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California plants, food, water, shelters and sleep

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Plants and food

Common hollyhock — fresh petals and tender leaves from a tall garden flower · Alcea rosea

Alcea rosea

In summer, tall stalks with large pink, burgundy, white, or nearly black flowers can often be seen around old houses in California. The flowers grow one above another along the stem, rather like a vertical garland. This is the common hollyhock, an old-fashioned ornamental that sometimes persists long after a garden has disappeared. Some of its parts can be eaten raw: young leaves, fresh petals, and the tender center of very young shoots.



Common hollyhock (Alcea rosea) — photograph of the plant

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HOW TO IDENTIFY IT

This herbaceous biennial or short-lived perennial usually grows about 1.5–2.5 meters tall. During the first season, large rounded or heart-shaped leaves form close to the ground on long stalks. They have several shallow lobes, a soft hairy covering, and conspicuous veins radiating outward. In the next season, a thick upright stem develops, bearing alternate leaves and many large flowers that emerge from the leaf axils along its upper portion. Each flower has five broad petals, although cultivated double-flowered forms can have numerous ornamental rows. A long column of stamens stands at the center. After flowering, a round, dry fruit divided into multiple segments develops, as in other members of the mallow family.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Alcea rosea as a nonnative plant and records scattered naturalized specimens in several counties, including occasional records from Sacramento and Yolo. Most hollyhocks seen in the state grow in gardens, beside fences and historic buildings, or in old flower beds. Hollyhock is not a common wild food of chaparral or conifer forests. Ornamental plants may be treated against leaf rust and insect pests; leaves and petals should not be gathered from treated plants.

WHEN EDIBLE PARTS ARE AVAILABLE

Rosettes of leaves appear as the weather warms in spring, or in autumn where the climate is mild. Young, soft leaves are available before the tall flower stalk develops. The main flowering season is summer, sometimes extending from late spring into autumn in warm valleys. Individual flowers are short-lived, so fresh petals are gathered on the day they open, before wilting begins. Older leaves become coarse, and the mature tall stem turns fibrous.

WHAT CAN BE EATEN WITHOUT COOKING

Petals and buds. Plants For A Future specifically documents their use raw. They have a mild plant flavor and a slightly mucilaginous texture, and can add delicate color and substance to a cold dish.

Young leaves. These can be finely chopped and eaten raw while still small and tender; the hairy foliage of mature leaves is less pleasant to eat.

The inner portion of a very young stem. Raw use is also documented for this part. The tough outer fibers are removed, leaving the soft central tissue.

The root is known as a source of starch after special processing, but it is not included here as food eaten without cooking.

HOW TO AVOID CONFUSION

Hibiscus syriacus, described separately in the atlas, is a woody shrub with flowers borne on individual short branches. Hollyhock, by contrast, has a tall herbaceous flowering stalk with blossoms distributed along it. Malva sylvestris is generally much shorter and has smaller flowers. Hollyhocks may have double flowers that alter the shape of the corolla, so identification should consider the leaves, stem, and fruits as well. Not every ornamental plant with mallow-like flowers should be treated as edible. Garden pesticides and fungicides pose an additional risk even when the species is identified correctly.

SOURCES

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Tapertip onion — pink spring umbels and slender leaves · Allium acuminatum

Allium acuminatum

On open slopes in Northern California, thin stalks topped with pink, star-shaped flowers sometimes appear in late spring. Narrow leaves near the base resemble a small onion, while a little bulb lies underground. This is Allium acuminatum, commonly known as tapertip onion. Young leaves, flowers, and bulbs have been eaten raw as pungent seasonings. But wild onions have deadly look-alikes, above all death camas. Bulbs must never be gathered on the strength of superficial resemblance alone.



Tapertip onion (Allium acuminatum) — photograph of the plant

Matt Lavin from Bozeman, Montana, USA · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a short, perennial bulb-forming plant, usually about 10–30 centimeters tall, with thin, linear leaves arising near the base. The leaves are soft, sometimes flat and sometimes slightly channeled, and emerge from a small bulb with a papery covering. There is one flower stalk, or sometimes a few; it is upright, almost leafless, and rises from the center of the leaf cluster. At its tip is an umbel of numerous small, star-shaped flowers. Each is usually pink or purplish pink, with six narrow tepals ending in noticeably elongated, pointed tips — the feature reflected in the name acuminatum. When fully open, the flowers form a little pink sphere. After flowering, dry capsules containing black seeds develop. The bulb is small, approximately 1–1.5 centimeters wide. Genuine Allium plants have a characteristic onion smell when damaged, but the absence of that smell, or the presence of a similar scent without full botanical identification, must not be taken as permission to harvest.

WHERE IT GROWS AND HOW COMMON IT IS

Plants For A Future places Allium acuminatum in western North America, from Washington to Northern California. California records show it on rather dry, open mountain slopes and rocky meadows where enough moisture remains after winter. It does not form vast stands in downtown Sacramento; in mountain areas it may occur locally and remain visible above ground only briefly. Digging up bulbs may be prohibited in protected areas and destroys the individual plant. For those interested in edible parts, taking a small quantity of leaves or flowers from a positively identified plant is preferable to destroying its bulb.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge after winter moisture or snowmelt, usually in spring. Flowering most often takes place in late spring or early summer, and may occur later at higher elevations. A species reference gives May–June for a temperate climate, but the Northern California calendar varies with elevation and the duration of snow cover. During flowering, the six-parted pink flowers and the structure of their umbel can be checked. Once the seeds mature and the aboveground foliage dries, the bulb's location becomes much less obvious; bulbs should not be sought for food without a flowering plant.



Tapertip onion (Allium acuminatum) — photograph of the plant

Wallace Keck / U.S. National Park Service · Public domain · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms that they are eaten raw. They have a fairly strong onion flavor and can serve as a small addition to a cold salad or other greens. Older leaves may become fibrous after flowering.

Pink flowers. The species reference also documents raw use of the fresh flowers. They are small, pungent, and may serve as a seasoning. Harvesting most of the flowers from a small wild population would leave too few to produce seed.

Small bulbs. They are edible raw only when the species has been identified beyond doubt, but their size is modest and digging them up kills the plant. For practical travel, it is better to avoid collecting underground parts: the risk of confusion with a poisonous bulb-forming species is too high. Mature seeds are described as food only after heating and are therefore excluded here.

HOW TO AVOID CONFUSION

The most dangerous confusion is with Toxicoscordion, the group known as death camas. These plants also have narrow basal leaves and star-shaped flowers, usually cream-colored or greenish white. They are deadly poisonous and occur in some of the same California plant communities. Other bulb-forming plants can also resemble Allium in early growth stages. Onion scent alone is insufficient: identification must rest on multiple botanical features of a mature plant, including the six-parted flowers and the structure of the umbel. Plants bearing only leaves should not be collected for food. Where rare native bulbs grow, even correctly identified plants are best left undisturbed.

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Narrowleaf wild onion — a pale spring umbel and a small bulb · Allium amplectens

Allium amplectens

In spring, a thin upright stem topped by an almost spherical umbel of white and pink flowers can sometimes be seen among grasses on California's foothill slopes. Several very narrow leaves emerge near its base, and a small bulb lies underground. This is Allium amplectens, a narrow-leaved native wild onion. Historical interpretive material from Olompali State Historic Park explicitly records that its bulbs were eaten raw. Gathering wild onions, however, calls for extreme care: similar-looking Toxicoscordion plants, known as death camas, are deadly poisonous.



Allium amplectens — photograph of the narrowleaf wild onion

Walter Siegmund (Wsiegmund) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming species usually reaches 20–50 centimeters in height. Two to four very narrow leaves rise from a small rounded or egg-shaped bulb; sometimes they are less than two millimeters wide. Their surfaces may be channeled, and they can begin to dry out by the time the plant is in full flower. The single flowering stalk is fairly smooth, cylindrical, and almost leafless. At its tip is a compact umbel of 10–50 small flowers. Each flower has six white, pale pink, or lilac tepals and six stamens. When fully open, the umbel resembles a little pale sphere. As the flowers wilt, the tepals become papery and fold around the developing ovary. Small capsules with black seeds follow. The bulb's outer coverings are brown and netlike, with a distinctive pattern botanists have compared to a herringbone design. Identification requires mature flowers and the plant's complete appearance: a bulb or narrow leaf alone is not enough.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Allium amplectens as endemic to California. There are many records from Butte, Tehama, Shasta, Napa, Lake, Marin, Sonoma, and Mendocino counties, with additional occurrences in Placer, El Dorado, and Sacramento counties. It inhabits open foothill slopes, open oak woodland, sparse conifer communities, and soils that are moist in winter but dry rapidly in summer. It is found in many places on serpentine soils. Around Sacramento, this is an interesting native onion but not a mass-forming green like some meadow plants after rain; a few flowering groups may occupy just a few square meters of suitable hillside. Digging out a bulb kills that plant and is often prohibited on protected land.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves start to grow after winter rains, while the upper soil remains cool and moist. The flower stalk emerges in spring. On warm California slopes, the umbels may open as early as April or May, while in cooler areas they may appear in June. For the northwestern portion of the species' range, Burke Herbarium gives May–July. Following flowering, seed capsules mature, the stalks and leaves dry, and the plant disappears above ground until the next season. The small bulb remains underground throughout the year, but it should not be sought without a flowering specimen. Seeing both the fresh, six-parted, whitish-pink flower and the characteristic narrow leaf helps establish identification.



Allium amplectens — photograph of the narrowleaf wild onion

Bureau of Land Management Oregon and Washington · Public domain · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

The small bulb, raw. Olompali State Historic Park interpretive material explicitly notes that bulbs of Allium amplectens were eaten raw or roasted. Only the first method belongs in a no-cooking diet. The bulb has a pungent onion flavor but is very small, usually around one centimeter across. Its dry outer covering can be removed and the bulb eaten fresh only after flawless identification of a flowering specimen and where digging is legally permitted.

Do not infer raw edibility by analogy. Young leaves and flowers of some other Allium species can be eaten raw, but the specific historical source cited here documents bulbs of Allium amplectens. The other parts are therefore not presented as confirmed raw food for this species. Seeds are not used here either.

Harvesting is destructive. Digging up the tiny bulb prevents the plant from flowering in the following year, and the amount of food obtained is extremely small. Even with reliable identification, a traveler is often better off leaving the plant where it grows. Such a small amount of food is not worth the risk of confusing it with a poisonous neighbor.

HOW TO AVOID CONFUSION

Toxicoscordion, or death camas, grows in some of the same spring meadows and has similarly narrow leaves and star-shaped flowers with six parts. It is deadly poisonous and must never be identified by tasting it. True Allium plants smell of onion, but scent is only a supporting clue and cannot establish identity on its own. Allium unifolium often has broader pink umbels on coastal slopes, while Allium acuminatum has more elongated tepals and brighter pink-purple flowers. Allium amplectens has particularly narrow leaves and often nearly white flowers. An unidentified, nonflowering plant beside a known onion must not be assumed to be the same species.

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Twincrest onion — mountain greens with pink umbels · Allium bisceptrum

Allium bisceptrum

In damp Sierra Nevada meadows, low clumps of narrow green leaves emerge after the snow melts. Flower stalks later rise above them, bearing pinkish-lilac, star-shaped flowers. This is twincrest onion, one of California's native Allium species. Its bulbs, young leaves, and flowers have a pronounced onion flavor and can be used without heating.



Twincrest onion (Allium bisceptrum) — photograph of the plant

Gary A. Monroe / USDA-NRCS · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming plant is usually 15–40 centimeters tall. Several long, flat or slightly channeled leaves emerge from a small underground bulb and are often already visible in early spring. The leaf edges are smooth, and the leaves taper toward their tips. The flower stalk is slender, straight, and leafless, ending in an umbel of a few to many star-shaped flowers. Six pink or lilac tepals surround stamens with conspicuous anthers. The bulb is small, usually about 1–1.5 centimeters across, and covered with thin, dry skins. When crushed, genuine onion leaves release their characteristic onion scent.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Allium bisceptrum as native to California. It grows in mountain meadows, along streambanks, and among pine and fir forests at higher elevations of the Sierra Nevada and other mountain ranges. Natural stands should not be expected on the dry Sacramento Valley floor. In a suitable mountain meadow, it may form small groups, but this is no reason to dig up every bulb: the underground bulb supports the following year's growth.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge once spring moisture reaches the soil; in high meadows, this follows snowmelt. The main season for tender greens is generally late spring and early summer. Flowering usually takes place in summer, roughly June–August depending on elevation. As seeds form, the leaves turn yellow and dry. A flowering umbel makes identification easier, but young leaves may be available earlier, when the species is much harder to recognize.



Twincrest onion (Allium bisceptrum) — photograph of the plant

Dcrjsr · CC BY 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Bulbs. Plants For A Future explicitly records their raw use. They have a strong flavor and are small, making them more of a seasoning than a substantial serving of food.

Young leaves. These are eaten fresh, finely chopped like green onions. Older, tougher leaves are less pleasant.

Flowers. Open pink flowers can also be used raw as a small, pungent addition.

Seed heads. Ethnobotanical accounts describe methods of extracting seeds after heating them in ashes, so they are excluded from a diet that requires no fire.

HOW TO AVOID CONFUSION

Other native Allium species differ in the length and shape of their leaves, flower color, and umbel size. The most dangerous confusion is between young onions and toxic species of Toxicoscordion, commonly called death camas. These do not have the true onion smell, but scent alone must not be the basis for identification. Several plant parts should be checked together, preferably while flowers are present. Never dig up an unidentified bulb in a mixed mountain meadow.

SOURCES

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Sierra onion — bell-shaped flowers and raw spring leaves · Allium campanulatum

Allium campanulatum

In summer, small umbels of dark pink or lilac, bell-shaped flowers can sometimes be seen in sunny high meadows of the Sierra Nevada. A slender flower stalk rises from the ground, with narrow green leaves nearby that smell of onion. This is Sierra onion, a native California species. Washoe people used it as food; for raw food during a journey, young leaves are the best-documented option, rather than underground bulbs that would have to be dug up.



Sierra onion (Allium campanulatum) — photograph of the plant

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming herb is usually 15–40 centimeters tall. A small, egg-shaped bulb with thin skins lies underground. Two or more narrow, almost linear leaves emerge from it. They may be slightly channeled and green, gradually drying out after flowering. A single slender flower stalk ends in a loose umbel of approximately ten to several dozen six-parted flowers that droop or point outward. The tepals are pink, lavender, or purple, sometimes with a darker central vein, and are shaped like small bells. Six stamens are visible inside. Mature fruits are small, three-chambered capsules with dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Allium campanulatum as native to California. It grows on dry, rocky, grassy mountain slopes, among pine forests, and on well-drained soils in the Sierra Nevada and some interior mountain regions. It is less closely associated with wet mountain meadows than Allium validum and is not a typical edible green of Sacramento's urban plain. Sightings have been recorded along mountain routes in Tuolumne County. Harvesting may be restricted in national parks and designated wilderness areas; preserving small clumps matters more than collecting a few leaves.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge after snowmelt as dry slopes warm in spring. Depending on elevation, tender young leaves are available in late spring or early summer, while flowers open roughly from late May through August. At higher elevations, flowering may be concentrated in July. After fruiting, the plant quickly enters summer dormancy and nearly disappears from the surface, leaving its bulb underground. An unidentified dry leaf rosette must not be used to locate bulbs for food.



Sierra onion (Allium campanulatum) — photograph of the plant

Alex Abair · CC BY 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. An educational publication about culturally significant Washoe plants specifically includes Allium campanulatum among edible onions, with the same method of use as Allium validum: leaves were eaten raw as greens, while bulbs were used in soups and broths. Only the tender, narrow leaves are appropriate for a method requiring no fire, taken in small quantities after certain identification. They can be chopped like green onions and have a pungent aroma and taste.

The bulb was traditionally used as food, but the species-specific source found here does not separately document its raw use. It is therefore not recommended here. Flowers are not listed as a separate raw food for the same reason.

HOW TO AVOID CONFUSION

Allium validum is larger and is associated with wet mountain meadows; its leaves are generally broader. Allium bisceptrum also bears pink umbels but differs in leaf and flower structure and often forms different clumps. Young leaves of poisonous Toxicoscordion species can resemble onions, and confusing the underground bulbs is especially dangerous. Identification requires seeing a true, six-parted Allium flower, the structure of the leaves, and the scent. Smell must not be the sole evidence. If there is any doubt, do not taste the leaves.

SOURCES

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Coastal onion — pink-purple flowers and aromatic greens of sea cliffs · Allium dichlamydeum

Allium dichlamydeum

Along California's cool Pacific coast, narrow green leaves may appear in spring on rocky, grassy slopes, followed by a slender stalk carrying a dense umbel of pink-purple, star-shaped flowers. This is the California coastal onion. Coastal peoples ate its tender fresh greens and small bulbs raw. The plant is useful as a pungent seasoning rather than as a source of large quantities of food.



Coastal onion (Allium dichlamydeum) — photograph of the plant

Eric in SF · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming herb usually grows about 15–45 centimeters tall. Several narrow, linear leaves emerge from an underground bulb, often looking like thin green ribbons or nearly cylindrical tubes. When crushed, they release a characteristic onion-and-garlic smell. The flowering stalk rises separately and bears an umbel at its tip. The small flowers each have six petal-like tepals in deep pink, lavender, or reddish purple, with six stamens visible at the center. After flowering, dry, three-chambered capsules with dark seeds develop. By the middle of the dry season, the leaves gradually turn yellow while the bulb remains underground.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Allium dichlamydeum as a California native restricted to the state and reports roughly two hundred observations. The species is associated mainly with coastal grasslands, sea cliffs, and rocky slopes along the central and northern coast, approximately from Santa Barbara to Mendocino. It may also occur in coastal scrub and on serpentine soils. It is not a familiar field onion of the Sacramento Valley, and looking for it in freshwater marshes would be pointless. On protected coastal land, plants must not be harvested where local rules prohibit collection.

WHEN EDIBLE PARTS ARE AVAILABLE

Green leaves grow after cool winter rains and are at their tenderest in late winter and spring in the coastal climate. Purple flowers usually appear between April and June, sometimes later or earlier depending on elevation and coastal fog. As the seed capsules mature, the leaves begin to dry. Flowering is the easiest time for identification, rather than early spring, when the narrow leaves of other bulb-forming plants may be growing nearby.

WHAT CAN BE EATEN WITHOUT COOKING

Young greens and bulbs. In its species account of coastal onion, the United States National Park Service reports that Pomo and Kashaya peoples ate the greens and bulbs both raw and cooked. For uncooked food during a journey, a little tender fresh foliage, finely chopped as a seasoning, is sufficient. The bulb was also eaten raw, but digging it up kills the plant; particularly in small coastal populations, it is better left underground. The flowers have an onion scent, but no separate species-specific evidence of their use as raw food was found, so they are not included among the edible parts here.

HOW TO AVOID CONFUSION

Allium peninsulare also forms purple umbels, but often grows on inland grassy foothill slopes rather than sea cliffs and has different leaf and flower characteristics. The early leaves of some Toxicoscordion species resemble onions, but these plants are poisonous. An onion smell may help with recognition, yet scent alone is not sufficient: identification also requires checking the six-parted flowers, the umbel, the leaves, and the habitat. If the plant is not in flower and the species cannot be established, neither the greens nor especially the underground bulbs should be tasted.

SOURCES

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Red-skinned onion — small bulbs in dark red skins on southern slopes · Allium haematochiton

Allium haematochiton

Short clusters of green, tubular leaves sometimes appear after winter rains on dry, grassy slopes in Southern California. In spring, umbels of whitish, star-shaped flowers open above them, often with a thin pink or reddish stripe along the center of each tepal. Underground lies a small bulb with dark red outer skins. This is red-skinned onion, a plant used as food by local peoples that can be eaten raw only after certain identification.



Red-skinned onion (Allium haematochiton) — photograph of the plant

Walter Siegmund (talk) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming herb is usually 10–40 centimeters tall. Several hollow, narrow leaves emerge from a short underground base; in cross-section, they are round or slightly channeled. They may appear in autumn and remain green until spring flowering. The flower stalk is relatively slender, sometimes with two faint angles, and ends in an umbel of approximately 10–30 flowers. The six tepals are white or pinkish, often with a darker central stripe. The bulbs are elongated and may grow in groups. Their outer skins are reddish brown to dark red, while inner layers are paler. Both foliage and bulb have a characteristic onion scent.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Allium haematochiton as a native California species, with several hundred observations. It grows in coastal and inland mountains of Southern California, in grassy openings within chaparral, on clay slopes and open clearings, and sometimes on serpentine soils. The University of California, Irvine records the species in the San Joaquin Hills and Santa Ana Mountains. It is not typical of the dry Sacramento Valley, although some outlying populations exist.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves develop after the first rains and are at their tenderest in winter and early spring. Flowering usually takes place from March to May, before the onset of intense heat. By summer the leaves have dried, while the underground bulb survives the dry season. The small bulb remains below the surface, but digging it up prevents that individual plant from growing again. Harvesting is prohibited in protected natural areas wherever local rules forbid it.



Red-skinned onion (Allium haematochiton) — photograph of the plant

Walter Siegmund (Wsiegmund) · CC BY-SA 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Bulbs. The Theodore Payne Foundation explicitly describes Allium haematochiton as an edible onion, while California ethnobotanical sources specify the use of bulbs raw or roasted. Only the raw method is included here. After careful species identification, the dry red skins may be removed and the small whitish inner bulb eaten as a pungent seasoning. Fresh leaves smell of onion and resemble green onions in potential culinary use, but species-specific evidence for eating these particular leaves raw is less definite. The bulb therefore remains the principal confirmed edible part. Seeds and roots are not listed separately as food.

HOW TO AVOID CONFUSION

Allium triquetrum generally has long, three-angled leaves and drooping white flowers, while Allium hyalinum bears looser spring umbels and smaller bulbs with different skins. Native Toxicoscordion species can have similar early leaves and bulbs, but they are poisonous. A small white bulb alone is therefore no evidence of edibility. Reliable identification requires a flowering umbel, the form of the leaves, and the characteristic red outer skins. Never taste an unidentified bulb dug from mixed grassland.

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Translucent onion — delicate white spring stars in Sierra foothills · Allium hyalinum

Allium hyalinum

In spring, a small onion with thin leaves and delicate white or pinkish flowers can be spotted on grassy slopes in California's foothills. Once open, the thin, petal-like flower parts look almost translucent. This is translucent onion, a plant endemic to California. A USDA ethnobotanical guide explicitly documents that its bulbs were eaten raw.



Translucent onion (Allium hyalinum) — photograph of the plant

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial has a small, round underground bulb, usually around 0.5–1 centimeter in diameter, enclosed in a thin brownish skin. There are usually two or three narrow leaves. They are long, soft, slightly channeled or almost cylindrical, and begin to dry from their tips around flowering time. The slender upright flower stalk reaches approximately 15–45 centimeters. At its top is a loose umbel of a few to dozens of small white or pale pink, star-shaped flowers. Each has six tepals; after flowering they become semi-transparent and draw together over the ovary. The flowers do not form a large, dense spherical head.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Allium hyalinum as a California native whose range is limited to the state. It is especially characteristic of the Sierra Nevada foothills from Kern to Butte counties, as well as some inland parts of the Coast Ranges. It grows on grassy and rocky slopes, particularly in heavy clay soils, near mossy rocks, and in foothill oak woodland. Broadly speaking, its range includes areas east of the Sacramento Valley, but it should not be expected in urban lawns. The bulbs are tiny and plants recover slowly after digging.

WHEN EDIBLE PARTS ARE AVAILABLE

This is an early spring onion. Flora of North America gives a main flowering period of March through May, although cold or rainy years can shift the dates. Narrow green leaves appear before the flowers, often soon after winter rains. The aboveground parts may already have dried by early summer. Fresh white flowers are much more useful for identifying the species than old, dry shoots from the previous year.



Translucent onion (Allium hyalinum) — photograph of the plant

Stickpen · Public domain · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

The bulb. Species-specific USDA NRCS material states that the Tübatulabal people used this onion as food and that some bulbs were eaten raw. The small bulb has a pronounced onion aroma and is more useful as a pungent seasoning than as a staple food. To use it without heat, its dry covering is removed and it is eaten fresh. The young greens of many other onions are edible, but no separate reliable account of raw leaf consumption for this species was found in the cited guide. The food claim here is therefore limited to the bulb. Seeds and roots are not recommended as separate foods.

HOW TO AVOID CONFUSION

California's foothills contain many Allium species with white or pink flowers, including Allium unifolium and Allium amplectens, both described elsewhere in this atlas. Translucent onion usually has just two or three narrow leaves and a loose umbel of small, star-shaped flowers that later become translucent. The main danger comes from other spring bulbs with superficially similar narrow leaves, especially poisonous Toxicoscordion species. An unidentified shoot must not be dug up for a taste test; the form of the flower must be seen and the plant's identity as an onion established.

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Neapolitan garlic — white flowers and mild garlicky greens · *Allium neapolitanum*

Allium neapolitanum

In an old coastal garden, white, six-parted flowers may rise above the grass after a wet winter. Before flowering, the plant looks like a small cluster of fairly broad, soft leaves with a faint garlic scent. This is Neapolitan garlic, a Mediterranean introduction that occasionally escapes cultivation in California. Its leaves, flowers, and bulb are known to be eaten without cooking.



Neapolitan garlic (Allium neapolitanum) — photograph of the plant

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming plant usually reaches 20–50 centimeters. Several long, narrow leaves rise from a small underground bulb. The leaves are relatively flat, with parallel veins and smooth edges. The flowering stem is almost leafless and generally three-angled or slightly angular. At its tip opens an umbel-like cluster of many star-shaped white flowers, each with six white tepals and conspicuous stamens. Small seed capsules develop after pollination. When damaged, a leaf releases the characteristic scent of onion-family compounds. However, an unfamiliar plant must not be identified by smell alone, much less tested by tasting it.

WHERE IT GROWS AND HOW COMMON IT IS

The species comes from the Mediterranean region. In California, it is mainly known in cultivation, with scattered records outside gardens, especially in mild coastal climates around old settlements and abandoned garden plots. It should not be described as an abundant wild green throughout the state. Because these plants are often near ornamental plantings, the main questions before any collection are who owns the land, whether herbicides have been used, and whether the specimen has been correctly identified.

WHEN EDIBLE PARTS ARE AVAILABLE

After winter rains, the small bulb produces new leaves. On the coast this often happens in winter, while in cooler areas it may occur closer to spring. The white umbels generally open from March to May. Leaves then yellow, leaving the bulb in the soil until the next growing season. In dry places, the period when leaves remain tender may end quickly. Identifying the species among related onions and superficially similar bulb-forming plants is much harder when the plant is not flowering.



Neapolitan garlic (Allium neapolitanum) — photograph of the plant

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Leaves. Plants For A Future confirms that fresh Allium neapolitanum leaves are eaten raw. Their mild garlic flavor can be added to cold dishes.

Flowers. Fresh white flowers may also be used; they have a gentle onion-like pungency.

Bulb. Plants For A Future records that the small bulb can be eaten raw. Digging it up, however, kills the plant, and collecting bulbs from small naturalized patches is undesirable.

Seeds are not recommended because the sources used here do not separately establish a raw-food method for them. Even correctly identified onions must not be gathered from treated ornamental flower beds.

HOW TO AVOID CONFUSION

California has both native and introduced Allium species, differing in leaf width, flower-stalk shape, flower color, and bulb structure. The gravest danger is confusion with poisonous Toxicoscordion plants, known as death camas. They, too, have narrow leaves with parallel veins and pale star-shaped flowers but are not true onions. A white flower umbel or similar-looking bulb is not enough for identification. If the species cannot be established, the plant must not be eaten; tasting as an identification method is unacceptable.

SOURCES

https://www.calflora.org/app/taxon?crn=214
https://pfaf.org/User/Plant.aspx?LatinName=Allium+neapolitanum https://powo.science.kew.org/

Mexicali onion — purple spring umbels and small foothill bulbs · Allium peninsulare

Allium peninsulare

On a sunny slope among dry foothill grasses, a low onion sometimes blooms in spring with a dense umbel of bright purple, star-shaped flowers. Its leaves are narrow, and a small bulb lies beneath the ground. This is Mexicali onion, a native plant of California and neighboring Baja California. Eating the peeled bulbs raw has been documented for the more widespread form of the species. However, the species also includes a very rare, protected variety that must not be collected in the wild.

HOW TO IDENTIFY IT

This bulb-forming perennial is usually 10–40 centimeters tall. Its bulb is small, rounded to egg-shaped, with dry brown skins that show a netlike pattern under magnification. There are generally two or three narrow leaves, several to tens of centimeters long, nearly cylindrical or slightly channeled. They gradually dry from their tips. A slender flower stalk carries an umbel of many bright crimson, pink, or deep purple flowers, each with six tepals and six stamens. After flowering, small dry capsules develop and open to release black seeds. Reliable identification requires examining the flowering umbel, leaves, and bulb coverings.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Allium peninsulare is native to California, with hundreds of records from southern and central counties on dry grassy slopes, in foothill oak woodland, and in open, scattered forest. Observations have been recorded in San Diego, San Luis Obispo, Butte, Tuolumne, El Dorado, and other areas. Sacramento County has only a single recorded occurrence. It is especially important to distinguish the two varieties: var. peninsulare is more widespread, while var. franciscanum has California Rare Plant Rank 1B.2. The latter must not be collected. For a nonspecialist, avoiding the digging of wild onions altogether is the more reasonable choice where a rare population might be present.

WHEN EDIBLE PARTS ARE AVAILABLE

Narrow green leaves emerge after winter rains, usually in late winter and spring. On warm, low foothills, flowering occurs mainly from March to May; in cooler places it may come later, sometimes in early summer. The bulbs remain underground after the foliage dries and survive the dry season. The plant is easiest to identify in full bloom, when the characteristic color and shape of the umbel are visible. Identification from a single dry bulb skin in late summer is unreliable.

WHAT CAN BE EATEN WITHOUT COOKING

The peeled bulb of the common variety. California ethnobotanical sources explicitly describe Allium peninsulare var. peninsulare as an edible wild onion whose bulbs were eaten raw or cooked. The small white inner portion is freed from the dry skin. It has a pungent onion flavor and serves more as a seasoning than as a substantial food. Digging, however, kills the perennial plant, and the rare var. franciscanum must not be disturbed. The sources examined do not provide sufficiently reliable separate accounts of raw flowers or leaves for this species, so the food claim is limited to the bulb of the common variety, and wild collecting is not recommended.

HOW TO AVOID CONFUSION

Allium dichlamydeum generally grows close to the ocean and differs in umbel coloration and other features. Allium haematochiton often has reddish outer bulb skins and different floral traits. Distinguishing the rare variety of Allium peninsulare requires a botanical identification key: petal color alone is not sufficient. Similar-looking Toxicoscordion plants have poisonous bulbs. Identification must therefore consider the leaves, flowering plant, and onion scent, without relying solely on the smell. Unknown bulbs dug from the ground must never be tasted.

SOURCES

https://www.calflora.org/app/taxon?crn=223 https://www.calflora.org/app/taxon?crn=224
https://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101388
https://seeyouknowthis.com/plant/562

Three-cornered leek — white bells and tender greens · Allium triquetrum

Allium triquetrum

In California's coastal gardens, thick green growth resembling long strips of ordinary onion leaves sometimes appears in winter. By spring, drooping white bell-shaped flowers hang above it, each marked with a thin green stripe. The flowering stalk has three distinct angles, as though made from three flat surfaces. This is Allium triquetrum, three-cornered leek, introduced from the Mediterranean region. Its young leaves and flowers are known as food that can be eaten without cooking. Collecting unidentified bulb-forming plants, however, is extremely dangerous: some similar garden and wild plants are highly poisonous.



Three-cornered leek (Allium triquetrum) — photograph of the plant

Hans Hillewaert · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial grows from a bulb and usually reaches a few tens of centimeters in height. Flat, fairly narrow, soft leaves emerge from a small underground bulb in winter. At first they grow in a clump, then arch outward. The smooth flowering stalk is not round: its cross-section is distinctly triangular. At its tip hangs an umbel of several white flowers, each with six tepals. A fine green vein often runs down the center of each white tepal. The flower stalklets curve downward, making the cluster look like a group of little white lanterns. Damaging a correctly identified plant releases the characteristic onion-and-garlic smell, but smell alone cannot establish that an unfamiliar plant is safe to eat. Seed capsules form after flowering, and the aboveground leaves gradually dry out by summer.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Allium triquetrum as a nonnative species found in disturbed places in California. It is best suited to the mild, wet winters of coastal counties. Noticeable clumps may form near old gardens, along the edges of damp paths, in the shade of shrubs and beside streams. In the Central Valley, hot, dry summers shorten the period when its leaves remain green; it should not be described as a wild food found everywhere around Sacramento. The plant can spread rapidly by bulbs and seeds, displacing lower-growing vegetation. Even outside gardens, it is not part of California's native flora.

WHEN EDIBLE PARTS ARE AVAILABLE

The main growth of green leaves follows the first sustained autumn and winter rains. In mild areas, leaves may be present from late autumn through spring. White flowers open in late winter and spring, with the season strongly influenced by temperature and rainfall. After flowering, the leaves turn yellow and dry, while the plant survives underground as a small bulb until the next wet period. Leaves and flowers are therefore most readily available during the cooler months; summer usually brings no aboveground food harvest.



Three-cornered leek (Allium triquetrum) — photograph of the plant

Tigerente · CC BY-SA 3.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly lists the leaves of Allium triquetrum as edible raw. They have a mild onion-and-garlic flavor and can be added in small amounts to other greens. Older leaves become tougher and die back quickly after flowering.

White flowers. The same reference records that the flowers can be eaten raw. They are succulent, with a light onion pungency. This is a small spring food that should be gathered only from a plant identified by its triangular flowering stalk, leaves and umbel as well as its flowers.

Small underground bulb. The species reference also confirms raw use of the bulb. Digging it up destroys the individual plant and is particularly dangerous if the identification is wrong. In practice, collecting a few leaves and flowers from a positively identified plant is more sensible; underground parts should not be dug without a compelling reason.

HOW TO AVOID CONFUSION

Never taste an unidentified bulb-forming plant. Daffodil leaves (Narcissus) can resemble onion greens, but daffodil bulbs are poisonous. Another dangerous garden look-alike is lily-of-the-valley (Convallaria majalis), which has broader leaves and differently structured flowers. Allium triquetrum is characterized by its triangular flowering stalk, drooping white flowers with green stripes, and onion smell. No single feature guarantees safety. Even correctly identified plants from treated ornamental beds must not be eaten because of possible chemical residues. On protected land, do not dig up bulbs or disturb the soil.

SOURCES

https://www.calflora.org/app/taxon?crn=238
https://pfaf.org/user/plant.aspx?latinname=Allium+triquetrum

One-leaf onion — pink coastal umbels and poisonous bulb look-alikes · Allium unifolium

Allium unifolium

In spring, slender flowering stalks rise from damp, rocky coastal slopes in California, topped by attractive pink umbels of little star-shaped flowers. A few narrow green leaves grow at the base, and a small true bulb lies underground. This is Allium unifolium, known as one-leaf onion, although it often has more than one leaf. Its leaves, flowers and bulbs are documented as foods eaten raw. Collecting it without certain identification is unacceptable, however: California also has deadly poisonous plants resembling onions, commonly called death camas.



One-leaf onion (Allium unifolium) — photograph of the plant

Toedrifter · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This native perennial onion is roughly 20–60 centimeters tall. A small oval bulb, about 1–1.5 centimeters in diameter, lies underground beneath dry outer coverings. Usually one to three relatively narrow, linear or slightly flattened leaves emerge from it. They often begin to yellow even while the plant is flowering. The upright, smooth, nearly leafless flowering stalk carries a compact umbel of a few to many small flowers. Each flower is pink, pinkish white or lilac, with six narrow tepals and six stamens. At full bloom, the umbel looks like a little sphere of stars. Small, three-chambered capsules containing black seeds develop after pollination, while the floral parts gradually dry. Compared with some other native onions, the species often has a softer range of pink flower colors and grows on coastal mountain soils that are moist in spring. Its common name must never replace a complete botanical identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Allium unifolium as endemic to California, with observations in Marin, Sonoma, Napa, Contra Costa, Santa Cruz, San Mateo and Mendocino counties, among others. Its habitats include chaparral, mixed evergreen forest and closed-cone pine forest communities, especially open meadows and rocky slopes of the coastal ranges that are moist in spring. There are very few natural records from Sacramento County, so this is not an ordinary spring onion of the urban valley. Flowering groups may occur on suitable sites, but the supply of small bulbs is limited. Digging out a whole bulb kills the plant; leaving it to flower and set seed is preferable, with only very modest leaf collection where permitted.

WHEN EDIBLE PARTS ARE AVAILABLE

New green leaves emerge from the bulb after winter rains. On warm west-facing slopes, this is generally in late winter and spring. Flower stalks develop later, and the pink umbels open in spring or early summer. Plants For A Future gives June–July in a more temperate climate, though flowering may be earlier in California. Once the small seed capsules mature, the leaves dry and the aboveground plant gradually disappears until the next rainy season. For edible leaves, the relevant stage is young green growth; for flowers, it is a freshly opened umbel. Do not search for bulbs on a bare, dry slope after the visible plant has disappeared.



One-leaf onion (Allium unifolium) — photograph of the plant

Michal Maňas (Snek01) · CC BY-SA 2.5 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms their raw use. Their flavor is distinctly onion-like and pungent, though usually milder than cultivated garlic. A few positively identified leaves can be chopped into a cold salad or mixed with other fresh vegetables.

Fresh flowers. Plants For A Future also confirms that the pink flowers can be eaten raw. They can be used sparingly as a seasoning, but all the flower clusters should not be stripped from a small population.

Bulb. Raw edibility is documented, but the bulb is tiny and digging it up prevents the plant from surviving. For practical uncooked food, it is better not to dig up bulbs, particularly on conservation lands. Never eat an unfamiliar little bulb simply because its shape resembles an onion.

A serious hazard. Death camas (Toxicoscordion) can have similar narrow basal leaves and whitish star-shaped flowers, yet contains deadly toxins. Do not collect onions identified only by their leaves or smell, without a mature flowering plant. Large quantities of onion-family plants may also be toxic to household animals.

HOW TO AVOID CONFUSION

Allium amplectens usually has even narrower leaves and mostly white or pale pink compact umbels, often growing on slopes that dry out in spring. Allium acuminatum has more pointed pink-purple tepals and a different, widespread mountain range. True Allium species smell of onion when crushed, but this alone is not enough for safe identification: all distinguishing features must match. Death camas (Toxicoscordion) also bears six-parted flowers and has a broadly similar bulb-forming habit; its bulbs are deadly poisonous. Even where one plant in a neighboring group has been identified with certainty, unfamiliar leaves from a mixed stand must not be gathered together.

SOURCES

https://www.calflora.org/app/taxon?crn=240 https://pfaf.org/User/Plant.aspx?LatinName=Allium+unifolium https://commons.wikimedia.org/wiki/File:Alliumunifoliumbloom.jpg

Pacific swamp onion — lilac flowers in wet mountain meadows · Allium validum

Allium validum

Dense clumps of long, flat onion leaves sometimes grow in wet alpine meadows beside streams. By midsummer, compact heads of pinkish-lilac flowers rise above them. This is Pacific swamp onion, unusual among California onions because it prefers mountain soil that remains consistently moist. The raw use of its bulbs, leaves and flowers is separately documented.



Pacific swamp onion (Allium validum) — photograph of the plant

Bob Moseley / USDA-NRCS · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming herb is generally 30–70 centimeters tall. Beneath the ground, several elongated bulbs grow in clusters on thick, short rhizomes. The leaves are long and flat, about 4–15 millimeters wide, usually three to six per plant; they may still be green when the plant is in flower. The upright flowering stalk carries a dense umbel of many star-shaped flowers, each with six tepals. Their color ranges from pink to purple-lilac. Outer bulb coverings are brownish, while inner layers are whitish or tinged with purple. Crushed green leaves and bulbs release an onion scent.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Allium validum as native to California, especially in mountain meadows, wet stream edges and waterlogged areas of pine, fir and subalpine forests. Suitable habitats are found in the Sierra Nevada and northern mountain ranges. This onion is almost absent from the hot lowlands around Sacramento. Wet meadow communities are vulnerable, so visitors should not trample dense clumps or tear up the turf to obtain bulbs.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge after snowmelt, which may come in late spring in mountain habitats. Botanical sources generally place flowering in June–August, often particularly July and August. Early plants provide leaves before flowering; fresh flowers are available for several weeks. As the season ends, the aboveground parts gradually turn yellow, while the underground clump survives.



Pacific swamp onion (Allium validum) — photograph of the plant

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WHAT CAN BE EATEN WITHOUT COOKING

Bulbs. Plants For A Future records that bulbs of Allium validum are eaten raw. They can be relatively large and fibrous, with a strong onion flavor.

Leaves. These are also eaten raw, chopped finely like green onions while still succulent.

Flowers. Fresh lilac flowers provide a small amount of pungent seasoning for a cold dish.

In practice, cutting a few leaves or flowers is preferable to digging out bulbs, allowing the perennial clump to continue growing. A seasoning does not replace substantial food, and large quantities of onions can irritate the stomach.

HOW TO AVOID CONFUSION

Allium bisceptrum is usually shorter and tends to have narrower leaves. Pacific swamp onion has comparatively broad leaves and grows in clumps associated with wet mountain meadows. Do not mistake it for lilies, irises, false hellebores or poisonous Toxicoscordion species, some of which also occur in damp meadows. True Allium plants smell of onion, but scent does not replace botanical examination of flowers, leaves and underground structures. Harvesting may be prohibited in protected meadows.

SOURCES

https://www.calflora.org/app/taxon?crn=241 https://pfaf.org/User/Plant.aspx?LatinName=Allium+validum https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Allium+validum

Wild garlic — hollow leaves and tiny bulbils replacing flowers · Allium vineale

Allium vineale

On old pastures and along roads in western California, clumps of thin, green, garlic-scented tubes sometimes appear. In early summer, a round stalk rises above them, often topped by a cluster of tiny bulbils with only a few flowers. This is wild garlic, introduced from Europe and Asia. Its young leaves and aerial bulbils are documented as pungent foods that can be eaten raw.



Wild garlic (Allium vineale) — photograph of the plant

Hüseyin Cahid Doğan · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial bulb-forming herb grows approximately 20–80 centimeters tall. In the cooler months, narrow dark-green tubular leaves emerge from a small underground bulb. The leaves are hollow and circular in cross-section, releasing a strong garlic odor when broken. The upright flowering stalk is usually longer than the leaves. At its tip is a small, nearly spherical cluster in which numerous tiny aerial bulbils develop in place of some flowers. The bulbils are green at first, later brownish or purplish. True flowers, when present, are small, usually pinkish or purple, with six tepals. The aboveground parts die back in summer and begin growing again in autumn.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Allium vineale as a nonnative species in California, occurring in scattered local populations. There are records from Sonoma, Napa, Mendocino, Sacramento, Placer and El Dorado counties, among others. It grows in meadows, old gardens, pasture edges and disturbed grassy land. It is not a wild garlic present everywhere around Sacramento; it may be absent from most nearby sites. Plants alongside highways or treated vineyards must not be collected for food.

WHEN EDIBLE PARTS ARE AVAILABLE

In a Mediterranean climate, growth often begins after autumn rain. Tender tubular leaves are visible in winter and spring, sometimes into early summer. The flowering stalk bearing aerial bulbils appears toward the end of spring or in summer. The aboveground parts then yellow and dry, while the underground bulbs survive the dry season. The best leaves are young, soft and green; they become tougher later.

WHAT CAN BE EATEN WITHOUT COOKING

Fresh leaves. Plants For A Future separately confirms that they are eaten raw. They are more fibrous than ordinary green onions and therefore work best finely chopped, as a seasoning in small quantities.

Aerial bulbils. These are also listed as edible raw. They have a pronounced garlic flavor and can be gently separated from the flower head without digging up the plant.

Underground bulb. Food references describe its use as a seasoning, but a separate raw preparation is not sufficiently clear in the cited material. This article therefore concentrates on the leaves and aerial bulbils. Dry flowering stalks are not eaten.

HOW TO AVOID CONFUSION

Unlike Allium triquetrum, three-cornered leek, wild garlic has cylindrical hollow leaves and a flower head often containing aerial bulbils; three-cornered leek bears white bell-shaped flowers. Other Allium species have flat leaves or flower clusters consisting entirely of flowers. Young tubular leaves without a flower stalk can resemble ornamental lawn plants. In particular, onion-family plants must not be confused with poisonous Toxicoscordion or other superficially similar bulb-forming species. A garlic smell helps, but does not replace the combined identifying features and a mature flowering stage.

SOURCES

https://www.calflora.org/app/taxon?crn=242 https://pfaf.org/USER/Plant.aspx?LatinName=Allium+vineale https://www.calflora.org/app/countytaxon?crn=242

White amaranth — tiny raw seeds from a summer tumbleweed · Amaranthus albus

Amaranthus albus

In summer, a pale-green plant with numerous thin branches sometimes appears on dry waste ground or beside an old agricultural field. By autumn, small dry fruits containing dark seeds mature at the bases of its leaves. This is white amaranth, a familiar weed in many parts of California. Of its parts, the sources reviewed here specifically document the seeds as edible raw. Young greens are more often described as food after cooking, so the leaves are not presented here as a salad vegetable.



White amaranth (Amaranthus albus) — photograph of the plant

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

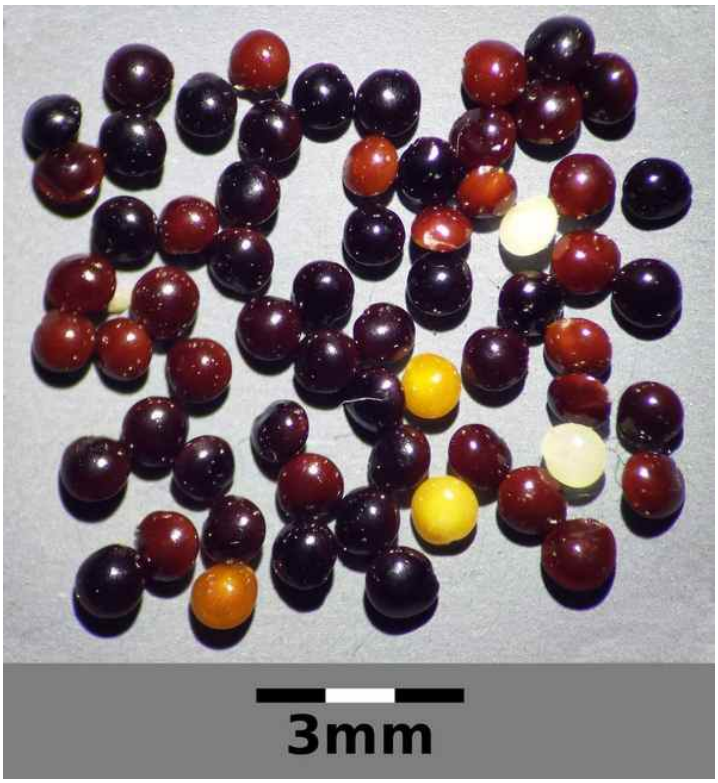
This annual usually grows 20–70 centimeters tall, sometimes remaining shorter where water is scarce. Its stems are light green or whitish, numerous, and branch almost from the base. By the end of the season, the plant may form a loose, rounded shape capable of tumbling in the wind. The small alternate leaves are oval or obovate, with smooth edges and short stalks; some have a slight notch at the tip. The tiny greenish-white flowers form small clusters mainly in the leaf axils, rather than a huge terminal flower panicle. The seeds are about one millimeter across, round, smooth and shiny, usually dark brown or black.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Amaranthus albus as a nonnative annual herb in California, with more than a thousand observations. It grows in open, dry, disturbed habitats across the state: in the Sacramento Valley, on the coast, in foothills and in southern districts. It often occupies the edges of cultivated fields, roadsides or compacted soil. For collecting uncooked food, however, only clean sites away from roads, industrial areas, animal waste and herbicide applications are suitable. Green parts are especially undesirable on fields heavily fertilized with nitrogen.

WHEN EDIBLE PARTS ARE AVAILABLE

The seeds usually germinate after spring temperatures rise and the soil becomes sufficiently warm. Through summer the plant branches rapidly and forms numerous small, greenish flower clusters. Seeds ripen in late summer and autumn, when the papery fruit coverings open easily. Gently shaking a fully mature, dry branch over a clean container may release dozens of tiny seeds. If the material is collected in rainy weather, it needs to be dried promptly to prevent mold.



White amaranth (Amaranthus albus) — photograph of the plant

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Mature seeds. Plants For A Future separately records that the seeds can be eaten raw. They are extremely small and hard, so swallowing them whole is not the best way to obtain nourishment: many may pass through the digestive tract undigested. Clean seeds can be thoroughly crushed by hand into a fine, uncooked meal and mixed with cold water or other ready-to-eat food. First remove sharp, dry stem fragments, dust and insects. The reference generally recommends cooking the leaves of this species; they are not used here in a diet without fire. Seeds must not be taken from plants grown on contaminated soil.

HOW TO AVOID CONFUSION

Amaranthus retroflexus usually has a thicker, upright stem, larger leaves and a substantial terminal flower panicle. In white amaranth, the flowers form small clusters in the leaf axils. Amaranthus blitoides, also described in this atlas, spreads more closely along the ground and differs in its shoots and fruits. A single black seed cannot establish which amaranth species is present. First examine the overall plant shape, leaves, arrangement of flowers and mature fruits, then collect the seeds. Some similar amaranths can accumulate nitrates and oxalates.

SOURCES

https://www.calflora.org/app/taxon?crn=271
https://pfaf.org/user/Plant.aspx?LatinName=Amaranthus+albus
https://www.calflora.org/app/countytaxon?crn=271

Prostrate amaranth — a summer carpet of greens and tiny seeds · Amaranthus blitoides

Amaranthus blitoides

In summer, a low, spreading carpet of numerous slender branches may develop across dry, disturbed soil. Small oval leaves create dense green growth, with inconspicuous greenish flower clusters visible in their axils. This is prostrate amaranth, a species native to California. Its young leaves can be eaten without heating, although the flavor is sometimes rather sharp and only small servings are advisable.



Prostrate amaranth (Amaranthus blitoides) — photograph of the plant

Amirh. absnd · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual herb has stems that lie on the ground and spread from a central root, sometimes turning upward at the tips. Individual shoots may extend 20–60 centimeters or more. The small alternate leaves are elliptical or obovate, with smooth edges and short stalks. The stems are often reddish and somewhat fleshy, with many branches. Small greenish flowers form compact clusters in the leaf axils. The fruits contain dark seeds, often larger than those of certain other small-seeded amaranths; the mature fruit covering splits open.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Amaranthus blitoides as native to western North America, including California, and reports hundreds of observations. The plant occurs on dry and periodically wet disturbed sites, in gardens, near fields, in loose soil and on open floodplains. It may be seen in the Sacramento Valley during summer, particularly after irrigation or rain. Near roads and in fields fertilized heavily with nitrogen, however, contamination is a special concern. Only clean, untreated plants are suitable for uncooked food.

WHEN EDIBLE PARTS ARE AVAILABLE

Seeds usually germinate with sustained spring warmth, after which the shoots spread rapidly along the ground. Young, soft leaves develop in spring and early summer. Flowering continues through summer and autumn until cold weather arrives. The foliage can become coarse quickly in hot conditions. It is best to gather young leaves before the upper leaf axils are crowded with mature, rough seed clusters.



Prostrate amaranth (Amaranthus blitoides) — photograph of the plant

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future confirms that the leaves of Amaranthus blitoides are eaten raw but also specifically notes their sharp, sometimes acrid flavor. This is not a primary salad green: only very young, soft leaves are suited to small mixtures with milder greens. Amaranths, including this species, can accumulate oxalates and nitrates, especially in fertilized soils, so large raw servings are not recommended. The seeds are also edible, but customary food preparations generally involve roasting or boiling them. They are therefore not presented here as a confirmed food to eat raw. The roots are not used.

HOW TO AVOID CONFUSION

Amaranthus albus has more upright branches and differently shaped fruits, while Amaranthus retroflexus develops a tall stem and large terminal flower clusters. Common knotgrass, Polygonum aviculare, also spreads as a low mat, but its stem nodes are surrounded by membranous sheaths absent from amaranths. A reddish stem alone cannot distinguish these species. Precise identification requires the small flower clusters and leaves to be examined, because many weeds have a similar low-growing habit.

SOURCES

https://www.calflora.org/app/taxon?crn=273
https://pfaf.org/user/Plant.aspx?LatinName=Amaranthus+blitoides
https://commons.wikimedia.org/wiki/File:Amaranthus_blitoides_absnd.jpg

Smooth pigweed — tender summer leaves on open soil · Amaranthus hybridus

Amaranthus hybridus

After spring rains have ended, tall herbs with broad green leaves and dense terminal flower spikes begin to grow rapidly in loose, warm soil near vegetable gardens. One of these is smooth pigweed, Amaranthus hybridus. Young plants produce tender greens that can be eaten without heating, but with this species it is especially important to consider fertilizers and soil conditions.



Smooth pigweed (Amaranthus hybridus) — photograph of the plant

Sam Thomas · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This upright annual plant grows from about 50 centimeters to 1.5–2 meters tall where sufficient moisture is available. The relatively thick stem is green or reddish, sometimes branching and becoming ribbed. Leaves are alternate, borne on distinct stalks, and range from egg-shaped to diamond-shaped, with smooth margins and conspicuous veins. Large leaves may have somewhat elongated bases and pointed tips. Small greenish flowers form dense, spike-like clusters both at the top of the plant and in the leaf axils. Tiny dark seeds develop within these clusters as they mature. Pigweed does not bear bright flowers with conspicuous petals: by midsummer its green flower heads often resemble rough, tightly packed panicles.

WHERE IT GROWS AND HOW COMMON IT IS

Amaranthus hybridus is a nonnative plant found on warm, disturbed land in California, including gardens, field margins, embankments and irrigated vacant lots. It germinates quickly after soil disturbance and regular watering. Many superficially similar pigweeds in the state, however, belong to other species. A photograph of an unidentified garden weed is not enough to establish that it is A. hybridus. Never gather these greens from roadsides, industrial sites or heavily fertilized garden beds.

WHEN EDIBLE PARTS ARE AVAILABLE

Small seedlings appear after the soil warms; in the Central Valley this often means late spring or early summer, and later in cooler areas. The leaves are particularly thin and tender before the stems elongate. From midsummer onward, the plant develops flower panicles, and small seeds ripen toward the end of the season. Even in June, leaves on a rapidly grown older plant may already be coarse. The age of the shoots matters more than the calendar alone.



Smooth pigweed (Amaranthus hybridus) — photograph of the plant

Ei'eke (Eiseke Bolaji) · CC BY-SA 4.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and seedlings. Plants For A Future explicitly reports that tender leaves and young plants of Amaranthus hybridus are eaten raw. Their taste is mild and grassy, and a small serving can be added to a cold mixture of greens. Large, mature plants are often collected as greens to be cooked, but that is a different preparation and is not considered here.

Seeds. They are known as a grain food, but the sources commonly describe processing them into porridge or bread. This article therefore does not recommend eating them raw.

Amaranths can accumulate nitrates, especially in nitrogen-rich soil; the leaves also contain oxalates. Raw pigweed is not appropriate as a large daily serving and must not be gathered from land of unknown treatment history.

HOW TO AVOID CONFUSION

Amaranthus retroflexus often has more noticeably rough or hairy upper shoots and differs in floral bracts and other flower details. Amaranthus powellii may have longer, narrower terminal clusters. Some species hybridize, and a single leaf is insufficient for distinguishing them. Accurate identification requires mature flowers, bracts and fruits rather than just the general shape of the panicle. Edibility documented for one pigweed species should not automatically be attributed to every similar plant. Do not taste a plant to identify it.

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Redroot pigweed — young summer leaves and tiny mature seeds · Amaranthus retroflexus

Amaranthus retroflexus

As moist spring soil warms, large herbs with broad leaves begin to rise quickly on open ground. One of them is redroot pigweed: a small, tender seedling at first, then a sturdy, tall annual with a dense green terminal panicle. Young leaves are known as uncooked edible greens, and by autumn the plant produces many tiny seeds. This is also one of those widespread plants for which soil quality is particularly important when gathering food.



Redroot pigweed (Amaranthus retroflexus) — photograph of the plant

Lynk media · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual of the amaranth family often grows from 30 centimeters to 1.5–2 meters tall on moist, fertile soil. The upright, sturdy stem is green, sometimes reddish, and covered in places with short, stiff hairs. A red or pink tint is often visible at the root crown. Mature shoots may become ribbed and branch toward the top.

Leaves are alternate, on long stalks. Their blades are generally egg-shaped to diamond-shaped, with smooth or slightly wavy margins, conspicuous networks of veins and somewhat pointed tips. Lower leaves are larger than those above them. Some leaves may droop during hot weather, but the species name does not mean that every leaf bends backward.

The flowers are very small and greenish, forming dense, spike-like panicles at the top of the stem and in the axils of upper leaves. The terminal head looks rough and prickly. As fruits mature, each small dry fruit

contains one shiny, dark brown or nearly black seed. In mature plants, details of the floral bracts, hairs and fruits are important for identifying the species.



Redroot pigweed (Amaranthus retroflexus) — photograph of the plant

NY State IPM Program at Cornell University · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Redroot pigweed occurs on open, disturbed ground and at field edges in California. It can grow on fallow land, loose soil beside fields and pastures, old embankments and near settlements. Summer warmth and access to moisture allow it to grow rapidly, while it is less likely to dominate in deep natural forest shade.

The species is widespread far beyond California and is known as a weed in many parts of the United States. A widespread weed, however, is not automatically a safe food source. Pigweeds absorb nitrogen from soil and may accumulate nitrates, particularly where fertilizer is abundant. Plants from actively treated fields and drainage areas are therefore unsuitable for raw greens.

WHEN EDIBLE PARTS ARE AVAILABLE

Late spring. Once the soil has warmed consistently, seedlings with a few thin leaves appear. They are harder to distinguish from other pigweeds than mature, flowering plants.

Early to midsummer. New leaves and soft shoot tips grow rapidly; before the dense flower panicles form, the greens are generally less coarse.

Summer to autumn. Flower clusters develop and elongate, followed by tiny seeds that ripen as the season progresses. In warm places, this continues until the first noticeable cold weather.

The plant's stage matters more than a calendar date: early greens are much better suited to limited raw use than large, old leaves.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. The United States Forest Service records using very young redroot pigweed leaves as salad greens while the plant is still short and its stem has not become woody. Their flavor is mild and grassy. Large daily portions are inappropriate because of the possible nitrate and oxalate content.

Young seedlings. An NC State Extension reference includes using seedlings in fresh salads. At this stage, however, pigweeds are difficult to distinguish. In practice, seedlings should only be collected where their identity can be established from older specimens in the same known population.

Mature seeds. These are extremely small but edible. University references describe their raw use and cold grinding into a powder. Clean, mature seeds from a fully identified plant are the clearest form to use. Separating such tiny grain from plant coverings without equipment can be difficult.

Mature leaves, tough stems and roots are not proposed here as raw food. Reports of edible pigweed do not negate this species' ability to accumulate unwanted substances. Plants on soil with an unknown fertilizer history are best avoided.

HOW TO AVOID CONFUSION

Amaranthus hybridus also has tall green panicles and broad alternate leaves, but differs in the details of the bracts, fruits and hairiness. Amaranthus powellii often has narrower, elongated terminal clusters; Amaranthus blitoides is usually lower and spreads along the ground. Some species hybridize, producing intermediate forms.

A reddish root, a single broad leaf or a green panicle does not establish a species. For accurate identification, mature shoots, flowers and fruits are needed. Never use the taste of a seedling as an identification test.

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Saskatoon serviceberry — white spring blossoms and edible summer fruit · Amelanchier alnifolia

Amelanchier alnifolia

In spring, a serviceberry shrub with small clusters of white flowers can be seen along forest edges, on rocky slopes and among mountain brush. Later, small fruits ripen on the same branches, changing from reddish purple to nearly dark blue. People eat them fresh and preserve them by natural drying.



Saskatoon serviceberry (Amelanchier alnifolia) — photograph of the shrub

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Saskatoon serviceberry is a deciduous shrub, often one to three meters tall, although it can grow higher in favorable places. Young shoots are grayish brown. The simple leaves are alternate, on short stalks. Each leaf is oval or almost round, paler beneath, with small teeth particularly noticeable toward the tip. In spring, the leaves unfold alongside clusters of white flowers; each flower has five petals.

The fruits ripen in groups. They are round, generally about one centimeter across, with a little star formed by the persistent calyx at the tip. Unripe fruits are reddish, while ripe ones become dark purple or almost blue-black. Inside is soft, sweet flesh with several small seeds. Although commonly called berries, botanically these are small pome fruits, related to miniature apples.

WHERE IT GROWS AND HOW COMMON IT IS

The species is native to western North America. In California, it has mainly been recorded in northern and mountainous areas, both coastal and inland ranges, Sierra Nevada foothills and forest openings. Calflora observations include Placer, El Dorado, Nevada, Siskiyou and Plumas counties.



Saskatoon serviceberry (Amelanchier alnifolia) — photograph of the shrub

Meggar · CC BY-SA 3.0 · Wikimedia Commons

Serviceberry prefers open, well-lit sites, forest margins and slopes. It can grow in groups but is not an abundant fruiting shrub throughout the hot Sacramento Valley.

WHEN EDIBLE PARTS ARE AVAILABLE

White flowers open in spring, depending on elevation and weather, roughly from April through June. Leaves develop during flowering or shortly afterward.

The fruit requires several more weeks to ripen. In warm places, the first ripe fruits may appear in early summer; at cooler, higher elevations they may ripen in July or August, occasionally later. Leaves turn yellow and drop in autumn: this is not an evergreen plant. The fresh-food season is tied to fruiting.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruits. These can be eaten fresh once they become soft and dark. Their flesh is sweet, with a slight apple-like flavor, and contains a few small hard seeds. Many Indigenous peoples of western North America gathered serviceberries. The Karuk tribal publication Uxraah describes fresh berries and dried stores of serviceberries; elsewhere in North America, ripe fruit was also used without cooking.

Fruit for storage. The fruits can be dried without heating and eaten later. Fresh fruit and stored dried fruit should be distinguished: the latter may remain available well after the brief summer harvest.

Leaves and young twigs are not described here as raw food for humans. The United States Forest Service documents cyanogenic glycosides in serviceberry shoots and foliage, particularly young twigs. Only the confirmed food part — fully ripe fruit — should be collected. Do not treat leaves, tender branches or separately crushed seeds as alternatives to food.

HOW TO AVOID CONFUSION

Serviceberry fruits can resemble blueberries, but they grow on a shrub with simple, toothed leaves and have a distinctive dried calyx at the tip. True Vaccinium species have a different flower structure: generally a small bell rather than a five-petaled white flower in a cluster. Similar serviceberry species may overlap in range and hybridize, so identification should consider leaves, flowers and habitat, not fruit color alone.

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Utah serviceberry — small sweet fruits of dry mountain slopes · Amelanchier utahensis

Amelanchier utahensis

A low shrub with small oval leaves sometimes grows on sunny foothill slopes and dry, rocky ridges of the Sierra Nevada. In spring it is covered with five-petaled white flowers. By summer, little fruits resembling dark miniature apples hang from its branches. This is Amelanchier utahensis, Utah serviceberry, also called western serviceberry. Fully ripe, healthy fruit can be eaten raw. Unlike the more familiar Saskatoon serviceberry, this species is more closely associated with dry, rocky slopes and sometimes bears fruit that is relatively dry and less sweet.



Utah serviceberry (Amelanchier utahensis) — photograph of the shrub

Eric Hunt · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Utah serviceberry is a deciduous shrub, often one to three meters tall, with several upright woody stems. Young bark is grayish or reddish brown, while older branches are darker. Leaves are alternate, relatively small, oval, obovate or rounded, and paler beneath. Their teeth are usually most obvious along the upper half of the margin. Young leaves are often slightly hairy and look paler than mature ones. Clusters of white flowers, each with five narrow petals and numerous stamens, appear in early spring. After pollination, tiny apple-like fruits develop, green at first. They gradually become pinkish and red, then may turn dark purple, though the final color varies among populations. A little star-shaped calyx remains at the fruit's tip. The interior has several small seed chambers rather than a single stone. The plant is conspicuous in its white-flowering stage, but mature serviceberries should be identified by their leaves and fruits together.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Amelanchier utahensis as native to California and lists many observations from yellow-pine forest, foothill woodland, chaparral, pinyon-juniper woodland and mountain communities. Unlike ordinary cultivated serviceberries, wild shrubs often grow on dry mountain slopes, in open woodland and on rocky bluffs. They occur in the Sierra Nevada foothills, eastern mountains and some southern desert ranges. The species should not be regarded as a widespread fruiting shrub on the flatlands of Sacramento County. Fruiting varies considerably even between nearby bushes: some produce pleasantly sweet fruit; others bear dry, firm fruits.

WHEN EDIBLE PARTS ARE AVAILABLE

After winter dormancy, white flowers and young leaves emerge in spring. In warm foothills this is usually March or April, and later at higher elevations. After flowering, small green pomes develop. Over several weeks, they grow and become reddish or purple. A species reference places ripening between June and August, depending on elevation and rainfall. Fruits on one bush often ripen unevenly, so each must be checked. Leaves yellow and fall in autumn; uncollected fruit may dry out. Dark color does not always mean the fruit is ripe — its flesh should be soft and sound.



Utah serviceberry (Amelanchier utahensis) — photograph of the shrub

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

WHAT CAN BE EATEN WITHOUT COOKING

Only fully ripe, healthy fruit. Plants For A Future explicitly confirms raw use of Amelanchier utahensis. The best fruit has a sweet, apple-like taste with a hint of grape; other fruit may be dry or bland. It can be eaten fresh without biting through or grinding the seeds. The reference warns about cyanogenic compounds in other plant parts, so leaves, bark and young shoots are not regarded as food.

Exclude diseased fruit. A rust fungus can infect this serviceberry, deforming the little fruits and sometimes giving them an orange color and unusual growths. Such fruit must not be mistaken for a special edible variety. For raw use, choose normally formed fruit with healthy flesh, free of growths, mold, rot or unpleasant odor.

Cold purée and drying. Soft ripe fruit may be mashed without crushing the seeds, or healthy fruit may be dried naturally under suitable conditions. At damp sites, however, drying often causes spoilage. This serviceberry provides small seasonal servings, not a guaranteed large harvest.

HOW TO AVOID CONFUSION

Amelanchier alnifolia, the Saskatoon serviceberry described elsewhere in this atlas, has larger leaves and is generally associated with less arid woodland and streamside habitats. In A. utahensis, the leaves are often paler underneath, the shrub is usually lower, and it more often grows on rocky foothills. Hawthorns (Crataegus) also bear small pome fruits, but their branches are often thorny and their leaves have a different lobing pattern. Some wild apples (Malus) have substantially larger fruits of a different form. A small dark “berry” alone is not enough to identify the plant: examine the white spring flowers, leaves and structure of the fruit.

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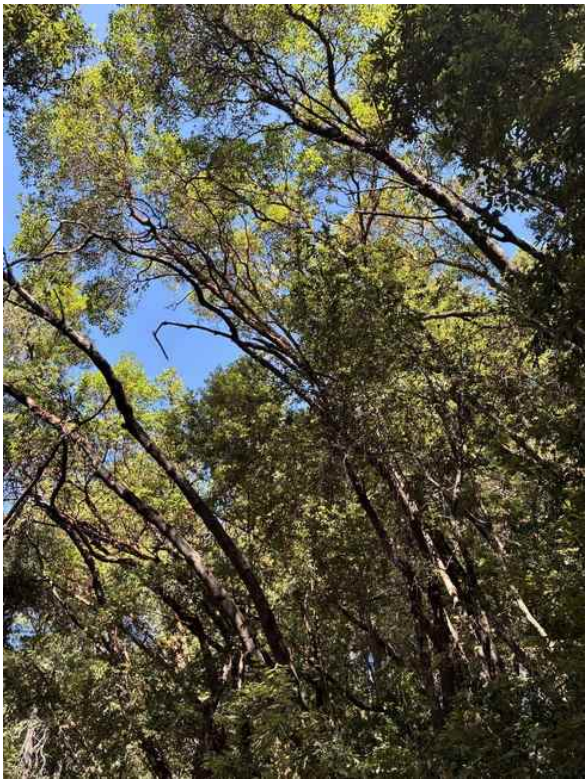
Pacific madrone — copper-red bark and edible autumn fruit · Arbutus menziesii

Arbutus menziesii

California forests contain a tree recognizable by its smooth, copper-red trunk. Thin curls of bark continually peel away, while its thick, glossy leaves stay green even in winter. In spring, the madrone bears small white bell-shaped flowers; by autumn, it produces rounded red fruits that have traditionally been eaten fresh.



Pacific madrone (Arbutus menziesii) — photograph of the tree

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HOW TO IDENTIFY IT

Pacific madrone is a large evergreen shrub or tree that can reach considerable height. In shaded woodland, its trunk often grows tall and straight; on an exposed hillside, its crown becomes broad and its branches curve in different directions. Its most distinctive feature is smooth reddish-orange bark that peels away in thin layers, revealing lighter new surfaces.

The leaves are simple, large, oval, leathery and glossy, and grow alternately along the branches. Their margins are nearly entire, and their undersides are noticeably paler. Unlike many deciduous forest trees, madrone retains much of its foliage throughout the year.

The small creamy-white, urn-shaped flowers resemble those of its relative, manzanita, but hang in numerous drooping clusters. Small round fruits follow flowering. They begin green, then turn yellowish and orange; when ripe, they become red or deep reddish orange. Their surfaces are slightly bumpy, the flesh is soft and mealy, and there are small seeds inside. The fruits are generally about one centimeter across.



Pacific madrone (Arbutus menziesii) — photograph of the tree

Awinch1001 · CC BY 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Pacific madrone is native to the Pacific coast from California to British Columbia. In California, it is common in suitable forests of the Coast Ranges and on the western slopes of the Sierra Nevada. It grows alongside oaks, pines, Douglas-firs and sometimes redwoods, preferring well-drained slopes and more open parts of the forest.

In northern and central forested regions it can be encountered frequently, sometimes in groups. It may be less numerous on damp, north-facing slopes or in shaded ravines, and it is not nearly as abundant on the exposed, dry floor of the Sacramento Valley. Its reddish trunk remains one of the most conspicuous woodland landmarks even when the tree bears no fruit.

WHEN EDIBLE PARTS ARE AVAILABLE

The leathery leaves are present throughout the year, from January through December. New foliage emerges in spring; creamy flowers appear at about the same time or slightly earlier. In many California locations, flowering occurs from April through June.

The fruits develop during summer and gradually turn red. The main season for ripe fruit is late summer and autumn, especially September through November. Some trees retain fruit even later. Availability depends greatly on location, rainfall and the age of the tree; not every tree produces the same crop.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe red fruit. Madrone fruit is eaten raw when it has developed its full color and become soft. The timing varies between the mountains and the coast: the USDA Forest Service reports autumn ripening and notes that some fruits may remain on branches into December. Their flavor can be slightly sweet, mealy or astringent. The USDA Forest Service records historical consumption of these fruits by Indigenous peoples of the West Coast, and the Arbutus menziesii entry in Plants For A Future explicitly confirms the raw use of ripe fruit.

A historical account of the Bear River people of Northern California also names madrone among plants providing an edible autumn harvest. The fruits are small, with mealy flesh and numerous little seeds, so even a heavily fruiting tree does not provide the equivalent of a harvest of large cultivated berries.

Fresh fruit should be eaten in moderation: large quantities of madrone fruit can cause nausea in some people. The evergreen leaves, red bark and wood help identify the species, but they are not included here as raw food for people.

HOW TO AVOID CONFUSION

Madrone has a large trunk with smooth bark, broad glossy leaves and reddish, bumpy fruits. Its relative Arctostaphylos manzanita usually has a much lower shrubby form and smaller leaves, while its fruits have a different structure. The ornamental strawberry tree, Arbutus unedo, also bears round red fruits, but can be distinguished by its foliage, bark and growth form. A red fruit alone is not sufficient to identify a tree.

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Strawberry tree — rough red autumn fruits from old plantings · Arbutus unedo

Arbutus unedo

In autumn, some California towns have evergreen trees carrying both small white urn-shaped flowers and round fruits that resemble red balls with a grainy surface. This is Arbutus unedo, the strawberry tree, introduced from the Mediterranean region. Its fully ripe red fruits can be eaten raw in small quantities. It is important not to confuse it with the native Pacific madrone, Arbutus menziesii, which bears much smaller fruits with a different flavor.



Strawberry tree (Arbutus unedo) — photograph of the plant

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HOW TO IDENTIFY IT

The strawberry tree is an evergreen shrub or small tree, often several meters tall, with a dense crown and relatively short trunk. Young branches are reddish; older bark is reddish brown and may peel in patches. The leaves are alternate, elongated-oval, leathery and glossy, with fine but noticeable teeth along their edges.

In autumn, drooping groups of little white or pale pink, urn-shaped flowers appear near the tips of the branches. They resemble manzanita flowers. After pollination, fruit develops very slowly, so a tree may carry new flowers and ripening fruit from the previous year's bloom at the same time.

The fruit starts green, turns yellow-orange, then becomes deep red. Its surface is covered with many tiny, pyramid-shaped bumps, and inside is soft, sweet, grainy flesh containing small seeds. Ripe fruits often fall off at the slightest touch.



Strawberry tree (Arbutus unedo) — photograph of the plant

Orac29 · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Arbutus unedo is a nonnative tree in California, recorded in Los Angeles, San Diego, Alameda, San Francisco, Santa Barbara and Sacramento counties, among others. There are relatively few observations compared with common weeds; most trees are associated with urban landscaping, old gardens and ornamental plantings. It is not an abundant native species in Sierra Nevada forests.

Where winters are mild, a strawberry tree may fruit quite regularly, particularly if severe summer drought has not affected it. But fruit hanging from a tree beside a sidewalk still belongs to the property owner or may be subject to specific rules. Easy physical access does not automatically mean harvesting is allowed.

WHEN EDIBLE PARTS ARE AVAILABLE

The leaves stay on the tree throughout the year, so the green crown does not indicate the food season. Flowering often begins in autumn, roughly October through December, and may continue into winter. Fruits from the previous year's flowers gradually change color, often reaching full ripeness in November or December.

Along the warm coast the season can stretch out; in dry inland valleys it may vary with the weather. Green and orange fruits are generally still astringent. Choose soft, bright red fruits that detach readily from the branch. A fruit lying on dirty ground may already be fermenting or moldy and should not be eaten raw.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe red fruit. Plants For A Future explicitly confirms raw use of the fruit of Arbutus unedo. The flesh is somewhat sweet, sometimes bland or slightly astringent, and its outer surface is distinctly grainy. A ripe fruit can be cut open and its soft interior eaten; small seeds are usually present within the flesh. Flavor varies from tree to tree, so the fruit should not be described as always tasting like a cultivated strawberry. The common name refers to a visual resemblance to a strawberry, not a botanical relationship.

A small serving rather than a large harvest. Ripe fruits become overripe rather quickly and can ferment on the tree or after falling. Leave behind exceptionally soft fruits with a strong alcoholic or vinegar-like odor. The species reference recommends moderation. The ripe fruit can also be mashed without heating and eaten immediately, but the mash should not be kept for long in a hot vehicle.

Leaves, flowers, bark, roots and green, unripe fruits are not included among the parts with confirmed raw food use.

HOW TO AVOID CONFUSION

The native Pacific madrone, Arbutus menziesii, grows larger, has smooth reddish-orange bark, and usually carries much smaller fruits in dense clusters. Arbutus unedo has larger, rougher fruits, and its flowers often appear at the same time as ripe red fruit. Manzanitas, Arctostaphylos species, also have leathery leaves and urn-shaped flowers, but their fruits are small, hard and often contain several large stones.

Identify the entire plant, examining leaves, flowers and fruits together, rather than relying on a single red ball. Fruit from ornamental plantings treated with insecticides or fungicides should not be eaten.

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Hoary manzanita — mealy ripe fruit on northern coastal shrubs · Arctostaphylos canescens

Arctostaphylos canescens

On northern California's coastal chaparral slopes, a dense shrub may be seen with reddish-brown bark and leaves that look as though they have been dusted with gray. Young shoots and the undersides of the leaves are especially pale. Small white and pink bells open near the tips of the branches in winter and spring; later, firm, reddish-brown, berry-like fruits develop. This is hoary manzanita, a native Northern California species. The soft pulp of its ripe fruit can be eaten without heating, but it is better to separate out the hard seed stones.



Hoary manzanita (Arctostaphylos canescens) — photograph of the shrub

Tom Hilton (Flickr) · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen shrub is generally one to two meters tall, sometimes reaching three meters. It is densely branched, with smooth, rusty-red bark on older branches. Young shoots are covered with short, white, felt-like hairs. The alternate, leathery leaves are oval to broadly oval, about two to five centimeters long, with smooth, untoothed margins. New leaves look grayish white because of their hairs; older ones may become greener and smoother.

In winter and spring, short, branched clusters of drooping, urn-shaped flowers appear near the branch tips. Their corollas are pinkish white, with five tiny teeth at the opening. They are followed by small, somewhat flattened, rounded drupes about eight millimeters across. These become brownish red as they ripen and contain dryish, mealy flesh.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Arctostaphylos canescens as a native species of coastal Northern California. It occurs from the Santa Cruz and Marin areas north through Sonoma, Mendocino and Humboldt to Del Norte, on sunny sandy, serpentine and rocky slopes, in chaparral and openings in pine woodland.

It is not a common manzanita in the Sacramento Valley, and other species of the genus grow on most Sierra Nevada slopes. Individual subspecies and local forms may differ. When collecting, it is important not to damage small populations and to observe restrictions in protected natural areas.

WHEN EDIBLE PARTS ARE AVAILABLE

Flowering takes place in the cool season, generally in winter and early spring, or later at higher and wetter sites. Fruits develop in spring and turn reddish brown toward summer or early autumn, depending on fog and rainfall. Full ripeness is indicated by color, a slightly dry but soft texture and the ease with which the fruit cluster separates.

Leave green, hard fruits on the plant. Choosing clean, ripe fruit matters more than trying to obtain a large harvest from uncommon shrubs.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit pulp. Botanical and food reviews of manzanitas confirm consumption of fresh ripe Arctostaphylos fruits. In hoary manzanita, the fruits are small and quite mealy. The pulp can be gently crushed and separated from the hard stones, then eaten a little at a time.

A convenient alternative is to mash clean, ripe fruits into cold drinking water and strain the liquid, making a light sweet-and-sour drink without fire. Do not use fruits with mold or an unusual odor. Seeds, hard stones, leaves and bark are not part of this food use. Large servings of dry pulp may irritate digestion.

HOW TO AVOID CONFUSION

Arctostaphylos glandulosa also has hairy young shoots, but often develops a woody swelling at the base from which it can resprout after fire; its leaves and flower clusters differ. In Arctostaphylos manzanita, older leaves are usually greener and glossier, and the shrub may grow taller.

Red bark and a little brown fruit are not sufficient for identification: California has dozens of closely related manzanitas, including rare ones. A reliable combination of features for hoary manzanita is the dense white hair on young branches and leaves, the shape of the flower clusters and its northern coastal range.

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Eastwood manzanita — red bark, urn-shaped flowers and mealy fruit · Arctostaphylos glandulosa

Arctostaphylos glandulosa

In California chaparral, manzanita shrubs with smooth reddish stems, stiff evergreen leaves and numerous small white urn-shaped spring flowers are often encountered. By summer, the flowers have been replaced by firm, mealy fruits. Eastwood manzanita is notable because the USDA has documented the use of ripe fruits eaten fresh and dried for this species itself, rather than merely for the genus Arctostaphylos as a whole.



Eastwood manzanita (Arctostaphylos glandulosa) — photograph of the shrub

Franz Xaver · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is generally a branching shrub about one to three meters tall. A thickened woody structure is often visible at its base; this allows the shrub to resprout after disturbance. Larger branches are smooth and reddish brown, but young shoots, leaf stalks and flower clusters frequently carry glandular hairs and may feel sticky.

The evergreen leaves are leathery, oval to oblong, with entire margins and green upper and lower surfaces. In spring, drooping clusters of white or slightly pink urn-shaped flowers appear at the branch tips. Ripe fruit is rounded, usually reddish brown, with relatively dry pulp and several hard inner parts.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Arctostaphylos glandulosa as a native California species and records thousands of observations, particularly in the Coast Ranges, mixed woodland and chaparral. It occurs from northern counties to the mountains of Southern California, though its distribution is uneven.

The plant prefers well-drained slopes and open woodland. Some narrowly distributed subspecies are protected. Nothing should be gathered on protected land or from rare populations.

WHEN EDIBLE PARTS ARE AVAILABLE

Flowering generally occurs during the wetter part of the year, from late winter into spring, or later in cooler mountains. Fruits develop afterward and darken mainly in summer, sometimes continuing into early autumn. Timing varies considerably between populations according to elevation, temperature and the amount of winter rainfall.

The evergreen foliage is present throughout the year, but the food season concerns the ripening fruit alone.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. The USDA Fire Effects Information System review of Arctostaphylos glandulosa states that its fruits were eaten fresh, dried and used in beverages. The pulp of a fully ripe fruit is rather dry and sweet-tart. It can be eaten raw in small quantities.

Natural drying preserves fruit without fire, but mold and spoilage must be ruled out before eating. When fruit is mashed with clean, cold water, the hard parts should be removed by straining. The kernels of the hard stones, leaves, bark and roots are not recommended here as raw food.

HOW TO AVOID CONFUSION

Compared with Arctostaphylos viscida, this species often has darker green leaves, sticky, glandular young shoots and a woody swelling at the base. Arctostaphylos manzanita more often develops into a tall shrub with particularly conspicuous smooth bark.

California has numerous closely related and variable manzanitas, including rare subspecies of A. glandulosa. Identification therefore requires comparison of leaf shape, the glands on the shoots, flower clusters, fruit and habitat, rather than just the characteristic red bark. Do not collect fruits when the species has only been identified approximately.

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Bigberry manzanita — summer fruit and a cold berry drink · Arctostaphylos glauca

Arctostaphylos glauca

On rocky chaparral slopes, a shrub with smooth reddish bark and a dense bluish-green crown may stand out. Small white urn-shaped flowers hang among the leaves in winter or spring. By summer, round reddish-brown fruits ripen, noticeably larger than those of many other manzanitas. This is Arctostaphylos glauca, bigberry manzanita. It is one of the California shrubs whose ripe fruit was used to make a cold drink without heating. The fruit itself can also be eaten raw in small quantities, bearing in mind its mealy texture and hard seeds.



Bigberry manzanita (Arctostaphylos glauca) — photograph of the shrub

Joe Decruyenaere · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen shrub or small tree can reach several meters in height. Its trunks and older branches have smooth reddish-brown bark that sometimes peels in thin plates. Young twigs are lighter and may have a bluish cast.

The alternate leaves are firm, oval or broadly egg-shaped, with smooth margins and short stalks. Their upper surfaces look grayish green because of a waxy coating. Small groups of drooping white or pinkish flowers develop on the flowering branches; each flower resembles a little closed urn with a narrow opening.

After pollination, a round drupe develops, with a thin skin and a dense, mealy interior. As it ripens, the fruit turns brownish red and remains firm or becomes only slightly yielding. Inside are several large, strongly hardened stones. Unlike a juicy blackberry, it contains very little soft, sweet flesh.



Bigberry manzanita (Arctostaphylos glauca) — photograph of the shrub

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Arctostaphylos glauca as native to California. It is particularly common in chaparral and in juniper and Joshua tree woodlands in Southern California and the central foothills. Many records come from San Benito, Los Angeles, Riverside, San Diego, Santa Clara and San Luis Obispo counties; scattered shrubs occur elsewhere.

This is not a common wild shrub of the Sacramento Valley, so it should not be expected beside every local park. Bigberry manzanita favors sunny slopes and tolerates dry summers well, but the fruit crop depends considerably on spring conditions. Harvesting may be prohibited on protected land.

WHEN EDIBLE PARTS ARE AVAILABLE

The leaves remain on the shrub throughout the year, but they are not a food recommended in this article. Manzanitas may begin blooming in winter in warmer parts of the state, continuing through spring; flowering starts later in local mountain districts.

Small green fruits form after pollination. They grow slowly and turn red or brown, usually ripening in summer and early autumn. A mature, firm fruit may remain on its branch for a while after reaching full size. The green winter crown does not imply that fruit is available in winter. Fruits for a cold drink are selected after they have completely changed color and ripened.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit can be eaten raw, as Plants For A Future specifically confirms for Arctostaphylos glauca. The fruit is mealy and tart, sometimes with a pleasant sweetness near the surface, but is difficult to chew and digest. Large handfuls should be avoided, and the hard stones should never be cracked with the teeth.

A cold drink is a particularly interesting local food tradition. A species-specific reference describes wetting the fruit lightly with clean water, crushing it by hand, leaving it in water in the sun for approximately twelve hours, and then straining it. The result was a sweet-and-sour liquid prepared without boiling.

For a safer modern version, use drinking-quality water and clean containers, and do not leave the drink in the heat for long: the historical practice of keeping it in the sun for that length of time does not guarantee microbiological safety. It is more sensible to make a short cold infusion and drink it fresh.

Leaves, stems, bark and flowers are not included as food. Separate reports about powdered, dry stones should not be turned into recommendations to consume the kernels raw.

HOW TO AVOID CONFUSION

Arctostaphylos manzanita, described in a separate article, resembles this species in its red bark and urn-shaped flowers but differs in leaf and fruit dimensions and in its main geographic range. Low-growing A. uva-ursi spreads across the ground and bears small red fruits; its separate atlas article describes limited use of ripe fruit and cautions against eating the leaves or large quantities.

A. glauca is much taller, has bluish leaves and bears larger ripe fruits. A single red-barked branch is not enough to identify a manzanita, particularly without flowers or fruit. A mealy interior or pleasant smell does not establish the species either. People with sensitive digestion should avoid large quantities of the fruit.

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Common manzanita — smooth red bark, summer fruits and cold drinks · Arctostaphylos manzanita

Arctostaphylos manzanita

On California's dry, sunny slopes grows a shrub with strikingly smooth reddish-brown bark. From a distance, it can be recognized by its intricately twisting branches and dense foliage that stays on the plant even in winter. Small bell-shaped flowers appear among the leaves in spring, and round, reddish fruits ripen in summer. These manzanita fruits provided food and a cold drink without fire.



Common manzanita (Arctostaphylos manzanita) — photograph of the shrub

Burkhard Mücke · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Arctostaphylos manzanita is an evergreen shrub, usually ranging from one or two to several meters in height. Mature stems and branches are smooth and reddish brown, with a thin peeling surface. Young shoots may look different: they can be greenish or slightly hairy.

Its simple, leathery leaves are oval, with entire margins, and arranged alternately. Their surface is firm, usually grayish or dark green. Small white or slightly pink flowers hang in short clusters. Each resembles a little urn with a narrow opening.

The fruits are round, resembling tiny apples: green at first, then pinkish or red, later becoming reddish brown. They have relatively dry, mealy flesh and hard inner parts. They are not soft, juicy berries like blackberries. Fruits on the same shrub ripen gradually.



Common manzanita (Arctostaphylos manzanita) — photograph of the shrub

Paul Asman and Jill Lenoble · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

This species is native to western North America and widespread in Northern and Central California. It is especially characteristic of foothill chaparral, sunny slopes in the Coast Ranges and Sierra Nevada, and mixed oak-and-pine communities. On suitable slopes and soils, the shrubs can form conspicuous, sometimes very dense thickets.

Manzanita tolerates dry summers well. Several closely related Arctostaphylos species grow in California, including plants with similar red bark, so this account concerns Arctostaphylos manzanita alone. A red-barked shrub on the Southern California coast is not necessarily this species: numerous other manzanitas also occur in the state.

WHEN EDIBLE PARTS ARE AVAILABLE

The leathery leaves stay on the shrub for all twelve months, but this does not mean they were eaten raw. The main food part is the fruit.

Flower clusters appear in the cool part of the year, often in winter and early spring, approximately January through April depending on the site. Fruit develops in spring and summer. On many slopes, ripe reddish or brown fruit is available in summer and early autumn, roughly July through October. At higher elevations, the season shifts later.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. People ate the fruit fresh, sometimes chewing its mealy outer flesh. The fruit is not necessarily pleasantly juicy: it may taste slightly sweet or astringent, and the hard inner parts do not resemble the small seeds of a cultivated berry. Historical ethnobotanical information about raw manzanita fruit appears in materials from the USDA Natural Resources Conservation Service.

Fruit for a cold drink. Ripe fruit was used to make a refreshing beverage: the pulp was crushed and mixed with cold water, then passed through a sieve or woven straining implement to separate the stony parts. The USDA NRCS account specifically describes a fruit drink prepared without boiling. California sources mention such methods among several Indigenous peoples, including the Karuk and Maidu. No fire was needed.

Dried fruit. Part of the crop was preserved by natural drying. The dried fruits could be stored beyond the short ripening season and later rehydrated with water. Bark, leaves and flowers are not included here as raw food for people: the fact that they remain present throughout the year or have other uses does not mean they are edible greens.

HOW TO AVOID CONFUSION

California is home to many manzanitas resembling one another in their red bark, firm leaves and bell-shaped flowers. Identifying Arctostaphylos manzanita therefore requires the size and shape of the leaves, the shoots and the range to be considered, not just bark color.

Toyon, Heteromeles arbutifolia, also bears red fruit, but it ripens in winter, and the leaves typically have toothed margins and distinctly different flower clusters. It is a different shrub.

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Greenleaf manzanita — reddish mountain fruit beneath bright leaves · Arctostaphylos patula

Arctostaphylos patula

In the Sierra Nevada, where the pine forest thins and sunlight reaches a rocky slope, broad evergreen shrubs with smooth reddish bark may be found. Their green leaves remain conspicuous in winter, while little brownish-red fruits ripen on the branches toward the end of summer. This is Arctostaphylos patula, greenleaf manzanita. The thin flesh of its fully ripe fruit can be eaten raw or used to make a cold drink. But several very hard stones occupy much of the fruit, so manzanita is no substitute for a handful of soft berries.



Greenleaf manzanita (Arctostaphylos patula) — photograph of the shrub

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial shrub often reaches one and a half to two meters in height, spreading widely from the base. On some dry slopes it grows lower and almost hugs the ground. Older branches are reddish brown and fairly smooth, with bark that sometimes peels in thin ribbons. Young shoots are greenish or becoming red.

The alternate leaves are thick and leathery, broadly oval, bright green, with smooth margins and short stalks. Unlike manzanitas with grayish foliage, these leaves lack a pronounced waxy gray coating.

In winter and early spring, small hanging clusters of white or pinkish urn-shaped flowers appear, each with a narrow opening. After pollination, round green fruits develop, with remnants of the flower still visible. By late summer they become reddish brown, measuring about one centimeter across, with dryish, sweet-and-sour outer flesh and several hard stones inside. A single ovary may contain four to eight hard seed parts, an important detail when deciding how to eat the fruit.



Greenleaf manzanita (Arctostaphylos patula) — photograph of the shrub

M. Simmonson / USFS Region 5 · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Arctostaphylos patula as native to California and lists several thousand observations. It is particularly characteristic of yellow pine and red fir forests: sunny openings in mixed mountain woodland, the edges of forest trails and rocky hillsides. It occurs in the Sierra Nevada, Cascade Range and other mountain regions of the state.

On a journey from Sacramento, the species is more likely to be encountered when climbing into the foothills and mountains than on a lawn in the valley. On suitable slopes, shrubs can form large, dense patches, but their fruiting varies noticeably between years and sites. Recovery after fires also differs between subspecies and populations; an individual healthy shrub should not be damaged.

WHEN EDIBLE PARTS ARE AVAILABLE

Young shoots develop as spring temperatures rise, while the leaves remain on the plant throughout the year. Flowering usually takes place in late winter and spring; Plants For A Future gives March through May under temperate conditions.

After pollination, round green fruits slowly enlarge, then begin turning red. Fully ripe reddish-brown fruits are most often available from August through October. At high elevations they may ripen later than on a warm lower slope. Winter greenery and spring flowers are not themselves signs of the berry season. Following prolonged autumn rain, some fruit spoils quickly, while old dry berries may remain attached without any soft flesh.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe outer fruit pulp. Plants For A Future specifically confirms that the fruit of Arctostaphylos patula is eaten raw. It is tart and somewhat astringent, sometimes pleasant and reminiscent of a little sour apple. A ripe fruit can be gently crushed, and the soft outer portion eaten without biting down on the hard stones. The pulp layer is very thin, so even several dozen fruits provide only a small serving.

A cold fruit drink. Clean ripe fruits can be briefly crushed into drinking-quality water and carefully strained so that hard parts do not enter the glass. The food reference confirms using the fruit in beverages, but alcoholic fermentation methods and preparations requiring heat fall outside this approach to food without fire. Make the drink fresh and do not leave it in the heat for a long time.

Powder made from whole stones is not recommended. Despite some historical accounts, the species-specific reference does not establish raw consumption of the kernels with the same clarity.

Leaves, flowers, bark and roots are not included as raw food.

HOW TO AVOID CONFUSION

Arctostaphylos glauca has more bluish, powdery-looking leaves and usually larger fruits; it is described separately in this atlas. Arctostaphylos manzanita also differs in shoots, dimensions and geographic range. Arctostaphylos viscida often has sticky, glandular shoots and grayer foliage.

A reddish stem and a white urn-shaped flower alone are therefore not enough. The entire shrub, its leaf blades, fruit and geography must be considered. Do not eat an unidentified fruit merely because a different edible manzanita grows nearby. National parks and conservation areas have their own rules about collecting wild plants.

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Pointleaf manzanita — tart mealy fruit on dry southwestern slopes · Arctostaphylos pungens

Arctostaphylos pungens

An evergreen manzanita with stiff, pointed leaves and reddish bark grows in the southern mountains and on dry slopes of the southwestern United States. Small white bells open in winter and spring, and little reddish-brown fruits ripen during the warmer season. This is pointleaf manzanita, one of the Arctostaphylos species whose fruit can be eaten raw. California, however, is exceptionally rich in closely related native and rare manzanitas. An unfamiliar shrub must not be assigned to this species merely because it bears a red fruit.



Pointleaf manzanita (Arctostaphylos pungens) — photograph of the shrub

Dick Culbert · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a heavily branched evergreen shrub, generally one to three meters tall. Young twigs may be hairy; older trunks and major branches develop reddish-brown, peeling bark.

The alternate leaves are thick and leathery, oval or narrowly egg-shaped, with entire margins and pointed tips; they often stand almost upright relative to the branch. The flower clusters consist of small groups of drooping whitish or pale pink, urn-shaped flowers, each with five short, recurved teeth.

The fruits are round and firm, initially green, then reddish or rusty brown. Inside are one or several hard, stone-like seed parts. The rather dry pulp can be noticeably mealy.

WHERE IT GROWS AND HOW COMMON IT IS

Plants of the World Online and Plants For A Future place Arctostaphylos pungens in southwestern North America. Calflora also records the species on slopes in Southern California, but historically the name was applied to several plants now treated as separate species.

It should therefore not be expected in every California manzanita thicket. Dry rocky communities near the Arizona and Mexico borders, mountain chaparral and some transitional habitats are particularly relevant. On northern slopes and near Sacramento, shrubs of other Arctostaphylos species are usually encountered instead. The name should not be extended to rare local endemics.

WHEN EDIBLE PARTS ARE AVAILABLE

The little bell-shaped flowers open in the cool season and spring, depending on elevation and moisture. Fruit develops during spring, then darkens to reddish brown by summer or early autumn, often drying on the shrub.

The ripening season varies substantially with location and annual rainfall. Only evenly ripe fruit without mold, with normally dryish, mealy pulp, is suitable for raw use. Green, hard drupes should not be gathered.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruit pulp. Plants For A Future explicitly confirms that Arctostaphylos pungens fruit is eaten raw. It has a sweet-and-sour flavor, sometimes pleasantly reminiscent of apple, but the flesh is relatively dry and mealy. Large quantities are difficult to eat and digest.

A clean fruit can be crushed gently and the soft outer part eaten, separating out the hard inner stones. Clean, cool water can also be mixed with freshly crushed ripe fruits and strained to remove the hard parts, producing a light fruit drink without fire. Leaves, bark and roots are not used here as raw food.

HOW TO AVOID CONFUSION

Arctostaphylos patula and Arctostaphylos manzanita are much more widespread in California, but differ in combinations of leaf characters, bark, hairiness of young shoots and flower structure. Some historical names applied to these plants included the word pungens, so an old Latin name on a herbarium label does not guarantee the plant's current identity.

Arctostaphylos glauca also differs in its foliage and fruit clusters. When a plant cannot be confidently identified to species with a botanical key, its fruit should not be tasted. Even in a correctly identified manzanita, the hard stones are not equivalent to the soft pulp.

SOURCES

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Bearberry — red, mealy fruit on a low evergreen mat · Arctostaphylos uva-ursi

Arctostaphylos uva-ursi

In northern coastal forests and on cold open slopes, the ground may be covered by a low evergreen carpet. Small round fruits turn red among its smooth, leathery leaves in autumn. Bearberry, also known as kinnikinnick, is a relative of manzanita. Its fruits can be eaten without heating, although they are much drier and blander than blueberries.



Bearberry (Arctostaphylos uva-ursi) — photograph of the plant

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial, creeping dwarf shrub generally rises only 5–20 centimeters above the ground, while its woody stems spread outward for tens of centimeters. Older twigs are reddish brown, sometimes with thin, peeling bark.

The small leaves are obovate, with rounded tips and entire, untoothed margins. They are glossy and dark green above, slightly paler beneath. Small drooping flowers, white with a pinkish tinge, grow in groups; each resembles a little urn with a narrow opening.

The fruits are round and smooth, turning bright red when ripe, about 6–10 millimeters in diameter.



Bearberry (Arctostaphylos uva-ursi) — photograph of the plant

Isidre blanc · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records natural populations in Humboldt, Del Norte, Mendocino, Marin, San Mateo, Monterey, Mono and several other California counties. Bearberry grows in well-drained sandy or rocky places, cool coniferous forests, coastal dunes and some mountain slopes.

It is not a common wild shrub on the dry floor of the Sacramento Valley. In suitable habitats it can form a continuous, low cover.

WHEN EDIBLE PARTS ARE AVAILABLE

The pale drooping flowers generally open in spring. Green fruit develops through summer, turning red in late summer and autumn. In cold regions, some ripe fruits may remain on the branches beneath snow.

The leaves stay green year-round, but that does not mean they belong in raw food.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. The USDA Forest Service explicitly describes fresh bearberry fruit as a reserve or emergency food: it is relatively dry, mealy and nearly flavorless. Plants For A Future also confirms that the fruit has been eaten raw and dried without heating.

The pulp surrounds hard inner stones, which should not be bitten through. Dry ripe fruit is sometimes moistened with clean, cold water to make it less mealy. Large portions are unsuitable: the high tannin content may cause discomfort.

HOW TO AVOID CONFUSION

Unlike taller manzanitas, bearberry creeps close to the ground. Arctostaphylos nevadensis and other low-growing manzanitas can look similar, so the twigs, leaves and flower clusters are important for identification.

Lingonberry, Vaccinium vitis-idaea, has similar red fruit but a different flower shape and leaves with characteristic spots on their undersides.

Most importantly, the edibility of the red fruit must not be extended to bearberry leaves: the leaves are known for potent active compounds and are not suitable as salad greens.

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Whiteleaf manzanita — pale leaves and dryish summer fruit · Arctostaphylos viscida

Arctostaphylos viscida

Shrubs with smooth red bark and pale, bluish foliage grow on dry, reddish slopes in the Sierra Nevada foothills. Small, light-colored urn-shaped flowers appear in spring, followed by dryish, spherical fruits in summer. This is whiteleaf manzanita, one of the native manzanitas whose fruit was eaten fresh and used in cold drinks.



Whiteleaf manzanita (Arctostaphylos viscida) — photograph of the shrub

Walter Siegmund · CC BY 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial evergreen shrub is generally one to several meters tall. Its trunks and major branches have smooth reddish-brown bark, although older patches may become rough.

The simple leaves are oval to broadly egg-shaped, stiff and entire-margined. Their pale bluish-green color immediately distinguishes the shrub from many darker-leaved manzanitas. Young twigs may be glandular and sticky.

Small white or pinkish flowers hang in clusters, resembling miniature urns. The round fruits have firm skins and mealy flesh surrounding hard inner parts.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records whiteleaf manzanita as a native species of California chaparral. It often becomes a conspicuous shrub on dry rocky slopes, among pines and oaks in the foothills, including mountain districts north and east of the Sacramento Valley.

Level irrigated farmland and damp coastal lowlands do not provide its typical habitat.

WHEN EDIBLE PARTS ARE AVAILABLE

Flower clusters emerge toward the end of the wet season; the timing depends on elevation and winter rain. Fruits develop during spring and usually ripen in summer, sometimes extending into early autumn.

A drupe that has turned red on the outside may still be quite firm, so the ripeness of the whole fruit cluster should be assessed before gathering.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. The food use of manzanitas chiefly concerns the dryish, sweet-and-sour outer part of the fruit. It can be eaten fresh in small amounts without trying to crack the hard stones inside.

A cold drink is made by mashing ripe fruits into clean cold water and then straining out the hard parts. The USDA NRCS guide specifically describes Wintu use of the raw and dried berries of Arctostaphylos viscida and a cold, strained drink prepared by Miwok people.

After a cold infusion, the drink should be consumed fresh; prolonged storage leads to fermentation.

HOW TO AVOID CONFUSION

Other California manzanitas also have red bark and small bell-shaped flowers. Arctostaphylos patula has greener foliage and different shoots, while Arctostaphylos manzanita can differ in leaf and flower-cluster structure.

A fruit alone cannot reliably establish the species: the leaves, twigs, flower clusters and habitat all need to be examined. Certain populations are subject to conservation restrictions.

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Garden asparagus — tender spring shoots and poisonous red berries · Asparagus officinalis

Asparagus officinalis

In spring, short, thick green spears with tightly closed tips emerge from the ground in old gardens and along some California irrigation canals. Later they become tall, branching stems covered in delicate green growth resembling soft needles. This is Asparagus officinalis, the familiar vegetable asparagus, which has escaped cultivation in some places. Its tender young shoots can be eaten without cooking. The red berries produced by female plants in summer, however, are poisonous and are not edible fruit.



Garden asparagus (Asparagus officinalis) — photograph of the plant

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HOW TO IDENTIFY IT

Asparagus is a perennial herb with a long-lived underground crown, rhizomes and substantial fleshy roots. New green or purplish shoots emerge from the crown each spring. At first they are short and thick, ending in close-packed, pointed tips. Tiny triangular, scale-like leaves lie against the surface of the stem; asparagus does not have the large, ordinary leaves familiar from most herbs. As the shoot elongates to a meter or more, it branches repeatedly. The thin green needle-like structures are actually modified branchlets called cladodes, arranged in small clusters.

Small greenish-yellow, bell-shaped flowers appear in summer. Plants are generally male or female. After pollination, female plants produce round berries that turn from green to glossy red. The bright berries may look appealing but are not edible. The aboveground stems turn yellow and die back toward winter, while the underground crown remains alive.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Asparagus officinalis as nonnative in California, with plants occasionally naturalized from gardens and agricultural fields. Records are relatively few compared with common weeds. It occurs in old garden plots, beside ditches, along field margins and roads, and around former farmsteads. Commercial asparagus growing is familiar in the Sacramento Valley, but the species should not be described as forming widespread wild stands in undisturbed meadows.



Garden asparagus (Asparagus officinalis) — photograph of the plant

Titantoma · CC BY-SA 3.0 · Wikimedia Commons

USDA and university resources also describe its ability to naturalize beside roads and in damp depressions. Cultivated asparagus remains the property of the landowner, even if a shoot has emerged just beyond a garden bed.

WHEN EDIBLE PARTS ARE AVAILABLE

As the ground warms in early spring, young fleshy spears emerge. In the Sacramento Valley this is usually late winter through spring, often March to May, depending on soil temperature and moisture. Each spear grows rapidly and soon loses its tenderness. By summer the plant has tall, heavily branched stems, fine green cladodes and small flowers. Female plants may carry red berries in late summer and autumn; these must never be tasted. The aboveground growth yellows and dies in autumn. The raw-food season is therefore brief and does not coincide with the red-berry season.

WHAT CAN BE EATEN WITHOUT COOKING

Very young spears. Montana State University Extension explicitly recommends eating asparagus raw, and Plants For A Future confirms raw use of the young shoots of Asparagus officinalis. Choose a firm green spear whose tip is still tightly closed and whose lower section has not become woody. After washing it in clean drinking water, bend the spear where it naturally snaps and eat the tender portion fresh or sliced into a cold salad. Its flavor is mild, grassy and faintly sweet. The lower part of an older spear is fibrous and unpleasant.

Not the red berries. North Carolina State Extension warns that asparagus fruits can cause gastrointestinal upset. They must not be eaten raw, mashed, or otherwise treated as fruit. Contact with raw young shoots can also irritate the skin of some people; anyone who reacts should avoid handling or eating the plant. Summer cladodes, seeds and roots are excluded from this food list.

Do not remove so many shoots from a clump that it cannot develop green stems for continued growth. Spears from treated agricultural margins must not be eaten raw.

HOW TO AVOID CONFUSION

A newly emerging asparagus spear has a distinctive appearance, yet at that stage it can resemble shoots of ornamental asparagus and other perennial garden plants. Confirm Asparagus officinalis by observing the mature plant: tiny scale leaves, clusters of fine cladodes, small greenish-yellow flowers and, on female plants, red berries. Ornamental Asparagus densiflorus and Asparagus setaceus should not be treated as edible vegetable asparagus. Particularly dangerous is the assumption that red berries must be edible simply because the spring shoots of the same plant are edible. Never taste an unidentified shoot.

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Garden orache — soft green and purple leaves from old gardens · Atriplex hortensis

Atriplex hortensis

Beside an old vegetable garden or in an abandoned planting bed, a tall, bushy annual with broad, soft leaves may appear. Some plants are bright green; others are purple, almost burgundy. This is garden orache, also called mountain spinach. Unlike many saltbushes of saline landscapes, it was deliberately grown for its tender leafy greens: young leaves can be eaten raw without heating.



Garden orache (Atriplex hortensis) — photograph of the plant

Salicyna · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an annual plant that can reach half a meter to 1.5 meters or more where moisture is sufficient. The stem is upright, strong and noticeably ridged, branching in its upper half. Alternate leaves grow on stalks and are large, ranging from broadly triangular to spear-shaped. At the base, a leaf often has two angular side lobes. Its margin is nearly entire or shallowly toothed.

Leaf color varies from green and yellowish green to deep purple, and the color may not be uniform throughout the plant. The flowers are inconspicuous, green or reddish, arranged in tall, branching inflorescences. Fruits develop between paired, enlarged bracteoles; the seeds are small and flat.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Atriplex hortensis a nonnative species and very rare outside cultivation in California, with few independent wild observations. Most encounters are in gardens, former vegetable plots and places where cultivated plants have self-seeded near settlements, rather than in undisturbed salt marshes or on desert hillsides.



Garden orache (Atriplex hortensis) — photograph of the plant

Carole Ritchie · Public domain · Wikimedia Commons

It can grow in warm valleys, including the Sacramento area, if moisture is available. A planting site may be private property, and garden plants may be treated with chemicals. A plant does not become free wild food merely because it has sprouted on the other side of a fence.

WHEN EDIBLE PARTS ARE AVAILABLE

Seedlings emerge in spring when temperatures are moderate and, in mild climates, after cool rains. Young leaves are at their juiciest early in growth, before the flowering stem begins to extend rapidly. During a hot, dry summer, orache quickly becomes coarse and produces tall flower clusters. Irrigation may cause another flush of tender growth.

Seeds mature in summer and autumn, but they are not suitable here for food that must be eaten without cooking.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly documents eating them raw. They are soft, with a moderately salty, spinach-like flavor, and can be finely chopped and mixed with other greens. Choose tender young upper leaves before they become tough.

Like other oraches, garden orache can accumulate nitrates on heavily fertilized soil, and its leaves can contain oxalates. Large raw portions are therefore undesirable. Seeds are described in food references as requiring preparation and soaking because of saponins, so they are not eaten without cooking in this account.

HOW TO AVOID CONFUSION

Atriplex semibaccata, also described in this atlas, spreads close to the ground, has smaller leaves and develops red fleshy fruiting bracteoles. Atriplex lentiformis is a large woody gray-green shrub; garden orache is a tall annual with broad, soft leaves. Chenopodium album has a mealy coating on its young leaves and a different arrangement of flowers.

A single triangular leaf is not enough to identify an edible species. Examine the stem, mature fruiting bracteoles and the whole plant.

SOURCES

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https://pfaf.org/USER/Plant.aspx?LatinName=Atriplex+hortensis
https://commons.wikimedia.org/wiki/Atriplex_hortensis

Spear-leaved orache — young leaves of brackish meadows · Atriplex prostrata

Atriplex prostrata

On low coastal ground or beside a brackish depression, an herb with dull green leaves shaped like spearheads may grow. With enough moisture it can become a spreading bushy plant even where salt makes it difficult for other herbs to survive. This is spear-leaved orache, a nonnative species whose tender young leaves are known as fresh edible greens.



Spear-leaved orache (Atriplex prostrata) — photograph of the plant

Ryan Hodnett · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual plant has branching stems that may be upright or spread close to the ground, depending on its surroundings. It is usually about 20–90 centimeters tall. Lower leaves are often triangular and spear-shaped: their tips are elongated, and two smaller basal lobes point sideways or backward. Upper leaves tend to be narrower and simpler.

The surface may look gray-green because of tiny mealy bladder cells, a common characteristic of the genus Atriplex. The flowers are extremely small, green and inconspicuous, carried in relatively loose spike-like inflorescences. As female flowers mature, distinctive bracteoles enclose the fruit. Their form is important when determining the species.

WHERE IT GROWS AND HOW COMMON IT IS

Atriplex prostrata occurs in California as a nonnative plant of coastal areas, damp disturbed ground, salt marsh edges, saline lowlands and, occasionally, the edges of inland water bodies. It tolerates salty soil better than many ordinary salad greens.



Spear-leaved orache (Atriplex prostrata) — photograph of the plant

Ryan Hodnett · CC BY-SA 4.0 · Wikimedia Commons

Salt tolerance does not mean a site is clean. Coastal mud, polluted ditches and old industrial deposits may contain contaminants that can end up on the leaves. Looking for this plant on an ordinary dry lawn in Sacramento makes little sense; appropriate damp saline soils are more likely locations.

WHEN EDIBLE PARTS ARE AVAILABLE

The plant produces fresh leaves quickly after rain. Where moisture remains available, growth may continue into warmer weather. In spring and early summer, tender upper shoots provide thin leaves with a less pronounced salty taste. The stems later lengthen, greenish flower clusters develop, and fruits ripen.

On a dry shore, leaves become coarse sooner than on continuously moist ground. Waiting for the characteristic fruiting bracteoles can be useful for reliable identification, even if the best leaves for food appear earlier.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Food references for Atriplex prostrata describe tender leaves eaten raw as a small, salty addition to other greens. Mature leaves can taste distinctly saltier and are tougher, making them less suitable for uncooked food.

Saltiness is not evidence of safety. Plants from wastewater-contaminated locations or soil containing heavy metals are unsuitable for eating. Oxalates also call for moderation, especially if the rest of the diet already contains many oxalate-rich greens. The plant is cooked as a vegetable in some countries, but heated methods are outside this article. Mature seeds and roots are not included in the uncooked diet without separate reliable evidence.

HOW TO AVOID CONFUSION

California has many native and introduced Atriplex species. Atriplex patula can also have spear-shaped leaves, while those of Atriplex hortensis are often considerably larger. Some species can only be reliably distinguished by the shape of the bracteoles surrounding the fruit, so a young rosette alone cannot always be named with certainty.

Some California oraches are rare and their habitats require conservation. Do not taste an unknown salt-marsh plant merely because it has salty, spear-shaped leaves.

SOURCES

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Australian saltbush — fleshy red fruiting bracteoles among silvery leaves · Atriplex semibaccata

Atriplex semibaccata

On sandy, salty coastal slopes in California, a low, spreading plant with gray-green leaves may grow close to the ground. By late summer, female plants bear small, fleshy red structures among the branches, standing out sharply against the pale foliage. This is Australian saltbush, introduced as a forage plant and later established beyond cultivation. Its mature red fruiting structures have been eaten raw, though their high salt content and scant flesh make them an occasional snack rather than an important food.



Australian saltbush (Atriplex semibaccata) — photograph of the plant

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low, branching perennial herb or subshrub, creeping along the soil and often forming mats up to a meter across. The stems are thin and green at first, becoming partly woody with age. Alternate leaves are small, oval or oblong, with entire margins. The upper surface is gray-green, and the underside has a silvery-white, mealy coating.

Flowers are tiny, greenish and inconspicuous. Male and female flowers may occur on different plants. After pollination, characteristic reddish, fleshy bracteoles develop around the fruits on female branches. They may be diamond-shaped or triangular, resembling miniature red berries. Botanically, it is these fleshy fruit-enclosing bracteoles that provide the red appearance, not the juicy flesh of a typical berry.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora reports thousands of observations of Atriplex semibaccata in California and classifies it as an invasive nonnative species. It is particularly frequent in coastal saline communities, sandy disturbed areas, dry grasslands, coastal scrub and the fringes of saline soils in Southern California.



Australian saltbush (Atriplex semibaccata) — photograph of the plant

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

Some occurrences exist in the Sacramento Valley, but the plant is less characteristic there than in certain coastal settings. Salt deposits and industrial contaminants in these habitats are not always visible; collecting from polluted land is inappropriate.

WHEN EDIBLE PARTS ARE AVAILABLE

New green growth develops after rainfall, and in a mild climate leaves can persist for a long period. Small flowers form during warmer weather. The fruiting bracteoles of female plants gradually turn red, mainly in summer and autumn.

Only uniformly red and soft structures should be gathered. Green, firm, immature ones are not included. In a very dry season, the branches may produce little or no fruit.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe, red, fleshy fruiting bracteoles. Plants For A Future explicitly describes their raw use and mentions food use by Indigenous peoples of Southern California, including the Cahuilla. They can be eaten fresh in small amounts; the taste is salty, tart and slightly sour. Select only clean, undamaged red bracteoles, free of sand and dirt.

Young leaves are sometimes described as edible, but because of their high salt content and the usual practice of boiling them, this article does not recommend them as reliable raw food. Seeds are also excluded.

HOW TO AVOID CONFUSION

The larger saltbush Atriplex lentiformis forms a substantial shrub and does not produce the same conspicuous fleshy, red, diamond-shaped fruiting structures. Atriplex canescens has dry, four-winged fruits rather than succulent red ones.

Young foliage of many saltbushes looks similarly gray and mealy. The whole creeping habit and mature fruiting bracteoles are more useful for identification. Never assume that an unfamiliar saline-land plant is edible simply because it tastes salty. Heavy metals and other pollutants may be present in salt marshes and beside roads.

SOURCES

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https://pfaf.org/User/Plant.aspx?LatinName=Atriplex+semibaccata

American yellowrocket — peppery young leaves beside mountain streams · Barbarea orthoceras

Barbarea orthoceras

In spring, a rosette of firm, glossy green leaves sometimes appears in a damp mountain meadow, beside a creek or in a cool forest valley. Later, a straight stem rises from it, bearing small yellow, four-petaled flowers followed by long, slender seedpods. This is American yellowrocket, a native plant of California's western mountains. Very young leaves can be eaten raw as a sharp, cress-like addition to food, but not in large quantities.

HOW TO IDENTIFY IT

This perennial or short-lived herb usually reaches 20–80 centimeters in height, sometimes more. Lower leaves are borne on stalks and are lyrate: they have one large, rounded terminal lobe and several smaller side lobes. Their surface may be glossy, and their margins are toothed. Leaves farther up the stem become smaller and may partly clasp it.

The small yellow flowers have the characteristic mustard-family structure: four petals arranged in a cross, six stamens and an elongated ovary. After flowering, straight, narrow seedpods several centimeters long appear, pointing upward or at an angle to the inflorescence's axis. When ripe, the pods turn brown and open to release small seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora has recorded more than a thousand observations of Barbarea orthoceras in California and considers it native. It grows in damp meadows, along mountain streams, in open yellow-pine, red-fir and lodgepole-pine forests, and in subalpine communities. Moist river valleys may also support it at lower elevations.

Near Sacramento Valley farms, superficially similar yellow-flowered mustards often belong to other species. American yellowrocket should not be described as growing everywhere in the lowlands. Greens collected beside polluted drainage ditches or on livestock-contaminated ground are unsuitable for raw use.

WHEN EDIBLE PARTS ARE AVAILABLE

Soft basal rosettes form after snowmelt and spring moisture. In warmer lowland sites, young greens may be available in spring; at high elevations, early summer is more typical. Yellow flowers and seedpods appear later, usually between late spring and midsummer and sometimes as late as August on high slopes.

Once the flowering stalk has elongated, the leaves become noticeably tougher and more bitter. For food, only early, tender rosette leaves should be considered, before flowering.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and the tender rosette. Plants For A Future specifically confirms raw use of Barbarea orthoceras. North Carolina State University Extension notes its peppery, cress-like flavor and recommends moderation. A few small fresh leaves can be chopped and mixed into a cold salad.

The greens can be pungent enough to irritate sensitive people. One cited reference also mentions a possible effect on kidney function; large servings and regular consumption are therefore not recommended. Buds are sometimes eaten after cooking, but the evidence for eating this particular part raw is less certain, so buds are excluded. Roots and coarse stems are not used here.

HOW TO AVOID CONFUSION

Barbarea vulgaris, the closely related nonnative wintercress, has similar glossy leaves and yellow flowers. Distinguishing it from American yellowrocket requires the mature fruit, leaves and a combination of botanical characters; a young rosette alone is difficult to identify reliably.

Sisymbrium irio and other mustards may also have similar leaves but differ in their seedpods. Four yellow petals occur in dozens of mustard-family species, not all of which have documented raw food uses. Do not taste an unknown plant before identifying a mature specimen with confidence.

SOURCES

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Wintercress — pungent winter greens and bright yellow flower clusters · Barbarea vulgaris

Barbarea vulgaris

On damp soil near meadows, streams and old fields, dense rosettes of glossy green leaves sometimes appear. In spring, a straight stem rises from the center, carrying bright yellow, cross-shaped flowers. This is Barbarea vulgaris, commonly known as wintercress or yellowrocket. Young leaves can be eaten without fire, but they are much more pungent than ordinary lettuce and are suited only to adding a little flavor.



Wintercress (Barbarea vulgaris) — photograph of the plant

AudreyMuratet · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Barbarea vulgaris is a biennial or short-lived perennial herb, commonly 30–80 centimeters tall. Its basal leaves are dark green and sometimes glossy, with a lyrate shape: one large rounded terminal lobe and several smaller side lobes along the leaf stalk. Stem leaves become smaller toward the top and often clasp the stem with little ear-shaped lobes.

Small flowers with four clear-yellow petals form a terminal cluster. After flowering, long narrow seedpods develop at angles to the stem. A characteristic short beak can be seen at the tip of developing pods. The basal rosette may remain green throughout a cool winter.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists the species as nonnative in California and records relatively few observations compared with the state's commonest wild mustards. It is found in moist places by streams, in floodplain communities, on damp disturbed meadows and along ditch banks.

Such habitats exist in the Sacramento Valley, but the occurrence of this particular species at a given site must be confirmed. Plants growing in wastewater ditches or on treated agricultural land are not suitable for eating raw.

WHEN EDIBLE PARTS ARE AVAILABLE

New rosettes emerge after autumn rains and during winter. In lowlands, young leaves are most suitable in winter and early spring. Flowering stems rise in spring and later develop pods.

In colder, wetter regions, tender foliage remains available longer and flowering may shift toward summer. Older leaves become bitter and tough after the flower stalk develops.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future specifically records their raw use, finely chopped in salads. Their taste is sharp, resembling watercress or mustard, so a few small leaves are enough.

Newly opened flowers are also named in the species reference as suitable for a cold garnish. Flowering stems and buds are more commonly described as foods to be cooked and are therefore not recommended here as separate raw vegetables. Large, old leaves and roots are excluded as well.

HOW TO AVOID CONFUSION

Compared with Brassica rapa, wintercress has darker basal leaves with a prominent terminal lobe and different seedpods. Wild radish, Raphanus sativus, may have white or lilac flowers and conspicuously segmented pods. The seedpods of Sisymbrium officinale lie close against the stem.

For reliable identification, it helps to see the basal rosette, a yellow flower and a developing fruit together. Not every mustard-family plant should be tasted without a species-level identification.

SOURCES

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https://pfaf.org/user/plant.aspx?LatinName=Barbarea+vulgaris
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Common daisy — low rosettes, white heads and edible raw buds · Bellis perennis

Bellis perennis

On cool, irrigated California lawns, little rosettes of rounded leaves sometimes grow close to the ground. Short flowering stalks rise from the middle, each topped with a white flower head with a bright yellow center. This is the familiar European common daisy, Bellis perennis, long cultivated in gardens and occasionally naturalized in California. Its small leaves, flower buds and petals are documented as parts eaten raw. A city flower bed or lawn, however, may have been treated with chemicals, which matters more than the botanical edibility of the plant.



Common daisy (Bellis perennis) — photograph of the plant

Sabina Bajracharya · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Bellis perennis is a low perennial with a basal rosette of leaves that can remain green for much of the year where the soil stays moist. The leaves are oval or obovate, tapering toward a short stalk at the base, sometimes with slightly wavy or shallowly toothed margins. They remain close to the ground.

Individual, usually leafless flowering stalks rise from the center of the rosette, generally from a few to about fifteen centimeters tall. Each carries a single flower head. Around its edge are numerous white ray florets, often with pinkish tips; the center consists of yellow tubular florets. The head may partly close at dusk or during bad weather.

After flowering, small dry achenes form, not berries. Not every little white 'daisy' belongs to Bellis perennis: many similar species have taller stems, deeply divided leaves or differently formed flower heads.



Common daisy (Bellis perennis) — photograph of the plant

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Bellis perennis as a nonnative perennial in California, predominantly an escape from cultivation. Records exist in San Francisco, Alameda, Marin, Mendocino, Humboldt and Sacramento counties, among others, but the plant is especially often encountered in gardens and on irrigated lawns.

Unlike some widespread wild lawn weeds, common daisy should not be assumed to grow on every dry Central Valley hillside. Without water, its growth rapidly slows on hot, exposed ground, while in cool, damp turf it can remain green almost year-round. City parks and private gardens often restrict plant collection and may use lawn-care chemicals.

WHEN EDIBLE PARTS ARE AVAILABLE

In mild coastal climates, the leaves may remain green almost continuously. In the Sacramento Valley, the most pleasant young growth tends to occur during cool autumn and winter weather and in spring, provided the site is watered.

Flowering is most conspicuous from early spring to early summer, but can recur at a cool, moist site. Buds are available immediately before opening, and petals while the flower head is fresh. After flowering, dry achenes develop; they are not used as food in this atlas. Strong summer heat and lack of water reduce tender leaf growth.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future confirms raw use. The flavor is somewhat astringent or tart, although on some plants it is mild. Leaves can be chopped into a small cold salad without pulling up the entire rosette.

Unopened flower buds and white ray florets. The species reference separately names these as edible raw parts. The buds have a more pronounced plant flavor, while the ray florets are milder. This claim applies specifically to Bellis perennis, not to every ornamental flower informally called a daisy.

Roots, mature seeds and tough flowering stalks are excluded from food without fire. People with a known allergy to plants of the daisy family should avoid trying this species as a new food. Plants from lawns treated with herbicides or contaminated by animal waste must never be gathered for raw use.

HOW TO AVOID CONFUSION

Pineapple weed, Matricaria discoidea, lacks the white ring of ray florets and has a different scent. German chamomile, Matricaria chamomilla, has deeply divided leaves. Oxeye daisy, Leucanthemum vulgare, develops considerably taller stems and larger flower heads.

Bellis perennis has rounded leaves in a low rosette, and one flower head on a short, leafless stalk. Some cultivated lawn varieties have double pink or reddish flowers, requiring extra care in identification. Do not collect a plant when white 'petals' are the only feature used to name it.

SOURCES

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Oregon grape — spring yellow clusters and tart blue fruit · Berberis aquifolium

Berberis aquifolium

Among evergreen shrubs along northern forest edges, one plant stands out with leaves resembling small holly leaves. In spring it bears sunny yellow clusters of flowers, followed later by bunches of dark fruits. These fruits remain tart even when ripe, but have long been used as food.



Oregon grape (Berberis aquifolium) — photograph of the shrub

Meggar (original uploader) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an evergreen shrub approximately one to two meters tall. Strong shoots bear large pinnately compound leaves with several stiff, glossy leaflets. Each leaflet has several sharp, spine-tipped teeth along its margins; young foliage can be bronze-colored.

Small yellow flowers bloom in dense clusters near the ends of branches. Although each individual flower is small, the entire cluster is conspicuous. Rounded blue-black berries with a waxy bloom develop afterward and remain grouped on the flowering stems.

WHERE IT GROWS AND HOW COMMON IT IS

In natural habitats, Oregon grape favors open forest, woodland margins and mountain slopes in Northern California. It may also be planted around houses and in gardens. An ornamental shrub growing on private land should not be mistaken for a freely available wild food source.



Oregon grape (Berberis aquifolium) — photograph of the shrub

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

In the dry lowlands of Sacramento, landscaping plants are more characteristic than extensive natural stands.

WHEN EDIBLE PARTS ARE AVAILABLE

The bright yellow flower clusters usually open in spring. In warmer, lower places the berries darken during the second half of summer; in cooler regions ripening may extend toward autumn. A ripe berry has dark skin and is softer than a green, immature one.

The evergreen leaflets remain on the plant year-round, but despite their attractive appearance they are not treated here as food.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe berries. Fruits of Berberis aquifolium are eaten raw, although they are much more acidic than table grapes. A berry cluster contains a considerable number of seeds relative to the small amount of juicy flesh. The fruit is suitable for modest fresh portions. Fully ripe berries can also be gently mashed with cold water and strained to remove the seeds.

Flowers. Plants For A Future also records raw use of the flowers, but these are a small seasonal addition, not a principal food.

Dry roots, bark and leaves are excluded from food that is eaten without cooking. Their presence on the same plant does not establish their safety as edible greens.

HOW TO AVOID CONFUSION

Berberis nervosa can resemble this species in its yellow flowers and blue fruit, but Oregon grape is usually much taller and has larger, stiffer leaflets.

Leaf arrangement and shrub form vary in Berberis pinnata, so species identification should use a botanical key rather than berry color alone. For all these shrubs, the edibility of ripe fruit must never be extended to their bitter vegetative parts.

SOURCES

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Fremont barberry — tart fruit on a rare desert shrub · Berberis fremontii

Berberis fremontii

An unusual evergreen shrub grows on rocky desert slopes in Southern California. Its stiff, gray-green leaves are armed with sharp teeth, yellow flowers open in spring, and small oval berries develop later in the season. This is Fremont barberry, also known as desert Oregon grape. Its fully ripe fruit is documented as edible raw. In California, however, the species has rare-plant conservation status, so fruit must not be collected from wild populations.



Fremont barberry (Berberis fremontii) — photograph of the shrub

Andy Blackledge · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen, many-branched shrub is usually one to three meters tall, occasionally higher. Its upright stems have grayish bark.

The alternate, pinnately compound leaves usually contain five to seven small, dense leaflets. Their color ranges from gray and blue-gray to bluish green. The leaflets are stiff, with several large, sharply pointed marginal teeth.

Short clusters of yellow flowers appear in spring. Each flower has six petals and numerous bright stamens. Small, elongated oval, berry-like fruits later ripen in clusters. Depending on the form, their color is brownish red, purple or almost dark. Inside is relatively little juicy flesh and several seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora and the California Native Plant Society regard Berberis fremontii as a rare native species. Its recorded California habitats include the eastern and southern Mojave Desert, the Joshua Tree area, pinyon-juniper woodland and rocky slopes of the Peninsular Ranges.

It is not a normal source of wild food in the Sacramento Valley. In some places populations are very small and occur in protected communities. If encountered in the wild, it is best to observe and photograph the shrub without disturbing it. Eating its fruit should be considered only from a lawfully cultivated plant whose identity has been established beyond doubt.

WHEN EDIBLE PARTS ARE AVAILABLE

Yellow flower clusters usually emerge in spring, often April through June, depending on elevation and rainfall. Small fruits develop during summer and attain their final color toward the end of the warm season, sometimes in autumn.

Green, immature fruit and ripe purple or brownish-red fruit may occur together on one plant. Ripeness should be assessed not merely by color but also by softness and the structure of the fruiting cluster. In very dry years the crop may be extremely small.

WHAT CAN BE EATEN WITHOUT COOKING

Only fully ripe fruit. Plants For A Future specifically describes raw use of Berberis fremontii, comparing the flavor to a tart berry with little flesh and many seeds. Fruit on some shrubs may be juicier, while on others it is drier and more acidic.

In principle, ripe fruit can be eaten fresh in small quantities, or gently mashed cold and separated from skin and seeds so that only clean flesh is used. Because of its conservation status, do not harvest wild Californian populations.

Leaves, roots and bark of barberries contain active alkaloids and are not considered raw food here. Sharp leaf teeth can also injure the fingers.

HOW TO AVOID CONFUSION

Berberis haematocarpa usually has narrower leaflets and red, relatively juicy fruits. The two species can appear very similar in southern deserts. Berberis higginsiae is another rare relative, and Calflora cautions against consuming any of its parts.

Identification requires the length and shape of the leaflets, the color of fully ripe fruit, flower clusters and habitat to be considered together. A rare or poisonous barberry must not be assumed edible merely because it belongs to Berberis.

SOURCES

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Dull Oregon grape — tart dark berries beneath conifer forests · Berberis nervosa

Berberis nervosa

In damp conifer forests of Northern California, low shrubs with firm, glossy leaves grow on the forest floor. Yellow flowers rise above them in spring, followed in summer by little blue-black berries with a sharply acidic flavor. This is low-growing Oregon grape, also known as Berberis nervosa or Mahonia nervosa.



Dull Oregon grape (Berberis nervosa) — photograph of the shrub

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen shrub is usually no taller than 30–60 centimeters and often grows in clusters. Its leaves are compound, each made up of several leathery leaflets with sharp, spiny teeth along the edges.

The central leaf axis is long, with conspicuous lateral veins that form a raised network across the leaflets. Young foliage is lighter than older leaves. Small yellow flowers appear in elongated clusters standing above the foliage.

Ripe berries are round, blue-black and sometimes covered with a pale waxy bloom. They generally measure around eight millimeters across.

WHERE IT GROWS AND HOW COMMON IT IS

The species grows in the understory of moist conifer forests in the northern part of California, beneath redwoods, Douglas-firs and other trees. In suitable places it can form noticeable groups. In the hot, open Sacramento Valley it is almost never found naturally.

During dry years, shaded shrubs may produce only a modest crop.

WHEN EDIBLE PARTS ARE AVAILABLE

New shoot growth occurs mainly during the cool, wet spring. Flowers open in spring, and the berries usually turn dark during summer, most often July through September. Ripening may be delayed along a cool coastal strip.

The evergreen leaves remain visible year-round but are not recommended as raw food.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe berries. A species food reference for Mahonia nervosa explicitly states that the fruit can be eaten raw. The amount of flesh is small and the number of seeds comparatively high. The flavor is acidic and sometimes astringent.

In traditional food preparations, these tart berries were combined with sweeter fruits, which can be done without heating. The leaves should not be eaten as raw greens: the food use mentioned in the source for leaves involves boiling rather than a fresh salad. Bark and roots are not included here as raw food.

HOW TO AVOID CONFUSION

The taller Berberis aquifolium forms large, upright shrubs with larger leaves, while Berberis repens stays lower and is often associated with drier mountain habitats.

Holly may have superficially similar, spiny leaves, but its flowers are different and its fruits are red. Ripe fruit should only be eaten after the plant has been confidently identified with flowers or fruit and the whole leaf structure has been checked.

SOURCES

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California barberry — glossy spiny leaves and blue ripe berries · Berberis pinnata

Berberis pinnata

In some California oak woodlands, a low evergreen shrub with deeply notched, stiff leaves grows beneath the trees. It is especially noticeable in bloom, when clusters of yellow flowers stand above the dark foliage. Blue fruits follow in summer. This is California barberry, a native relative of Oregon grape.



California barberry (Berberis pinnata) — photograph of the shrub

Franco Folini · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub sometimes reaches about one and a half meters in height, but on slopes it can have a low, broad and spreading form. Its leaves are compound, consisting of several large, glossy leaflets whose margins bear stiff, sharply pointed teeth. The leaflets may be wavy, and new growth often has a reddish tint.

Dense clusters of small yellow flowers develop in the flowering season. The fruits are rounded and turn bluish black when fully ripe; hanging in clusters, they resemble tiny sour grapes. These are fleshy fruits, not the large bunches of a cultivated vine.

WHERE IT GROWS AND HOW COMMON IT IS

Berberis pinnata grows in western California, including the Coast Ranges, oak woodland, chaparral, rocky slopes and forest edges. It is recorded along the central and southern coast and in some mountains near Los Angeles.

It is not a shrub to expect on every block in Sacramento. Its presence depends on suitable native plant communities, and it may be absent from otherwise similar sites.

WHEN EDIBLE PARTS ARE AVAILABLE

Flowering often begins in late winter in the mild coastal climate and continues in spring. The dark berries follow, usually ripening in summer. The timing changes with elevation, rainfall and the direction a slope faces.

Green berries are not suitable food. Their dark color and softness are important signs of maturity.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe berries. The Theodore Payne Foundation specifically identifies the blue fruits of California barberry as edible. They are sour and contain seeds. For raw use, select only soft, fully ripe fruits and eat them in modest quantities.

The evergreen shoots and bright-colored roots contain other substances. The food claim for ripe fruit must never be extended to the leaves, bark, shoots or roots; they are not salad greens.

HOW TO AVOID CONFUSION

Berberis aquifolium has similarly colored flowers and fruit but usually forms a taller, more upright shrub. Berberis nervosa is shorter and is associated with moist northern conifer forests.

Some native barberries are variable and include closely related subspecies. Accurate identification therefore considers the leaflets, the flower cluster, the fruits and the habitat together, rather than relying solely on the blue berry color.

SOURCES

Theodore Payne Foundation, California barberry: https://theodorepayne.org/nativeplantdatabase/index.php?title=Berberis_pinnata_ssp._pinnata

Calflora: https://www.calflora.org/

Plants For A Future, Mahonia pinnata: https://pfaf.org/user/Plant.aspx?LatinName=Mahonia+pinnata

Creeping Oregon grape — low mountain mats with blue-purple berries · Berberis repens

Berberis repens

On relatively dry forested slopes in northeastern California, low patches of glossy evergreen foliage sometimes spread across the ground. Yellow flower clusters rise above them in spring, followed by small blue berries in summer. Unlike the taller Oregon grapes, this barberry seems to hug the earth.



Creeping Oregon grape (Berberis repens) — photograph of the shrub

Stephen Lea (Seglea) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen shrub is usually only 20–40 centimeters tall, though its creeping shoots may spread much farther sideways. The leaves are compound, consisting of several firm leaflets with sharply toothed, spiny margins.

During cold weather, the foliage may turn reddish or bronze. Small groups of yellow flowers stand above the leaf rosettes on short flowering stalks. The fruits are small, blue-purple berries, usually with a waxy bloom, and contain seeds.

Its low, mat-forming habit is an important clue, but mature flowers and fruit are also needed for a confident identification.

WHERE IT GROWS AND HOW COMMON IT IS

In California, creeping Oregon grape is associated chiefly with the northeastern mountains and other upland districts where relatively dry pine and mixed forests occur. It favors open forest slopes and places with partial shade.

It is not a widespread wild berry shrub on the floor of the Sacramento Valley. An evergreen plant with dark blue fruits found beside an ordinary city sidewalk is not necessarily this species.

WHEN EDIBLE PARTS ARE AVAILABLE

The yellow flowers open in spring, or closer to summer on higher, colder slopes. The berries gradually darken during the second half of summer and into early autumn.

Although the shrub retains its leaves throughout the year, it does not carry edible fruit all year. Once the berries have fallen, the food season is over.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe berries. Plants For A Future separately documents the raw use of the fruit under the name Mahonia repens. The berries are acidic, sometimes astringent, and have relatively little flesh around their seeds.

They can be eaten fresh, a few at a time, or gently mashed without heating to separate the flesh from the hard parts. Naturally drying the mature berries is also documented as a way to store them.

Roots, bark and stems are not food. Because these parts contain berberine and other active substances, it is particularly important not to extend the edibility of ripe berries to the rest of the shrub.

HOW TO AVOID CONFUSION

Compared with Berberis aquifolium, creeping Oregon grape is much shorter. It also differs from Berberis nervosa in tending to occupy drier, more mountainous environments.

Other evergreen plants have stiff, glossy leaves, so identification requires checking the yellow flower clusters and the form of the fruit as well as the overall habit. The blue-purple color of a single berry is never sufficient.

SOURCES

Plants For A Future, Mahonia repens: https://pfaf.org/user/Plant.aspx?LatinName=Mahonia+repens

Calflora: https://www.calflora.org/

Sea beet — tender spring leaves on salty coastal soils · Beta vulgaris subsp. maritima

Beta vulgaris subsp. maritima

Along low stretches of the Pacific coast, among pebbles, sand and seaside grasses, a relatively small beet plant sometimes grows that looks nothing like the large roots of the garden vegetable. It has broad, glossy leaves on succulent stalks. Later, inconspicuous greenish flowers rise above the leaf rosette. This is sea beet, a wild-growing relative of table beet and chard. Its youngest leaves can be eaten without heating, but large servings are undesirable because of oxalates and salts.



Sea beet (Beta vulgaris subsp. maritima) — photograph of the plant

Colsu · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Sea beet is a perennial, or sometimes biennial, herb with a thickened taproot from which several green shoots emerge. The leaves grow mostly near the base. They are oval, broadly lance-shaped or triangular, with smooth, entire margins and a prominent midrib.

The long leaf stalks are fleshy and firm, sometimes with a reddish tint. In warm weather the plant produces ribbed flowering stems, which may grow to about a meter high. Tiny green flowers without showy petals occur in clusters along the branched flowering stems, beside bracts. Each has five greenish perianth segments.

The mature clusters of fruits dry and harden, each containing several small seeds. The coastal form usually lacks the large, fleshy red storage root of a cultivated table beet.



Sea beet (Beta vulgaris subsp. maritima) — photograph of the plant

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Beta vulgaris subsp. maritima as nonnative in California. Outside cultivation it is found mainly along the coasts of Southern and Central California, with reports from San Diego, Orange, Los Angeles, Santa Barbara, San Luis Obispo, Alameda and Solano counties, among others.

It can establish on exposed coastal slopes and disturbed saline ground. This is not a common wild vegetable of the Sierra Nevada or the flat Sacramento Valley.

Sea spray, polluted runoff and contamination around harbors make the raw consumption of leaves unsafe even when the species has been identified correctly.

WHEN EDIBLE PARTS ARE AVAILABLE

The softest leaves develop after winter rains and during periods of moderate temperatures. Along the coast, tender growth is most readily available in late winter and spring; new leaves may also appear during a cool summer at sheltered sites.

As the flowering stalk grows, the foliage becomes coarser and its flavor saltier and more bitter. The tiny green flowers and later hardened fruit clusters generally develop in summer and autumn.

For uncooked food, the important stage is tender young foliage, not seed production.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. The species account at Plants For A Future explicitly confirms raw use of Beta vulgaris subsp. maritima. Soft leaves can be carefully washed in fresh, drinking-quality water, chopped and added to a cold salad. Their flavor resembles spinach with a salty note; older leaves may become bitter.

Like garden beet greens, sea beet contains oxalates. Only a modest serving is advisable, especially for someone prone to calcium-oxalate kidney stones. The plant's coastal root is not the same as the succulent storage root of a cultivated table beet. Seeds and old flowering stalks are not appropriate raw food.

HOW TO AVOID CONFUSION

Cultivated Beta vulgaris subsp. vulgaris has undergone long selective breeding and often forms a thick, edible root, though its leaves can resemble those of sea beet.

New Zealand spinach, Tetragonia tetragonoides, has creeping succulent stems, yellowish flowers in the leaf axils and angular fruits, rather than branched beet-like flowering spikes.

Some oraches (Atriplex) have mealy, silver-gray leaves and different fruiting bracts. Similar-looking greens on saline shores are not proof of edibility: mature flowering stems and fruit clusters are important identifying features.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=11374

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Beta+vulgaris+maritima

Brown mustard — young peppery leaves and yellow flowers · Brassica juncea

Brassica juncea

Among the cool-season plants growing on disturbed ground in spring, mustard plants with broad lower leaves sometimes appear. When they flower, small yellow, cross-shaped blossoms rise above the greenery. Young leaves of brown mustard, Brassica juncea, are eaten raw, but it has many close relatives. The entire stem, leaf arrangement and fruits must be examined to distinguish the species.



Brown mustard (Brassica juncea) — photograph of the plant

Petr Pakandl · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

This plant is annual or sometimes biennial. Its lower leaves are borne on stalks and often have a broad, rounded terminal lobe and smaller side lobes. The margins are toothed or irregularly wavy. Leaves higher up the flowering stem are smaller and narrower, sometimes almost undivided. The green leaves and stems often have a slightly waxy surface.

Each flower has four yellow petals arranged in a cross, and the flowers are grouped in terminal racemes. As the inflorescence grows, it lengthens; narrow elongated pods develop below the blossoms, eventually enclosing round seeds. Leaf shape varies among cultivated varieties, so finding a large rosette alone does not establish the species.

WHERE IT GROWS AND HOW COMMON IT IS

Brassica juncea is not native to California. It occurs on disturbed ground, in old vegetable gardens, vacant lots, field margins and places where cultivated mustard has escaped or self-seeded. Calflora has recorded it in Sacramento County.

The number of California observations is much lower than for black mustard, Brassica nigra, which can cover whole slopes with yellow flowers in spring. An extensive yellow hillside should therefore not automatically be called brown mustard.

WHEN EDIBLE PARTS ARE AVAILABLE

In a mild climate, new growth begins during the cool season, often in winter after rain. Tender leaves are most pleasant before the flowering stem elongates. Flowers and seedpods appear in spring and early summer. Hot weather hastens the aging of foliage and makes its flavor noticeably sharper.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. North Carolina State University Extension explicitly describes eating them raw in salads. Their flavor is spicy and mustard-like, sometimes hot enough that a few small leaves mixed with milder greens are sufficient.

Flowers and tender shoot tips. The same food reference lists these as edible raw. Flowers have a somewhat milder peppery flavor, while succulent young tips are useful only before they turn fibrous. Mature, elongated stalks are not tender salad greens.

The edible parts must come from a plant identified confidently to species, in a place free from treatment with pesticides, herbicides and soil contaminants.

HOW TO AVOID CONFUSION

Black mustard, Brassica nigra, often grows taller and has mature pods held differently along the flowering axis. Brassica rapa also has yellow, four-petaled flowers, but its upper leaves often clasp the stem. Wild radish, Raphanus sativus, differs in its fruits and several flower characters. Yellow flower color alone cannot identify any of these plants.

Brassica juncea can accumulate metals from contaminated soils, which is why it has been studied for phytoremediation. Plants growing beside roads, on former industrial sites or on treated fields should never be regarded as safe uncooked food.

SOURCES

North Carolina State University Extension: https://plants.ces.ncsu.edu/plants/brassica-juncea/

Calflora: https://www.calflora.org/app/taxon?crn=1142

Missouri Botanical Garden: https://plantfinder.mobot.org/PlantFinderDetails.aspx?ht=2&isprofile=0&st=2&taxonid=278099

Oilseed rape — tender waxy leaves beneath bright yellow flowers · Brassica napus

Brassica napus

In spring, tall blue-green stems with large clusters of yellow flowers sometimes rise on disturbed agricultural ground. Broad lobed leaves are visible near the base of the plants, while the upper leaves partly clasp the stem. This is oilseed rape, Brassica napus, grown primarily for oil and occasionally found outside cultivation in California. Its young leaves have documented raw use, but mature seeds are not suitable as an unprocessed hiking food of unknown origin.



Oilseed rape (Brassica napus) — photograph of the plant

Michael Brandtner (Discostu) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual or biennial herb commonly grows 60 centimeters to a meter and a half tall, sometimes taller. The upright stem is smooth, branching in the upper part, and covered by a bluish waxy bloom.

Lower leaves are large, oval-oblong and often lyrate, with several smaller side lobes and a broad terminal lobe. Upper leaves are narrower, smooth and partly clasp the stem at their bases.

Bright or pale yellow flowers have four petals and are arranged in elongated terminal racemes. The unopened buds usually stand above the open flowers. After flowering, long, slender pods develop, generally pointing upward at an angle. Inside are small, round, dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Brassica napus as a nonnative agricultural escape or weed, with only several dozen observations in California. It is found mainly near fields, roads, gardens and places where seeds have been handled or spilled, rather than in old, undisturbed forest.

Not every yellow mustard on a hillside is oilseed rape. Brassica nigra, Hirschfeldia incana and Sinapis arvensis are common in the Central Valley. Oilseed rape fields are often treated with agricultural chemicals, so leaves from such places must not be gathered for raw consumption without reliable information on the treatment history.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves appear after winter rains or spring warming. In mild valleys, their most tender stage is usually during winter and early spring, before the plant directs its energy into flowering stems.

Flowering begins in spring or early summer and may continue later in cooler areas. After many seedpods develop, the foliage becomes coarse and the plant gradually dries. For food without fire, select only very young leaves from a confidently identified plant, not mature flower stalks or dry seedpods.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future separately documents raw use of Brassica napus foliage. The small, soft leaves can be finely chopped into a cold vegetable mixture. Their taste is cabbage-like, sometimes spicy or slightly bitter, particularly after the flowering stem has lengthened.

A modest serving is preferable to a large portion of coarse mature greens. Flowering stems are mainly described as foods requiring cooking, so they are not included in the raw-food list.

Mature seeds are commonly processed commercially for oil. Different forms contain different concentrations of erucic acid and glucosinolates; raw seeds from an unknown wild or escaped plant are not recommended here.

HOW TO AVOID CONFUSION

In Brassica rapa, upper leaves often clasp the stem more strongly, and buds may lie below the open flowers. In B. napus, the foliage tends to be more blue-green and smooth, while the buds are usually higher than the open flowers.

Brassica juncea often has greener leaves and a different flowering raceme. Hirschfeldia incana bears narrower pods and frequently has rougher lower leaves. Yellow-flowered members of the mustard family are easily confused. Examine upper leaves, bud position and mature pods together rather than relying on a single yellow flower.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=1143

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Brassica+napus

Canadian Food Inspection Agency, identification: https://inspection.canada.ca/en/plant-health/seeds/seed-inspection-procedures/swi-142-1-2-4

Black mustard — raw young leaves and a cold-ground seed seasoning · Brassica nigra

Brassica nigra

Every spring, hillsides and vacant lots in California can turn yellow with tall flowering plants. Among the different members of the mustard family, black mustard, Brassica nigra, is particularly noticeable. This introduced annual can displace native vegetation in places. Its young leaves can be eaten raw as spicy greens. However, mustard-family plants contain sulfur compounds, so black mustard is best treated as a small addition to the diet rather than the main daily vegetable.



Black mustard (Brassica nigra) — photograph of the plant

Magnus Manske · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Black mustard begins as a rosette of somewhat rough green leaves. A tall, upright, branching stem later grows from its center. In favorable soil, the plant may grow taller than a person, although about one to two meters is more common.

The lower stem usually bears hairs, while the upper part branches into many flowering tips. Lower leaves can be as large as a hand, rough to the touch and deeply divided into lobes. The terminal lobe is usually the largest, rounded and slightly toothed; lateral lobes are smaller. Higher leaves become simpler and narrower, with upper leaves often lacking obvious stalks.

Bright yellow flowers, each with four cross-shaped petals, appear in elongated racemes. Narrow pods develop below them. Mature pods are especially useful for recognizing black mustard: they are relatively short, usually about one to two centimeters, and stand close against the flowering axis. A thin beak is visible at the pod tip. Small dark seeds mature within.



Black mustard (Brassica nigra) — photograph of the plant

Magnus Manske · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Brassica nigra has become well established in California, especially on disturbed ground: roadsides, agricultural field margins, grassy slopes, old pastures and land near vineyards. The California Invasive Plant Council identifies it as an invasive species capable of changing natural plant communities.

Dense yellow stands are familiar in coastal and southern districts, and the plant also occurs in suitable open parts of the Central Valley. Its abundance depends heavily on winter rain. After a wet winter, plants may cover large areas; in a dry year they may be much less numerous.

By early summer, the tall stands dry out and can contribute to flammable vegetation. They are not equally common in every desert or mountain district.

WHEN EDIBLE PARTS ARE AVAILABLE

After autumn and winter rain, seeds germinate and soft leaf rosettes appear. In California's warmer lowlands, young greens are often available from December through March; cooler foothills may have a later season.

In spring, approximately March through May, the flowering stems lengthen and bloom. Small new leaves continue to appear near the top of the shoots. Flowers may persist into summer in some regions.

Green pods follow the flowers, later drying as the seeds mature in spring and summer. In the hot lowlands, many stands are completely dry by June or July, with little tender greenery remaining.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. North Carolina State University Extension specifically identifies the leaves of Brassica nigra as edible and confirms their use raw in salads. While small and soft, they have a pungent mustard flavor. As the plant grows, lower leaves become tough and fibrous. Collect only tender leaves from a plant identified confidently.

Seeds as a cold seasoning. Mature black mustard seeds are a familiar source of pungent spice. They can be ground without heating and combined with a small amount of cold water to produce a sharp mustard flavor. This is a condiment, not a seed food to be consumed by the handful. NC State Extension confirms culinary use of the ground seeds of this species.

Fresh flowers and young stems are also listed as edible in some food references, but the sources used here do not document a separate uncooked preparation for them as clearly. They are therefore excluded from the main practical raw-food list. Roots are likewise excluded without further species-specific evidence.

HOW TO AVOID CONFUSION

Many yellow-flowered mustard-family species occur in California, including Brassica rapa and Hirschfeldia incana. Four yellow petals are a shared family trait and do not identify a species. The relatively short pods that lie close against the raceme axis distinguish black mustard from some relatives whose pods are longer or project farther outward.

Identification from a young rosette alone is especially difficult. The decision to eat a plant should not be based on a leaf without the mature features of that species being known.

UC IPM notes that roots, leaves and especially seeds of mustards contain compounds that can irritate digestion when consumed in large quantities. Do not eat large portions of raw mustard greens every day as the only vegetable, or concentrated mustard condiment by the spoonful.

Fields and roadsides may be treated with chemicals. Even a confirmed edible species cannot be gathered for raw use from a contaminated or treated site.

SOURCES

California Invasive Plant Council: https://www.cal-ipc.org/plants/profile/brassica-nigra-profile/

University of California IPM: https://ipm.ucanr.edu/weeds-identification-gallery/mustards/

California Coastal Commission: https://www.coastal.ca.gov/publiced/unbweb/plants/blackmustard.html

North Carolina State University Extension: https://plants.ces.ncsu.edu/plants/brassica-nigra/common-name/black-mustard/

Cabbage — tender raw leaves from escaped garden plants · Brassica oleracea

Brassica oleracea

An abandoned vegetable garden sometimes contains a large green rosette with thick, bluish-green leaves. If the plant survives its first growing season, a tall flowering stem may rise from the center in the following year, bearing yellow flowers and dry pods. This is cultivated cabbage, Brassica oleracea, the species that includes headed cabbage, kale, broccoli and many other vegetable forms. Tender leaves can be eaten without fire, but an escaped plant must be distinguished from other similar members of the mustard family.



Cabbage (Brassica oleracea) — photograph of the plant

Kurt Kulac (Kulac) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Brassica oleracea is usually a biennial or short-lived perennial with a stout stem and fleshy, waxy, blue-green leaves. Cultivated forms vary greatly. Some develop a compact cabbage head; others grow a loose rosette of broad, smooth or curly leaves; still others produce substantial flowering shoots.

Typical leaves are alternate and thick, with a waxy coating, a conspicuous central vein and slightly wavy, toothed or lobed margins. During flowering, an upright branching stem bears racemes of four-petaled yellow flowers. Long, narrow pods with small, round dark seeds follow.

Because cultivars differ so widely, a single rosette cannot always be identified reliably to species.



Cabbage (Brassica oleracea) — photograph of the plant

Elena Chochkova (Eola) · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Brassica oleracea as a nonnative cultivated species, with only several dozen observations outside normal garden beds, including Sacramento, Yolo and coastal counties. It is rare in the wild compared with California's widespread yellow mustards.

Self-seeding can occur from discarded plants, and perennial forms may persist in an old garden. Commercial cabbage fields are often treated with insecticides, while municipal lawns can be treated with herbicides. Greens from such sites must not be gathered for raw consumption.

WHEN EDIBLE PARTS ARE AVAILABLE

Cool-season cabbage plants produce new leaves during the autumn and winter months and in spring when moisture is sufficient. In the hot Sacramento Valley summer, leaves may become bitter and coarse.

In the second season, warmer days and increasing daylight encourage a tall flowering stalk and yellow blossoms. Pods mature toward late spring and summer. The best period for fresh food is the rosette of a young plant, or soft new growth on a known leafy cultivar, before the leaf veins become fibrous.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms raw use of Brassica oleracea. Small, soft leaves can be washed, stripped of any coarse central rib, shredded and eaten as part of a cold vegetable mixture. Some forms taste slightly sweet; others are more mustard-like, particularly after bolting.

Mature coarse raw foliage may be difficult to digest, so large servings are undesirable. Although broccoli heads belong to cultivated forms of the species, this article does not present them as a separately

recommended food from an accidentally discovered wild plant. Confirmed young leaves are a more reliable choice.

Mature pods and seeds are not included in the raw-food list.

HOW TO AVOID CONFUSION

Brassica rapa often has softer, greener foliage with less conspicuous wax. Brassica napus produces taller bluish shoots and differs in its upper leaves and buds. Cultivated brassicas vary so much that a single rosette is sometimes insufficient for identification.

Wild mustards such as Sinapis and Hirschfeldia often have hairier, more deeply divided foliage. Do not eat an unidentified cabbage-scented green from beside a road. Examine the adult plant, flowers and pods before making a species determination.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=9040

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Brassica_oleracea

Field mustard — tender raw leaves after winter rain · Brassica rapa

Brassica rapa

Following winter rain, rosettes of light-green leaves appear in California fields. By spring, yellow flowering stems rise above them, often forming broad patches among the grasses. This is field mustard, Brassica rapa, an introduced relative of turnips, Asian leafy cabbages and other cultivated vegetables. Its tender leaves are eaten raw. Identifying an escaped plant correctly, however, is harder than the yellow flowers might suggest: California has many very similar mustards.



Field mustard (Brassica rapa) — photograph of the plant

TeunSpaans · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Field mustard usually develops as a cool-season annual. First, a basal rosette of leaves appears. Lower leaves are comparatively large, with an expanded terminal lobe and smaller side lobes, irregularly or sharply toothed along their margins. The stalk of each leaf can be conspicuous, and the leaf may be slightly hairy.

As the plant grows upward, smaller leaves appear that clasp the flowering stem at their bases.

In spring, an upright, branching stem rises from the rosette. Each flower has four bright-yellow petals in a cross and six stamens. The raceme starts compact and then elongates. After flowering, long cylindrical seedpods develop, often several centimeters in length, with a slender beak at the tip. As the seeds mature, the pod splits along its valves. This helps distinguish it from the dry, non-splitting fruits of some wild radishes.



Field mustard (Brassica rapa) — photograph of the plant

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

Cultivated turnips, which belong to the same species, develop a thick storage root. In escaped field forms, the root is generally much less like a large vegetable. A Californian weed cannot be identified as a turnip merely by the resemblance of its leaves.

WHERE IT GROWS AND HOW COMMON IT IS

The California Invasive Plant Council describes Brassica rapa as a winter annual widely established across the state. It is especially noticeable on disturbed ground, at field edges, in pastures, alongside roads, and near gardens and vineyards.

In the Central Valley, whole patches may turn yellow after a wet winter. The plant tolerates cool conditions and light frost.

Yet an extensive yellow field may be Brassica nigra, Hirschfeldia incana or another mustard. Cal-IPC also notes that cultivated and weedy forms of Brassica rapa cross readily. Botanical characters, not just habitat, must therefore establish the identification.

WHEN EDIBLE PARTS ARE AVAILABLE

In the Sacramento Valley, young leaves appear after the first substantial autumn and winter rains, often from November through February. In watered gardens, another generation may continue growing for longer. Leaves are usually at their softest before the flowering stems begin to elongate.

Yellow flowers appear approximately from February to May. Green pods follow, then dry toward late spring and early summer. In cooler parts of California, the season can shift by several weeks. By the end of the dry summer, green leaves are generally absent from wild plants.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. This is the main recommended part. Brassica rapa includes cultivated leafy forms whose raw edibility is explicitly documented by North Carolina State University Extension. Tender leaves of the weedy field form are related to these vegetables but are generally sharper and coarser. They can be added in small quantities to milder salad greens. Both the species and the cleanliness of the collection site must be established before eating them.

Tender upper leaves at the beginning of flowering. These emerge later than the basal rosette but quickly become fibrous. They should not be gathered unless the species has been identified confidently.

Petals and young pods are useful identifying features here, not separately recommended raw food. Information about edible cultivated forms should not automatically be applied to every escaped population or to other mustard species.

Seeds are not treated as food for large, uncooked servings. Brassica rapa and its relatives contain sulfur-bearing compounds. University of California IPM warns that routinely consuming large amounts of mustard greens can irritate digestion. A little tender greenery is different from a daily diet based solely on mustard.

HOW TO AVOID CONFUSION

In black mustard, Brassica nigra, the mature pods are shorter and often lie close against the raceme axis. Those of Brassica rapa are generally longer; the leaves and flowering structure should be compared as well.

Wild radish, Raphanus sativus, may have cream or pinkish flowers and bears distinctly different fruits. Many other members of the mustard family have nearly identical yellow flowers. Without well-developed leaves and pods, a species cannot be named reliably.

Yellow roadside stands beside treated fields are unsuitable for gathering because of herbicide residues and contaminated soil. An apparent mustard flavor is not a safe identification method: do not taste an unknown plant to decide what it is.

SOURCES

California Invasive Plant Council, Brassica rapa: https://www.cal-ipc.org/plants/profile/brassica-rapa-profile/

University of California IPM, Mustards: https://ipm.ucanr.edu/weeds-identification-gallery/mustards/

North Carolina State University Extension, turnip group: https://plants.ces.ncsu.edu/plants/brassica-rapa-rapifera-group/

North Carolina State University Extension, pak choi group: https://plants.ces.ncsu.edu/plants/brassica-rapa-chinensis-group/common-name/pak-choi/

USDA identification tools, Brassica rapa: https://idtools.org/id/weed-tool/key/grapeseedkey/media/html/fact_sheets/Bra-rap.html

American sea rocket — peppery fleshy leaves on ocean sand · Cakile edentula

Cakile edentula

Just above the surf line, low, succulent green plants sometimes grow directly from dry sand. They have small white or pale pink four-petaled flowers, followed by unusually jointed fruits. This is American sea rocket, a plant introduced to the Pacific coast. Its young leaves and tender shoots have a sharp, mustard-like flavor and can be eaten without heating.



American sea rocket (Cakile edentula) — photograph of the plant

Ixitixel · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This branching annual herb is usually 15–50 centimeters tall and may spread close to the sand. The stems are rather thick and succulent. Leaves are alternate, fleshy, oblong or lobed, with margins that are often only weakly toothed or nearly entire; their color is pale or bluish green.

The small flowers are white, pale pink or light lilac, each with four petals, in short, open clusters. After flowering, a short, two-part pod develops. As the fruit ripens, its upper segment separates. Its relatively blunt tip and the shape of both fruit segments are important for distinguishing Cakile species.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Cakile edentula as nonnative in California, occurring on ocean beaches and in sandy dune plant communities. It has been observed along parts of the northern and central coast, but its distribution is discontinuous. Many beaches support the closely related European sea rocket, Cakile maritima, instead.



American sea rocket (Cakile edentula) — photograph of the plant

John Tann from Sydney, Australia · CC BY 2.0 · Wikimedia Commons

There are no naturally occurring beach populations on the floor of the Sacramento Valley or in its foothills. Plants from polluted surf zones, or places where large numbers of birds or animals congregate, should not be gathered for raw food. Beach conservation rules may also prohibit picking or disturbing vegetation.

WHEN EDIBLE PARTS ARE AVAILABLE

This annual grows from seed when the sand provides sufficient moisture, with tender leaves and shoots appearing during the growing season. The species reference at Plants For A Future describes flowering from June through August and seed ripening from August through September in a temperate climate.

These dates are not an exact calendar for every California beach. Coastal fog, rainfall, temperature and local exposure can shift development. The most tender edible leaves are found while the plant is young, before the stems and two-part pods become firm and mature.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender ends of stems. Plants For A Future explicitly confirms both as edible raw for Cakile edentula. The young leaves are used in salads, and the flavor has been compared with horseradish. Finely chop a small quantity into milder greens rather than treating the plant as a bulk vegetable. Saltiness and sharpness vary with habitat and plant age.

The root is described in sources as dried and ground before being mixed with flour for baking; it is therefore not part of a diet without fire. Mature fruits and seeds are also not established as the confirmed raw food parts in this article.

Only correctly identified young vegetation from clean, legally accessible ground is suitable.

HOW TO AVOID CONFUSION

European sea rocket, Cakile maritima, is described separately in this atlas. Its leaves are often more distinctly lobed, while the shape and dimensions of the mature fruit segments differ. Leaf form varies widely within both species, however, so the mature fruit and a botanical key are more dependable than a green leaf alone.

Other coastal mustards also have four-petaled pale flowers, but lack the same characteristic two-part pods. Do not disturb plants on protected dunes where removing vegetation is forbidden.

SOURCES

Calflora, Cakile edentula: https://www.calflora.org/app/taxon?crn=1232

Plants For A Future, edible parts and flowering season: https://pfaf.org/USER/Plant.aspx?LatinName=Cakile+edentula

Calflora species directory: https://www.calflora.org/species/sci-C.html

European sea rocket — spicy greens on a sandy ocean beach · Cakile maritima

Cakile maritima

Above the usual high-tide line on California's sandy beaches, spreading green plants with fleshy leaves sometimes grow directly in the sand. Small pale flowers with four petals open between the leaves, followed by unusual succulent fruits divided into two segments. This is Cakile maritima, European sea rocket, an introduced species of coastal dunes.



European sea rocket (Cakile maritima) — photograph of the plant

Carsten Niehaus (Lumbar) · CC BY-SA 3.0 · Wikimedia Commons

Tender leaves, buds and green immature fruits are known as peppery foods that can be eaten raw. Coastal sand, salt spray, water pollution and rules protecting dunes, however, demand just as much attention as botanical identification.

HOW TO IDENTIFY IT

This is an annual with low, branching stems that spread across the sand or rise slightly above it. The leaves are somewhat thick, succulent and bluish green, with irregular large teeth or deep lobes. Lower leaves are usually larger than those farther up the branches.

It does not resemble an ordinary thin-leaved field mustard. The dense, water-storing leaf tissue helps it withstand salt spray and dry sand.



European sea rocket (Cakile maritima) — photograph of the plant

Janke · CC BY-SA 2.5 · Wikimedia Commons

Small flowers appear toward the branch tips. Each has four whitish, pinkish or pale-lilac petals. After flowering, a characteristic two-part fruit develops. The lower segment remains attached to the plant, while the upper part breaks away more readily and may be carried by water. At maturity, both segments become hard and corky.

For reliable identification, look at both the leaves and the mature, segmented seed-bearing fruit.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Cakile maritima across a substantial part of the California coast, particularly in San Diego, Los Angeles, Santa Barbara, Monterey, San Mateo and Marin counties. It occurs on sandy beaches, dunes and disturbed coastal ground.

It is not a natural member of the Sacramento Valley's vegetation; finding it far inland in a river forest without coastal conditions would be unusual.

In some dune communities, this introduced plant displaces other beach species. An extensive green patch on the sand is not permission to harvest it. Restored dunes often prohibit even leaving marked trails.

WHEN EDIBLE PARTS ARE AVAILABLE

After seasonal rains on the coast, seedlings emerge from the sand and develop new growth. During cool weather, the succulent leaves are at their most tender.

Flowering can begin in spring and continue into summer; the exact timing depends on fog, moisture in the sand and air temperature. Small green, two-part fruits develop after the flowers. While young, they are soft and quite unlike the dry, corky pods produced at the end of the season.

On dry exposed dunes, some plants complete their life cycle during summer, while plants on moister sand may still be flowering.

WHAT CAN BE EATEN WITHOUT COOKING

Very young leaves. Plants For A Future confirms raw use of Cakile maritima and notes its pronounced bitterness and pungency. Small amounts can be added to milder salad leaves. A mature, fleshy leaf may be too strongly flavored for pleasant eating.

Tender shoot tips, flower buds and green immature fruits. The species reference also includes these among raw edible parts. They have a distinctly peppery and slightly salty flavor and serve as small seasonal additions rather than bulky vegetables. As the stems age they become fibrous, and the fruits turn hard and unsuitable for this use.

Seeds and roots are not recommended here as separate uncooked food. Other coastal species resemble sea rocket, and different plant parts may require different methods of preparation.

Do not collect from sand contaminated by rubbish, petroleum products, polluted runoff or animal waste.

HOW TO AVOID CONFUSION

American sea rocket, Cakile edentula, also occurs on the Pacific coast and is described in a separate article. Its leaves and fruits differ in form, but individual leaves vary so much that the two species are hard to distinguish from a single succulent leaf. It is better to examine the flowers and the distinctive two-part pods.

Young seedlings of other coastal mustards and unrelated fleshy-leaved plants may also look similar. Do not taste an unknown beach plant as an identification test: salty air and a peppery smell are not reliable species characters.

On many protected dunes, collecting plants or moving sand is forbidden. Observe and photograph plants in such places without disturbing them.

SOURCES

Calflora, Cakile maritima: https://www.calflora.org/app/taxon?crn=1233

Calflora county observations: https://www.calflora.org/app/countytaxon?crn=1233

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=cakile+maritima

Redmaids — pink spring flowers, fresh greens and tiny seeds · Calandrinia menziesii

Calandrinia ciliata

In late winter and early spring, small plants with narrow, succulent leaves appear in sunny grasslands of the Sacramento Valley. Bright pink, sometimes crimson, flowers later open above the foliage. This is redmaids, a California plant whose tender young greens were eaten fresh; its tiny dark seeds can also be consumed without heating.



Redmaids (Calandrinia menziesii) — pink flowers and narrow succulent foliage

Joe Decruyenaere (pixeltoo) · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Redmaids is a low annual herb, usually 10–30 centimeters tall. Several slender green or reddish stems spread from one base. Some shoots lie close to the ground, while others turn upward. Early in the season, a plant may resemble a little rosette of narrow, succulent leaves.

The simple, alternate leaves are relatively narrow, from linear to oblanceolate, generally about 2–8 centimeters long. They are slightly fleshy and smooth, sometimes bearing a few fine hairs at the margins. Each leaf narrows toward the base, resembling a short petiole.

The flowers are comparatively large for such a small plant. They normally have five rounded pink-red petals, sometimes a deeper crimson, with a pale center and visible stamens. They open most fully in good light and may remain closed early in the morning or on cloudy days.



Redmaids (Calandrinia menziesii) — pink flowers and narrow succulent foliage

Stickpen · Public domain · Wikimedia Commons

After flowering, a small, elongated capsule develops. It holds many minute, glossy black seeds, usually around one to two millimeters long. Once the capsule ripens, it splits open and scatters its seeds; a plant whose flowers have already faded may therefore have no seeds left to gather.

WHERE IT GROWS AND HOW COMMON IT IS

This species is native to California and occurs elsewhere in western North America. Within California it grows in open grasslands, foothill oak woodland, fields, gardens, vineyards and places where winter moisture remains in the soil.

UC IPM notes that redmaids is particularly abundant in the Sacramento Valley and northern San Joaquin Valley. Around Sacramento it may be seen in open grassy sites after winter rain. It is much less characteristic of the driest deserts and the high eastern slopes of the Sierra Nevada.

Its scientific name requires care. Older ethnobotanical studies and weed references often called it Calandrinia ciliata; the modern Jepson flora of California uses Calandrinia menziesii for the California species discussed here. Both names in the cited California references concern this food plant, but photographs of an unrelated Calandrinia species should not be substituted.

WHEN EDIBLE PARTS ARE AVAILABLE

The first young leaves and stems grow during the cool, moist season, from winter into early spring. At low elevations in California, tender greens can be available roughly January–April, depending strongly on rainfall.

Flowers generally appear February–May. In cooler foothills this may occur later than on sunny valley floors. Seed capsules follow the flowers, and the small seeds ripen during spring and early summer, not all at once.

When sustained heat arrives and the soil dries, the aboveground plant quickly dies back. Unlike an evergreen shrub, redmaids does not supply fresh greens for all twelve months.

WHAT CAN BE EATEN WITHOUT COOKING

Tender young leaves and shoots. They were eaten raw. The USDA NRCS plant guide for redmaids quotes a specific observation by Sparkman from 1908: the Luiseño ate the tender young greens fresh. This concerns a method without cooking, unlike the seed-roasting methods found in other historical accounts. The taste is described as somewhat sharp, reminiscent of arugula. The short season for these greens begins well before the seeds mature.

Ripe black seeds. These seeds are extremely small but contain oil. Plants For A Future specifically lists raw consumption and grinding as possible methods. To gather a supply, separate the tiny mature seeds from dry capsules and remove fragments of the plant. Historical California accounts also describe other processing methods, but only methods without heat are considered here.

The USDA NRCS guide cautions that redmaids greens contain oxalic acid, as spinach does, and should be consumed in moderation. Since the greens are not cooked here, boiling to reduce oxalates is not an option; they should not be recommended in large portions. The pink flowers are helpful identification clues, but no separate reliable species-specific confirmation of raw flower consumption is included in these sources.

HOW TO AVOID CONFUSION

Look for the combination of narrow, slightly fleshy leaves, five pink-red petals and a small capsule filled with glossy black seeds. Some Clarkia species have four petals rather than five. Geranium species commonly have much more deeply divided leaves and elongated, beak-like fruits. Do not identify a young, nonflowering plant solely by the reddish color of its stem.

Modern California references generally use Calandrinia menziesii for redmaids, while older publications and UC IPM may retain Calandrinia ciliata. Examine the leaves, pink five-petaled flower and seed capsule together. An image or description of another Calandrinia species cannot establish the identity of this one.

SOURCES

UC IPM, Redmaids, distribution and season: https://ipm.ucanr.edu/weeds-identification-gallery/redmaids/

Calflora, modern name: https://www.calflora.org/app/taxon?crn=13205

USDA NRCS, Fringed Redmaids Plant Guide, Luiseño food use: https://plants.usda.gov/DocumentLibrary/plantguide/pdf/cs_caci2.pdf

Plants For A Future, Calandrinia ciliata, raw leaves, shoots and seeds: https://pfaf.org/user/Plant.aspx?LatinName=Calandrinia+ciliata

UC Irvine Natural History, flower and seed characters: https://nathistoc.bio.uci.edu/Plants%20of%20Upper%20Newport%20Bay%20(Robert%20De%20Ruff)/Portulacaceae/Calandrinia%20ciliata.htm

Field marigold — small golden flower heads and peppery young greens · Calendula arvensis

Calendula arvensis

After rain, a short, branching herb with soft, elongated leaves may appear on a grassy slope. In spring, small golden-yellow flower heads open above it, resembling miniature pot marigolds. This is field marigold, a Mediterranean species naturalized in parts of California. Its young leaves and very tender shoots have confirmed use as uncooked food. Whole raw flower heads, however, are not recommended here without separate species-specific evidence.



Field marigold (Calendula arvensis) — small yellow-orange flower heads

Nick Savvopoulos · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual herb usually 10–30 centimeters tall, though it can grow taller in fertile soil. Its green stems branch freely and may be slightly hairy or sticky. Leaves are alternate, narrowly oblong or lance-shaped, with entire or faintly toothed margins and sometimes fine hairs.

Each branch tip bears a flower head generally about 2–4 centimeters across. Bright yellow or yellow-orange ray florets surround small tubular florets at the center. After flowering, achenes of several shapes develop, including strongly curved ones resembling little sickles or claws. The plant has a noticeable herbal smell.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Calendula arvensis as nonnative and reports hundreds of observations across California, particularly in coastal and central counties. It grows in disturbed grasslands, near old garden plantings, in meadows and by roads.

Occasional occurrences are possible in the Sacramento Valley, but it should not be described as a universally common native golden daisy. It can spread with disturbed soil. Road verges and chemically treated lawns are inappropriate places to collect raw greens.

WHEN EDIBLE PARTS ARE AVAILABLE

Soft new leaves grow after autumn and winter rains. In lowland California, winter and spring are usually the best times for tender foliage; in cooler places the season may extend into early summer.

Flowering can last from early spring into summer and may recur in autumn where moisture is available. As numerous dry, curved seeds develop, the shoots become coarse. Fresh, soft growth is preferable to wilted leaves on an old flower stalk.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender shoots. Plants For A Future explicitly confirms their raw use. They have a mildly spicy, sometimes bitter flavor, so a few young leaves, finely chopped, are best mixed into a cold salad. Very soft shoot tips are more useful than old stems.

The species reference describes flower heads as pickled, not unequivocally as a food eaten raw, so they are excluded here. The culinary methods used for cultivated Calendula officinalis, discussed separately, must not simply be transferred to field marigold. Seeds and roots are not included as uncooked foods.

HOW TO AVOID CONFUSION

Calendula officinalis normally has substantially larger flower heads with more conspicuous ornamental ray florets. Field marigold is shorter and develops numerous smaller heads.

Some native yellow-flowered members of the daisy family look similar, but differ in leaves, fruits and flower-head structure. The distinctly curved achenes and soft leaves are useful distinguishing characters. A yellow composite flower does not establish edibility; some members of the family can cause allergies or irritation.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=1252

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Calendula_arvensis

Wikimedia Commons, species photograph: https://commons.wikimedia.org/wiki/File:Calendula_arvensis_image.JPG

Pot marigold — fresh orange ray florets at garden edges · Calendula officinalis

Calendula officinalis

In winter and spring, low green plants with broad orange or yellow flower heads can be seen near homes and old gardens. These are commonly called pot marigolds. In a sunny spot they may bloom for a long time, occasionally self-sowing beyond their original planting. The bright ray florets can be eaten fresh, adding color and a slightly spicy bitterness to cold dishes.



Pot marigold (Calendula officinalis) — orange and yellow flower heads

Kmtextor · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual herb is generally 20–60 centimeters tall, with branching stems that may feel slightly sticky or hairy. Its simple, alternate leaves range from oblong to lance-shaped. They are soft, with entire margins or very small teeth. Lower leaves may narrow toward a short stalk, while higher leaves are almost sessile.

The flower heads are large, commonly 4–7 centimeters across and sometimes larger in cultivated varieties. Many orange or yellow ray florets grow around the edge, with tubular florets at the center. Mature achenes have unusual curved shapes, sometimes almost hook-like, resembling small claws.

WHERE IT GROWS AND HOW COMMON IT IS

Calendula officinalis is not native to California. Calflora records some naturalized plants, but the species is much more frequently encountered in gardens and around houses; independent wild observations are relatively few.



Pot marigold (Calendula officinalis) — orange and yellow flower heads

WWELNUR · CC BY 4.0 · Wikimedia Commons

In the Sacramento Valley, it grows when cool-season moisture is available and often stops blooming during intense summer heat. Flowers in gardens, lawns and residential landscaping are not automatically safe to eat: chemical treatments and the owner's permission both matter.

WHEN EDIBLE PARTS ARE AVAILABLE

In a mild winter, pot marigold may flower after autumn rains, particularly in maintained garden beds. Its principal flowering period is usually the cool spring. Where summer is mild, flowers may continue much longer, and blooming can resume in autumn after a spell of heat.

Choose fresh, newly opened heads for food, not those that are wilted or damaged by insects. Each individual flower head remains fresh only briefly.

WHAT CAN BE EATEN WITHOUT COOKING

Ray florets from the flower head. UC Master Gardeners of Sacramento County explicitly states that calendula petals are eaten in salads. The bright orange or yellow ray florets are separated from the outer edge of the head and used raw as a small addition to fresh greens. Their flavor is mildly bitter and spicy.

Young leaves. The same source separately notes that leaves can be eaten raw or cooked, while warning that they may be bitter. For uncooked food, use only a few soft, tender young leaves.

Tough stems, roots and mature achenes are not included in the diet.

HOW TO AVOID CONFUSION

Pot marigold can be confused with ornamental French and African marigolds, Tagetes species, whose foliage is often pinnately divided and has a different, sharper scent. Some native yellow composites have smaller flower heads and narrower leaves.

Calendula has simple oblong leaves, large orange flower heads and strongly curved mature achenes. Do not gather flowers from an unidentified ornamental plant: some species can irritate the skin, and garden plantings may be treated with pesticides.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=1253

UC Master Gardeners of Sacramento County, edible herbs: https://www.ucanr.edu/site/uc-master-gardeners-sacramento-county/grow-herbs

Wikimedia Commons, flower photograph: https://commons.wikimedia.org/wiki/File:Calendula_flower_orange-yellow.jpg

Shepherd's purse — peppery greens and tiny heart-shaped pods · Capsella bursa-pastoris

Capsella bursa-pastoris

In spring, slender stems bearing rows of tiny green hearts appear in disturbed soil between cultivated plants. Below them, almost at ground level, is a rosette of deeply divided leaves. Shepherd's purse is among the familiar annual weeds of California's disturbed lands. Its young greens and flowering shoots have a peppery note, while the distinctive fruits make the plant much easier to recognize than its leaves alone.



Shepherd's purse (Capsella bursa-pastoris) — white flowers and heart-shaped pods

Eike Wulfmeyer · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a small annual herb in the mustard family, most often 15–50 centimeters tall, occasionally taller in moist conditions. It begins as a flat rosette of elongated leaves. Their margins vary greatly: they may be almost entire, toothed or deeply cut into side lobes. Fine hairs may cover the green surfaces. Even leaves belonging to the same rosette can differ in the extent of their division.

When flowering starts, a thin, upright, sometimes branching stem rises from the center. It carries a few smaller, narrower leaves whose bases partly clasp the stem. Flowers are tiny, with four white petals, arranged in a loose terminal raceme.

Below the flowers, flat fruits develop on individual thin stalks. They are triangular, often with a notch in the upper edge, giving each the appearance of a heart or a tiny purse. Numerous extremely small seeds occur inside each fruit. The plant has a taproot, but its main food value in this account is the aboveground greenery.



Shepherd's purse (Capsella bursa-pastoris) — white flowers and heart-shaped pods

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Shepherd's purse was introduced from Eurasia and is now common throughout California, including the Central Valley. UC IPM records it in agricultural fields, gardens, vineyards, nurseries, lawns and other disturbed places, from lowlands to approximately 2,300 meters in elevation.

Calflora includes observations from Sacramento, Yolo, Placer and many other counties. It is most conspicuous during cool, wet months, when exposed soil remains moist. It may be found almost year-round in cool coastal areas, while summer greenery often disappears in the dry interior.

A common species does not make every collection site safe: crops and field margins may have been treated with pesticides.

WHEN EDIBLE PARTS ARE AVAILABLE

November–February. Rosettes begin developing after autumn rain. Young leaves are usually most tender before the main flowering period. The precise start depends on rainfall.

February–April. In the Sacramento Valley this is a useful approximate period for active growth, tiny white flowers and fresh flowering shoots. Some plants flower earlier in mild sites.

March–June. Green, flattened fruits occur along the stems; they later turn yellow and split open. At cooler coastal and mountain sites the timetable shifts, while irrigation can permit another generation. Active green growth is less dependable in Central Valley summer heat.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. While the plant is still in a soft rosette, its leaves can be added raw to salads. They taste mildly peppery, like delicate mustard greens. They become coarser and more strongly flavored as they age.

Flowering shoots. Tender upper sections of flowering stems and the tiny flowers themselves are documented as edible raw. They are used fresh in small amounts with young leaves.

Young pods and seeds. The green heart-shaped pods have a peppery flavor; UC IPM specifically notes their use as a salad-green addition. North Carolina State Extension also identifies the seeds as edible, but here they are considered only as a small condiment rather than a major food source. Roots are mentioned as food in other contexts, without sufficiently clear documentation for a practical recommendation here, so they are excluded.

Moderation matters. UC IPM warns that shepherd's purse leaves and seeds contain glucosinolates, which can irritate the digestive system in large amounts. This is not a suitable large-volume daily replacement for lettuce.

HOW TO AVOID CONFUSION

A young shepherd's purse rosette without flowers can resemble dandelions and other mustard-family seedlings. It is preferable to see the plant's complete set of characteristics before identifying it.

Hairy bittercress, Cardamine hirsuta, also has four white petals, but its compound leaves have small rounded leaflets, and it bears long, narrow pods rather than flat triangular ones. Field pennycress, Thlaspi arvense, has nearly circular, broadly winged fruits resembling little coins. The tiny white flowers alone are not a reliable distinguishing feature.

Do not treat greens from herbicide-treated fields, polluted roadsides or drainage areas as suitable food. Clean surroundings and certain identification are as important as the harvest season.

SOURCES

UC IPM, Shepherd's-purse: https://ipm.ucanr.edu/weeds-identification-gallery/shepherds-purse/

North Carolina State University Extension: https://plants.ces.ncsu.edu/plants/capsella-bursa-pastoris/common-name/shepherds-purse/

Calflora, county observations: https://www.calflora.org/app/countytaxon?crn=1472

Cornell University, identification: https://cals.cornell.edu/weed-science/weed-profiles/shepherds-purse

California milkmaids — white spring blossoms and peppery oak-woodland leaves · Cardamine californica

Cardamine californica

In early spring, little white or faintly pink, four-petaled flowers appear among fallen oak leaves on shady slopes. Thin stems and soft green leaves can be seen below the flowers. This is California milkmaids, a native bittercress. Its young leaves can be eaten, although they have a distinctly peppery flavor that may be somewhat bitter.



California milkmaids (Cardamine californica) — spring white flowers and green leaves

Eugene Zelenko · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a perennial herb that becomes dormant during summer, commonly 15–40 centimeters tall. It grows from a small underground rhizome. The first basal leaves may be rounded or heart-shaped and often lie close to the ground.

Later a flowering stem rises, carrying one or more compound stem leaves divided into three to five oval or narrow lobes. Flowers grow in loose racemes. Each has four white, pale pink or pink petals, about one centimeter long, and several shorter sepals.

After flowering, long narrow pods develop. As they dry, they open and scatter seeds. The soft leaves are smooth, without spines.



California milkmaids (Cardamine californica) — spring white flowers and green leaves

Joe Decruyenaere (pixeltoo) · CC BY-SA 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records thousands of California observations of Cardamine californica. It grows in shady oak woodland, mixed evergreen forest, damp slopes, among coastal redwoods and along forest margins.

It is also recorded in Placer and El Dorado counties. The species is far less common in the hottest, lowest portion of the Sacramento Valley. It is most noticeable after winter rains, while the soil remains cool and damp.

Do not pull up the rhizome when gathering leaves: doing so prevents that part of the perennial clump from recovering.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves appear in late autumn or winter after rainfall. The main flowering season in California is January–May, with later development in colder sites.

Tender leaves are best gathered before all the flowers have opened, while the foliage remains soft. After seedpods develop and summer drought begins, the aboveground parts generally disappear until the next winter.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. University of California Agriculture and Natural Resources explicitly describes the leaves as edible, with a rather bitter, horseradish-like flavor. Use only small amounts, chopped finely into a cold mixture of greens; large servings are not especially useful.

Small underground tuberlets. A specialized North American Rock Garden Society publication separately describes their raw use in salads. They are tiny, however, and digging them up destroys part of the perennial plant. In practice, it is better to rely on leaves.

Flowers and mature pods have not been established by sufficiently definite, separate evidence as raw foods for this species, so they are not included in the food list.

HOW TO AVOID CONFUSION

Cardamine hirsuta and C. oligosperma, described elsewhere in this atlas, usually look like small annual members of the mustard family, with differently structured rosettes and many small leaflets.

California milkmaids form seasonal perennial patches, with larger white-pink flowers and conspicuous divided stem leaves. Some other early-spring flowers have similar four-petaled blossoms but do not produce long narrow pods.

Do not taste an unknown peppery green as a method of identification.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=1479

University of California Agriculture and Natural Resources: https://ucanr.edu/blog/coastal-gardener/article/cardamine-edible-not-so-tasty

North American Rock Garden Society: https://www.nargs.org/sites/default/files/free-rgq-downloads/VOL_62_NO_3.pdf

Wavy bittercress — peppery young leaves on damp ground · Cardamine flexuosa

Cardamine flexuosa

On damp, loose soil beneath shady trees, a small rosette of tender divided leaves may appear, followed by a slender stem with tiny white flowers. A closer look reveals long, narrow seedpods and a somewhat zigzagging flowering stem. This is wavy bittercress, a mustard-family herb that is relatively uncommon in California. Its young leaves have documented raw food use.



Wavy bittercress (Cardamine flexuosa) — divided leaves and tiny white flowers

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual, sometimes biennial herb, usually 10–40 centimeters tall, with a comparatively thin, soft stem and a basal rosette.

The leaves are pinnately divided. Small rounded or egg-shaped leaflets are arranged along the central axis, with the terminal leaflet often noticeably larger. Leaves on the flowering shoots are smaller and more widely spaced.

The stem may be slightly flexuous; a few scattered hairs are sometimes present. Flowers are tiny, with four white petals in a cross and yellowish stamens.



Wavy bittercress (Cardamine flexuosa) — divided leaves and tiny white flowers

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

The fruits are long, narrow pods pointing upward or slightly outward. Mature pods may open suddenly, twisting their valves and dispersing the seeds.

WHERE IT GROWS AND HOW COMMON IT IS

This species is widespread in Eurasia. In California it is regarded as introduced and, according to botanical observations, is significantly less common than the widespread Cardamine hirsuta.

It occurs in cool, damp places: river valleys, moist urban gardens and disturbed forest margins. It would therefore be inaccurate to describe it as an ordinary salad green growing throughout California.

The cleanliness of the site matters particularly for such a low herb. Streamwater running off roads, vegetable plots or livestock pastures can carry contaminants onto leaves that are close to the soil.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes most often emerge after winter rains, while moist soil is still cool. At low elevations, suitable tender leaves may be available in winter and early spring.

Later, slender flowering stems develop, white flowers open, and the pods elongate. In cool, shaded sites the plant may continue growing longer than on a dry, exposed plain.

The most pleasant leaves for raw food are young ones, before the stem grows tall and coarse.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future records that Cardamine flexuosa leaves can be eaten raw. They have a characteristically mustard-like, mildly peppery taste, and a few small leaves can be mixed with other fresh greens.

Wilted leaves and coarse stems are excluded. Although some references discuss roots and other parts, this account restricts practical food use in California to young leaves only.

Gather from clean ground that is not flooded by polluted runoff. Thorough washing does not automatically make vegetables exposed to contaminated water safe to eat raw.

HOW TO AVOID CONFUSION

Cardamine hirsuta also forms a small rosette and can eject seeds explosively from its pods. Cardamine oligosperma likewise has pinnate leaves but differs in leaflet form, hairiness and the proportions of its flowers and fruits.

Other little mustard-family plants also bear similar white flowers. Examine the leaves along the stem, fruit shape and distribution of hairs. Identifying a plant by its mustard taste is unsafe.

Without flowers and mature pods, a confident species-level identification may be impossible.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=8509

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Cardamine+flexuosa

Wikimedia Commons, species photograph: https://commons.wikimedia.org/wiki/File:Cardamine_flexuosa_sl8.jpg

Hairy bittercress — peppery winter rosettes and tiny white flowers · Cardamine hirsuta

Cardamine hirsuta

When winter rains bring moisture back to California gardens, little green rosettes appear in loose soil and along the edges of paths. Thin flowering stems rise from their centers, bearing tiny white blossoms. This is hairy bittercress, a small member of the mustard family whose tender leaves have a mild peppery flavor. Even when the plant is fully grown, most of its foliage remains close to the ground.



Hairy bittercress (Cardamine hirsuta) — basal rosette and tiny white flowers

SB Johnny · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Hairy bittercress is an annual herb, usually around 8–25 centimeters tall. At its base is a rosette of compound leaves. Each leaf consists of several pairs of small, rounded or kidney-shaped leaflets and one larger terminal leaflet. Their margins are slightly wavy or shallowly toothed.

A few short hairs may grow on the leaves and stems, although the plant can look smooth from a distance.

The slender, upright flowering stalk bears only a few small leaves. At its tip, white flowers open, each with four petals arranged in a cross.



Hairy bittercress (Cardamine hirsuta) — basal rosette and tiny white flowers

Christian Hummert (Ixitixel) · CC BY 2.5 · Wikimedia Commons

They are followed by straight, narrow seedpods approximately 2–3 centimeters long. When they ripen, their valves spring open, scattering the seeds. This explosive release is a distinctive feature late in the plant's short growing season.

Below the ground is a small, shallow root system, not a substantial edible storage root.

WHERE IT GROWS AND HOW COMMON IT IS

The species originated in Eurasia and became established in North America, including California. Calflora records it in the state, though this does not mean it is equally abundant everywhere.

Hairy bittercress favors damp, disturbed soil: gardens, plant nurseries, lawn edges, paths and shady places near cultivated plants. Around Sacramento, such sites are more promising after autumn rain or in late winter than during a dry, sun-scorched August.

Irrigated places may support it for a longer season; dry desert landscapes are much less characteristic.

WHEN EDIBLE PARTS ARE AVAILABLE

November–January. In rainy years, seedlings germinate and rosettes begin to produce tender leaves. The start of the season depends strongly on moisture.

February–April. In the mild Central Valley climate, well-developed rosettes, flowering and young leaves are most likely during these months. White flowers and green pods may occur on the same plant.

March–May. At many sites the seedpods dry and release their seeds. Flowering may be later in cool places, while the life cycle ends sooner on warm, dry ground. In the hot season there may be no living rosettes at all.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. These are the principal food part. They are eaten fresh as a small addition to salad greens. Their flavor is peppery but generally milder than the name bittercress suggests. The tender rosette is most convenient before the flowering stems elongate. Individual leaflets can be picked by hand and mixed with other uncooked greens.

Flowers. The little white blossoms are also edible and are used fresh, although their firmer structure can make them less pleasant to chew. A species-specific reference explicitly confirms the edibility of both leaves and flowers.

Pods, seeds and roots should not automatically be considered foods to eat raw. Their appearance helps identify the plant, but the evidence used in this article does not warrant turning them into recommendations.

Hairy bittercress is primarily a small seasonal seasoning, not a source of a large quantity of food.

HOW TO AVOID CONFUSION

A related California species, Cardamine oligosperma, closely resembles it in its rosette, white flowers and narrow pods. UC IPM compares the two species and notes differences in the number and form of their leaflets. Identifying either from one small leaf alone is not reliable.

Shepherd's purse, Capsella bursa-pastoris, also has four white petals, but its flowering stalk carries broad, flattened triangular 'hearts' instead of long, narrow pods.

Young rosettes of many other mustard-family plants can look alike. Examine leaves, flowers and fruits of the same plant together before gathering anything.

Do not take greens from herbicide-treated lawns, heavily trafficked roadsides or places exposed to runoff or animal waste. Washing cannot remove every chemical contaminant. Only correctly identified plants from clean sites are suitable for food.

SOURCES

North Carolina State University Extension, identification and edible leaves and flowers: https://plants.ces.ncsu.edu/plants/cardamine-hirsuta/

Calflora, presence in California: https://www.calflora.org/app/taxon?crn=1486

University of California IPM, comparison with C. oligosperma: https://ipm.ucanr.edu/weeds-identification-gallery/little-bittercress/

Little western bittercress — peppery greens beside forest paths · Cardamine oligosperma

Cardamine oligosperma

After rain, small rosettes with several rounded leaflets may appear on damp forest soil. In spring a slender stalk rises above them, carrying white, four-petaled flowers and later narrow seedpods. This is Cardamine oligosperma, little western bittercress, a native member of the mustard family. Its young leaves have documented raw food use. The plant is small, so it provides a little peppery seasoning rather than a substantial supply of greens.



Little western bittercress (Cardamine oligosperma) — divided rosette and white flowers

Walter Siegmund (Wsiegmund) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Early in its growth, the plant forms a low rosette of pinnately compound leaves. Each leaf has several rounded lateral leaflets and a larger terminal one, sometimes resembling a little heart.

Leaves along the stem are smaller and alternate. The stem is slender and not woody. Adult plants usually range from only a few centimeters to around 30 centimeters tall.

Small white flowers have four petals arranged in a cross, often in a relatively short terminal raceme. After pollination, straight, narrow seedpods grow upward or outward. Mature pods may open suddenly and scatter tiny seeds.

These narrow structures are fruits, not four separate long leaves. Even after the petals have fallen, the arrangement of pods and leaves helps identify the species. Fresh leaves are soft; older ones may dry and redden.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Cardamine oligosperma as native to California and lists more than a thousand observations. It grows on damp soil in canyons, oak woodland, open forests and beside trails. Records are particularly numerous in San Mateo, Marin, Butte and Sonoma counties.

There are considerably fewer Sacramento County observations, so it would be misleading to describe it as a universally common green of the urban valley.

Cool, damp depressions and places with some shrub or open-tree shade are better habitats than dry summer hillsides. Small groups may grow together, but prolonged drought makes fresh foliage almost disappear.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes appear after autumn and winter rain, while the soil remains cool. At low elevations, their softest leaves are generally available in winter and early spring.

Small white flowers open later. Several weeks afterward, green seedpods become visible on the stem. In colder mountain areas the whole cycle shifts into late spring.

On mature, fruiting plants, the lower leaves are no longer as tender. Dry pods may remain even after the food season has ended.

It can help to wait until neighboring plants flower before confidently naming the population, while gathering only young greens whose identity is certain.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future specifically lists raw use of the leaves of Cardamine oligosperma. They are mildly peppery, rather like garden cress, and generally not strongly bitter. A few tender leaflets can be torn into small pieces and mixed with other greens; each rosette yields very little.

Check and wash leaves that have been lying close to wet soil, using clean drinking-quality water. Do not gather raw greens from waterlogged land exposed to sewage or animal waste.

Parts not used here. Flowers, mature seeds, roots and stems of some related bittercresses are discussed as foods elsewhere, but the species-specific source here identifies the leaves. These other structures are therefore treated as identification characters, not separate confirmed uncooked foods. A peppery taste does not establish that every part of a plant is edible.

HOW TO AVOID CONFUSION

Cardamine hirsuta, also described in the atlas, is very similar: it has a low rosette and tiny white flowers. The species differ in hairiness, number of stamens and arrangement of fruits. Mature specimens and a botanical key offer the most dependable distinctions, rather than a single round leaflet.

Cardamine californica generally has larger flowers and often grows from an underground rhizome. Shepherd's purse, Capsella bursa-pastoris, produces triangular heart-shaped fruits, not long, narrow pods.

Where multiple mustard-family species grow together, do not collect them indiscriminately and assign all of them the same name. Herbicide-treated roadsides, areas frequented by animals and polluted streams are excluded.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=1493

Calflora county observations: https://www.calflora.org/app/countytaxon?crn=1493

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Cardamine+oligosperma

Italian thistle — peeled tender stems eaten fresh · Carduus pycnocephalus

Carduus pycnocephalus

In early spring, low, dark-green rosettes with very spiny margins appear on open California slopes. Soon the plants send up narrow stems bearing several closely grouped, purple flower heads at their tips. A mature Italian thistle looks completely inedible, but beneath the tough, prickly outer layer of its young stem is a soft core. Eating that core without cooking has been documented in several Mediterranean food traditions.



Italian thistle (Carduus pycnocephalus) — spiny leaves and purple flower heads

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This annual, sometimes biennial, herb belongs to the daisy family. In the rainy season, it forms a basal rosette of deeply cut leaves. Each leaf lobe ends in a stiff, yellowish spine. The leaf surface is green, often lighter beneath.

After the flowering shoot elongates, a plant may reach a meter or more, especially at moist sites.

The stem is upright and branches in its upper part. It bears prominent spiny 'wings' running along its length, formed by extensions of the leaf tissue. Small groups of narrow, oval flower heads usually develop at the branch tips.



Italian thistle (Carduus pycnocephalus) — spiny leaves and purple flower heads

Harry Rose (Macleay Grass Man) · CC BY 2.0 · Wikimedia Commons

Their surrounding bracts end in sharp spines, while the florets themselves are pinkish purple. Ripe achenes bear light, hairy tufts.

At the low-rosette stage, the plant is hard to distinguish from several related thistles. The winged stem, grouping of flower heads and form of their spiny bracts are helpful identification characters. Mature flowering plants can establish which thistle grows in a particular patch.

WHERE IT GROWS AND HOW COMMON IT IS

Italian thistle was introduced from the Mediterranean and spread in California. UC IPM reports it especially from the northern coast, western Sierra Nevada foothills, the San Francisco Bay region, Central Coast and coastal mountain ranges farther south.

It occurs on pastures, grassy hillsides, vacant lots, roadsides and open fence lines. It prefers well-lit places with seasonal moisture.

It is not typical of closed, shady forest, but can form noticeable patches on open foothill grassland. Near pastures and roads, cleanliness and the absence of chemical treatments are particularly important.

WHEN EDIBLE PARTS ARE AVAILABLE

Autumn–winter. New rosettes appear after the first rains. While leaves are short and soft, their spines may be less rigid but still require careful removal.

Spring. The stem begins to elongate while its inner tissues remain tender. Before dense flower heads develop, this is the most useful stage for eating the core raw.

Late spring–summer. Shoots become woody, spines harden and seeds mature. A stiff mature stem is unsuitable for the method described here.

WHAT CAN BE EATEN WITHOUT COOKING

Inner core of a young stem. Sardinian ethnobotanical studies document eating the stems of Carduus pycnocephalus raw. The fresh young stem is stripped of its tough, spiny, fibrous outer covering, leaving a pale tender core. This was eaten immediately without heating as a crisp seasonal food.

Young basal leaves. A study of wild leafy vegetables in Lebanon also documents eating them raw after removing tough and spiny portions. They are less convenient than the tender stem core; sharp spines can remain even on a well-developed rosette.

Mature spiny leaves, flower heads and seeds are not included here as confirmed uncooked foods.

All spines must be completely removed, even from a correctly identified plant. Sharp pieces left behind can injure the mouth or throat.

HOW TO AVOID CONFUSION

Carduus tenuiflorus is a closely related introduced thistle also found in California. Its flower heads are often more numerous and narrow, in dense clusters, but identifying it depends on further characters of the bracts and stems.

Some Cirsium species form similar prickly rosettes, yet differ in the structure of the seed pappus and the bracts around the flower heads.

Species-level identification from a rosette alone is not always reliable. Before gathering young shoots, compare them with mature flowering members of the same population. A food tradition documented for one thistle species does not automatically extend to every spiny weed.

SOURCES

UC IPM, Italian Thistle: https://ipm.ucanr.edu/weeds-identification-gallery/italian-thistle/

Sustainability (2020), thistle gathering: https://www.mdpi.com/2071-1050/12/12/5105

Frontiers in Sustainable Food Systems (2022), wild leafy vegetables in Lebanon: https://doi.org/10.3389/fsufs.2022.991979

California Invasive Plant Council: https://www.cal-ipc.org/plants/profile/carduus-pycnocephalus-profile/

Hottentot fig — yellow coastal flowers and ripe sea-fig fruit · Carpobrotus edulis

Carpobrotus edulis

Huge, dense mats of succulent, three-angled leaves cover some California coastal slopes and edges of old paths. Large bright-yellow flowers open above them in spring, and later in the season oval fruits can be found among the greenery.



Hottentot fig (Carpobrotus edulis) — triangular succulent leaves and yellow flower

Tangopaso · Public domain · Wikimedia Commons

This is Carpobrotus edulis, a sea-fig introduced from South Africa. It has become one of the most conspicuous coastal plants in California and has strongly altered natural dune communities. When the species has been identified correctly, its fully ripe fruits and succulent leaves can be eaten without heat, but beach collection conditions require care.

HOW TO IDENTIFY IT

A perennial, creeping succulent. Its lower stems become woody, while long, fleshy branches root at their nodes and spread over several meters.

The leaves grow in opposite pairs. They are thick, elongated and sharply triangular in cross-section, with pointed tips. Their edges may redden in the sun. They do not resemble the flat blades of ordinary grasses.



Hottentot fig (Carpobrotus edulis) — triangular succulent leaves and yellow flower

Ercé · CC BY-SA 3.0 · Wikimedia Commons

At shoot tips, solitary flowers several centimeters across open, with numerous narrow petal-like parts. Carpobrotus edulis is characterized chiefly by yellow flowers, sometimes turning pinkish with age. The center contains numerous stamens.

After flowering, a fairly large fleshy fruit develops, green and firm at first, later yellowish brown, sometimes reddish, and softer. Remnants of the sepals persist at its tip. Inside a ripe fruit is a small amount of mucilaginous, sweet-and-sour pulp with numerous tiny seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records approximately five thousand observations of Carpobrotus edulis in California, particularly in Marin, Mendocino, Monterey, San Francisco, San Mateo, Los Angeles and San Diego counties.

It was planted to stabilize slopes, then spread beyond cultivation and now carpets some dunes and sea cliffs. Natural stands are uncommon in the Sacramento Valley: this is primarily a plant of the ocean coast.

Even where the plant is abundant, a protected dune is not permission to leave marked trails or dig up plants. Beneath the green surface of a thick mat, old dry woody material often remains; young green shoots spread outwards.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves remain on the plant throughout the year in a mild coastal climate. New succulent growth appears in spring when moisture is sufficient.

Flowering is usually most noticeable in spring and early summer, though some individual flowers may open later depending on the location. Fruits develop after flowering.

On foggy coastal sites, fruit may not fully ripen until late summer or autumn. For uncooked food, the important stage is a fully ripe, soft fruit: young hard fruits are strongly astringent.

During the dry season, leaf margins may redden, but this does not mean the leaves have turned into seasonal fruit.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruits only. Plants For A Future specifically confirms their raw use. The amount of pulp is small, with a sweet-and-sour, slightly salty flavor; unripe fruits are strongly astringent.

A soft ripe fruit can be cut open carefully and its inner portion eaten fresh. Ripe fruits were also dried naturally, but damaged or moldy raw fruit must not be used.

The name sea fig does not mean that these fruits have the same botanical structure as true figs, Ficus carica.

Succulent leaves. The species-specific food reference also confirms their raw use, for example in small amounts mixed into cold greens. They are very fleshy and mucilaginous, with a salty acidity; they are better as an addition to food than as a main vegetable. Coastal succulent greens should not be assumed to contain little salt.

Stems, roots and young astringent fruits are not recommended here.

Do not eat raw leaves or fruits from areas treated with herbicides during invasive-plant control.

HOW TO AVOID CONFUSION

Carpobrotus chilensis may grow nearby, often with smaller pink or purple flowers; the two species can hybridize. Identifying a plant from leaf shape alone, without a flower and mature fruit, is unreliable.

Other ice plants, such as Mesembryanthemum crystallinum, have shimmering bladder cells on their leaves and differ in flower structure and life cycle.

A coastal slope does not establish the edibility of every succulent plant: some ornamentals are inedible. Runoff, pesticides and microplastics may contaminate coastal sites. Choose only clean places where gathering is permitted, and remember that even a beach that looks clean is not necessarily free from pollutants.

SOURCES

Calflora, species account: https://www.calflora.org/app/taxon?crn=1660

Calflora, county distribution: https://www.calflora.org/app/countytaxon?crn=1660

Plants For A Future, edible parts: https://pfaf.org/user/Plant.aspx?LatinName=Carpobrotus+edulis

European hackberry — sweet little drupes on old city trees · Celtis australis

Celtis australis

In California city plantings and beside older properties, a deciduous tree may be seen with fairly smooth gray bark, elongated toothed leaves and tiny round fruits on thin stalks. By autumn the fruits darken to purple-brown or nearly black. This is European hackberry, a nonnative tree occasionally recorded in California outside cultivation. The ripe fruit has a thin layer of sweetish, mealy flesh around a very hard stone; it is this outer flesh, not the stone, that is eaten without cooking.



European hackberry (Celtis australis) — small ripe drupes and toothed leaves

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

European hackberry is normally a deciduous tree about 10–20 meters tall, with a broad crown. The bark is gray and relatively smooth when young, becoming more cracked with age. Its alternate leaves are elongated, with a sharply drawn-out tip, toothed margins and a slightly asymmetrical base. Their upper surfaces are often rough to the touch, and prominent veins are visible beneath.

Small inconspicuous greenish flowers appear in spring together with the young foliage. Round drupes follow on slender, comparatively long stalks. They are usually around one centimeter across, green at first, then brown or dark purple. Each contains one large, very hard stone with only a thin edible layer around it.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Celtis australis as nonnative in California and records only a few dozen observations. It may persist in old urban plantings, parks and places where seedlings have escaped nearby. Once established it can tolerate summer dryness in parts of Central and Southern California, but it is not a widespread native tree of the state's wild forests.



European hackberry (Celtis australis) — small ripe drupes and toothed leaves

Eiku · CC BY-SA 4.0 · Wikimedia Commons

It is not the same species as the native netleaf hackberry, Celtis reticulata, described separately in this atlas. Fruit may be gathered from private property only with permission, and urban trees may have been treated with chemicals.

WHEN EDIBLE PARTS ARE AVAILABLE

New leaves and small greenish flowers appear in spring. Hard green drupes develop over summer, then ripen mainly from late summer into autumn, later at some cooler sites. Unripe green fruits are not the target for gathering.

When ripe, the outer layer becomes slightly sweet and floury, but it remains thin relative to the hard inner stone. On a city street, fruit lying on dirty pavement is not an appropriate source of fresh food.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe outer fruit flesh. Plants For A Future explicitly confirms eating ripe Celtis australis fruits raw. They are relatively dry and mealy, moderately sweet, and sometimes compared with tiny dates. The large hard stone should not be cracked or chewed. The outer flesh can be removed carefully, or a clean ripe fruit may first be softened in cool drinking-quality water to make separating the flesh easier.

A Wikimedia Commons photograph by Eiku illustrates the thin edible pulp surrounding the large woody endocarp. It is a useful visual reference, but not a substitute for identifying the living tree.

Leaves, bark and the seed kernel are not presented here as confirmed raw foods.

HOW TO AVOID CONFUSION

Native Celtis reticulata usually occupies rather different rocky natural habitats and differs in its leaf form, bark and especially its network of veins. Chinese hackberry, Celtis sinensis, is another introduced tree commonly planted in cities; it has its own leaf and fruit characters.

Check asymmetrical, toothed leaves, the leaf venation, fruit stalks and the structure of the drupe together. Several ornamental trees bear small round dark fruits, not all of which have edible flesh. Color alone never establishes the identity or safety of a fruit.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=9787

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Celtis+australis

Wikimedia Commons, fruit and seed photograph: https://commons.wikimedia.org/wiki/File:Celtis_australis_fruit_and_seed.jpg

Netleaf hackberry — sweet tiny fruits on rocky desert slopes · Celtis reticulata

Celtis reticulata

In the dry canyons of eastern and southern California, a small tree sometimes grows with deeply wrinkled bark and leaves marked by an extraordinary mesh of veins. In autumn, little round fruits darken on slender stalks; each offers only a thin layer of sweet flesh. This is Celtis reticulata, netleaf hackberry. Unlike a cultivated mulberry or blackberry, its fruit is a drupe containing one large, hard stone, with very little edible pulp around it.



Netleaf hackberry (Celtis reticulata) — fruit and strongly net-veined leaves

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Netleaf hackberry is deciduous. In dry places it often develops as a low, crooked, multistemmed tree. On favorable land it can grow several meters high or even approach ten meters.

Older trunks have gray-brown, conspicuously uneven bark, covered with bumps and interlacing ridges. Leaves are alternate, relatively small, oval or egg-shaped with an elongated tip. Teeth are often concentrated toward the upper half of the margin.

The leaf base is markedly asymmetric: one side begins a little higher than the other. Three main veins arise near the leaf stalk, with many connecting smaller veins forming the characteristic network.



Netleaf hackberry (Celtis reticulata) — fruit and strongly net-veined leaves

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

In spring, small, inconspicuous greenish flowers appear. Later, little round drupes hang on thin stalks, initially green, then orange-red and finally darker at maturity. One very hard stone occupies most of each fruit's volume.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Celtis reticulata as native to California but reports relatively few observations. Records are concentrated in San Bernardino, Kern, Inyo, San Diego and Riverside counties.

Typical habitats are rocky hillsides, dry canyons, desert foothills, the edges of intermittent streams and some pinyon-juniper woodlands. This is not an ordinary tree of urban Sacramento Valley parks. Reaching its natural range generally requires traveling farther east or south.

Some small groups grow where roots can access a little extra moisture. Birds may consume much of the fruit before the tree loses its leaves.

WHEN EDIBLE PARTS ARE AVAILABLE

New leaves emerge as spring warmth follows winter dormancy. The small flowers appear around April and May, subject to elevation. Green fruit develops in summer and gradually changes color.

The species food reference places seed ripening at about October. In California canyons, fully mature fruit with softened flesh is most likely from late summer into autumn. Green, reddish and dark fruits can occur simultaneously on the same tree.

Leaf fall follows cooler weather, and some dried fruits may persist on branches afterward. Old, shriveled fruit is not necessarily safe if it has become moldy.

WHAT CAN BE EATEN WITHOUT COOKING

Only the completely ripe outer fruit flesh. Plants For A Future explicitly confirms raw consumption of Celtis reticulata fruit. The flesh tastes sweet but is extremely thin, sometimes rather dry. A ripe fruit may be gently squeezed between fingers or lips to separate the soft part from its single large stone. Swallowing the whole stone or cracking it to obtain the kernel is unnecessary and is not recommended: the documented food part is the fruit pulp.

Naturally dried ripe fruits. The species reference also allows drying for winter storage. Without fire, use only mature fruit dried under clean conditions and free of mold. Since so little flesh surrounds each stone, a tree does not provide a large quantity of soft food.

Leaves, flowers, branches and the seed kernel are not recommended as raw food. Avoid fruit covered in road dust or contaminated runoff.

HOW TO AVOID CONFUSION

Chinese hackberry, Celtis sinensis, is commonly planted in California. It is often taller, with different bark and leaves, and has East Asian rather than North American origins.

Celtis occidentalis has generally rougher leaves and a different combination of bark characters. Some hackberries are very similar without flowers and fruit, so examine the strong network of leaf veins, the asymmetrical base, the fruit and the habitat together.

Do not mistake small round fruits of an unrelated red-berried shrub for hackberry: establish that the fruit, leaf and stalk all belong to the same tree.

SOURCES

Calflora, taxon: https://www.calflora.org/app/taxon?crn=1838

Calflora, counties: https://www.calflora.org/app/countytaxon?crn=1838

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Celtis+reticulata

Chinese hackberry — tiny sweet drupes on urban street trees · Celtis sinensis

Celtis sinensis

California cities often plant trees with dense rounded crowns and relatively small, smooth leaves. In autumn, little orange or dark purple balls sometimes lie beneath them, resembling miniature cherries. This is Chinese hackberry, Celtis sinensis, a deciduous tree from East Asia. Its fully ripe fruit can be eaten raw; very little pulp is present, but it is somewhat sweet.



Chinese hackberry (Celtis sinensis) — mature foliage and small round fruits

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

In Sacramento Valley conditions, this is primarily a planted city tree, not a native inhabitant of California's mountains.

HOW TO IDENTIFY IT

Chinese hackberry is a deciduous tree with one or several trunks and a rounded or umbrella-shaped crown, often around 10–20 meters high in urban landscaping.

Its bark is gray and fairly smooth on young trees, sometimes blotchy or marked by scars on older ones. The alternate leaves are relatively small and oval, with pointed tips, three prominent main veins arising near their bases and teeth usually on the upper half of the margin. The leaf base may be slightly asymmetrical.



Chinese hackberry (Celtis sinensis) — mature foliage and small round fruits

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

In spring, small greenish flowers with no conspicuous colorful petals open among the foliage. Tiny round drupes develop from them on thin stalks. They begin green, turn orange-red in autumn and sometimes progress through purple to nearly black.

Each fruit contains one relatively large, hard stone enclosed by a thin layer of sweetish pulp. Leaves turn yellow and fall in autumn, though some fruits may stay on the branches for longer.

WHERE IT GROWS AND HOW COMMON IT IS

California State University, Stanislaus describes Chinese hackberry as an ornamental tree planted on its campus. An archival account from the University of California, Davis likewise records Celtis sinensis planted along UC Davis streets and notes its adaptation to urban conditions.

Calflora includes the species in its California plant listings, but that does not make it native. In the Sacramento Valley it can be encountered in landscaped streets, near universities, parks and older plantings.

In a natural desert canyon, the native Celtis reticulata is more likely. Even fallen fruit beside a city sidewalk is not automatically free to gather: ownership, tree treatments, vehicle pollution and road dust all matter.

WHEN EDIBLE PARTS ARE AVAILABLE

Fresh foliage and small greenish flowers appear in spring. After pollination, tiny fruits grow through summer.

Plants For A Future places seed maturity around October. In California, mature city trees may carry orange or purple ripe drupes in late summer and autumn. Fruits on one tree may differ in color, so the fruit should be fully ripe and its outer layer soft before eating.

Some drupes persist after leaf fall. An old fruit lying on a contaminated pavement can spoil; the fact that the tree still bears fruit does not make the ground beneath it a safe harvest site.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe outer fruit pulp. Plants For A Future explicitly confirms raw use of Celtis sinensis fruit. The fruits are only several millimeters wide and contain one large, hard stone. Their outer layer is thin, mildly sweet and somewhat dry or floury, unlike the juicy flesh of a small plum.

Remove the ripe soft portion without biting or cracking the stone. Collecting a substantial serving would require a very large number of these tiny fruits.

Parts not included. The species reference generally describes eating its leaves after cooking and making hot infusions from them; it does not separately confirm a raw leaf salad, so leaves are not recommended here. Neither the seed kernel, bark nor branches are included.

Only a clean, permitted tree without chemical treatment is a possible source of raw food. Do not use fruits lying under cars, beside busy streets or on sprayed lawns.

HOW TO AVOID CONFUSION

Native western Celtis reticulata has a particularly pronounced network of veins in its leaves and often deeply bumpy bark; its natural habitats are southern dry canyons.

North American Celtis occidentalis differs in leaf form and bark, and is also planted in some landscaped areas.

Chinese hackberry leaves can resemble elm leaves, but elms usually produce winged samaras, not small round drupes with one hard stone. A dark autumn fruit alone cannot identify this tree: examine its foliage, bark, flowers and the planting context.

SOURCES

Calflora species list: https://www.calflora.org/species/sci-C.html

California State University, Stanislaus: https://www.csustan.edu/campus-tree-story-map/chinese-hackberry-celtis-sinensis

University of California, Davis, planting history: https://library.ucdavis.edu/wp-content/uploads/2022/02/Celtis.pdf

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Celtis+sinensis

Western redbud — pink flowers on bare branches and tender green pods · Cercis occidentalis

Cercis occidentalis

In early spring, a small tree may bloom on a dry California foothill while its branches are still nearly bare. Old twigs suddenly become covered in pink-purple flowers. A few weeks later, rounded, heart-shaped leaves unfold, and slender green pods hang where the flowers were. This is Cercis occidentalis, western redbud. A species-specific food reference confirms that its flowers and young, flexible pods can be eaten raw. These brief seasonal stages, rather than mature dry seeds, are the useful parts for food without fire.



Western redbud (Cercis occidentalis) — pink flowers on bare branches

John Comeau · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Western redbud is a deciduous shrub or small tree, often multistemmed and reaching approximately 3–5 meters. Mature bark is gray-brown, and the thin branches divide repeatedly.

Before the leaves unfold, numerous bright, pea-like flowers emerge directly from older wood. They have several differently shaped petals, ranging from pink to purple, arranged in short clusters along the branches.

The leaves develop later. They are nearly round with heart-shaped bases and smooth margins, usually several centimeters across. The stalk attaches where the leaf base forms a deep notch.



Western redbud (Cercis occidentalis) — pink flowers on bare branches

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

After pollination, flat green pods form, like narrow, thin plates with a line of rounded seeds inside. As they mature, the pods turn brown and dry out, often remaining on the branches. The tree is leafy through summer and turns yellow in autumn. Both the flower and the distinctive leaf are useful identification characters.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Cercis occidentalis as native to California, with observations in Sacramento, Placer, Yolo, El Dorado, Butte, Shasta, Tulare and numerous southern counties.

It is characteristic of oak woodland, canyons, the Sierra foothills and the Coast Ranges, on sunny or lightly shaded slopes. In the hot urban lowlands it is often planted as an ornamental, although wild populations occur nearby.

On some foothill slopes its spring bloom is visible from a distance. It does not, however, form dense forest everywhere. Flowers should not be taken from private ornamental plantings or protected trails without permission.

WHEN EDIBLE PARTS ARE AVAILABLE

In warm lower foothills flowering usually begins in March, sometimes in late February after a mild winter, and continues into April. At higher elevations the pink blossoms appear later. Tender petals and young flower clusters are available only for a few weeks.

Young green pods develop afterward, remaining soft in late spring and sometimes early summer. As the seeds enlarge, the pod walls stiffen and gradually turn brown.

Mature dry pods may remain on the branches until autumn and winter, but they are not equivalent to the edible young, flexible pods.

WHAT CAN BE EATEN WITHOUT COOKING

Pink-purple flowers. Plants For A Future confirms raw use of western redbud flowers. They have a mild sweet-and-sour taste, sometimes faintly reminiscent of peas. Fresh flowers can be added to uncooked greens. Do not strip a small tree of all its flowers: they are used by insects and would otherwise develop into fruit.

Young, green, flexible pods. The same species reference separately confirms eating them raw while they are still bright green and bend easily. Their flavor is mildly pea-like, sometimes slightly astringent. These are genuine legume pods, but their documented use must not be transferred automatically to mature dry seeds. Brown mature pods become tougher, and the seeds are not recommended here as raw food.

Leaves, bark, roots and dry seeds are excluded from the food list. Flowers from chemically treated ornamental trees may contain unwanted residues.

HOW TO AVOID CONFUSION

Cultivated eastern redbud, Cercis canadensis, also has heart-shaped leaves and pink flowers. Some ornamental forms differ only subtly in size and color. Native western redbud often has somewhat rounder, thicker leaves and is better adapted to summer drought.

Other pink-flowering trees, such as Prunus species, have a different flower structure and do not form flat bean pods. For identification, observe the legume pods and the leaves together. Do not assume the raw flowers or pods of another legume are edible simply because they look similar. Avoid collecting alongside busy urban roads.

SOURCES

Calflora species: https://www.calflora.org/app/taxon?crn=1877

Calflora county observations: https://www.calflora.org/app/countytaxon?crn=1877

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Cercis+occidentalis

Fireweed — tender early shoots following forest disturbance · Chamerion angustifolium

Chamerion angustifolium

Where a forest fire, logging operation or avalanche has opened the woodland, tall columns of pink-purple flowers may spread across the ground in summer. This is fireweed, a perennial herb of northern and mountain forests. Its young spring shoots are much softer than its mature stems, while numerous flowers open along the upper portion in summer. Only particular tender parts, not the entire tall stem, are suitable for uncooked food.



Fireweed (Chamerion angustifolium) — purple-pink summer flower spikes

Alpsdake · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial herb grows from long underground rhizomes and often reaches one to two meters in height. Stems are upright, mostly unbranched, with alternate, narrow-lanceolate leaves several centimeters long or longer. Their pale central veins are conspicuous.

An elongated raceme of many flowers develops near the top of the stem. Each flower has four broad pink or purple petals, four sepals, long stamens and a stigma with four lobes.

After flowering, slender, long capsules form. When ripe, they split and release numerous seeds attached to long, silky hairs.



Fireweed (Chamerion angustifolium) — purple-pink summer flower spikes

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Chamerion angustifolium as native to California and records more than one thousand observations.

It grows in cool northern conifer forests, in the Sierra Nevada, in moist clearings, beside mountain streams and on land disturbed by fires. It can be especially abundant after canopy cover is removed while enough soil moisture remains.

It is not an ordinary food plant of Sacramento's hot valley floor. Do not collect greens on recent fire sites near the ash of treated buildings or other potentially contaminated ground.

WHEN EDIBLE PARTS ARE AVAILABLE

Young shoots emerge as snow melts and spring warmth returns to the soil. When they are only a few centimeters high, the leaves and shoot tips are far softer than later growth.

By June and July, plants elongate and develop flower racemes. On higher slopes, flowering may continue through August and September. After the capsules ripen, foliage turns yellow, while the underground rhizomes survive until the next growing season.

For raw food, the relevant period is the brief early stage, not the later flowering season.

WHAT CAN BE EATEN WITHOUT COOKING

Very young leaves and shoot tips. Plants For A Future explicitly documents their raw use but cautions that oxalates may contribute bitterness or irritation to the mouth and mucous membranes. Only very small, soft tips, taken in modest quantities, should be considered; stop if they cause burning or discomfort.

Tender inner pith of very young stems. The same species reference separately confirms its raw use. It can be removed from a stem while the tissue is still soft and has not become woody.

Large mature leaves, tough rhizomes and older stems are not reliable uncooked foods here. The flowers are also listed as edible in the reference, but they often taste soapy or bitter and are not the principal food part recommended in this article.

HOW TO AVOID CONFUSION

Fireweed has characteristic elongated flower racemes with four-petaled pink blooms. Many Epilobium species have smaller flowers, sometimes with notched petals, and their inflorescences differ.

Very young shoots without flowers are harder to recognize, especially among other moisture-loving vegetation. A more reliable approach is to observe mature flowering plants at a site and check the new shoots there during the next growing season.

The fact that a plant has sprung up on recently burned land does not establish its identity or suitability for food.

SOURCES

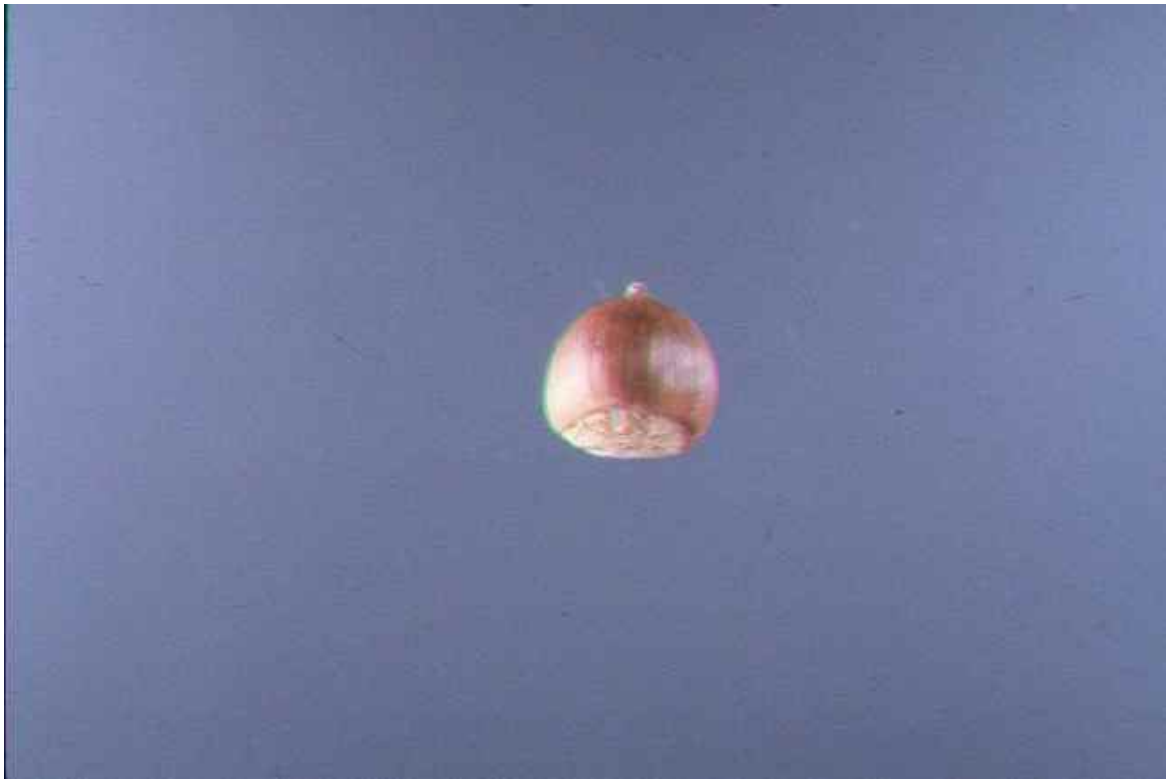
Calflora: https://www.calflora.org/app/taxon?crn=9065

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Chamaenerion+angustifolium

Giant chinquapin — sweet raw nuts inside spiny burs · Chrysolepis chrysophylla

Chrysolepis chrysophylla

Among oaks, redwoods and conifers on forested slopes in Northern and Central California, an evergreen chinquapin grows with dark green leaves. Turn one over and its underside appears densely golden. In autumn, spiny round burs hang on the branches, enclosing small, sweet nuts. This is Chrysolepis chrysophylla, golden or giant chinquapin. Its kernels are confirmed as food that can be eaten without fire. Gathering them requires care: the very sharp spines of the bur can lodge in skin, while the hard shell needs to be opened mechanically.



Giant chinquapin (Chrysolepis chrysophylla) — golden leaf undersides and spiny burs

USDA Forest Service (individual author not named) · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

Giant chinquapin can grow into a tree about 10–20 meters high, or remain a large shrub, particularly on poor rocky soils. Its trunk has gray-brown bark that becomes uneven with age.

The alternate leaves are leathery, narrow-oval to oblong, with entire margins. They are dark green and slightly glossy above, densely covered in golden felt beneath.

Long, slender male catkins appear near shoot tips during the warmer season. Less conspicuous female flowers grow near their bases. After pollination, dense rounded burs develop, covered with numerous sharp, branched spines.



Giant chinquapin (Chrysolepis chrysophylla) — golden leaf undersides and spiny burs

Themodoccypress · CC BY-SA 3.0 · Wikimedia Commons

As the burs turn brown and open, one or more nuts can be found inside. Each has a smooth, hard brown shell; the nut is small, often about one centimeter across, with a pale, mildly sweet kernel.

Even where a population remains shrub-sized, its leaves, catkins and spiny fruit retain the principal characteristics of the species.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Chrysolepis chrysophylla as native to California in redwood forest, closed-cone pine forest, yellow pine forest and chaparral communities.

It is especially characteristic of moist and moderately dry coastal mountain slopes, including the Santa Cruz Mountains, the North Coast and some Sierra Nevada woodlands.

It is not abundant on open lawns of the Sacramento Valley: this species requires suitable forested slopes and soils. Varieties differ in height, so a low shrub does not necessarily represent another species.

On favorable sites some trees produce substantial crops, but squirrels and birds often take many nuts before they fall.

WHEN EDIBLE PARTS ARE AVAILABLE

Catkins appear in summer on the new shoots. Nut burs develop over more than one growing season; Plants For A Future notes that seeds mature after two summers.

Brown, spiny burs are most conspicuous in late summer and autumn. Green burs of different ages and mature brown ones may be present on the same tree at once.

They are not equally suitable for food: a green bur may enclose an immature nut. For raw consumption, choose a fully mature nut with a hard shell that has separated from an opening bur. Fallen nuts quickly become damp and spoiled during rainy autumn weeks.

WHAT CAN BE EATEN WITHOUT COOKING

Fully mature pale kernel. Plants For A Future explicitly confirms eating Chrysolepis chrysophylla seeds raw. The kernel is mild and sweet, somewhat like a hazelnut.

First, separate the nut safely from its spiny bur using thick gloves or an implement. Then mechanically crack the smooth, hard shell and extract the pale inner kernel. No heating is needed. It may be eaten as it is or crushed and mixed with other cold foods.

The spiny bur and the shell are not food.

Gathering and storage. Prefer fully ripe, fallen nuts, without breaking living branches. Discard any kernels that are soft and dark, smell rancid or show mold. In a damp coastal forest, storage without good drying and ventilation is unreliable.

Some food accounts also mention boiling and making flour, but those preparations are not necessary for this use: only the mature raw kernel is included.

Leaves and catkins help identify the species but are not established as raw food in the cited reference.

HOW TO AVOID CONFUSION

Shrub chinquapin, Chrysolepis sempervirens, is usually much lower and grows in more open, higher mountain communities, although it has similar spiny burs.

Cultivated sweet chestnut, Castanea sativa, has much larger, sharply toothed leaves and usually much larger nuts.

Tanoak, Notholithocarpus densiflorus, also has golden hairs under its leaves but produces acorns in cups, not rounded, densely spiny burs.

Correct identification requires the leathery, entire leaves with golden undersides, summer catkins and characteristic burs together. The spines may penetrate thin fabric; do not handle the burs barehanded.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2069

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Chrysolepis+chrysophylla

Wikimedia Commons, species photograph: https://commons.wikimedia.org/wiki/File:Castanopsis_chrysophylla.jpg

Bush chinquapin — sweet raw kernels inside spiny mountain burs · Chrysolepis sempervirens

Chrysolepis sempervirens

On sunny, rocky slopes of the Sierra Nevada, low evergreen shrubs with stiff leaves sometimes grow in dense patches beneath conifers. Near the end of the growing season, little spiny balls appear among the foliage, resembling miniature chestnut burs. This is Chrysolepis sempervirens, bush or Sierra chinquapin.



Bush chinquapin (Chrysolepis sempervirens) — leaves and spiny mountain burs

USDA Forest Service (photographer unnamed) · Public domain · Wikimedia Commons

Beneath its sharp, needle-like spines lie one, sometimes several, small edible nuts. Their kernels can be eaten raw, but extraction requires care: avoid touching the spiny bur with bare skin.

HOW TO IDENTIFY IT

This evergreen, spreading shrub is often a few tens of centimeters to one and a half meters high, though favorable sites can support plants reaching two or three meters.

Older branches are woody and strongly branched, sometimes lying close to the ground. Alternate, leathery leaves are oblong or obovate with entire margins. They are usually green above, but noticeably golden-rusty or yellowish gray underneath because of dense minute hairs.



Bush chinquapin (Chrysolepis sempervirens) — leaves and spiny mountain burs

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

Male catkins bearing many little flowers appear near branch tips in summer, along with less conspicuous female flowers. After pollination a bur develops, covered in numerous stiff, sharp projections.

Inside are usually one, sometimes two or three nuts with smooth hard shells. The bur begins green, then turns brown and splits open. Although the nuts are small, the pale kernels have a sweet, pleasant taste.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Chrysolepis sempervirens as native to California's mountain plant communities and reports close to two thousand observations.

It occurs in the Sierra Nevada, on dry mountain ridges, in open pine and fir forests and sometimes in subalpine vegetation. The USDA Forest Service describes the formation of broad groups on hillsides and ridges.

Around Sacramento it belongs to mountain excursions rather than the city valley floor. The related Chrysolepis chrysophylla is more usual on coastal forested slopes.

A bush chinquapin patch may be locally abundant, yet nut production can still be small because of the short season, the size of the nuts and animals that consume them first.

WHEN EDIBLE PARTS ARE AVAILABLE

In summer, usually July–September, the shrub produces male catkins and less conspicuous female flowers.

According to the USDA Forest Service, the nuts develop over two summers. They mature in the late part of the second summer or early autumn, and the burs open toward mid-autumn.

September–October is therefore especially relevant for practical gathering, subject to elevation and the year. A green spiny bur can contain an immature soft nut that is not ready to be eaten.

As a bur turns brown and splits, the mature nut becomes easier to find. By winter, birds and rodents have already taken most of them.

WHAT CAN BE EATEN WITHOUT COOKING

Fully mature, shelled nut kernel. Plants For A Future explicitly confirms that Chrysolepis sempervirens kernels are eaten raw. They are small and sweet, somewhat like hazelnuts.

To obtain one without fire, first find a completely mature, opening bur. Separate the nut with a tool or thick gloves, then crack the smooth hard shell and remove the pale inner kernel.

Do not eat the sharp bur. A fresh kernel can be eaten on its own or mashed into a cold mixture.

Storing mature nuts. Nuts removed from their burs can be kept for a time in cool, dry conditions, but moisture quickly encourages mold. Discard kernels that show rancidity. For the sake of wildlife and the living shrub, gather only a portion of detached mature nuts and avoid damaging branches.

Leaves, catkins and bark are not included as food. Although botanical accounts describe other uses of the species, the food focus here is only on mature, uncooked kernels.

HOW TO AVOID CONFUSION

Giant chinquapin, Chrysolepis chrysophylla, is more often a tall tree or large shrub with larger leaves and a range strongly associated with coastal and northern forests.

Cultivated sweet chestnut, Castanea sativa, also has a spiny bur, but its leaves are longer with large, sharp teeth, and the nuts are usually much bigger.

Other shrubs may have round, spiny fruits without edible kernels. Do not identify bush chinquapin from the bur alone. Look for stiff leaves with golden undersides, the male catkins and the mature bur together.

Protect hands while collecting, and follow the rules for protected mountain areas.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2072

USDA Forest Service: https://research.fs.usda.gov/feis/species-reviews/chrsem

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Chrysolepis+sempervirens

Virginia Tech Dendrology: https://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=1150

Common chicory — bitter young winter greens and summer blue flowers · Cichorium intybus

Cichorium intybus

In summer, tall, almost leafless stems stand along dry California roadsides and abandoned fields, opening clear blue flower heads in the morning. Many heads close again by midday.



Common chicory (Cichorium intybus) — blue flowers and basal leaves

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

This is common chicory, Cichorium intybus, an introduced perennial with a long taproot. Although its summer flowers are the most conspicuous feature, the main raw food part is available much earlier: tender basal leaves growing during cool, moist weather.

HOW TO IDENTIFY IT

In the first stage of growth, chicory forms a rosette of elongated leaves with deep teeth or lobes, somewhat resembling those of a dandelion. Their surfaces may be rough or hairy. The leaves narrow at the base; hairs sometimes occur beneath the central vein. Damaging the green tissue releases a white milky sap.

A stiff upright stem later grows from the developed root. It is about half a meter to one and a half meters high, strongly branched, with relatively few small lance-shaped leaves.



Common chicory (Cichorium intybus) — blue flowers and basal leaves

Kristian Peters (Fabelfroh) · CC BY-SA 3.0 · Wikimedia Commons

The flower heads occur on side branches and in leaf axils. Each head consists of blue ray florets, occasionally white or pinkish ones, with tiny teeth at their tips.

When the flowers fade, dry achenes develop, not fleshy berries or pods.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Cichorium intybus from numerous California counties, including Sacramento, Placer, Yolo, Solano, Sonoma and coastal districts.

There are more records from disturbed ground, fields, roadsides and pasture than from intact forests. Established chicory tolerates sunny, dry places because of its deep root, but its soft edible leaves grow best in cooler weather.

In the Sacramento Valley the blue flowers are often most apparent from June through September, when the basal rosette has already become tougher. Irrigated locations can retain green foliage for longer, but agricultural fields and city roadsides are unsuitable for gathering because of chemical treatments and other contamination.

WHEN EDIBLE PARTS ARE AVAILABLE

After autumn rain, fresh leaves regrow from the base in California's lowlands. From November through March, sometimes April, tender young rosettes can be found.

On the cool coast, green leaves may emerge at other times where enough moisture remains.

From late spring the flower stems lengthen. Blue flower heads are most noticeable June–September and may persist later where moisture is available. They often open in the morning and close rapidly in hot sunshine.

Dry achenes form later in the season but are not a food part recommended here.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. North Carolina State University Extension explicitly confirms that the leaves of Cichorium intybus can be used in salads. Wild plants are often quite bitter, especially after the flower stalk has emerged.

Early, cool-season greens are therefore the most useful for small raw servings. Chop the leaves finely and mix them with less bitter greens. Cultivated salad chicories may taste milder, but that should not be assumed for a wild plant.

Later basal leaves remain botanically edible, but are often so coarse and bitter that they offer little practical value for a raw salad.

The root has traditionally been dried and roasted to make a coffee substitute. That preparation uses heat, so the root is not recommended here as food without fire.

The blue flower heads are included as identification characters, not automatically as confirmed raw food.

HOW TO AVOID CONFUSION

At the rosette stage, chicory is easily confused with common dandelion, Taraxacum officinale. A dandelion has a yellow head borne singly on a separate, hollow, leafless stalk. Chicory develops a tall, branching stem carrying blue heads.

Some Lactuca species have similar leaves and white milky sap, but differ in their flowers and fruits. One leaf yielding milky sap does not establish edibility.

Do not gather bitter greens from roadsides, treated agricultural land or polluted waste ground. Identification must come before tasting, not after comparing flavors. People with known allergies to plants in the daisy family may need to avoid this food.

SOURCES

Calflora, California county distribution: https://www.calflora.org/app/taxon?crn=2107

North Carolina State University Extension, chicory identification and edible salad leaves: https://plants.ces.ncsu.edu/plants/cichorium-intybus/

Calflora county observations: https://www.calflora.org/app/countytaxon?crn=2107

Canada thistle — peeled tender stems and young leaves · Cirsium arvense

Cirsium arvense

On damp vacant lots and meadows in northern parts of California, colonies of prickly herbs bear pale purple flower heads. Digging up one shoot often reveals other stems linked through underground roots. This perennial, Canada thistle, is an invasive weed capable of rapidly occupying open ground.



Canada thistle (Cirsium arvense) — purple flower heads and spiny foliage

kallerna · CC BY-SA 3.0 · Wikimedia Commons

Despite its formidable spiny appearance, certain young parts can be eaten without fire after the prickles and tough outer layers have been completely removed.

HOW TO IDENTIFY IT

This perennial is usually 40–120 centimeters tall and develops a branching system of creeping roots.

Its upright, ribbed stems branch in the upper portion. The alternate leaves are elongated and variably lobed, with sharp prickles along the lobes and teeth. Leaf undersides are often paler.



Canada thistle (Cirsium arvense) — purple flower heads and spiny foliage

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

Flower heads are relatively small, typically a few centimeters across, pale purple or lilac and arranged in groups at the ends of flowering branches.

In many populations male and female heads occur on different shoots. After flowering, seeds with conspicuous fluffy tufts develop. Unlike the biennial bull thistle, this species forms perennial colonies through its underground root system.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Cirsium arvense as a nonnative invasive species in California. It occurs primarily in northern districts, in the Sierra Nevada and mountain valleys, in damp meadows and along roads and rivers, rather than on the dry floor of southern deserts.

There are relatively few observations from Sacramento County. It can occupy broad clearings, but the risk of contamination is especially high beside agricultural land and railway tracks. Plants from such places should not be used for raw food.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes and shoots develop from the roots in spring, while their tissues are still comparatively soft.

Stems grow rapidly in late spring, after which the outer layers become tough. Flowering is mainly in summer, and seeds ripen toward late summer.

Sites with enough moisture can develop a second flush of young growth in autumn. For raw food, the softness of the leaf or stem center matters more than the exact calendar date.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves after removing all spines. Plants For A Future explicitly records their raw use but emphasizes that all prickly margins must be cut away, leaving relatively little usable material.

The pale inner core of a young stem. A systematic scientific review of Cirsium arvense describes consuming fresh peeled stems raw. These can be juicy and crisp if all the spiny outer covering is removed.

First-year roots are also described as raw food in some accounts, but because of the deep root system, the limited yield and the presence of inulin, they are not recommended as practical food here.

No hard prickles should remain on anything eaten: they can injure the mouth or throat.

HOW TO AVOID CONFUSION

Bull thistle, Cirsium vulgare, discussed separately, is usually taller and coarser, with larger flower heads and very conspicuous spiny wings along the stem.

Some native Cirsium species have similarly shaped leaves and flower heads, and young rosettes are difficult to distinguish before blooming.

Check the form of the flowering heads, the growth of multiple shoots from a perennial root system and the stem structure. Prickliness alone does not demonstrate that a plant is edible; many similar members of the daisy family have no separately documented raw food part.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2118

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Cirsium+arvense

Systematic review: https://doi.org/10.1080/15427528.2022.2126419

Short-styled thistle — raw young taproots in cool coastal meadows · Cirsium brevistylum

Cirsium brevistylum

In northern coastal oak woodland and cool California meadows, tall thistles sometimes stand with purple flower heads grouped at the ends of their shoots. Their leaves are armed with spines, but young plants develop a substantial taproot underground.



Short-styled thistle (Cirsium brevistylum) — purple clustered heads and thorny foliage

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

It is the peeled young root of this particular species that has been eaten raw. Digging it up destroys the plant, however, and large portions may cause severe bloating because of its inulin content.

HOW TO IDENTIFY IT

This is a biennial or short-lived perennial herb, commonly one to two meters tall.

In its first year, it forms a basal rosette of long, lobed leaves, green and only slightly hairy above, sometimes whitish-woolly beneath. Their margins have short, stiff prickles.

In the following growing season, a thick, upright, fleshy stem develops and branches toward its upper part.

Flower heads usually grow in tight groups, sometimes partly surrounded by the upper leaves. Their involucral bracts are covered with thin, cobweb-like hairs. The tubular florets are reddish purple.

After flowering, dry achenes form, each with a long feathery tuft.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Cirsium brevistylum as native to California and records hundreds of observations, mainly along the northern and central coast.

It grows in moist meadows, at forest edges, in open parts of mixed evergreen woodland and among coastal shrubs. Extensive natural stands are not to be expected on Sacramento's hot valley floor.

Some older publications used the name Cirsium edule for this California thistle, but modern botanical treatments distinguish the two species.

WHEN EDIBLE PARTS ARE AVAILABLE

In spring, young plants develop their basal leaves, while older ones produce fleshy stems. Flowering usually takes place in summer and may continue longer in cool, damp coastal places.

The taproot stores nutrients before flowering; once a tall flower stalk has developed, the root often becomes more fibrous.

Underground parts may be collected only where gathering is permitted and the species has been identified beyond doubt. To protect local populations, do not dig up successive young plants.

WHAT CAN BE EATEN WITHOUT COOKING

Young taproot. Ethnobotanical accounts from Pacific coastal peoples separately document eating peeled Cirsium brevistylum roots raw.

After digging, remove all soil and the dirty outer skin and use the pale inner tissue while it is still tender.

The root can contain substantial inulin, a carbohydrate not digested directly by humans that often causes gas and abdominal discomfort. Large raw portions are therefore unsuitable.

A peeled young stem is also described as food, but its specifically raw preparation is less unambiguously established; it is not the primary confirmed raw food in this article. Do not eat the spiny leaves or flower-head bracts.

HOW TO AVOID CONFUSION

Cirsium vulgare, discussed elsewhere, has coarse spiny wings running along its stem and large flower heads.

Cirsium arvense grows in perennial patches linked through creeping roots and has smaller flower heads.

True Cirsium edule, distributed chiefly from Oregon northward, is morphologically similar but differs in the flower style and head structure. It is incorrect to apply that name automatically to the California plant.

Digging up a young thistle before seeing its flowers does not guarantee a correct species identification. If in doubt, leave the root undisturbed.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2119

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Cirsium+brevistylum

Burke Herbarium: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Cirsium+brevistylum

Bull thistle — tender pith inside young spiny stems · Cirsium vulgare

Cirsium vulgare

On a pasture or disturbed hillside, a large thistle may stand with silvery-haired leaves and vivid purple flower heads. Handling it without gloves is unpleasant, but a tender, pale core lies beneath the tough exterior of a young stem. Different parts of this species have been used as food, yet for eating without fire the principal practical option is a carefully peeled young shoot.



Bull thistle (Cirsium vulgare) — whole plant with spiny leaves and purple flower heads

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a biennial herb. In its first year it usually forms a large basal rosette; in the second it sends up a thick flowering stem that can stand roughly 0.5–2 meters tall. The long leaves are deeply lobed, and each lobe ends in a stiff, pale yellow spine. Leaf undersides are lighter, sometimes almost whitish with hairs.

The leaf bases extend down the stem, forming conspicuous spiny wings. The large purple flower heads are surrounded by numerous narrow bracts with sharply pointed, spiny tips. Later, achenes develop with long, feathery tufts that carry them on the wind. Both the spiny stem wings and the structure of the mature flower heads are important identification features.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Cirsium vulgare as a widespread nonnative weed in California. Observations extend from coastal and lowland counties to mountain districts, including Sacramento County.



Bull thistle (Cirsium vulgare) — whole plant with spiny leaves and purple flower heads

Harry Rose (Macleay Grass Man) · CC BY 2.0 · Wikimedia Commons

It grows in pastures, meadows, comparatively dry woodland edges, along forest roads and wherever soil has been disturbed. Dense stands can displace native vegetation. Because it frequently grows beside roads or treated agricultural fields, those locations are unsuitable for gathering raw food.

WHEN EDIBLE PARTS ARE AVAILABLE

A rosette appears during the first growing season, often in spring. In the second spring, a thick, succulent stem begins to elongate rapidly from its center. This is the brief period when the inner pith is still tender.

As large flower buds form, the stem becomes firmer and more fibrous. Flowering is mainly in summer, sometimes continuing into early autumn in cooler places. Local weather and the plant's developmental stage matter more than a fixed date.

WHAT CAN BE EATEN WITHOUT COOKING

Tender inner pith of young stems. The species-specific Plants For A Future account documents eating peeled young flowering shoots raw or cooked. While a shoot is still succulent, remove every tough, fibrous and spiny outer layer. The remaining crisp, pale core has a texture somewhat like celery. This takes careful preparation: if any sharp fragments remain on the core, do not eat it.

Young leaves are also described by some sources as suitable for salad only after completely removing the spines. Very little usable tissue may remain after that work, so they are much less practical than the peeled young stem.

Roots, flower buds and receptacles are chiefly described in preparations involving cooking and are not recommended here as raw foods.

HOW TO AVOID CONFUSION

Cirsium arvense is a more slender perennial thistle that produces shoots from creeping roots and generally carries smaller flower heads. Native California Cirsium species can also bear purple flowers; identify bull thistle using its biennial rosette, the spiny wings running down the stem and the structure of its large heads.

Yellow starthistle, Centaurea solstitialis, is likewise prickly but has a different kind of flower head. Never try chewing a spiny stem before removing every sharp part mechanically.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2151

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Cirsium+vulgare

Small-flowered springbeauty — tiny succulent leaves on rocky spring slopes · Claytonia exigua

Claytonia exigua

After a spring rain, extremely small succulent plants sometimes appear on rocky or serpentine hillsides in California. Fine, elongated leaves rise from the soil, with tiny white or pinkish, star-like flowers above them. This is Claytonia exigua, a native spring annual. Its leaves are documented as food eaten raw, but the plant is so small that gathering it in quantity makes little sense. It is more valuable as an example of spring plant diversity than as a substantial source of food on a long journey.

HOW TO IDENTIFY IT

This is one of the smallest members of its group. It usually rises only a few centimeters, occasionally up to 10–15 centimeters. Several slender reddish or greenish stems emerge from a fine root. At the base are narrow, succulent leaves, linear to spoon-shaped, resembling tiny green fingers.

Higher on the flowering stem is a pair of small leaves. In some forms they are separate; in others their bases partly join, forming a small hornlike or almost disk-shaped structure. Flowers are only a few millimeters across, each with five white or pale pink petals and sometimes faint, dark lines near their bases.

After flowering, minute three-valved capsules develop, containing several seeds. In dry weather, the whole plant may turn reddish or appear grayish. Its miniature stature, narrow fleshy leaves and very small flowers distinguish it from larger miner's lettuce.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Claytonia exigua as native to California in yellow pine forest, mixed evergreen forest, foothill woodland, chaparral and valley grassland. Open sites on poor rocky soils, including serpentine, are especially characteristic.

There are roughly a thousand observations statewide, but populations at individual sites are often highly localized. Near Sacramento, suitable habitats are more likely on foothill slopes than in irrigated city parks.

Some varieties are associated with particular mountain soils, and several similar small annuals may grow together. Destroying a colony for a few grams of leaves is unreasonable.

WHEN EDIBLE PARTS ARE AVAILABLE

Seeds germinate after cool winter rains while the thin upper layer of soil remains moist. In lower foothills, small green leaves may appear as early as February.

Botanical accounts for western North America give flowering from March through July, depending on elevation, though the season on a warm, sunny valley floor may end much earlier. After its tiny capsules form, the plant quickly dries and disappears above ground until the next rainy season.

Only its young, succulent stage provides leaves suitable for raw food. Dry reddish stems do not become a stored food supply.

WHAT CAN BE EATEN WITHOUT COOKING

Young succulent leaves. Plants For A Future explicitly confirms eating Claytonia exigua leaves raw. They are minute, tender and slightly mucilaginous, without pronounced bitterness. A few can be washed and eaten fresh or mixed with larger salad greens.

Almost nothing can be gathered from one plant. Uprooting an individual also prevents its seeds from maturing. A reasonable approach, where gathering is permitted and a population is genuinely plentiful, is to pick only occasional leaves; usually the plants are best left undisturbed.

Parts not recommended. The species-specific food reference confirms the leaves, not the roots, flowers, seeds or the entire plant. The tiny capsule should not be treated as an edible raw nut.

Because these plants grow close to the soil, avoid locations contaminated by rubbish, industrial runoff or road dust. Serpentine habitats also have unusual mineral chemistry and require attention to the cleanliness of the site. This is not a species for bulk daily gathering.

HOW TO AVOID CONFUSION

Claytonia perfoliata has much larger leaves and usually a broad, joined, cuplike disk around the flowering stalk. Claytonia parviflora has narrower basal leaves than ordinary miner's lettuce, yet is generally taller with a more noticeable flowering portion. Claytonia rubra may have reddish stems but differs in leaf form and the arrangement of flowers.

The vegetative stage of C. exigua can resemble other miniature spring succulents. For identification, examine the fully formed small flowers and seed capsules. Do not eat the leaves when the species is uncertain.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2231

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Claytonia+exigua

Burke Herbarium: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Claytonia+exigua

Lanceleaf springbeauty — tender alpine leaves and small underground corms · Claytonia lanceolata

Claytonia lanceolata

As snow melts in a Sierra Nevada meadow or on a moist woodland edge, small fleshy leaves and slender stems appear, bearing white and pale pink flowers. This is Claytonia lanceolata, lanceleaf springbeauty, a perennial of mountain slopes. Unlike annual miner's lettuce, it grows from a small rounded underground storage organ, or corm.



Lanceleaf springbeauty (Claytonia lanceolata) — flowering mountain plant

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Food references confirm that its tender leaves and peeled corm can be eaten raw. Gathering the underground part, however, demands exceptionally certain identification: dangerously poisonous bulb-forming species can grow nearby, and digging up a corm destroys the individual plant.

HOW TO IDENTIFY IT

This small perennial often grows about 5–15 centimeters tall. One or several slender stems emerge from a roughly spherical underground corm, with a few leaves around the base.

The flowering stalk usually carries two conspicuous, opposite, fleshy leaves, lance-shaped or elongated, sometimes seeming to clasp the stem. Above them, a small cluster of flowers opens, each with five white or delicately pink petals, occasionally marked by pink stripes or yellowish patches near the base.



Lanceleaf springbeauty (Claytonia lanceolata) — flowering mountain plant

Thayne Tuason · CC BY-SA 4.0 · Wikimedia Commons

After pollination, small capsules containing black seeds form. The underground corm is rounded, sometimes slightly irregular, and can measure up to a couple of centimeters across. It is neither a layered onion bulb nor a potato tuber; its verified connection to the flowering plant is crucial for identification.

Once the soil dries, the aboveground portion disappears rapidly. Never collect an unknown underground structure based only on remembering where a flower stood earlier in the season.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Claytonia lanceolata as native to California and associated with red fir, lodgepole and subalpine forests and moist mountainside habitats. It favors alpine or montane meadows and edges where the soil is wet after snowmelt but gradually dries in summer.

This is not a plant of the Sacramento Valley floor. It can occur in small groups around the Tahoe Basin and at higher elevations, where snow melts gradually. Calflora shows only several hundred observations, so it should not be portrayed as a ubiquitous mountain vegetable. Removing corms from a small colony can eliminate that population.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves emerge after the snow melts. In lower mountain zones this may occur in April–May; in high subalpine meadows, June or later.

The flowers appear soon after the leaves and remain visible for a relatively short period while the spring moisture persists. By the beginning of dry summer weather, the foliage wilts, capsules split and the plant enters dormancy.

Tender leaves are best early in the season. The corm persists underground longer, but trying to locate it without the flowering plant is both dangerous and ecologically destructive. Flowering is the most useful stage for certain identification.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms their raw use. They are tender and relatively mild and can be added in small amounts to cold greens. Each plant has few leaves, and gathering them all prevents the corm from replenishing its reserves.

Underground corm — only with flawless identification. Plants For A Future separately lists the root as edible raw or cooked and describes its raw flavor as pleasant, slightly reminiscent of radish. Yet this underground organ is tiny, and other ethnobotanical accounts note that some related underground parts were traditionally more often cooked.

Only a whole corm securely attached to a correctly identified flowering Claytonia lanceolata could be considered, thoroughly cleaned and peeled, and only where digging is allowed. In practice, it is better to use a few leaves and leave the corms undisturbed.

Never gather loose, unidentified 'little bulbs' from the soil or try to identify them by tasting. California includes deadly poisonous bulb-forming plants. Seeds, mature capsules and coarse stems are not recommended.

HOW TO AVOID CONFUSION

Claytonia perfoliata is an annual, usually with a much larger leafy cup around the flowering stalk and without this kind of small storage corm. Claytonia rubra sometimes has reddish shoots and little leaves but is also an annual.

Death camas, Toxicoscordion, is deadly poisonous and can occur in similar spring habitats. Its narrow leaves and six-parted flowers differ from the five-petaled flowers of Claytonia. Never dig a corm without clearly identifying its complete flowering shoot, especially where unfamiliar bulbs are mixed in. Underground food is rarely worth that danger on a journey without fire.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2235

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Claytonia+lanceolata

Wikimedia Commons: https://commons.wikimedia.org/wiki/Category:Claytonia_lanceolata

Small-flowered springbeauty — tender narrow leaves by woodland streams · Claytonia parviflora

Claytonia parviflora

Along the edge of a spring creek or on a moist, shady California slope, tender greens sometimes grow that look very much like the familiar miner's lettuce. Yet the basal leaves are usually noticeably narrower, and the flowering portion is finer and more branched. Little white or pinkish flowers may be barely visible between the leaves.



Claytonia parviflora — narrow leaves and small white spring flowers

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

This is Claytonia parviflora, small-flowered springbeauty, a distinct California native that often grows near Claytonia perfoliata. Its young leaves can be eaten raw. Although some food uses overlap, the two botanical species must not be merged into one account.

HOW TO IDENTIFY IT

This small annual is generally a few centimeters to about 30 centimeters tall. Near its base are elongated or narrow spoon-shaped, fleshy leaves on long stalks. Leaf form varies greatly among subspecies and even populations.

Slender, succulent flowering stems rise from the rosette. Higher on the stem may be two opposite leaves, sometimes joining around it, but in other forms remaining separate or making only a small disk.



Claytonia parviflora — narrow leaves and small white spring flowers

Matt Lavin from Bozeman, Montana, USA · CC BY-SA 2.0 · Wikimedia Commons

The flower clusters carry small blossoms with five white or pinkish petals, occasionally marked by fine veins. After flowering, little capsules containing black seeds develop.

Narrower lower leaves are useful for recognizing the species, but they are not sufficient alone. The upper leaf pair and flower structure must also be examined. In some subspecies, flowers are larger, so a reliable identification must take the local form into account.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Claytonia parviflora as a California native, with several thousand observations in spring habitats that remain moist: creek banks, ravines, shaded slopes and damp margins of forest roads.

It is particularly conspicuous in years with long periods of winter rain. It can grow at suitable sites in the Sacramento Valley, while foothill occurrences are more frequent.

Calflora recognizes several subspecies, including the relatively rare subsp. grandiflora, which has California Rare Plant Rank 4.2. General edibility of a species cannot justify collecting a rare subspecies. When identification is uncertain, a small population should be left alone.

The common name miner's lettuce is used for several Claytonia species, so it is not a substitute for a botanical identification.

WHEN EDIBLE PARTS ARE AVAILABLE

Succulent narrow basal leaves develop after autumn and winter rains. In California lowlands, tender foliage is often available from late winter, roughly February–April.

Small white or pinkish flowers open in spring and may continue into May–June in cooler foothills. By hot, dry summer weather, the annual generally completes its life cycle, its basal leaves yellow, capsules open and succulent foliage disappears.

An irrigated plant may remain green longer, though older leaves become tougher. Soft leaves are most useful before the flower stalks have elongated strongly.

WHAT CAN BE EATEN WITHOUT COOKING

Young succulent leaves. Plants For A Future specifically confirms raw use for Claytonia parviflora subsp. parviflora. The leaves are mild, with a flavor similar to lettuce, and pleasantly crisp where enough moisture is available.

A few leaves can be pinched off carefully, washed with clean water and eaten fresh or mixed into a salad. The species reference describes high-quality greens, but that does not justify uprooting whole patches: some plants must remain to set seed.

Do not automatically transfer all the edible parts of Claytonia perfoliata to this species. Sources for miner's lettuce confirm raw flowers and stems, but for Claytonia parviflora the best-supported food part is the leaf. Flowers, roots, seeds and mature capsules are not offered here as separate raw foods.

Wetland greens may be covered in soil and sand. Avoid polluted ditches, runoff and areas treated with herbicides.

HOW TO AVOID CONFUSION

Claytonia perfoliata has broader, more rounded basal leaves and usually a well-developed joined, cuplike disk beneath the flowers. In C. parviflora, lower leaves are narrower, and the upper pair may remain separate.

Claytonia sibirica has oval leaves, often brighter pink flowers and a longer growing season. Claytonia exigua is much smaller with very narrow leaves.

Chickweeds (Stellaria) also have little white flowers but differ in petal structure and other features. The Claytonia parviflora group itself contains several subspecies; when uncertain, especially at a rare mountain population, refrain from collecting.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2240 https://www.calflora.org/app/taxon?crn=2241

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Claytonia+parviflora+ssp.+parviflora

Miner's lettuce — succulent winter greens in a circular leaf cup · Claytonia perfoliata

Claytonia perfoliata

During California's cool months, small patches of tender greenery appear on moist soil. Miner's lettuce has smooth, succulent leaves and thin stems. In spring, little white flowers seem to grow out of the middle of a green saucer. This unusual leaf structure around the flowering stalk is one of the easiest clues to recognizing a mature plant.



Miner's lettuce (Claytonia perfoliata) — circular fused leaves and white flowers

Curtis Clark · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

Early in its growth, a rosette of separate leaves develops close to the ground on long, slender stalks. The leaves may be oval, elongated or shaped like a rounded diamond. They are soft, light to bright green, slightly fleshy and without obvious hairs.

A mature plant remains fairly low; its slender stems commonly reach around 20 centimeters.

As flowering begins, the two upper leaf blades fuse around the stem, giving the appearance of a single, almost circular cup. A small cluster of flowers rises from its center. Individual flowers have five white, sometimes faintly pink petals and are only a few millimeters across.



Miner's lettuce (Claytonia perfoliata) — circular fused leaves and white flowers

Curtis Clark · CC BY-SA 2.5 · Wikimedia Commons

Do not look only for the circular upper leaves: a young plant before flowering chiefly shows its ordinary basal leaves. Several similar Claytonia species may also have joined upper leaves.

WHERE IT GROWS AND HOW COMMON IT IS

Miner's lettuce is widespread in California, including the Sacramento Valley and Sierra Nevada foothills. It favors cool places with sufficient moisture: the shade of oaks, forest margins, damp slopes, gardens and disturbed soil.

At a favorable site it may appear in groups, but that does not mean it covers every woodland floor uniformly.

For many parts of California this is a common species rather than a rare one. It is largely absent from the hottest, lowest deserts and quickly finishes its growing season on exposed sites when the soil dries.

WHEN EDIBLE PARTS ARE AVAILABLE

During a mild, rainy winter, young greens appear after the soil becomes moist. In lowland California, the main season is winter and spring.

Flowering is most characteristic of February–May in California, although cooler mountain sites may flower later. With sustained spring heat the plant dries out.

The precise weeks depend on rainfall and elevation, not just the calendar. Its leafy cup is most obvious at flowering, whereas the earliest edible greens may be growing before that structure appears.

WHAT CAN BE EATEN WITHOUT COOKING

Leaves. Tender succulent leaves are eaten raw as salad greens. They have a gentle, grassy flavor and a soft texture.

Stems. Slender stems while still tender are also edible raw and may be eaten with the leaves.

Flowers. The little white or pinkish flowers can likewise be eaten raw. An ethnographic account of the Miwok records the plant as a seasonal green, and a USDA Forest Service review explicitly names the leaves, stems and flowers as edible.

No heating is needed for these documented parts. However, the University of California IPM notes that miner's lettuce can accumulate soluble oxalates. Avoid large daily servings, especially where oxalate consumption needs to be restricted.

HOW TO AVOID CONFUSION

Young miner's lettuce lacks its most recognizable 'saucer.' At this stage, other little spring herbs may look similar.

Later, the combination of smooth succulent leaves, a joined cup around the flowering stalk and tiny five-petaled flowers makes identification easier.

Some related Claytonia species also develop fused leaves, so the cup alone is insufficient for species-level identification. Examine the basal leaves, growth habit and flowers as well.

SOURCES

UC IPM, description, season and oxalates:
https://ipm.ucanr.edu/weeds-identification-gallery/miners-lettuce/

USDA Forest Service, edible leaves, stems and flowers:
https://research.fs.usda.gov/feis/species-reviews/claper

Calflora, California distribution: https://www.calflora.org/app/taxon?crn=2244

Barrett and Gifford, Miwok Material Culture (1933):
https://www.yosemite.ca.us/library/miwok_material_culture/greens.html

Redstem springbeauty — tender spring leaves on reddish shoots · Claytonia rubra

Claytonia rubra

After winter rain, tiny succulent plants with reddish stems may appear on an open slope among scattered oaks. Their leaves look like miniature salad greens, with nearly inconspicuous whitish-pink flowers above them. This is Claytonia rubra, redstem springbeauty, a native relative of miner's lettuce.



Redstem springbeauty (Claytonia rubra) — reddish stems and pale flowers

Jim Morefield (James D. Morefield) · CC BY-SA 2.0 · Wikimedia Commons

Young leaves and tender shoots can be eaten raw. It is important to distinguish it from the larger Claytonia perfoliata: although both belong to the same group, they differ in leaf form, size and moisture preferences.

HOW TO IDENTIFY IT

This small annual is usually a few centimeters high, sometimes reaching 10–15 centimeters. A slender root supports several succulent stems that are often pinkish red, particularly in young plants growing in sunshine.

At the base are small, rounded spoon-shaped or oval leaves on stalks. Higher up, a pair of leaves may partly join around the flowering stalk in certain forms, making a small, cuplike platform. Unlike the broad cup of ordinary miner's lettuce, this one is generally smaller and may be shaped differently.

The small terminal flower cluster consists of blossoms with five white or pale pink petals, sometimes faintly veined. After pollination, little capsules open and disperse black seeds.

Toward late spring, stems may turn deep red, leaves yellow and thin shoots dry out. Red stem color alone is not definitive: flowers, leaf form and the plant's life cycle are essential to identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Claytonia rubra as native to California, with close to a thousand observations, including the Sierra Nevada, Cascade Range and Coast Ranges.

It is more closely associated with relatively dry spring woodland margins, open oak groves and scrub than Claytonia sibirica, which favors wet forest. Small groups may grow alongside other spring annuals on suitable foothill slopes after winter rain.

The plant is possible in appropriate habitats around the Sacramento Valley but is not a universal lawn green. Different subspecies and forms vary in the upper leaf pair, so complex populations may require a botanical key.

WHEN EDIBLE PARTS ARE AVAILABLE

After sustained autumn and winter rain, seeds germinate and develop tender basal leaves. In warmer foothills, the best fresh greens appear in winter and early spring; in cooler woodland, development shifts toward March–May.

Flowering is generally in spring and can last into early summer at higher elevations. As the flowering stems lengthen, plants age, their stems redden more strongly and leaves gradually toughen.

By early hot, dry summer, most individuals have dried out. The proper raw-food stage is a soft young leaf or succulent tip, not a dry brown stem.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms raw use. They are tender and slightly succulent, resembling miner's lettuce. After dry weather they can have a stronger plant flavor.

A modest portion may be washed in clean drinking water and mixed with other fresh greens. Because the plants are small, uprooting a whole colony for a few grams makes little sense.

Tender young stems. The same species reference separately confirms eating these raw before they become coarse. Soft tops can be torn into pieces with the leaves and eaten fresh. Mature fruiting stems and ripe capsules are not equivalent foods.

Related Claytonia species have long been eaten as spring greens in western North America. Here the food method is limited to cold preparation. Seeds and roots are not included because the species reference does not confirm them as independent raw foods.

Leaves growing near the soil can accumulate sand or be contaminated by animal waste. Do not collect from herbicide-treated lawns or dirty ditches.

HOW TO AVOID CONFUSION

Claytonia perfoliata is generally larger and has a broad, complete leafy cup under its flowers.

Claytonia parviflora has narrower lower leaves and small flowers; certain forms can only be distinguished reliably while flowering. Claytonia exigua is even smaller, with very narrow leaves, and can also turn reddish in drought.

Chickweeds (Stellaria) have soft leaves but differently constructed white flowers with deeply divided petals. Never identify springbeauty from a red stem alone. Several features on one individual are needed so that different annual species are not mixed together in the same handful.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2247

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Claytonia+rubra

Siberian springbeauty — soft oval leaves and pink flowers in damp forests · Claytonia sibirica

Claytonia sibirica

In the cool, wet forests of California's northern coast, a soft green carpet may spread beneath the trees, with little five-petaled pink flowers rising above it. Near the plant's base are broad oval leaves, very different from the round joined cup of ordinary miner's lettuce.



Siberian springbeauty (Claytonia sibirica) — pink flowers and oval leaves

Walter Siegmund · CC BY 2.5 · Wikimedia Commons

This is Claytonia sibirica, Siberian springbeauty, a native spring green of northwestern North America. Its young leaves can be eaten raw. They are soft, with a mild lettuce-like flavor and sometimes a faint earthy aftertaste.

HOW TO IDENTIFY IT

This is a low perennial or relatively short-lived herb, depending on conditions, commonly about 10–20 centimeters tall. Several slender succulent stems arise from its base and may trail partly over the ground.

Leaves may be alternate or paired near the upper shoot. They are oval or egg-shaped, with a distinctly pointed or softly rounded tip. Lower leaves have longer stalks.



Siberian springbeauty (Claytonia sibirica) — pink flowers and oval leaves

Walter Siegmund · CC BY 2.5 · Wikimedia Commons

In Claytonia perfoliata, the two upper leaves join around the flowering stem to make a familiar circular cup. Claytonia sibirica lacks that characteristic complete disk.

Its flowers are often pink or pinkish white, each with five petals and small yellow stamens; several appear along a flowering stem. Little dry seed capsules form afterward. Leaves and shoots feel soft and succulent but may lose their brightness in hot, dry conditions. Groups of plants can spread through partially shaded forest soil.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Claytonia sibirica as native to California, recording it in northern coastal scrub, redwood, Douglas-fir, mixed evergreen and red fir forests, as well as damp riparian communities.

Cool northern coastal woods, wet canyons and shaded streambanks are especially characteristic. The species is not an ordinary lawn herb of the hot, dry Sacramento Valley floor.

After a rainy winter, populations may cover patches of forest soil. Yet raw leaves gathered low beside a stream can be exposed to microbes in water and animal waste. Site cleanliness is particularly important.

WHEN EDIBLE PARTS ARE AVAILABLE

On the mild coast, leaves may persist for a substantial part of the year, although the best tender growth follows cool, wet periods. In colder mountain forest, fresh spring leaves emerge after the snow melts.

Plants For A Future generally gives April–July as the flowering season in temperate climates. Along California's northern coast, pink flowers may open at different times during spring and early summer, depending on rainfall.

After flowering, capsules develop; older leaves can become bitter in summer. The useful food stage is fresh succulent foliage, not simply any point at which an old plant remains visible.

WHAT CAN BE EATEN WITHOUT COOKING

Young tender leaves. Plants For A Future explicitly documents raw use for Claytonia sibirica. The leaves are mild and slightly mucilaginous, with a green lettuce-like flavor. Some have a faint earthy note, almost reminiscent of raw beet.

A few leaves may be gathered, washed with clean drinking water and eaten fresh or mixed with more pungent greens. On a wet northern coast the leaves are often in better condition than on a drying summer site.

Parts not included. Although Calflora makes a broad reference to the edibility of aerial growth, the species-specific Plants For A Future account independently and clearly confirms the leaves. Roots, seeds and mature fruits are therefore not proposed as separate raw foods. Tender stems should not be promoted without further explicit species-specific evidence.

Do not collect foliage repeatedly soaked in polluted streamwater. A simple rinse does not make microbially contaminated raw greens safe.

HOW TO AVOID CONFUSION

Claytonia perfoliata has a complete circular cup of fused leaves beneath the flowers. In C. sibirica, leaves are generally separate and more ovate, while the flowers are often a noticeable pink.

Claytonia parviflora is a spring annual with narrower basal leaves and generally smaller, paler flowers.

Other smooth-leaved woodland herbs also grow beside streams. Leaf texture and pink flower color are not sufficient: examine leaf shape, the five-petaled flower structure, the life cycle and the particular forest habitat.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2251

Plants For A Future: https://pfaf.org/user/plant.aspx?LatinName=Claytonia+sibirica

Calflora botanical reference: https://www.calflora.org/app/ipl?list_id=px1048

California yerba buena — aromatic leaves beneath coastal oaks · Clinopodium douglasii

Clinopodium douglasii

In the cool shade of California oaks and redwoods, thin creeping shoots with little rounded leaves can be found among forest litter. The plant nearly disappears against the ground, but its leaves carry a delicate, sweet mint fragrance.



California yerba buena (Clinopodium douglasii) — creeping stems with paired leaves

Gordon Leppig and Andrea J. Pickart / US Fish and Wildlife Service · Public domain · Wikimedia Commons

This is yerba buena, a native aromatic herb. Its fresh leaves and small flowers may be eaten without fire, either as a fragrant addition to food or used in clean cold water.

HOW TO IDENTIFY IT

This is a low perennial member of the mint family, Lamiaceae, generally only about 5–15 centimeters above the ground. Long, slender stems creep along the soil, sometimes becoming woody in places and forming loose mats.

The leaves are opposite, on short stalks, generally about 1–3 centimeters long. They are oval or rounded, with shallow, rounded teeth. Their upper surfaces are green, sometimes glossy, while the undersides are paler.



California yerba buena (Clinopodium douglasii) — creeping stems with paired leaves

Iamnotabunny · CC BY-SA 4.0 · Wikimedia Commons

Little tubular flowers develop in the leaf axils. They are white or pale pink and have a two-lipped corolla.

Gently rubbing a correctly identified leaf releases a pleasant mint scent. Unlike many Mentha species, however, yerba buena does not produce long, upright flowering spikes.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Clinopodium douglasii as native to California, occurring mainly in humid coastal and northern forests.

It grows beneath oaks, in mixed conifer woodlands, on shaded slopes and in forested canyons and ravines. Observations are particularly numerous in Marin, San Mateo, Santa Cruz and Monterey counties, while natural records from Sacramento County are relatively few.

This creeping groundcover is not characteristic of the dry, exposed Sacramento Valley.

WHEN EDIBLE PARTS ARE AVAILABLE

Evergreen leaves may persist through much of the year where shade and summer moisture remain available. The softest new growth generally follows rain and appears during spring.

Flowering is principally in spring and summer, beginning later in colder districts. On sites that become very hot and dry, the aboveground growth can partly wilt.

Gather only small amounts of fresh leaves from healthy, substantial patches without destroying their creeping stem network.

WHAT CAN BE EATEN WITHOUT COOKING

Fresh leaves. The United States National Park Service describes yerba buena leaves as edible. Santa Clara University's educational account further specifies eating the leaves raw, not only preparing them as a hot infusion.

Their mild, sweet mint fragrance can flavor a cold dish. A few leaves can also be steeped in clean cold drinking water for an aromatic beverage; no fire is necessary.

Flowers. The same Santa Clara University ethnobotanical source explicitly confirms raw use of the small flowers, whose scent resembles garden mint.

Roots and tough older stems are not treated here as food. A cold infusion must be made with clean water and consumed fresh.

HOW TO AVOID CONFUSION

Mentha canadensis and Mentha spicata more often have upright, four-angled stems and larger, more clearly toothed leaves. Yerba buena spreads on long, low shoots.

Some ornamental groundcovers also have rounded leaves, but lack its distinctive little two-lipped flowers in the leaf axils.

Mint scent alone is not enough for identification. Some strongly aromatic members of the mint family are unsuitable for eating. Examine the whole stem, paired leaves, flowers and characteristic woodland habitat.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=11541

National Park Service: https://www.nps.gov/articles/000/sfan_botany-news_spring-2022.htm

Santa Clara University, Ohlone Native Plant Garden: https://www.scu.edu/community-heritage-lab/ohlone-heritage-hub/ohlone-native-plant-garden/yerba-buena/

Cilantro — tender aromatic leaves and ripe coriander seeds · Coriandrum sativum

Coriandrum sativum

In a cool garden, soft, strongly aromatic greens sometimes appear with divided leaves. In the United States the fresh leaves are commonly called cilantro. As the plant develops, the upper leaves become increasingly fine and threadlike, followed by little white or pale pink flowers gathered into umbels.



Coriander (Coriandrum sativum) — leafy cilantro foliage and flowering umbels

Schlaghecken Josef · CC BY-SA 4.0 · Wikimedia Commons

This is coriander, Coriandrum sativum, introduced to California as a vegetable and spice crop. Young leaves can be eaten raw, while fully mature, dried fruits yield a fragrant seasoning when crushed without heating.

HOW TO IDENTIFY IT

This annual herb is normally about 20–70 centimeters tall, with relatively slender, upright, branched stems.

Lower leaves grow on long stalks and are broad and rounded in outline, deeply divided into toothed lobes. Leaves higher on the stem are divided two or three times into much narrower, almost threadlike segments.



Coriander (Coriandrum sativum) — leafy cilantro foliage and flowering umbels

H. Zell · CC BY-SA 3.0 · Wikimedia Commons

Crushed leaves and young stems have a strong, distinctive aroma. Flower clusters are small compound umbels of white or faintly pink flowers, sometimes with slightly larger outer petals.

After flowering, round, yellow-brown ribbed fruits develop, only several millimeters across. Each contains two seeds. Once dried, the fruits have a warmer, different spice fragrance from that of the fresh leaves.

WHERE IT GROWS AND HOW COMMON IT IS

Coriandrum sativum originated in the eastern Mediterranean and western Asia and is grown in California for cilantro and coriander spice.

Royal Botanic Gardens, Kew records the species as introduced to California, and the Santa Cruz County flora checklist documents it outside ordinary garden plantings. It is not an everywhere-present plant of native grasslands and forests.

An escaped plant is most likely to occur as self-sown growth in an old vegetable bed, near homes or on disturbed moist soil. Crops and plants beside drainage ditches may have been treated with chemicals and are unsuitable for eating raw.

WHEN EDIBLE PARTS ARE AVAILABLE

Fresh leaves grow rapidly after germination during cool weather. In the Sacramento Valley and other warm valleys, foliage is usually most pleasant in winter and early spring. Summer heat quickly induces elongation, flowering and tougher leaves.

In cooler coastal regions the leafy season can last longer. White flower umbels generally develop in spring and early summer. By mid- or late summer, the round seed-bearing fruits mature and dry.

Choose the early stage for leaf food and only fully mature, dry fruit for the spice.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender shoot tips. Plants For A Future and standard food references confirm eating them raw. They can be chopped into cold vegetables, fruit mixtures or prepared beans.

Their strong flavor is perceived differently: some people describe it as citruslike, while others find it soapy.

Fully mature dried fruits. Clean, ripe coriander fruits can be crushed without heat into a powder and added as a seasoning to a cold dressing or prepared food. Colorado State University Extension describes this use of the dried seed spice.

Do not collect unripe green fruits from an unidentified member of the carrot family. Roots and tough old stems are not part of this practical raw-food list. A large quantity of dry coriander fruit is not a meal; use only a little as seasoning.

HOW TO AVOID CONFUSION

Parsley, Petroselinum crispum, has similarly divided early foliage, although its aroma and fruit structure differ.

Poison hemlock, Conium maculatum, and water hemlock, Cicuta, can be deadly poisonous and also have finely divided leaves. Neither smell, leaf form nor proximity to a vegetable garden can safely distinguish cilantro from these relatives.

Identify the mature species by its different lower and upper leaves, flowering umbels and round ribbed fruits. At any uncertainty, do not gather or taste the plant.

SOURCES

Plants of the World Online, Royal Botanic Gardens, Kew: https://powo.science.kew.org/taxon/840760-1

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Coriandrum+sativum

Santa Cruz County plant checklist: https://santacruzmuseum.org/wp-content/uploads/2021/07/Annotated-Checklist-of-the-Vascular-Plants-of-Santa-Cruz-County-California_Dylan-Neubauer_2013.pdf

UC Agriculture and Natural Resources: https://ucanr.edu/sites/default/files/2020-09/335846.pdf

California beaked hazelnut — sweet raw kernels in long green husks · Corylus cornuta ssp. californica

Corylus cornuta ssp. californica

Beside streams and on shady California woodland edges, a tall spreading shrub sometimes grows with rounded, toothed leaves. In autumn, small nuts can be seen among the foliage, each concealed in a long green, tubular husk resembling a bird's beak.



California beaked hazelnut (Corylus cornuta ssp. californica) — nuts in beaked husks

US Bureau of Land Management (individual author not named) · Public domain · Wikimedia Commons

This is California beaked hazelnut, Corylus cornuta subsp. californica. Inside its hard shell is a familiar, hazelnut-like kernel that can be eaten raw. The green husk, however, may carry irritating hairs, and wild nut harvests are usually modest compared with those from cultivated hazelnut orchards.

HOW TO IDENTIFY IT

This deciduous shrub often reaches two to four meters tall, forming several stems and a broad canopy. Young twigs are comparatively flexible and hairy, becoming woody with age.

Leaves are alternate, rounded to broadly oval, with heart-shaped bases and sharp marginal teeth; the margins may be distinctly double-toothed.



California beaked hazelnut (Corylus cornuta ssp. californica) — nuts in beaked husks

Fungus Guy · Public domain · Wikimedia Commons

Long male catkins hang from branches in late winter or early spring, opening before full leaf emergence. Female flowers are minute and remain mostly concealed in buds, with only reddish stigmas visible.

Later, the nuts form inside an envelope of fused bracts. The husk extends far beyond the nut into a narrowing tube, creating the characteristic 'beak' that gives the plant its common name.

The husk surface has fine, stiff hairs capable of irritating skin. Inside is a round or egg-shaped brown nut with a hard shell and an oily, pale kernel.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora uses the name Corylus cornuta subsp. californica for this native California variety and records roughly fifteen hundred observations. They are especially numerous in Marin, Humboldt, Santa Cruz, Sonoma and Trinity counties, and in Sierra Nevada foothill forests.

It grows by creeks, at cool woodland margins, on slopes and in open forest communities. It is not a common lawn shrub in the city of Sacramento, although it occurs in wetter forest habitats in Placer and El Dorado counties.

Some patches contain several shrubs, but in many years squirrels, jays and other animals consume most of the nuts. A cultivated ornamental shrub is not automatically open to public harvesting.

WHEN EDIBLE PARTS ARE AVAILABLE

Male catkins may release pollen in late winter, before the full leaf canopy develops. New leaves appear in spring, and nuts grow inside their bracts throughout summer.

Plants For A Future lists September–October as the seed-maturing period for Corylus cornuta. At cooler coastal and mountain sites, dates may shift somewhat.

An immature nut contains soft tissue within a still-green, tightly closed husk. As it matures, the hard shell turns brown and the nut begins separating from the husk.

Mature nuts may be easier to gather after naturally falling, provided the ground is clean and dry.

WHAT CAN BE EATEN WITHOUT COOKING

Only the fully mature nut kernel. Plants For A Future confirms that Corylus cornuta nuts can be eaten raw. The California subspecies belongs to the same botanical species, while its presence and range in California are separately documented by Calflora.

Remove the ripe nut from its beak-shaped husk, crack the brown shell and eat the pale kernel. It has a mildly sweet, oily flavor similar to cultivated hazelnuts. No roasting is necessary.

Safe handling. The bristly husk can catch and irritate skin. Remove it with a tool or sturdy gloves, and never eat the husk itself.

Discard nuts with mold, rotting shells or a rancid, bitter smell. Fresh kernels can be crushed without heating, but peeled nuts do not store well when exposed to moisture.

Leaves, male catkins, bark and roots are not included as raw food. Do not strip every green nut from a shrub before it can ripen.

HOW TO AVOID CONFUSION

Cultivated European hazelnut, Corylus avellana, generally has a shorter, less elongated husk around its nut, and is more often encountered in gardens.

California beaked hazelnut is recognized by the long 'beak,' the catkins before leaf-out and the rounded toothed leaves.

Birches (Betula) also bear male catkins and toothed leaves, but their fruit structures are entirely different, without a substantial nut in an elongated tubular husk.

Related Corylus forms differ in leaf dimensions; subspecies identification should include geographic range and additional botanical characters. Never eat an unfamiliar woodland nut simply because it is enclosed in a green husk.

SOURCES

Calflora species: https://www.calflora.org/app/taxon?crn=10818

Calflora counties: https://www.calflora.org/app/countytaxon?crn=10818

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Corylus+cornuta

Wikimedia Commons photo: https://commons.wikimedia.org/wiki/File:Corylus_cornuta.jpg

Black hawthorn — dark autumn fruit beside cool woodland streams · Crataegus douglasii

Crataegus douglasii

Along moist woodland edges in the mountains of Northern California, a thorny tree sometimes bears clusters of white flowers in spring and nearly black, miniature apple-like fruits in autumn. This is Crataegus douglasii, commonly called black hawthorn. Its fully mature fruit can be pleasantly sweet, sometimes juicier than that of European hawthorns. But several hard inner nutlets may occupy much of each tiny fruit, so the edible part is the soft outer pulp.



Black hawthorn (Crataegus douglasii) — native tree with dark ripe pomes

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Black hawthorn normally grows as a dense shrub or small tree, sometimes several meters high. Its lateral branches may carry strong, straight thorns, particularly while young, although old trees can appear comparatively sparsely thorned.

The alternate leaves are oval or obovate, with teeth mainly along their upper margins; they are usually much less deeply lobed than the leaves of several European hawthorns. White, five-petaled flowers appear in small groups in spring. Their many stamens often have pinkish or reddish anthers.

Little green fruits develop after flowering. They turn red, then dark purple and finally almost black. A small star-shaped calyx persists at the fruit tip. Within each pome are up to five closely packed, hard nutlets. Botanically these are little apple-like fruits, not berries with a single stone. Examine leaf shape, flower details, thorns and mature fruit together.



Black hawthorn (Crataegus douglasii) — native tree with dark ripe pomes

Kymi · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Crataegus douglasii is distributed chiefly through the Pacific Northwest and northern parts of California. Here it favors stream floodplains, moist meadows, cool foothills and forest margins.

It should not be represented as a dominant wild fruit tree on the hot, dry floor of Sacramento Valley. Ornamental plantings and introduced hawthorns may also occur near settlements, so a record from a garden does not prove natural distribution.

In suitable streamside habitats, individual trees may carry substantial fruit crops, but the yield varies with water availability, frosts and the season. Fruit on private or treated property must not be collected without permission and a clean site.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge in spring, followed by white flowers, generally April–June depending on elevation. The developing fruits remain green for several months, then turn red during late summer.

The fruits become dark purple or nearly black as autumn arrives. September and October are often the best months in cooler areas. Their flesh softens after full ripening, while leaves turn yellow and fall.

Spring bloom is not the fruit harvest. A hard, old winter fruit is also usually much less pleasant than freshly ripe pulp. Timing must be checked on the actual tree rather than inferred from calendar dates alone.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruit pulp. Plants For A Future explicitly confirms raw use of Crataegus douglasii fruit. The soft dark flesh may taste sweet or sweet-tart. Cut or open a fruit and separate its pulp from the hard inner nutlets. Do not chew, crush or grind those nutlets: seeds of some members of the rose family contain cyanogenic compounds.

Cold mashed pulp. The same confirmed edible part may be mashed without heat and eaten immediately or combined with other clean fruits. References also mention drying hawthorn fruit for storage; when preparing an uncooked pulp, first remove the hard seed structures and dry the edible flesh thoroughly under clean, well-ventilated conditions.

Moldy fruit is not food. Leaves, bark and seeds are not included as uncooked foods in this article.

HOW TO AVOID CONFUSION

Crataegus monogyna, discussed separately, usually has more deeply lobed leaves and red ripe fruits. Black hawthorn typically has shallower lobing and a crop that becomes almost black.

Several other native hawthorns can resemble it in bloom. The persistent little calyx at the top of the apple-like fruit, several hard nutlets, leaf shape and thorns should be considered together. An unrelated shrub with dark purple berries must not be assumed to be a hawthorn on fruit color alone.

Avoid sprayed trees and dusty roadside fruit.

SOURCES

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Crataegus+douglasii

USDA Forest Service: https://research.fs.usda.gov/feis/species-reviews/cradou

Burke Herbarium: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Crataegus+douglasii

USDA Plant Guide: https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_crdo2.pdf

Midland hawthorn — shallowly lobed leaves and red autumn pomes · Crataegus laevigata

Crataegus laevigata

An old garden or former hedge may contain a thorny small tree with white spring flowers and red autumn fruits. Its leaves are comparatively shallowly lobed, and its flowers usually have two or three styles. This is Midland hawthorn, Crataegus laevigata, a European species only rarely recorded as an escape in California.



Midland hawthorn (Crataegus laevigata) — spring flowers and red fruit

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

The ripe outer fruit flesh, soft spring leaves and very young shoots are documented as foods that can be eaten without heating.

HOW TO IDENTIFY IT

A deciduous shrub or small tree, commonly three to seven meters tall, sometimes higher. Its branches carry strong, sharp thorns.

Alternate leaves have wedge-shaped bases and usually three to five fairly shallow, rounded lobes. Their teeth are concentrated mostly near the tips of the lobes. In spring, groups of small five-petaled white or faintly pink flowers open in corymbs.



Midland hawthorn (Crataegus laevigata) — spring flowers and red fruit

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

Two or three styles are often visible in the center of a flower, an important feature when comparing this species with other hawthorns. Small round red pomes, approximately one centimeter wide, develop after flowering. Their mealy pulp usually surrounds two or three hard nutlets.

The leaf shape, flower styles and number of nutlets are best assessed together. Hybrid hawthorns can show intermediate characters.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Crataegus laevigata as nonnative in California and records only around a dozen observations. It is primarily a planted tree of old gardens, hedges and parks rather than a widespread wild species.

Birds sometimes move seeds beyond cultivated sites. Nevertheless, a red-fruited hawthorn growing in a California woodland is much more likely to belong to another species. Do not label every thorny tree with red fruit as C. laevigata.

Collecting from privately owned plantings requires permission, and ornamental trees may have been treated with chemicals.

WHEN EDIBLE PARTS ARE AVAILABLE

The first young leaves and tender shoot tips appear in spring. The white or pinkish flowers generally open in April and May, with local differences depending on temperature.

Green fruits develop through summer, turning red and softening in autumn. In species references, ripening is usually given as September–October, sometimes extending into November. Leaves then yellow and fall; winter is not a dependable season for fresh greens.

The California source article contained a missing seasonal paragraph. These flowering and ripening dates were restored from the species reference at Plants For A Future and the USDA hawthorn phenology table, rather than being inferred from an unrelated hawthorn. They remain approximate for California.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit pulp. Plants For A Future specifically confirms raw use of Crataegus laevigata fruit. Its flesh is mealy and not very juicy; separate the soft part from the two or three large, hard nutlets before eating. Never crack or grind the seeds as nuts.

Young leaves and soft shoot tips. The same species reference confirms that these may be eaten raw while still young. A few clean leaves or tender tips can be used in a small spring salad. Handle the thorny twigs carefully.

Older tough leaves, bark, woody shoots and the seed kernels are not recommended here.

HOW TO AVOID CONFUSION

Crataegus monogyna generally has more deeply divided leaves, usually one style in each flower and commonly one hard nutlet in the fruit. Crataegus douglasii, a native North American species, normally develops much darker, nearly black mature fruit.

Hawthorns can hybridize. The number of styles, depth of leaf lobes and internal fruit structure must therefore be checked together with the branches and habitat. A red fruit on an unidentified spiny shrub is not evidence that it can be eaten raw.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=12394

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Crataegus+laevigata

University of Florida IFAS: https://ask.ifas.ufl.edu/publication/ST210

USDA hawthorn phenology, supplementary seasonal verification: https://www.fs.usda.gov/nsl/Wpsm/Crataegus.pdf

Common hawthorn — spring shoots and ripe red autumn fruit · Crataegus monogyna

Crataegus monogyna

On moist forest edges and near old gardens along California's central and northern coast, a thorny shrub or small tree may carry white spring flowers and small red fruits in autumn. This is common or one-seed hawthorn, Crataegus monogyna, introduced from Europe and naturalized in places.



Common hawthorn (Crataegus monogyna) — thorny branches and ripe red pomes

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

The soft pulp of its fully ripe red fruits can be eaten raw, but the hard inner seed structure should not be chewed. Very young tender shoots also have documented raw use.

HOW TO IDENTIFY IT

This is a deciduous shrub or tree generally two to six meters tall, sometimes taller. Strong, straight thorns several centimeters long may occur along its branches, particularly older ones.

Alternate leaves usually have three to five deep, rounded lobes and teeth along the margins. In spring, numerous small white, five-petaled flowers bloom in clusters. Each normally has one style in its center.



Common hawthorn (Crataegus monogyna) — thorny branches and ripe red pomes

Krzysztof Golik · CC BY-SA 4.0 · Wikimedia Commons

The flowers are followed by tiny round red pomes — miniature apple-like fruits rather than true berries or cherry-like drupes. Inside each is usually a single hard nutlet containing the seed.

Green fruits gradually turn red and become softer in late summer. By autumn the pulp is often floury, slightly tart and mildly sweet. Identification depends on leaves, flowers, thorns and the mature fruit together.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Crataegus monogyna as nonnative in California, with limited invasive behavior. Most observations are from Marin and San Mateo counties; records also exist in Sonoma, Humboldt, Placer, Sacramento and elsewhere.

It favors damp streamside ground, forest margins, old pasture and abandoned horticultural plantings. In the Central Valley, isolated trees may survive around gardens and irrigated sites, but this species is less characteristic of natural Sacramento woodlands than of some coastal areas.

A branch hanging over a public fence does not make fruit on private land free to take. Check permission and chemical treatments before considering any food harvest.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves appear with spring warmth; white flowers usually open from April through June, depending on the locality.

Small green fruit forms in late spring and summer, turning red as it ripens. Along the coast and in the foothills, fully mature fruit is generally available August–October and may persist longer. Cool nights can sometimes soften the pulp.

Tender spring shoot tips are useful much earlier, before becoming woody or developing hard thorns. The tree sheds its leaves for winter, and is not a continuing source of fresh greens then.

WHAT CAN BE EATEN WITHOUT COOKING

Soft pulp of fully ripe red pomes. Plants For A Future explicitly confirms raw use. The fruit can be dryish and mealy and is not always as pleasant as a garden apple. Cut it open and separate the reddish or yellowish pulp from the hard internal nutlet.

Do not bite through or grind the seed-bearing nutlet. Seeds of hawthorns and other members of the rose family may contain cyanogenic compounds.

Young tender shoots. The species food reference separately documents eating their soft, unwoody spring tips raw, in modest quantities. Old thorny twigs and late-season tough leaves are not included.

Some foods use dried hawthorn purée, but pulverizing intact fruits with their hard seeds is not a safe substitute for removing the nutlets first. Avoid fruit from industrial or roadside locations.

HOW TO AVOID CONFUSION

Other native and introduced Crataegus species occur in California and differ in leaf lobing, number of flower styles and number of nutlets. Ornamental apples, Malus, also have white flowers and red fruit, but their leaves and branch structure differ.

Toyon, Heteromeles arbutifolia, bears red fruit in autumn but has evergreen, non-lobed leaves. The safety of eating its fruit raw is disputed in this atlas, where the species remains on a separate editorial safety hold.

Never identify a food tree solely from the color of one red fruit; inspect its leaves and flowers as well.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=8429

Calflora county observations: https://www.calflora.org/app/countytaxon?crn=8429

Plants For A Future: https://pfaf.org/USER/plant.aspx?latinname=Crataegus+monogyna

Smooth hawksbeard — tender spring rosettes and little yellow flower heads · Crepis capillaris

Crepis capillaris

In a damp meadow in early spring, a rosette of elongated, toothed leaves may resemble a miniature dandelion. Later it produces a slender, branching flowering stem topped by several small yellow heads. This is smooth hawksbeard, Crepis capillaris, an introduced member of the daisy family whose young foliage is used in fresh salads.



Smooth hawksbeard (Crepis capillaris) — basal rosette and yellow flower heads

Forest & Kim Starr · CC BY 3.0 us · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or biennial herb, commonly 20–70 centimeters tall. Its basal leaves form a rosette. They are elongated, deeply toothed or pinnately divided, often with a larger terminal lobe and several smaller lateral lobes.

Relatively slender flowering stalks emerge from the rosette and may branch strongly above. Only a few leaves grow on the upper stem.

The small yellow flower heads consist entirely of strap-shaped ray florets, surrounded by slender green involucral bracts. Later, dry achenes develop with tufts of fine whitish hairs that carry them on the wind.



Smooth hawksbeard (Crepis capillaris) — basal rosette and yellow flower heads

Rudolphous · CC BY-SA 4.0 · Wikimedia Commons

Like several other members of the daisy family, damaged tissues may release a little whitish milky sap. This feature alone does not identify the species or demonstrate edibility.

WHERE IT GROWS AND HOW COMMON IT IS

Crepis capillaris originated in Eurasia. Calflora regards it as nonnative in California, with scattered occurrences on open grassy land, meadows, roadsides and disturbed gardens.

It does not form the continuous stands throughout the state that some more abundant weeds do. Cool seasonal moisture allows the basal rosettes to grow before the soil dries in summer. Near roads or on managed lawns, herbicides and other treatments make collecting greens for raw eating inappropriate.

WHEN EDIBLE PARTS ARE AVAILABLE

In mild areas, seed germination can follow winter rain. The rosette develops during winter and spring, while in cool coastal or higher-elevation settings fresh leaves may remain available later.

As the season progresses, the flowering stalk lengthens and branches. Small yellow heads open, followed by light, wind-dispersed achenes.

The older a leaf becomes, the more pronounced its bitterness and tougher its veins. The best raw-food stage is the young rosette before a tall flowering stem forms.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Food Plants International material hosted by ECHO, as well as European reviews of wild edible plants, record the use of fresh young leaves of Crepis capillaris.

They taste mildly bitter and are usually mixed with sweeter or milder salad greens. Their central veins and fibers are thinner and softer than those of older leaves.

Flower heads, roots and achenes are not included as separately confirmed uncooked food parts in the reviewed sources. Ordinary washing removes surface dust but cannot undo chemical treatment of a plant.

HOW TO AVOID CONFUSION

Young rosettes can resemble those of Hypochaeris radicata or H. glabra, as well as some Lactuca and Sonchus plants.

The flowering stem of Hypochaeris usually differs in its form. Leaf shape, involucral bracts and mature achenes must be compared when separating these related yellow-flowered plants. A rosette without flowers or fruits may be impossible to assign confidently to Crepis capillaris.

White milky sap occurs in many composites and should never be used as a taste-based identification test.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2417

ECHO / Food Plants International: https://www.echocommunity.org/en/resources/ddbd58c6-c70a-4ea3-9b4e-9b5f26bf021e

Review of wild food plants: https://www.mdpi.com/2223-7747/11/4/519

Beaked hawksbeard — winter leaf rosettes and branching yellow heads · Crepis vesicaria subsp. taraxacifolia

Crepis vesicaria subsp. taraxacifolia

In coastal California grassland, a rosette of deeply cut leaves may resemble dandelion. Later, branching flowering stems grow from it, carrying numerous yellow heads and pale wind-dispersed achenes.



Crepis vesicaria subsp. taraxacifolia — deeply divided leaves and yellow heads

Philmarin · CC BY-SA 4.0 · Wikimedia Commons

This is Crepis vesicaria, represented in California especially by the introduced subspecies taraxacifolia. The species food reference documents young leaves as bitter raw salad greens. Reliably distinguishing the plant from dandelion and other hawksbeards, however, is difficult when only winter leaves are visible.

HOW TO IDENTIFY IT

This herb commonly spends its cooler season as a basal rosette and may complete its life cycle in one or more seasons depending on conditions.

The lower leaves are oblong and can be deeply divided into toothed lobes. Their size and shape change with age.



Crepis vesicaria subsp. taraxacifolia — deeply divided leaves and yellow heads

Didier Descouens · CC BY-SA 4.0 · Wikimedia Commons

A leafy, branching flower stem develops later. Yellow heads at the ends of its branches consist of numerous narrow strap-shaped florets. Dry achenes with whitish pappus hairs follow flowering.

In some forms the part of the flower stalk immediately below a head appears swollen, while the involucre has several ranks of narrow green bracts.

The Californian subspecies taraxacifolia has botanical features that distinguish it from the typical European subspecies. Photographs of any plant called C. vesicaria should therefore be compared critically with the local plant's leaves, stem branching, head involucre and fruit.

WHERE IT GROWS AND HOW COMMON IT IS

Royal Botanic Gardens, Kew, confirms that Crepis vesicaria subsp. taraxacifolia is introduced to California. Calflora has listings from San Francisco Peninsula and coastal protected areas.

It grows on grassy slopes, old meadows, disturbed soil and abandoned gardens, but should not be treated as a universally abundant food plant of Sacramento Valley. Individual plants may be noticeable in spring near the coast, while on hot dry ground they finish their growing season rapidly.

Despite superficially similar yellow flower heads, it is not the same genus as cultivated lettuce, Lactuca.

WHEN EDIBLE PARTS ARE AVAILABLE

New basal rosettes grow after winter rain. Tender leaves are generally most useful for raw food from December through March or early April in a mild climate.

The flowering stems then elongate; yellow heads appear in spring or early summer. Flowering may last longer in cooler locations, while plants on drying warm soil complete their life cycle sooner.

By the time the seeds mature, the basal leaves have usually become more bitter and can partly die back.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly lists leaves of Crepis vesicaria as edible raw and notes their pronounced bitterness. The California atlas applies this species-level information cautiously to the local subspecies taraxacifolia; subspecies-level equivalence should not be assumed without botanical identification.

Pick only soft young leaves before the flowering stem extends strongly. A small quantity may be sliced and mixed with milder salad greens.

Not the entire mature plant. The species reference does not separately confirm the raw use of flower heads, roots, mature achenes or rigid flowering stalks. None is recommended here. Do not invent a 'safe dose' that makes an intensely bitter, unidentified mature plant suitable for raw consumption.

Avoid collecting from roadside lawns and agricultural ground where herbicides may have been applied.

HOW TO AVOID CONFUSION

True dandelion, Taraxacum officinale, produces one head per separate, hollow, leafless flower stalk; a hawksbeard has a branching flowering system.

Hypochaeris radicata and H. glabra have similar rosettes and yellow heads but differ in involucres, stalk form and fruits. Lactuca serriola often has spines along the leaf midrib.

Before flowering, these species can be particularly difficult to distinguish. Do not eat an unidentified rosette merely because its leaves resemble those of a familiar edible plant. Collection can also be restricted in protected coastal grassland.

SOURCES

Royal Botanic Gardens, Kew: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77110919-1

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Crepis+vesicaria

Calflora: https://www.calflora.org/app/ipl?list_id=px1508

Quince — fragrant golden fruit edible raw only when truly soft · Cydonia oblonga

Cydonia oblonga

In late autumn, an old garden tree may carry large golden-yellow fruits with a powerful, pleasant fragrance. They resemble pears but have a fine fuzzy skin and usually much firmer flesh. This is quince, Cydonia oblonga, a cultivated tree that only rarely escapes into California landscapes.



Quince (Cydonia oblonga) — golden yellow ripe fruit and leaves

Pryma · CC BY 3.0 · Wikimedia Commons

Unlike most garden fruits, many quinces remain hard and strongly astringent even when their skin is fully yellow. Raw eating is practical only with genuinely soft, fully ripe fruit or with cultivars that naturally develop tender flesh.

HOW TO IDENTIFY IT

A deciduous shrub or small tree, generally three to six meters tall, with a spreading crown and gray-brown bark. Young shoots carry fine grayish hairs.

The alternate leaves are broad and oval, with entire margins and short stalks. Their undersides are densely covered in silvery felt and are noticeably paler than the upper surfaces.



Quince (Cydonia oblonga) — golden yellow ripe fruit and leaves

Rillke · CC BY-SA 3.0 · Wikimedia Commons

Large, solitary, five-petaled white or pale pink flowers open at the ends of short shoots, generally after the leaves have emerged.

The large fruit may be pear-shaped or apple-shaped. While growing it has a conspicuous fuzzy covering; at maturity it becomes golden yellow and very fragrant. Several chambers inside contain flat, dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Cydonia oblonga as a nonnative tree occasionally escaping cultivation, with only a few dozen recorded observations.

It is principally a tree of abandoned orchards, old farmsteads and collection plantings, not a common native forest tree. In the warm valleys, quince can tolerate hot summers when enough water is available. Individual trees may grow near settlements in the Sacramento area.

A tree on private land is not open to public harvesting without the owner's consent.

WHEN EDIBLE PARTS ARE AVAILABLE

White or pink flowers usually open in spring, later than those of many apple trees. Fruit grows through summer, gradually becoming fragrant and yellow toward autumn, most often between September and November.

Cold weather can stop development. Some fully yellow fruits remain too hard and astringent for uncooked food; natural storage does not always make them pleasant. Certain softer cultivars produce notably juicier flesh, especially in warm climates.

The true raw-food stage depends on texture and sweetness, not yellow skin alone.

WHAT CAN BE EATEN WITHOUT COOKING

Only soft, fully ripe fruit flesh. Plants For A Future notes that certain forms of Cydonia oblonga can be eaten raw when they ripen fully in a warm climate.

Check that the flesh is genuinely soft, juicy and aromatic rather than hard and sharply astringent. Slice the flesh and remove the core and all seeds.

Most wild-growing or escaped quince may remain hard and puckering even when yellow, in which case it is unsuitable for this diet without fire.

Do not crush or chew the seeds: they contain cyanogenic compounds. The bark, leaves, seeds and bitter core are not included as food.

HOW TO AVOID CONFUSION

European pear, Pyrus communis, generally has smoother leaves with fine teeth and lacks the dense silvery felt beneath quince leaves.

Asian pear, Pyrus pyrifolia, usually has crisp, juicy fruit when ripe, whereas quince is notably aromatic and has fuzzy skin. Cultivated apples differ in the arrangement of their shoots, leaves and fruits.

Chinese quince, Pseudocydonia sinensis, can resemble this species but has different bark and leaves. Identify the whole tree, not just a pear-shaped fruit.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=8716

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Cydonia+oblonga

Wikimedia Commons: https://commons.wikimedia.org/wiki/File:Cydonia_Oblonga.jpg

Yellow nutsedge — sweet raw underground tubers in moist open soil · Cyperus esculentus

Cyperus esculentus

In damp valley soils, a tall, light-green sedge sometimes resembles an ordinary grass. Yet its most useful food is not in the leaves. On slender underground runners it develops small rounded tubers with firm brown skins and a subtly sweet, nutlike taste.



Yellow nutsedge (Cyperus esculentus) — golden spikelets and narrow green leaves

JMK · CC BY-SA 4.0 · Wikimedia Commons

The plant is often called yellow nutsedge, chufa, tiger nut or earth almond, although it is a sedge rather than a nut-bearing tree.

HOW TO IDENTIFY IT

This is a perennial of the sedge family, Cyperaceae, usually approximately 30–90 centimeters tall.

Its upright green stem is smooth and distinctly triangular in cross-section. Long, narrow, stalkless leaves arise in groups of three from the stem base. The leaves are relatively stiff and shiny, yellowish or light green, with a conspicuous central fold that can make them look V-shaped.



Yellow nutsedge (Cyperus esculentus) — golden spikelets and narrow green leaves

Marco Schmidt · CC BY-SA 3.0 · Wikimedia Commons

In summer, an umbrella-like inflorescence appears at the top: several rays of different lengths carry many narrow golden-brown spikelets. Long leaflike green bracts stand beneath them. The flowers lack showy petals; their tiny achenes are less important for spread than the subterranean tubers.

Thin horizontal underground runners grow from the stem base. In this species, a single brown to nearly black rounded tuber usually develops at the end of each runner. Nearby shoots can form dense patches as the underground network expands.

WHERE IT GROWS AND HOW COMMON IT IS

UC Integrated Pest Management reports Cyperus esculentus throughout much of California, chiefly below about 1,000 meters elevation.

It favors warm, open, regularly watered ground: irrigated fields, wet vacant lots, gardens, canal edges and shallow depressions. In the Central Valley, it can occupy large areas and is regarded as a difficult agricultural weed.

It is not the typical green plant of dry pine forest. Even within one valley it is concentrated wherever sunlight and moisture are available.

For raw underground food, water and soil quality are essential. A tuber growing beside a ditch, pasture or treated field cannot be regarded as clean merely because the plant is correctly identified.

WHEN EDIBLE PARTS ARE AVAILABLE

Spring. Winter-surviving tubers sprout when the soil warms, producing leaves and upright shoots.

Summer. Patches grow rapidly, golden-brown spikelets appear, and new tubers develop at the ends of the underground runners.

Late summer and autumn. Tubers are generally better formed, and some persist in the soil after the leaves die back.

Winter. Aboveground foliage may disappear, while tubers remain underground until the next spring. Persistence does not guarantee that a tuber from cold, wet soil is still in sound condition for raw eating.

WHAT CAN BE EATEN WITHOUT COOKING

Underground tubers. North Carolina State Extension explicitly confirms their raw edibility. They are small and firm, with a sweet, almond-like taste.

Thoroughly remove dirt from the skin and every crease using clean drinking-quality water; peel where practical. Do not eat raw tubers from areas exposed to drainage wastewater, manure, herbicides or unknown agricultural treatments. Rinsing cannot reliably eliminate every chemical contaminant or soilborne pathogen.

Tender base of a young stem. A botanical description maintained by UC Irvine separately mentions raw use of this part. It provides far less food than the tubers and should only be considered from an unambiguously identified plant.

Chufa is also used traditionally to make a cold drink from crushed tubers and water. For a traveler, however, the cleanliness of the underground food and water is far more important than any recipe.

HOW TO AVOID CONFUSION

Purple nutsedge, Cyperus rotundus, is often lower and darker, with reddish-brown spikelets. Its underground tubers more commonly form chains along the runners.

Cyperus esculentus has golden-brown spikelets and usually one tuber at the end of each rhizome. Cyperus eragrostis forms dense shoots but lacks these characteristic underground tubers.

Kyllinga brevifolia can also resemble a mown sedge lawn, but does not have this same underground tuber arrangement.

A single triangular green stem is insufficient for identification. The inflorescence and underground tuber structure must be examined together.

SOURCES

UC IPM, yellow nutsedge: https://ipm.ucanr.edu/weeds-identification-gallery/yellow-nutsedge/

UC IPM, nutsedges: https://ipm.ucanr.edu/home-and-landscape/nutsedge/

NC State Extension: https://plants.ces.ncsu.edu/plants/cyperus-esculentus/

UC Irvine botanical site: https://nathistoc.bio.uci.edu/plants/Cyperaceae/Cyperus%20esculentus.htm

American persimmon — meltingly soft sweet fruit from old plantings · Diospyros virginiana

Diospyros virginiana

In autumn, a tree near an old farmstead may carry glossy leaves and round orange fruits. While they are still firm, the flesh is intensely astringent and unpleasant to eat. Once completely ripe, however, the fruit becomes almost jellylike, richly sweet and fragrant.



American persimmon (Diospyros virginiana) — orange mature fruit and leaves

Peterwchen · CC BY-SA 4.0 · Wikimedia Commons

This is American persimmon, Diospyros virginiana, a tree native to eastern North America. It has been cultivated in California and can occasionally persist outside gardens. Only the thoroughly softened ripe pulp is suitable for food without fire.

HOW TO IDENTIFY IT

A deciduous tree commonly five to fifteen meters tall, sometimes larger, with a rounded crown. Older trunks have dark bark divided by small, almost square cracks.

The simple alternate leaves are oval or elliptical, with smooth margins, pointed tips and conspicuous pale midveins.

In late spring, small creamy, bell-shaped flowers appear on the branches. Male and female flowers usually occur on separate trees.

Round fruits develop afterward, generally two to five centimeters across. At their base a large four-lobed, greenish-brown calyx persists. Within the orange pulp may be several large, flat seeds, although some fruit is seedless.

These characters, particularly the distinctive four-lobed calyx and bark, matter more for identification than fruit size alone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Diospyros virginiana as nonnative in California, with only a few dozen observations. Most trees are associated with old orchards, botanical collections and their descendants rather than natural California woodlands.

In the Sacramento Valley the tree can tolerate summer heat when supplied with enough moisture, but it does not form extensive wild stands around the city.

Fruit growing on a former or current private farm remains subject to the property owner's permission, and old orchard trees may have been treated with chemicals.

WHEN EDIBLE PARTS ARE AVAILABLE

Small flowers open in late spring or early summer. Fruits enlarge throughout summer and may begin ripening in autumn at warm sites. Some remain on branches after the first cool nights.

Their skin may be orange, yellowish or brownish orange. The decisive sign of readiness is not color alone but an extremely soft, almost creamy consistency.

Firm fruit can sometimes finish ripening naturally after picking, without heating. Discard any fruit showing mold, sour decay or unpleasant spoilage.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe, soft pulp. Plants For A Future explicitly confirms raw use of Diospyros virginiana fruit.

Open a fully softened fruit and separate its sweet orange pulp from the skin, four-lobed calyx and any large, flat seeds. Its flavor may recall dates and apricots. This is an unusually sweet seasonal fruit that needs no cooking once properly ripened.

Clean fruit can also be dried naturally if it remains free of decay. The food reference mostly describes seeds after roasting; they are therefore not used in this diet without fire. Leaves and bark are not included as raw food.

Firm, unripe fruit is particularly astringent and is not suitable even from a correctly identified tree.

HOW TO AVOID CONFUSION

Japanese persimmon, Diospyros kaki, generally produces larger fruit, but some of its cultivars are small, so size alone is unreliable.

Unripe American persimmons may resemble little apples or other orange-fruited trees. Check the thick four-lobed calyx, the leaf structure, bark and planting context.

Even when the species is certain, fruit that has not softened fully contains much more astringent material. Do not judge edibility by orange color alone.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=9863

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Diospyros+virginiana

Wall rocket — peppery raw leaves with small yellow mustard flowers · Diplotaxis muralis

Diplotaxis muralis

On disturbed dryish soil beside an old vegetable garden or road, a small rosette of divided leaves may appear. Thin flowering stems later rise above it, carrying four-petaled yellow flowers reminiscent of cultivated rocket.



Wall rocket (Diplotaxis muralis) — flowering plant with lobed leaves

Fornax · CC BY-SA 3.0 · Wikimedia Commons

This is wall rocket, Diplotaxis muralis, an introduced European species occasionally found outside gardens in California. Its young leaves can be eaten raw as a pungent seasoning, but only when collected from clean ground.

HOW TO IDENTIFY IT

Usually an annual or short-lived perennial, about 15–50 centimeters high.

Its basal rosette consists of elongated leaves divided into a larger terminal lobe and several smaller lateral lobes. Stem leaves are smaller, sometimes almost entire with a few shallow teeth.



Wall rocket (Diplotaxis muralis) — flowering plant with lobed leaves

Fornax · CC BY-SA 3.0 · Wikimedia Commons

The green branching stems are fairly smooth and release a cabbage-like smell when damaged. Flowers appear in short racemes, each with four yellow petals arranged in a cross and six stamens.

After flowering, long, narrow, relatively straight pods develop. Inside, small seeds are arranged in two rows, a characteristic reflected in the generic name Diplotaxis.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Diplotaxis muralis as nonnative and reports only a few dozen observations across California.

It occurs on disturbed dry land beside railway lines, old fields, city vacant lots and road embankments, including some coastal areas of Central and Southern California. Extensive yellow-flowering stands in the Sacramento Valley more often belong to other mustard species.

Wall rocket can be found locally, but cannot be relied upon as a widely available food green. Roadside contamination is a particular problem with its typical habitats.

WHEN EDIBLE PARTS ARE AVAILABLE

A young leaf rosette develops after winter rain, sometimes January–March at lower elevations.

With warming weather, flowering stems elongate and yellow flowers open. On hot dry sites the plant finishes its life cycle quickly, while tender leaves may persist longer on the cooler coast.

For raw use, small leaves before strong stem elongation are preferable: older leaves become fibrous, tougher and noticeably more bitter.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms their use raw. They have a sharp, rocket-like taste, sometimes with a distinctly mustard-like finish.

A little finely chopped leaf can season otherwise mild salad greens. The intensity can increase during hot, dry weather.

Young flower buds and seeds are not separately confirmed in the reviewed species reference as raw food, so they are not included. Neither are roots or mature stems.

Do not gather leaves from road verges, polluted railway ground or treated gardens.

HOW TO AVOID CONFUSION

Diplotaxis tenuifolia, also described in this atlas, is a longer-lived perennial with a more substantial, sometimes woody base; its leaves are generally narrower, and it may grow into a taller, branching tuft.

Eruca vesicaria usually has pale flowers with darker purple veins rather than the bright yellow flowers of wall rocket.

Hirschfeldia incana and Brassica nigra differ in pods, leaf arrangement and habit. Four yellow petals occur in many mustards, so identification requires the basal leaves, flowers and mature pods of the same plant.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2735

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Diplotaxis+muralis

Plants For A Future, wall rocket: https://pfaf.org/plants/wall-rocket-diplotaxis-muralis/

Wild rocket — intensely peppery young leaves on dry disturbed ground · Diplotaxis tenuifolia

Diplotaxis tenuifolia

On a Californian vacant lot, a persistent perennial herb can grow among dry stones, with narrow deeply lobed leaves and thin flowering stems. Bright yellow, four-petaled flowers appear at the stem tips.



Wild rocket (Diplotaxis tenuifolia) — narrow lobed leaves and yellow flowers

AnRo0002 · CC0 · Wikimedia Commons

When crushed, its leaves release a strong mustard-and-nut fragrance familiar from wild rocket. This is Diplotaxis tenuifolia, perennial wall rocket, introduced to California and sometimes naturalized. Its young leaves are documented as food eaten raw, though their intense flavor makes them better suited to small additions.

HOW TO IDENTIFY IT

A perennial herb generally 20–60 centimeters tall, with a fairly substantial base and several branching shoots.

Its alternate leaves are gray-green, ranging from narrow-oblong to deeply lobed, with several elongated side lobes. Margins may be entire along part of a leaf and toothed elsewhere; young and old leaves can differ greatly.



Wild rocket (Diplotaxis tenuifolia) — narrow lobed leaves and yellow flowers

Alex Lockton · CC BY-SA 4.0 · Wikimedia Commons

The stems are usually smooth, sometimes with sparse hairs near their bases. Each bright yellow flower has four rounded petals and six stamens, grouped near the shoot tips.

Long, slender seedpods develop after flowering. Small seeds lie in two rows inside these pods, which look like thin little sticks from a distance.

Old plants often retain flowering upper branches even while lower leaves grow tougher. Identification is easiest when a divided leaf, yellow flower and mature pod are present on the same plant.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Diplotaxis tenuifolia as a nonnative plant of disturbed California ground.

It has been recorded in urban areas and beside agricultural land, preferring sunny, open places. Unlike short-lived winter mustards, it can survive for several seasons and repeatedly produce foliage from the same base.

It tolerates dry, stony soil fairly well, though the tenderness of leaves depends on access to water. It is not an abundant plant in every natural Sacramento meadow. Likely sites include old vacant plots, roadside cracks and abandoned gardens — precisely the sorts of places often contaminated and therefore unsuitable for raw gathering.

WHEN EDIBLE PARTS ARE AVAILABLE

After winter rain, fresh leaves develop from the living perennial base. In spring they are at their softest.

Yellow flowers appear during warmer weather, and the long seedpods develop through summer. Plants For A Future describes the possibility of harvesting new foliage from early spring into autumn; with adequate moisture, some plants continue growing during mild periods.

During severe dry heat, the leaves become coarse and exceptionally pungent. A flowering tip may remain green even after the lower foliage dries. The edible stage concerns young leaves, not ripening seed.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms raw use of Diplotaxis tenuifolia foliage, noting its very strong flavor, similar to rocket but sharper.

Finely chop a few leaves and mix them with mild greens. After a cool, moist spell, young leaves tend to be more tender; old leaves become bitter and dense.

Fresh raw leaves can also be served beside vegetables as a herb rather than made into a cooked sauce. The source confirms the leaves, not the flowers, seeds, roots or entire stem. Yellow flowers and long pods are primarily identification characters.

Too much pungent mustard-family greenery can irritate digestion, so large servings are not recommended.

HOW TO AVOID CONFUSION

Brassica nigra has yellow flowers too, but differs in its leaves and pods and is usually a much taller annual.

Sisymbrium irio has smaller, paler yellow flowers, thin pods and differently divided lower leaves.

Cultivated salad rocket, Eruca vesicaria, generally has creamy or whitish petals with darker veins and differs in its overall habit. Never identify a plant by its pungent flavor alone.

Roadside greenery and herbicide-treated sites are unsuitable for raw food even where the botanical species is known.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2736

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Diplotaxis+tenuifolia

Engelmann's hedgehog cactus — red fruit among long spines · Echinocereus engelmannii

Echinocereus engelmannii

Among rocks on desert slopes in Southern California, clusters of short cylindrical cacti are sometimes visible. In spring, large, vivid purple-pink flowers open above their long spines. Later, red fruits ripen where those flowers grew; some peoples of the desert Southwest ate them fresh.



Engelmann's hedgehog cactus (Echinocereus engelmannii) — plant photograph

Tom Hilton · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Unlike the flattened pads of prickly pears, Opuntia, Echinocereus engelmannii has cylindrical stems with prominent longitudinal ribs. A single plant can form a cluster of several or even dozens of upright stems. Numerous areoles cover each stem, bearing long central spines and shorter radial ones; these may be pale, reddish or grayish. An individual stem is usually only a few tens of centimeters tall.

The flowers are conspicuously wide relative to the stems, with many narrow petals of intense pink, purple or fuchsia. Yellow stamens and a green stigma are visible in their centers. The developing fruit is fleshy and reddish; young fruits also have protective spines. Without flowers and several other characters, different desert hedgehog cacti can be difficult to distinguish.

WHERE IT GROWS AND HOW COMMON IT IS

In California this cactus occurs in the Mojave and Colorado Deserts, including San Bernardino, Riverside, Inyo, San Diego and Imperial counties. It grows among rocks and shrubs and in pinyon-juniper woodland. It is not an abundant native food plant of the Sacramento Valley.

Some varieties within the species occupy extremely restricted areas and have conservation status. Even where several plants are visible together, their numbers should not be assumed sufficient for harvesting.

WHEN EDIBLE PARTS ARE AVAILABLE

After winter and early spring rainfall, flowering generally takes place in spring and may extend into early summer at cooler sites. Fruits ripen after flowering, most commonly in late spring and summer. During dry years there may be few flowers and little fruit.

The key food season is therefore fruit maturity, not the flowering period. A green, undeveloped fruit is not equivalent to a fully ripe red one.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruit. An ethnobotanical report from Nevada desert regions records fresh consumption of the fruits of this cactus. The pulp is suitable for food only after every surface spine has been carefully removed. Never bite into a spiny fruit or use its color alone to establish that it is ready to eat.

Unripe green fruits, stems and flowers are not recommended as uncooked food merely because this cactus produces edible mature fruit.

The fruits are small, and gathering them does not justify damaging a long-lived cactus. Because some populations are rare, recognizing and studying this species is usually more appropriate than treating it as a reliable source of large food supplies.

HOW TO AVOID CONFUSION

Other desert Echinocereus species also have ribbed stems and large flowers; some flower red rather than purple. Opuntia has flattened, succulent pads, while Mammillaria generally has separate tubercles instead of long, continuous ribs. Correct species identification requires comparing the number of ribs, the arrangement of spines and flower structure.

A rare variety, Echinocereus engelmannii var. howei, is recorded in California as a protected plant. Do not cut, uproot or collect from wild populations, particularly in parks and protected natural areas, without lawful authorization.

SOURCES

DOE/Nevada, ethnobotanical study of Echinocereus engelmannii: https://www.osti.gov/servlets/purl/137690

Calflora, Echinocereus engelmannii: https://www.calflora.org/app/taxon?crn=2878

Calflora, rare variety howei: https://www.calflora.org/app/taxon?crn=2879

FloraFinder, plant and fruit description: https://florafinder.org/Species/Echinocereus_engelmannii.php

Russian olive — silvery leaves and sweet, mealy autumn fruit · Elaeagnus angustifolia

Elaeagnus angustifolia

Along dry roadsides and beside older riverside plantings, a small tree may appear as though it has been dusted with silver. Its narrow leaves are silvery on both sides, its tiny flowers have a strong fragrance, and yellow-silver, mealy fruits ripen toward the end of summer. Russian olive is not native to California, but in some places it has escaped cultivation and established in the wild.



Russian olive (Elaeagnus angustifolia) — photograph of the tree

Robert Flogaus-Faust · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree or large shrub, often three to seven meters tall. Its alternate leaves are narrow and lance-shaped, several centimeters long, and covered in minute silvery scales. Young branches also appear pale, and some end in sharp thorns.

The small, tubular flowers are yellowish inside and silvery outside and often occur singly or in groups of two or three in the leaf axils. The fruit is ellipsoid and approximately one centimeter long, initially silvery and firm, later more yellow, softer and mealy. One large, hard stone lies within it.

The combination of silvery scales, narrow leaves, fragrant little flowers and elongated fruits is more useful for identification than any single feature.



Russian olive (Elaeagnus angustifolia) — photograph of the tree

Thayne Tuason (ThayneT) · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Elaeagnus angustifolia as nonnative in California, although it sometimes persists beyond its original plantings. It may occur in old shelterbelts, beside canals and rivers, and in other disturbed places.

In suitable moist valleys it can spread and displace native shrubs. An ornamental tree growing close to a house should not be treated as a freely available wild harvest. Roadside dust and chemical treatments may also make its fruits unsuitable for eating.

WHEN EDIBLE PARTS ARE AVAILABLE

The fragrant flowers generally open in late spring or early summer. Fruits develop during summer and most often reach maturity between August and October, sometimes later in cooler districts.

On the same day, branches of one tree may carry both hard, astringent unripe fruit and softer, somewhat sweet ripe fruit. Assess each fruit's maturity rather than assuming an entire crop has ripened uniformly.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruit. Both Cal Poly's tree reference and Plants For A Future explicitly describe eating the fruit of Elaeagnus angustifolia raw. It has an unusual, rather dry and floury flesh around a large, hard stone, sometimes with a pleasant sweetness.

Very unripe fruits are unpleasantly astringent. Waiting until they have softened and matured changes the taste. Fully ripe fruits can be eaten fresh or allowed to dry naturally without heat under clean conditions.

Leaves, bark, flowers and the hard stones are not included here as confirmed uncooked field foods.

HOW TO AVOID CONFUSION

Some other Elaeagnus species and plants such as sea buckthorns also have silvery foliage. Russian olive, however, has narrow, entire leaves, strongly fragrant little yellow flowers and single elongated fruits.

Do not confuse it with true olive, Olea europaea: the latter has opposite leaves and a different fruit structure. A silvery appearance alone is insufficient to identify any edible tree.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=2897

Cal Poly SelecTree: https://selectree.calpoly.edu/tree-detail/elaeagnus-angustifolia

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Elaeagnus+angustifolia

Loquat — juicy orange fruit ripening after winter flowering · Eriobotrya japonica

Eriobotrya japonica

When many fruit trees are only starting to bloom, the evergreen loquat may already carry juicy yellow fruits. In warmer parts of California it is often seen near older homes and parks. Its large, deeply veined leaves remain on the tree throughout winter, while round orange fruits develop after autumn or winter flowering.



Loquat (Eriobotrya japonica) — photograph of the tree

SAplants · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Loquat usually grows as a small tree with a dense, rounded crown, about three to eight meters tall. The leaves are very large, simple and toothed along their margins. They are glossy dark green above and covered in dense reddish-brown felt beneath. Their deeply sunken veins give them a ribbed appearance.

At the tips of the shoots, branching clusters of little fragrant white flowers appear in autumn. Round or pear-shaped fruits follow, generally three to five centimeters long, turning yellow or orange when ripe. Each contains one or several large, smooth, dark-brown seeds.

The evergreen habit, large textured leaves and terminal flower clusters distinguish loquat from many other cultivated fruit trees.



Loquat (Eriobotrya japonica) — photograph of the tree

Dinkun Chen · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

This tree was introduced from East Asia and is found mostly in gardens and around houses. Calflora records escaped plants in Los Angeles, Orange, Marin, San Mateo, Sacramento and other counties, though wild observations remain comparatively few.

Loquat prefers mild winters and can suffer frost damage while flowering. In the Sacramento Valley it is found principally around settlements, rather than in natural woodland. Fruit on a privately owned tree cannot be gathered without permission, and ornamental trees may be sprayed.

WHEN EDIBLE PARTS ARE AVAILABLE

Loquat's main seasonal distinction is flowering during cool weather, often from late autumn through winter. Ripe fruit appears from late winter into spring, shifting toward early summer in parts of the state.

The same tree may carry yellow, already fragrant ripe fruit alongside firm, green, immature fruit. The useful raw-food stage is soft, fully colored fruit, not simply any developing fruit cluster.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit flesh. Soft, juicy yellow or orange loquats can be eaten fresh. Remove the skin if it is tough. The flesh may be whitish, yellow or apricot-colored, with a pleasant moderate tartness.

Cut open each fruit and remove every large, smooth seed intact. Fully ripe pulp can also be mashed cold, or dried naturally without heat where conditions are clean and sufficiently dry.

Leaves, twigs and seeds are not food here: Calflora separately warns about their toxicity. Do not crack or chew the seeds. The edible ripe flesh must not be confused with the seed-bearing core of this rose-family fruit.

HOW TO AVOID CONFUSION

Loquat is not the true European medlar, Mespilus germanica, and its seed and leaf structure differ from those of small yellow citrus fruits.

Its leaves are large, deeply veined and felted beneath, and its flower clusters grow at shoot tips. Apple and pear trees generally have smaller leaves and are deciduous.

Seeds of some rose-family plants contain cyanogenic compounds; the fact that the fruit flesh is edible is no reason to treat loquat's large seeds as nuts.

SOURCES

Calflora, Eriobotrya japonica: https://www.calflora.org/app/taxon?crn=8718

Oregon State University, Eriobotrya japonica: https://landscapeplants.oregonstate.edu/plants/eriobotrya-japonica

Calflora county records: https://www.calflora.org/app/countytaxon?crn=8718

Longbeak stork's-bill — tender bases of very young beaked fruits · Erodium botrys

Erodium botrys

In late winter, a low rosette of lobed leaves appears on California's grassy slopes. In early spring, a few small pink-purple flowers rise above it. After pollination, each flower produces a long, narrow 'needle' — a developing fruit with a characteristic beak.



Longbeak stork's-bill (Erodium botrys) — plant photograph

Stickpen · Public domain · Wikimedia Commons

This is Erodium botrys, an introduced stork's-bill now widespread in California. A traditional food account from Spain specifically records eating the soft bases of very young fruits raw. This is a narrow, brief stage of one plant part, not a claim that all stork's-bill foliage or mature fruits can be eaten.

HOW TO IDENTIFY IT

An annual herb, often 10–50 centimeters tall, with spreading or somewhat ascending shoots. Its basal rosette bears broad, oval leaves divided into lobes. They are not dissected into numerous very narrow segments in the way typical of Erodium cicutarium.

The stems and leaves have short hairs. Each flower has five pinkish or purplish petals, often with darker veins. The flower is fairly symmetrical, sometimes slightly uneven.



Longbeak stork's-bill (Erodium botrys) — plant photograph

Curtis Clark · CC BY-SA 2.5 · Wikimedia Commons

A long, beak-shaped fruit forms after flowering and consists of five separate parts. As it matures, its seed-bearing sections twist and coil; the pointed, dry parts can attach to animal fur and footwear. The young fruit looks very different from these sharp, mature structures.

WHERE IT GROWS AND HOW COMMON IT IS

University of California IPM identifies Erodium botrys as a common weed of agriculture and other disturbed places. Calflora records thousands of observations, including hundreds in Sacramento County and additional records in Placer, Yolo, Marin and coastal counties.

It grows on grassy slopes, pastures, roadsides and old fields. Sites exposed to car dust, fertilizer, herbicides or animal waste must not be used to gather raw food, even when the species is widespread and correctly identified.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes emerge after autumn rains. Flowering may start in late winter and continue through spring in lowland California, lasting longer at cooler sites.

The soft fruit structure begins developing immediately after the flower fades. Soon the long beak lengthens and hardens; a mature fruit forms a springy, sharp coil. The stage suitable for the documented raw use is therefore extremely short: early spring, while a newly formed fruit base remains tender.

WHAT CAN BE EATEN WITHOUT COOKING

Only the soft base of an immature fruit. An ethnobotanical study by José A. González and colleagues in rural Spain explicitly recorded eating the base of young Erodium botrys fruits raw as a small seasonal snack.

The report concerns the base of a fruit that is still soft, not the long, mature beak. Dry, mature seed-bearing parts are pointed and are not intended for chewing.

Evidence for this species does not justify transferring other raw food uses reported for Erodium cicutarium to its leaves, roots or old stems. The amount of food provided by a fruit base is very small.

HOW TO AVOID CONFUSION

Erodium cicutarium has far more deeply dissected, almost feathery leaves. Erodium moschatum has larger pinnate leaflets with different hairiness and scent. Erodium botrys is particularly recognizable by its broad, lobed leaf blades before flowering.

Many geranium-family plants bear similar pink, five-petaled flowers. Identification requires looking at the rosette and both young and mature fruit structure. Never taste unidentified greens or dry 'seed arrows' that can scratch the skin and mucous membranes.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=3446

UC IPM, filarees: https://ipm.ucanr.edu/weeds-identification-gallery/filarees/

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Redstem filaree — fine spring leaves and tender young stems · Erodium cicutarium

Erodium cicutarium

After a rainy winter, California's dry slopes may be carpeted with low plants bearing finely divided green leaves. Small pink flowers rise above them in spring; long 'beaks' then form and twist as they dry.



Redstem filaree (Erodium cicutarium) — plant with dissected leaves and pink flowers

Ivanhoe65 · CC BY-SA 3.0 · Wikimedia Commons

This is Erodium cicutarium, commonly called redstem filaree or common stork's-bill. Its young leaves and tender stems are eaten raw, but mature fruits with sharp seed-bearing parts are completely unsuitable for food. A single feather-like leaf is not enough to identify the species safely.

HOW TO IDENTIFY IT

A member of the geranium family, usually completing its life cycle during one rainy season. First it forms a basal rosette of long leaves, deeply divided into small, feather-like lobes. The surfaces are often softly hairy, and leaf stalks can be reddish.

Later, low stems spread or rise slightly from the ground. The flower usually has five pink or lilac petals, often showing darker veins, and five sepals.



Redstem filaree (Erodium cicutarium) — plant with dissected leaves and pink flowers

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

After pollination, an elongated fruit develops with a beak several centimeters long. As the fruit matures, it divides into separate seed-bearing units. The tail of each unit twists into a spiral and can work its way into dry soil. Even when the plant has almost dried out, this fruit remains conspicuous.

The petioles and dissected leaves of young filaree resemble those of other herbs, so identifying a plant that shows both flowers and its characteristic beaked fruits is preferable.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora has thousands of records of Erodium cicutarium across almost all of California, including Sacramento, Yolo, Placer, San Diego and desert counties.

The California Invasive Plant Council describes it as a widespread introduced weed of pasture, grassy slopes, fields and roadsides. It rapidly exploits temporary moisture and can form large green patches before drought begins.

In the Sacramento Valley it is most evident in late winter and early spring. After favorable rains it can form unusually dense carpets even in deserts, then disappear as temperatures rise.

Abundance does not establish cleanliness. Pastures may be chemically treated, and roadside plants are unsafe for raw gathering.

WHEN EDIBLE PARTS ARE AVAILABLE

Seedlings appear after the first sustained autumn rains. In the Central Valley, the softest leaves are generally available from December through March.

In late winter and spring the plants flower and develop green beaked fruits, which become longer and springy as they dry. Dry fruits can remain on the soil even in summer when almost no edible greenery remains.

On cooler slopes the growing season lags behind that of warmer lowlands. For raw food, the plant's young stage matters more than the maximum length reached by its spring stems.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms their raw edibility. The flavor is slightly tart and sometimes astringent; finely divided leaves may be mixed with other greens. Large old leaves are hairier and less pleasant. Tannins make large, repetitive servings particularly undesirable.

Tender young stems. The species reference separately records eating them raw before they become coarse. These soft stems are available for a short period before flowering and just afterward.

Mature beaked fruits must not be eaten: their pointed seed-bearing parts can catch on skin and mucous membranes.

Roots and thick lower stems are often described in preparations involving heat; they are not recommended here as fresh vegetables. Do not taste unidentified pinnate rosettes.

HOW TO AVOID CONFUSION

Musk stork's-bill, Erodium moschatum, has larger leaflets that are divided differently. Various Geranium species have similar pink flowers but differently constructed fruits.

Early identification is particularly important: potentially poisonous carrot-family plants can also have finely divided foliage, making some young rosettes confusing. Only collect a fully identified Erodium, checking leaves, flowers, stems and characteristic beaks together.

Soil dirt, traffic dust and evidence of herbicide use make a location unsuitable for raw gathering.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=3448

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Erodium+cicutarium

California Invasive Plant Council: https://www.cal-ipc.org/plants/profile/erodium-cicutarium-profile/

Musk stork's-bill — soft spring leaves and pink flowers · Erodium moschatum

Erodium moschatum

On a damp California meadow after winter rain, a low rosette of leaves divided into rounded, toothed leaflets may appear. Small pink flowers later open above it, followed by long fruits resembling birds' beaks.



Musk stork's-bill (Erodium moschatum) — photograph of the plant

Eugene Zelenko · CC BY-SA 4.0 · Wikimedia Commons

This is Erodium moschatum, musk stork's-bill, an introduced relative of the redstem filaree described elsewhere in the atlas. Its young leaves can be eaten raw. Distinguishing the two from a single photograph is difficult, making the form of their leaves and the development of their flowers and fruit especially important.

HOW TO IDENTIFY IT

An annual, sometimes biennial herb that forms a rosette and several creeping or ascending stems.

The leaves are pinnately compound or deeply divided, with comparatively broad, oval leaflets and rounded teeth along their edges. They are usually visibly larger and softer than the finely divided leaflets of Erodium cicutarium.



Musk stork's-bill (Erodium moschatum) — photograph of the plant

E Wusk · CC BY-SA 4.0 · Wikimedia Commons

Correctly identified leaves may have a distinctive musky odor when rubbed, but scent must not be used to identify an unknown plant initially.

Flowers generally have five pale pink or lilac petals, often with darker veins. After flowering, a characteristic long, beak-like fruit develops, consisting of seed-bearing units with elongated tails. As the tails dry, they twist into spirals that help move the seeds into the soil.

Older stems may redden, and leaves can sometimes remain green into summer at irrigated sites.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Erodium moschatum as a nonnative annual with roughly two thousand observations in California.

It occurs on grassy slopes, pastures, roadsides, gardens and disturbed land, particularly where winter rain produces temporary soil moisture. In the Sacramento Valley it is a possible, sometimes common seasonal weed, although Erodium cicutarium is often considerably more abundant.

In exposed dry places, musk stork's-bill quickly completes its life cycle, leaving dried beaks on the ground. Grazing sites and areas treated with herbicides are unsuitable for gathering raw food.

WHEN EDIBLE PARTS ARE AVAILABLE

Seedlings emerge after the first substantial autumn rains. In lowlands, soft young leaves usually develop during December–February, the best period for this food.

Flowering generally intensifies in early spring, though individual flowers may appear in winter in mild places. By mid- and late spring, long green beaked fruits develop, then dry and coil.

As summer heat arrives, most plants yellow and die back. On irrigated lawns, foliage may persist longer, but an old green leaf is not necessarily tender.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms eating leaves of Erodium moschatum raw. Their flavor is slightly grassy, sometimes with a musky note. A few soft leaflets can be torn up and added to mixed cold greens.

Old leaves are tougher, particularly near dried stems. Do not assume that every similar-looking pinnate rosette is edible simply because musk stork's-bill has a documented raw leaf use.

Unlike Erodium cicutarium, whose species reference also describes raw young stems, the direct confirmation here concerns leaves alone.

Stems, flowers, roots, green and dry fruits are therefore excluded from the raw-food list. Mature beaks with long tails are especially unsuitable: they become caught in fabric and can injure a person attempting to chew them.

Low leaves close to the soil should only be gathered from clean ground.

HOW TO AVOID CONFUSION

Erodium cicutarium has more finely dissected foliage with narrow lobes; the leaflets of musk stork's-bill are broader and rounder. Several Geranium species also have pink flowers and low rosettes but differ in fruit structure.

Without flowers and mature beaks, early stork's-bill plants can be difficult to identify. Potentially poisonous members of the carrot family can also have pinnate leaves.

Do not use taste or fragrance to determine an unknown plant. Check adult features on the same living plant rather than on an unidentified neighbor.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=3452

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Erodium+moschatum

Garden rocket — peppery cut leaves and pale, veined flowers · Eruca vesicaria

Eruca vesicaria

During cool weather, a low rosette of long leaves with deep lobes may appear in an old vegetable plot or beside an abandoned garden bed. A strong, spicy aroma comes from a leaf once the plant has been correctly identified.



Garden rocket (Eruca vesicaria) — photograph of the plant

Joaquinasad · CC BY-SA 4.0 · Wikimedia Commons

Later, pale four-petaled flowers with dark veins open above the rosette — a characteristic appearance of cultivated rocket, commonly called arugula in the United States.

HOW TO IDENTIFY IT

Rocket first develops a rosette close to the soil surface, then sends up an upright flowering shoot.

The lower leaves are elongated and divided into one large terminal lobe and several narrower side lobes. Their margins may be smooth in places or irregularly toothed. They are usually light green, sometimes with fine hairs.

The flowers have the cross-shaped structure typical of the mustard family: four widely spaced petals, generally cream, whitish or very pale yellow, with conspicuous purple-brown veins.

Elongated seedpods develop after flowering. The flowers and fruits help distinguish this rocket from other plants with divided leaves.

WHERE IT GROWS AND HOW COMMON IT IS

Eruca vesicaria is introduced to California and is primarily known as a vegetable crop. It also occurs outside garden beds, on disturbed soil and near settlements.

Calflora confirms its presence in the state, but records of escaped plants are relatively few. Here it does not form the huge wild stands typical of some introduced mustards.

An escape from a vegetable garden is still subject to the same questions of site contamination and property rights as any other cultivated plant.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves are especially good after cool, moist weather, usually in winter and spring in California's lowlands.

As temperatures rise, rocket quickly develops flowering stems, while the leaves become coarse and sharper in taste. The timing of flowering depends on autumn germination, rain and temperature; at irrigated sites, growth cycles can repeat.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future confirms eating Eruca vesicaria raw. Use a modest amount as peppery greens. Their flavor is sharp and nutty-mustard-like, rather than the neutral taste of lettuce.

Open flowers. The pale flowers are also edible raw, usually with a similar but milder flavor. Flowers are valuable for confirming the species when a young rosette could resemble neighboring mustard-family weeds.

Seedpods and seeds. Although rocket is used in many food traditions, methods of processing the seed or extracting oil must not be transferred automatically to this raw-food guide.

For this species, young leaves and open flowers are the confirmed parts recommended without fire; pods and seeds are excluded.

HOW TO AVOID CONFUSION

Perennial wild rocket, Diplotaxis tenuifolia, described separately, has more vividly yellow flowers and often leaves divided into narrower lobes.

Brassica juncea and Brassica nigra can also have deeply cut lower leaves, but their flowers are bright yellow without the characteristic network of contrasting veins.

The differences are harder to see in plants that have not yet flowered. A rosette alone is insufficient for reliable identification. Greens gathered near roads or from herbicide-treated ground are not safe simply because the botanical genus is edible.

SOURCES

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Eruca+vesicaria

Calflora: https://www.calflora.org/app/taxon?crn=9941

Wikimedia Commons, species photograph: https://commons.wikimedia.org/wiki/File:Eruca_vesicaria.jpg

Common fig — fresh ripe syconia and naturally dried fruit · Ficus carica

Ficus carica

Near old gardens, on river terraces and beside California canals, trees with enormous rough leaves sometimes grow. During summer, green pear-shaped figs appear among the foliage; by the end of the season many become soft and turn golden, brown or purple.



Common fig (Ficus carica) — photograph of the tree

Fanghong · CC BY-SA 3.0 · Wikimedia Commons

Figs originated in the Mediterranean region, but some have escaped cultivation and established in California. Their fully ripe fruit can be eaten fresh or dried naturally without fire. The tree's milky latex, on the other hand, can injure skin and is not food.

HOW TO IDENTIFY IT

Ficus carica is a deciduous shrub or tree, sometimes eight to ten meters tall. Young trees have a spreading crown; older plants may have several large branches and relatively smooth, gray bark. Roots can produce new shoots, forming groups of young trunks near the main stem.

The alternate leaves are large, often wider than a hand, on long stalks. They commonly have three to five deep lobes, though the leaves of a single tree may be less deeply divided. Their upper surfaces are rough, with noticeable hairs, and their undersides have conspicuously raised veins. Breaking a leaf or an unripe fruit releases white latex.



Common fig (Ficus carica) — photograph of the tree

Stefan Thiesen (Buntrabe) · CC BY-SA 3.0 · Wikimedia Commons

What is commonly called a fig fruit is botanically a special fleshy inflorescence, a syconium. Tiny flowers grow inside its hollow, pear-shaped structure and are almost invisible from outside. Fig trees therefore do not bloom with the conspicuous exposed flowers of an apple tree.

Developing syconia begin small, green and firm, then enlarge, soften and — depending on variety — become greenish yellow, bronze or purple. Dark color alone does not prove ripeness because some fully ripe varieties remain pale.

WHERE IT GROWS AND HOW COMMON IT IS

Figs are extensively cultivated in California gardens, but Calflora also records naturalized plants.

The University of California Weed Research & Information Center describes escaped trees along riverbanks, irrigation canals, ravines, former homesteads and other sites with some summer moisture. Trees can appear along levees in the Sacramento–San Joaquin Delta. The California Invasive Plant Council treats the species as having a moderate impact on native plant communities.

This does not mean wild figs grow under every tree in every county. They are less likely to establish on very dry sites without water, and some apparently wild individuals are remnants of former plantings.

The Sacramento Valley's hot summers are suitable for figs. A tree beside a fence or garden may nevertheless stand on private property; fruit visible from a road does not automatically become public property.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves unfold in spring; after winter leaf fall the tree may appear almost bare. Fruit growth starts as temperatures rise.

Some varieties produce an early, small crop, called the breba crop, on the previous year's wood in early summer. Their main crop develops later on the current season's growth.

In the Central Valley, fresh figs are most often available from June or July through September or October, depending on the variety and temperatures. Not every escaped tree produces large amounts of ripe fruit: yield depends on the cultivar or local type and pollination.

Rain close to harvest may cause splitting and spoilage. Fully ripe figs that have been dried naturally can be stored beyond the fresh fruit season under suitable conditions. Spring leaves and milky latex appear earlier but are not food parts in this article.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe fruit. Eat a fig fresh once it is soft, droops slightly on its stalk and separates easily. Inside, the flesh may be pink, red or amber and contains many tiny edible achenes. Sweetness differs greatly between trees.

UC IPM notes that abundant white milky sap coming from a cut fruit stalk is a sign that the fig is not yet ripe.

Cut or mashed ripe figs. No boiling is needed. The soft interior may be eaten directly after cutting the fig open. Reject fruit damaged by insects or showing fermentation, a sour alcoholic odor, decay or mold. Even refrigerated fresh figs spoil fairly quickly.

Naturally dried ripe figs. A traditional way to store figs without fire is to dry fully ripe fruit on a clean tray, protected from dust and insects, in suitably dry conditions. The fruit must dry through completely; otherwise long storage risks mold. California heat may help drying, but high humidity and contamination make the method unreliable.

HOW TO AVOID CONFUSION

The large lobed leaves, grayish branches and fleshy pear-shaped syconia usually make Ficus carica recognizable. A young shoot without fruit may be confused with other trees bearing large lobed leaves, so the combination of foliage and figs matters.

Ornamental Ficus species have different leaves and fruit and must not be treated automatically as edible figs.

Especially important is the white latex released by damaged leaves, twigs and unripe figs. Calflora warns of skin irritation, and dermatological literature describes phytophotodermatitis: contact with plant sap followed by sunlight can cause burns and blisters.

Never taste the latex. After contact, wash the skin and protect it from sunlight. Only the fully ripe syconia are food here — not the green wood, leaves or sap.

SOURCES

UC IPM, Cultural Tips for Growing Fig, ripeness and fresh/dried fruit: https://ipm.ucanr.edu/home-and-landscape/cultural-tips-for-growing-fig/

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UC Weed Research & Information Center, naturalized figs in California: https://wric.ucdavis.edu/information/natural%20areas/wr_F/Ficus.pdf

DermNet, phytophotodermatitis: https://dermnetnz.org/topics/phytophotodermatitis

Fennel — fine aromatic greens and anise-scented fruits · Foeniculum vulgare

Foeniculum vulgare

Tall, bluish-green fennel stems rise above the grass, with very fine green threads in place of ordinary broad leaves. During summer, umbrella-shaped clusters of tiny yellow flowers appear above them.



Fennel (Foeniculum vulgare) — photograph showing feathery leaves and yellow umbels

Sten · CC BY-SA 3.0 · Wikimedia Commons

Fennel originated in the Mediterranean region but has long been established in California, sometimes forming extensive stands. This is a food plant with a sweet, anise-like aroma. However, some deadly poisonous members of the carrot family look superficially similar, so identifying wild fennel requires exceptional care.

HOW TO IDENTIFY IT

Fennel is a perennial herb that sends up new stems from its base each year. At favorable sites the stems rise higher than a person, sometimes reaching about three meters. They are upright, branched, longitudinally grooved and hollow. Dead stems from the previous season often remain around their base.

The leaves are divided repeatedly into exceptionally fine, almost threadlike segments. From a distance the foliage looks like a light green feather. The leaf bases are enlarged and clasp the stems.



Fennel (Foeniculum vulgare) — photograph showing feathery leaves and yellow umbels

Saintfevrier · CC BY-SA 4.0 · Wikimedia Commons

A correctly identified fennel plant releases its characteristic sweet anise aroma when handled, but smell alone cannot replace examining the whole plant, and an unknown plant must never be tasted to test its identity.

The tiny yellow flowers form broad compound umbels: several rays arise from a common point, each bearing additional clusters of little flowers.

After flowering, elongated, ribbed fruits ripen. In everyday language these are commonly called fennel 'seeds.' They are initially green, then yellowish brown. Each dried fruit separates into two halves.

WHERE IT GROWS AND HOW COMMON IT IS

Fennel grows in many parts of California, including field margins, open slopes, roadsides, former agricultural land and coastal plant communities.

Especially extensive stands are reported around San Francisco Bay, the Palos Verdes Peninsula and parts of Southern California. In the Sacramento Valley, fennel can also occur on disturbed, relatively sunny ground, though it is not distributed evenly throughout the state.

It is an introduced species. Where fennel spreads vigorously, it may displace native vegetation. The presence of a large aromatic-looking plant does not prove that it is edible fennel: some members of the family Apiaceae are deadly poisonous.

WHEN EDIBLE PARTS ARE AVAILABLE

New leaves and tender shoot tips appear as growth resumes after rainfall. In mild areas they can remain available through much of the year, especially winter and spring. By summer, stems are often coarser.

Little yellow flowers generally appear from late spring through summer. The California Invasive Plant Council notes especially conspicuous umbels from April through July, though flowering may last longer at some sites.

Green, fragrant fruits follow flowering. By late summer and autumn, many have become dry and brownish. Their precise timing varies with moisture and temperature.

WHAT CAN BE EATEN WITHOUT COOKING

Tender leaves. Fennel's fine green leaf segments can be used fresh. Their anise flavor adds aroma to salads, uncooked greens and other cold dishes. Unlike broad salad leaves, fennel is normally used as an aromatic addition rather than as the main ingredient in a large helping.

Young shoots and soft stems. Mediterranean food traditions and modern cuisine include eating tender fennel growth fresh. In cultivated Florence fennel, the swollen, juicy bases of the leaves are also eaten.

Wild Californian fennel stands, however, generally lack the large white swollen 'bulb' of that vegetable form. Do not assume every wild plant has the same food structure as the cultivated variety.

Fruits commonly called seeds. Green and dried aromatic fruits are used as a spice. They may be chewed or crushed without heat to release their scent. Mature fruits can be dried naturally for later use.

Thus fennel has several different food seasons: tender greenery while growing, aromatic green fruits after flowering and dry fruits later.

HOW TO AVOID CONFUSION

The resemblance to poison hemlock, Conium maculatum, is particularly dangerous. That plant also has tall stems and finely divided leaves, but its flowers are white rather than yellow. Smooth poison-hemlock stems often display purple spots.

Poison hemlock is deadly poisonous, and handling its parts is best avoided. UC IPM confirms that every part contains toxic alkaloids.

Young carrot-family plants can look alike before their flower colors and characteristic stem markings have developed. Identification of unknown wild fennel must never begin by tasting a leaf, fruit or crushed plant material.

Other Apiaceae may also resemble fennel, especially before flowering. Leaf shape, aroma or a photograph by itself is insufficient for deciding that a wild specimen is edible. If there is the slightest uncertainty, do not consume the plant.

SOURCES

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White sage — tender shoots and cold-soaked seeds of Southern California · Salvia apiana

White Sage

A shrub with almost white, woolly leaves grows on dry hillsides in Southern California. After winter rains, it sends out tender new shoots; by summer, tall flowering branches rise above the silvery foliage. Small dark seeds later remain in the flower calyces.



White sage (Salvia apiana) — photograph of the shrub

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

Young tender stems have direct ethnobotanical documentation as a food eaten raw. The seeds were also used as food, but distinguishing cold soaking from the historically widespread practice of roasting them is important.

HOW TO IDENTIFY IT

White sage is a perennial, semi-evergreen shrub of the mint family, Lamiaceae. Its main leafy part is generally about 60–150 centimeters tall, though flowering stems may reach much higher, sometimes around two meters. Branches spread from the base and become woody over time.

The simple leaves are long, narrow-lanceolate or oval-lanceolate, often about 4–8 centimeters long, with barely visible marginal teeth. Dense, short, pale hairs cover them, making the entire bush appear silver-white. Young leaves may be greener than old ones. Handling the plant releases a powerful aroma, but a sage scent alone is not sufficient for species identification.



White sage (Salvia apiana) — photograph of the shrub

Roger Culos · CC BY-SA 4.0 · Wikimedia Commons

In spring, tall flowering branches grow from the upper part of the shrub. Small white or faintly lilac, two-lipped flowers are arranged in groups along them. The stamens project conspicuously from the flowers. After pollination, small hard nutlets develop within the calyces, distinguishing this plant from berry-bearing shrubs. The seeds are small, dark and rounded-oval.

WHERE IT GROWS AND HOW COMMON IT IS

Salvia apiana is native to Southern California and northern Baja California, Mexico. It is especially characteristic of coastal sage scrub, dry sunny hills and foothill slopes with well-drained soil.

It occurs in San Diego, Riverside, Orange and neighboring counties, including the western fringes of the deserts. In suitable coastal scrub, white sage can be conspicuous and locally abundant, but it is not a common wild green of moist Northern California forests or the floor of the Sacramento Valley.

Even within its southern range, the number of shrubs varies from one slope and one year to another. Identification, conservation and permission to gather matter more than the presence of a few apparently healthy bushes.

WHEN EDIBLE PARTS ARE AVAILABLE

Silvery leaves may remain on the shrub through much of the year, especially in mild districts, but mature leaves are not confirmed as ordinary uncooked food in the cited sources. During severe summer drought, some foliage dries or becomes sparse.

Young stems develop chiefly in the cool, moist season, from about January through April, often continuing to grow during spring. Flowering stalks generally rise in spring, and flowers open approximately April–July. The season of truly tender edible stems is short; later they become tough.

Seeds ripen after flowering, mainly in summer. Historic seasonal calendars of Southern California place seed gathering roughly between June and September. Rainfall and elevation can shift these dates considerably.

WHAT CAN BE EATEN WITHOUT COOKING

Young stems. The San Diego Natural History Museum specifically describes eating young white sage stems raw. The University of San Diego also documents peeled young shoots used by the Kumeyaay. The soft portion of spring growth could be eaten without heating. This concerns young shoots, not old, tough, woody branches.

Peeled tips of flowering stalks. A separate ethnographic account of Luiseño food use records peeling the outer layer from stalk tips and eating them raw. This concerns a different growth stage: a developed but still tender stem. These methods apply specifically to Salvia apiana and must not automatically be transferred to other sages.

Seeds. Small mature seeds could be eaten raw or ground. Plants For A Future separately lists raw use of Salvia apiana seed and soaking overnight in cold water or fruit juice to make a drink.

That cold-soaked preparation is not the same as roasted and ground pinole, which is documented in other Southern California food traditions. White sage seeds were important food for some Indigenous communities; for the present purpose, what matters is that consumption without heating has also been documented.

Leathery, intensely aromatic leaves can remain on the bush throughout the year, but these sources do not describe them as an ordinary raw salad green. The food parts confirmed here are therefore young stems, peeled tender tips and mature seeds.

HOW TO AVOID CONFUSION

Southern California has many sages, including black sage, Salvia mellifera, and purple sage, Salvia leucophylla. White sage generally has especially pale, densely hairy leaves, tall whitish flowering stalks and white-to-lavender flowers.

Black sage usually has greener, more wrinkled leaves and differs in the color and arrangement of its flower clusters. Accurate identification requires considering the leaves and flowers together.

White sage principally inhabits Southern California coastal scrub, rather than the Sacramento foothills. It may grow alongside other Salvia species, which differ in flowers, hairiness and foliage. It cannot be identified by its strong smell or pale color alone.

The soft edible core of a young stem is not the same thing as an aromatic mature leaf. Raw salad leaves are not recommended here.

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Garden strawberry — juicy red fruit with achenes on its surface · Fragaria × ananassa

Fragaria × ananassa

Low rosettes of three-part leaves sometimes persist in a California garden or beside an abandoned plot, connected by long, creeping runners. White flowers appear above them in spring, followed by juicy red fruit with tiny achenes on its surface. This is the garden strawberry, the plant commonly sold as a strawberry. It is primarily cultivated in California, although individual plants can survive after a vegetable garden has been abandoned. Fully ripe fruit can be eaten raw.



Garden strawberry (Fragaria × ananassa) — plant with three-part leaves and ripe red fruit

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low perennial herb, usually 10–25 centimeters tall, with a short, thick rhizome and long creeping runners that root at their nodes. Leaves grow on long stalks. Each consists of three oval leaflets with distinctly toothed edges and a slightly wrinkled surface.

Small flowers with five white petals open on separate, short flowering stalks. Their yellow centers contain many pistils. Following pollination, the fleshy red receptacle enlarges. The true botanical fruits are the tiny

yellow-brown achenes visible on its surface. Cultivated varieties may have rounded, conical or elongated red fruit, sometimes with pale tips.

WHERE IT GROWS AND HOW COMMON IT IS

Fragaria × ananassa is a cultivated hybrid derived from several American strawberry species. It is grown widely in California, particularly in cool coastal agricultural areas, and in irrigated gardens of the Central Valley.

Native wild strawberries also grow in the state, including Fragaria chiloensis and F. vesca. They must not automatically be identified as cultivated strawberries. Calflora separately records certain natural and historical taxa in the Fragaria × ananassa group; these records do not mean that every wild strawberry along the coast is an ordinary commercial cultivar.

Fruit growing in an agricultural field or private garden belongs to its owner.

WHEN EDIBLE PARTS ARE AVAILABLE

In a mild climate, the rosette may retain green leaves for a long time, especially with irrigation. Spring flowers open after a cool period, and the fruit ripens several weeks afterward.

Along coastal California, some cultivars bear fruit for much of the warmer season. In the hot Sacramento Valley, the main crop often appears during spring and early summer, although irrigation can support another crop.

In red-fruited cultivars, a ripe strawberry becomes evenly red, fragrant and relatively soft. White tips can mean incomplete ripening in some varieties.

WHAT CAN BE EATEN WITHOUT COOKING

Only fully ripe fruit. The enlarged red receptacle is eaten raw together with the tiny achenes on its surface; the green calyx is usually removed. The flesh is juicy and either sweet or sweet-tart.

Ripe strawberries can be mashed into a cold fruit mixture, mixed with drinking-quality water or dried naturally on clean mesh, provided mold is completely avoided. Fruit growing close to the soil is especially vulnerable to contamination. Rinse it gently with clean water before eating.

Leaves and roots are not included as food in this article: their raw use is not separately confirmed for this cultivated hybrid, nor is it necessary to treat them as food.

HOW TO AVOID CONFUSION

Fragaria chiloensis, a native coastal strawberry, generally has firmer, glossier leaves and often bears fewer fruits on each wild plant.

Fragaria vesca has smaller, fragrant fruits that separate from the receptacle in a characteristic way, along with differences in the teeth of its leaflets. Gardens contain numerous hybrids, so it may be impossible to identify a cultivar from a single red fruit.

Do not confuse strawberry with the ornamental mock strawberry, Potentilla indica. Its red fruit resembles a strawberry but is often drier and lacks the familiar fragrance.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=9968

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Fragaria+x+ananassa

California Strawberry Commission: https://www.calstrawberry.com/

Beach strawberry — glossy evergreen coastal leaves and small ripe fruit · Fragaria chiloensis

Fragaria chiloensis

On California's coastal slopes and sandy hollows, a low strawberry grows with firm, shiny, three-part leaves. White flowers appear in spring, followed closer to summer by small, fragrant, red fruits. This is Fragaria chiloensis, the beach or Chilean strawberry. One of the ancestors of the modern garden strawberry, it forms green mats of runners along the Pacific coast. Its raw food crop consists of fully ripe fruit, which may be scarce even where the leaves are abundant.



Beach strawberry (Fragaria chiloensis) — glossy trifoliate foliage and coastal growth

Mike (Pompilid) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low perennial herb. Long, creeping runners emerge from its basal rosettes, giving rise to daughter plants. Several connected rosettes can form a dense carpet of greenery.

Leaves arise on long stalks and each consists of three separate, firm leaflets with toothed edges. Compared with woodland strawberry, Fragaria vesca, the leaflets are often more leathery and glossy.

Flowers grow singly or in small groups on slender stalks above the foliage. They have five white petals, yellow stamens and a green calyx. Following pollination, a fleshy red receptacle develops with tiny dry

achenes on its surface. Its fruit may be rounded or slightly elongated and is generally much smaller than a cultivated strawberry.



Beach strawberry (Fragaria chiloensis) — glossy trifoliate foliage and coastal growth

Dinkum · CC BY-SA 3.0 · Wikimedia Commons

Leaf size and the amount of fruit differ among populations. Confident identification therefore relies on the combination of creeping runners, leaves, flowers, calyx and fruit on the same plant.

WHERE IT GROWS AND HOW COMMON IT IS

Fragaria chiloensis is native to California and characteristic of coastal habitats: the edges of dunes, seaside grasslands and scrub-covered slopes. Calflora confirms many observations in coastal counties.

It is also planted in native-plant gardens, but a cultivated planting does not establish where the species grows naturally. Unlike Fragaria vesca, which occurs in forests and mountains, F. chiloensis is chiefly associated with an oceanic climate.

It is not a common wild strawberry around Sacramento. Where seaside light and moisture are suitable, the plant may form broad mats, although few ripe berries may be produced. Strong wind, salt and sand favor its compact growth.

WHEN EDIBLE PARTS ARE AVAILABLE

Green leaves can persist year-round in a mild coastal climate. Fresh runner growth develops in spring. White flowers are usually visible from April through June, and sometimes longer.

Fully ripe red fruits generally appear after flowering, approximately from late May through July or August. Coastal fog, the elevation of a marine terrace and seasonal rainfall can shift the timing.

The plant may remain green for months after its fruit crop has finished. Persistent leaves do not mean berries are still available.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe red fruit. Plants For A Future explicitly confirms raw consumption of Fragaria chiloensis fruit. Eat it fresh once it is soft, fully colored and has its characteristic strawberry fragrance.

Wild fruit is small and can be especially sweet or somewhat tart. It is an occasional seasonal treat, not a dependable source of large quantities of food.

Mashed fresh fruit. Ripe fruit can be crushed and eaten without heating. Soft strawberries do not keep reliably without refrigeration.

Leaves, roots, runners and flowers are not classified as raw food here. The use of leaves from other strawberry species or for hot drinks does not separately establish the raw edibility of those parts of Fragaria chiloensis.

HOW TO AVOID CONFUSION

Woodland strawberry, Fragaria vesca, typically has less leathery leaves and grows in woodland and foothill habitats.

Potentilla species may also have three toothed leaflets, but their flowers and fruits differ. Potentilla indica has yellow flowers and typically bears more upright, structurally distinct red fruits. Five-petaled flowers alone cannot establish a strawberry's identity.

Collecting plants or fruits may be prohibited on protected coastal dunes, even when the species is common. Never pull out rosettes for a few berries or disturb the sand held together by their runners. Gather only from clean, legally accessible sites after certain identification.

SOURCES

Calflora, native distribution: https://www.calflora.org/app/taxon?crn=3606

Plants For A Future, raw fruit: https://pfaf.org/user/Plant.aspx?LatinName=Fragaria_chiloensis

Watershed Nursery, coastal habitat and flowering: https://www.watershednursery.com/nursery/plant-finder/fragaria-chiloensis/

Woodland strawberry — fragrant red fruit and tender edible leaves · Fragaria vesca

Fragaria vesca

In shaded woodlands, at forest edges and beside clearings, a plant resembling a miniature garden strawberry grows close to the ground. White flowers open on short stalks, and later fragrant red fruits appear above the leaves. Woodland strawberry also has another edible part: its tender young leaves can be eaten raw.



Woodland strawberry (Fragaria vesca) — small red fruit among toothed leaflets

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low perennial herb, usually no more than 15–30 centimeters tall. It does not remain a single isolated rosette: thin creeping runners may extend from the parent plant and produce new rosettes.

Each long-stalked leaf is divided into three leaflets with conspicuous veins and toothed margins. Young leaves are soft and sometimes slightly hairy. Slender flowering stalks rise from the center of the rosette.

The flowers normally have five rounded white petals and yellow centers. Later a small, fleshy red receptacle develops, with many tiny achenes on its outer surface — the structure commonly called a strawberry. Fruits are often around one centimeter long, sometimes a little larger.



Woodland strawberry (Fragaria vesca) — small red fruit among toothed leaflets

Curtis Clark · CC BY-SA 2.5 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Fragaria vesca is native to California and other parts of North America and also grows in Eurasia. In California, it occurs in forests, forest openings, mountain meadows and foothills where the soil retains moderate moisture.

It may grow among pines and oaks or in mixed woodland, but it does not form a continuous berry carpet in every dry part of the state.

In suitable habitats the plant spreads by rosettes and can form small patches. Where summer soil dries rapidly, its food season is brief; at cooler elevations the green growth and fruiting may last longer.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves emerge as growth begins and remain green while moisture and temperatures are suitable. In mild places they may persist through winter, but their most tender growth generally occurs in spring.

White flowers appear from spring in California, and at some sites earlier or again later. Fully ripe red fruit is most often available from late spring through midsummer. At higher elevations, the fruiting season may shift toward July and August.

The exact weeks depend on rainfall, temperature and shade.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. Eat it fresh when the fleshy part is completely red and soft. A USDA Natural Resources Conservation Service reference documents that Indigenous peoples of California and Nevada gathered and ate wild strawberry fruit fresh. Fresh wild strawberry gathering is also known from European areas where the same species grows.

Young leaves. Iowa State University Extension discusses woodland strawberry alongside Virginia strawberry and confirms that their leaves can be eaten raw.

For gathering in California, confidently identifying Fragaria vesca matters: three leaflets alone do not distinguish all similar species. The best leaves are soft and newly grown; older leaves become firmer.

In mild climates leaves may be present much longer than fruit, but the recommended food part is the tender young leaf, not the tough old rosette.

HOW TO AVOID CONFUSION

Woodland strawberry has three toothed leaflets, a white flower with a yellow center and a fleshy fruit bearing achenes on the outside.

The similar mock strawberry, Potentilla indica, also forms creeping rosettes and red fruits, but its flowers are yellow and its fruit usually stands more upright and appears more granular. It is not regarded as a dangerously poisonous look-alike, but it is a different plant.

Woodland strawberry itself varies slightly in leaflet form and fruit size. Do not identify it from a single trifoliate leaf: flower structure, growth habit and fruit must all be considered together.

SOURCES

Royal Botanic Gardens, Kew, botanical characters: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30074127-2/general-information

USDA Forest Service, ecology and use: https://research.fs.usda.gov/feis/species-reviews/fraves

USDA NRCS, Native Uses of Native Plants: https://www.nrcs.usda.gov/sites/default/files/2023-01/Native_Uses_of_Native_Plants-revised_2018-web.pdf

Iowa State University Extension, raw leaves and fruit: https://naturalresources.extension.iastate.edu/encyclopedia/woodland-strawberry

Calflora, California distribution: https://www.calflora.org/app/taxon?crn=3609

NIEHS, mock strawberry: https://www.niehs.nih.gov/health/kids/topics/natural-world/wildlife/plants/false-strawberry

Virginia strawberry — sweet small red fruit on mountain runners · Fragaria virginiana

Fragaria virginiana

Beside mountain streams and at the edges of California forests, low, three-part leaves grow close to the soil, with white flowers appearing among them in spring. Later, small, fragrant red strawberries ripen on thin stalks.



Virginia strawberry (Fragaria virginiana) — three-part leaves and ripe red fruit

Fritzflohrreynolds · CC BY-SA 3.0 · Wikimedia Commons

This is Fragaria virginiana, Virginia strawberry, also recognized by California botanists as a mountain strawberry. Wild fruits are usually much smaller than supermarket strawberries, but can be eaten raw. Their short mountain season reflects the brief summer at higher elevations.

HOW TO IDENTIFY IT

This is a low perennial herb with a basal rosette. Long, thin creeping runners extend from it and form daughter rosettes at their ends.

Each leaf consists of three separate oval leaflets with toothed margins, carried on a slender stalk. The central leaflet is often slightly larger than the two side leaflets. Upper leaf surfaces are green, while the undersides may have hairs; their distribution varies among varieties and populations.



Virginia strawberry (Fragaria virginiana) — three-part leaves and ripe red fruit

Sebaz · CC BY-SA 4.0 · Wikimedia Commons

Flowers generally have five white petals and numerous yellow stamens, with green sepals visible underneath. After pollination, a fleshy receptacle enlarges, bearing many tiny dry achenes on its surface. When fully ripe, it turns red and soft.

California mountain populations may differ in leaf shape and hairiness from the eastern North American examples most often illustrated. Assess all the plant's characters together instead of relying on one leaf in a picture from another region.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Fragaria virginiana as native to California, recording it in mountains and foothills, along streams, and in yellow-pine, red-fir, Douglas-fir and subalpine forest communities.

Its range is neither restricted to the coast like Fragaria chiloensis nor completely the same as that of woodland strawberry, F. vesca.

For someone traveling from Sacramento, suitable habitats occur higher in the Sierra Nevada where spring moisture remains available and summer is cooler. Do not expect native mountain strawberry on the valley's dry, exposed lawns. A cultivated or ornamental hybrid beside a home does not represent a wild local population.

WHEN EDIBLE PARTS ARE AVAILABLE

In winter, the mountain foliage contracts or is hidden by snow. As snow melts, new leaves and white flowers appear, generally later than in the warm Central Valley.

At low foothill elevations, flowering may occur in April and May; higher up it more often occurs in May and June or later. Fully red fruits generally ripen in June–August, depending on elevation, shade and water availability.

At a single site, the short berry crop may finish within a couple of weeks even though green leaves continue growing. Leaves visible in September do not mean fruit is still available.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe red fruit. Plants For A Future explicitly documents raw consumption of Fragaria virginiana. The soft, red fruit is easy to crush, sweet and fragrant, sometimes distinctly tart.

Eat it fresh without heating, leaving its tiny surface achenes intact. For field food, use only fully colored fruit with the familiar strawberry scent.

Mashed fresh fruit. Ripe fruits can be combined into a cold berry mixture and eaten shortly after gathering. They store poorly without refrigeration and rapidly bruise or become moldy.

Some culinary sources describe infusions made from the leaves with hot water. Such infusions fall outside food without fire; raw leaves, roots and runners are not recommended as a food harvest for this species here.

Wild strawberries give modest yields. Leave a lone red fruit on a small patch, especially where the habitat is under restoration.

HOW TO AVOID CONFUSION

Fragaria vesca also has three toothed leaflets and white flowers but differs in details of its leaflets, hairs and receptacle structure. A botanical key is preferable for distinguishing these features.

Coastal Fragaria chiloensis generally has firmer, shinier leaves and grows closer to the ocean.

The mock strawberry, Potentilla indica, bears yellow flowers and usually holds its red fruit more upright. Do not identify a strawberry solely from its three leaflets: some cinquefoils look very similar.

Gathering may be prohibited in protected mountain meadows. Plants beside trails can also be covered in dust.

SOURCES

Calflora, native California range: https://www.calflora.org/app/taxon?crn=3610

Plants For A Future, raw ripe fruit: https://pfaf.org/User/Plant.aspx?LatinName=Fragaria+virginiana

Small-flowered galinsoga — soft summer leaves and delicate shoots · Galinsoga parviflora

Galinsoga parviflora

On damp vegetable-garden soil in summer, a small, fast-growing herb can appear almost unnoticed among taller crops. Its toothed leaves are paired opposite each other, and its tiny flower heads contain a yellow center surrounded by a few short, white, petal-like florets.



Small-flowered galinsoga (Galinsoga parviflora) — leaves and small composite flower heads

Eurico Zimbres (Zimbres) · CC BY-SA 3.0 · Wikimedia Commons

This is Galinsoga parviflora, a plant introduced to California. Its young leaves and soft shoots are documented as greens eaten raw in different parts of the world, although the species has relatively few records in California.

HOW TO IDENTIFY IT

An annual herb approximately 10–60 centimeters tall, with a soft, branching stem that can be four-angled or rounded.

Leaves grow in opposite pairs on short stalks. They are ovate, pointed at the tip and distinctly toothed along the margins, sometimes bearing a small number of hairs.



Small-flowered galinsoga (Galinsoga parviflora) — leaves and small composite flower heads

Kristian Peters (Fabelfroh) · CC BY-SA 3.0 · Wikimedia Commons

Tiny flower heads, only a few millimeters across, emerge in the axils of upper leaves. Usually four or five short white ray florets surround a yellow center made of many tubular florets. Each white ray typically ends in three little teeth.

Later, small dry achenes develop, bearing short scales that assist dispersal. With steady soil moisture, the plant rapidly produces new branches and flower heads.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Galinsoga parviflora as a nonnative annual, with approximately ninety observations; its var. parviflora is recorded even less often.

It grows on disturbed soil, old vegetable beds, near compost heaps, in irrigated plantings and occasionally around rural homes. It is neither a typical herb of dry California hillsides nor an expected food source in alpine tundra.

Self-seeded plants are possible in watered gardens around Sacramento, but small plants of other members of the daisy family are more often encountered. Chemically treated fields and rubbish heaps are unsuitable for gathering raw food.

WHEN EDIBLE PARTS ARE AVAILABLE

Galinsoga germinates when moist soil warms sufficiently. In hot irrigated valleys, leaves can appear from late spring onward, with flowering often continuing through summer into early autumn.

Where moisture is adequate, several generations may grow in a single season. The most tender leaves are available before numerous flower heads form. Later, stems become tougher, although young shoot tips may remain soft.

The aboveground plant dies after frost.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender upper shoots. Botanical food accounts describe Galinsoga parviflora as a leafy vegetable, and a specialist edible-plant database separately confirms raw use.

The leaves have a mild, grassy flavor, sometimes with a faint spicy note. Chop soft leaves into a cold green mixture without heating.

Mature, strongly hairy stems are less pleasant. Seeds are not included as a confirmed raw food part in this article.

Do not eat leaves raw if their soil has been contaminated by wastewater or agricultural chemicals. Washing does not necessarily remove contaminants absorbed by a plant.

HOW TO AVOID CONFUSION

Galinsoga quadriradiata, described separately, has longer and denser hairs on stems and flower stalks; its leaves are generally hairier too. The achenes and their scales also differ. Galinsoga parviflora usually looks comparatively smooth.

Tridax procumbens has larger individual flower heads on long stalks and a different growth habit.

One tiny white-and-yellow head cannot establish the species. Check the leaves, degree of stem hairiness, flower stalk and mature achenes together.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=9974

Calflora, variety: https://www.calflora.org/app/taxon?crn=3651

Cornell University, Galinsoga identification: https://cals.cornell.edu/weed-science/weed-profiles/galinsogas

Edible Plant Database, Galinsoga parviflora: https://edibleplantdb.org/plants/4610/galinsoga-parviflora

Shaggy soldier — hairy summer leaves with tiny white and yellow heads · Galinsoga quadriradiata

Galinsoga quadriradiata

On the loose, damp soil of an old vegetable plot, a small, densely hairy annual sometimes grows with opposite, toothed leaves. Tiny yellow-centered flower heads with just a few white, petal-like florets appear above the foliage.



Shaggy soldier (Galinsoga quadriradiata) — hairy leaves and minute flower heads

Rasbak · CC BY-SA 3.0 · Wikimedia Commons

This is Galinsoga quadriradiata, commonly called shaggy soldier. Closely related to small-flowered galinsoga, it differs in its dense covering of hairs and details of its fruit. Young leaves are separately documented as food eaten raw, including in Indonesian ethnobotanical research.

HOW TO IDENTIFY IT

An annual herb approximately 15–60 centimeters tall, branching freely. The soft stems often bear many long hairs and may feel slightly sticky.

Leaves grow opposite one another, on short stalks. Their blades are oval or broadly lance-shaped, with clearly toothed margins. Noticeable soft hairs cover the leaf blades, veins and often the flower stalks.



Shaggy soldier (Galinsoga quadriradiata) — hairy leaves and minute flower heads

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

The flower heads are minute, carried on thin stalks. Usually four or five short white ray florets surround the many yellow tubular florets in the center. Each ray floret has three small teeth at its end.

Dry achenes develop after flowering, with small scales and bristles. Mature fruit characters are particularly useful for identifying this species accurately.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Galinsoga quadriradiata as nonnative, with only a handful of confirmed California observations. A tiny galinsoga found in the state therefore should not automatically be named as this species; most similar plants require fresh identification.

Potential habitats include damp vegetable beds, disturbed gardens, compost areas and irrigated plantings. The species originates in the Americas but has been introduced to many other regions, where it grows well in loose, moist soil.

It should not be expected continually in Sacramento's dry natural plant communities.

WHEN EDIBLE PARTS ARE AVAILABLE

Seeds germinate after damp soil warms, and the first toothed leaves develop quickly. Under irrigation, growth may begin in late spring and flowering sometimes follows only weeks later.

Through summer, new leaves and flower heads can grow simultaneously, while seeds mature toward autumn. Tender leaves are most readily available before active branching and flowering.

Older plants can become unpleasantly hairy. The aboveground growth dies when strong cold arrives.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. An ethnobotanical study of plants used as food on Mount Bisma in Central Java specifically mentions Galinsoga quadriradiata: its young leaves are eaten raw as fresh greens, while mature leaves are more often cooked.

For food without fire, take a few clean, soft leaves from the upper part of the plant, chop them finely and combine with milder greens.

Mature, densely hairy leaves and tough stems are less suitable. Seeds and roots are not part of the confirmed raw-food list.

Because this plant is associated with garden soil, make sure there is no insecticide treatment, fecal contamination or wastewater exposure.

HOW TO AVOID CONFUSION

Galinsoga parviflora has smoother stems and leaves and differs in the scales on its achenes. Other small members of the daisy family, including Tridax procumbens, can have similar white rays but different leaves and flower stalks.

Galinsoga quadriradiata has many long hairs on its leaves and peduncles, together with very small heads. The number of white ray florets varies in both galinsoga species and is not sufficient for identification on its own.

Look at a mature plant and developed flower head before naming it.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=3652

Ethnobotanical study, Mount Bisma, Central Java: https://journal.ugm.ac.id/jtbb/article/viewFile/66953/33038

Botanical Society of Scotland, shaggy soldier: https://botsoc.scot/2022/10/23/plant-of-the-week-24th-october-2022-shaggy-soldier-galinsoga-quadriradiata/

Cleavers — sticky spring shoots with whorls of slender leaves · Galium aparine

Galium aparine

In winter and early spring, a clinging herb appears under shrubs, beside fences and on damp soil. Its shoots stretch across neighboring plants and easily catch on clothing like green hook-and-loop tape.



Cleavers (Galium aparine) — whorls of narrow leaves and hooked stems

Luis Nunes Alberto · CC BY-SA 3.0 · Wikimedia Commons

While the stems are still very young and tender, their upper sections and leaves can be eaten fresh. Later, the little hooks become increasingly tough.

HOW TO IDENTIFY IT

This annual has long, weak stems with four distinct angles, often ranging from a few tens of centimeters to more than a meter in length. The stems can hardly stand upright without support, instead clinging to other herbs and shrubs.

At each node, six to eight narrow leaves with pointed tips form a whorl around the stem. Leaves and the angles of the stem are densely covered in tiny, backward-pointing hooks.



Cleavers (Galium aparine) — whorls of narrow leaves and hooked stems

Sarefo · CC BY-SA 3.0 · Wikimedia Commons

A gentle touch reveals the rough surface. The flowers are minute, whitish and generally four-petaled. Later, paired, rounded fruits form with similar hooks.

WHERE IT GROWS AND HOW COMMON IT IS

Galium aparine is very widespread in California. Calflora records it in Sacramento, Placer, Yolo, Butte and many coastal and mountain counties.

It grows along moist forest edges, beside hedges, among shrubs, on disturbed ground and sometimes on irrigated land. On a hot, dry roadside it quickly yellows; in shade it may persist longer.

An abundant tangle of green leaves does not establish a clean harvest site. Avoid gathering beside roads, treated gardens and places exposed to other contamination.

WHEN EDIBLE PARTS ARE AVAILABLE

In Sacramento's lowlands, young cleavers usually appear after autumn and winter rain. The softest growth is found in winter and early spring.

At colder sites, growth begins later. Flowering and the development of hooked fruits often take place in spring and may continue into early summer in cool mountain districts.

As the seeds mature, the stems become coarse and the whole plant eventually dries out.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. University of Wisconsin Horticulture explicitly states that young leaves of Galium aparine can be eaten raw. They have a mild grassy taste, although small hooks can already be felt on young greenery.

Tender shoot tips. Species food references also confirm eating the soft upper shoots raw. Choose them before stems become coarse and mature hooked fruits appear.

Very young greens may be finely chopped into a cold mixture with other edible plants. Mature, rough stems and hooked seeds are not recommended as raw food.

HOW TO AVOID CONFUSION

Related Galium species grow throughout California. Cleavers are especially recognizable by whorls of narrow leaves, a four-angled stem and backward-facing hooks that cling to fabrics.

Some other species have smoother stems or smaller whorls. Do not identify a plant solely because it sticks to clothing.

In sensitive people, the fine hooks of Galium aparine can irritate the skin and mucous membranes. Only very tender growth is suitable for this raw use; avoid eating it if irritation occurs.

SOURCES

Calflora, Galium aparine: https://www.calflora.org/app/taxon?crn=3669

University of Wisconsin Horticulture, catchweed bedstraw: https://hort.extension.wisc.edu/articles/catchweed-bedstraw-galium-aparine/

Kew, Plants of the World Online: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30007294-2/general-information

Salal — glossy evergreen leaves and sweet late-summer berries · Gaultheria shallon

Gaultheria shallon

In coastal forests of Northern California, a dense shrub with broad, glossy leaves often grows beneath the trees. Its foliage stays green through winter, spring and summer, while dark fruits appear among the leaves in late summer.



Salal (Gaultheria shallon) — glossy leaves and dark fruit

Wing-Chi Poon · CC BY-SA 2.5 · Wikimedia Commons

This is salal, Gaultheria shallon. Its fully ripe dark berries were eaten fresh and preserved by natural drying. Although the shrub remains green throughout the year, its principal food harvest takes place in late summer and autumn.

HOW TO IDENTIFY IT

Salal is a perennial evergreen shrub usually about half a meter to two meters tall. In sufficiently moist soil, its numerous branches form a dense forest understory.

The leaves are leathery, oval to broadly egg-shaped and generally about 5–10 centimeters long. Their upper surfaces are dark green and glossy, with very finely toothed margins. Leaves are arranged alternately and remain on the plant for several years.



Salal (Gaultheria shallon) — glossy leaves and dark fruit

Darren Giles · CC BY-SA 3.0 · Wikimedia Commons

New shoots appear at the branch tips and initially carry lighter, softer green leaves. Flowers hang in small groups, each resembling a little white or pinkish bell.

As fruits mature, they turn bluish black or deep purple. These rounded berries, often about a centimeter across and sometimes with a velvety surface, contain numerous tiny seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Salal is widespread along the Pacific coast from California to British Columbia and farther north.

In California, it is especially characteristic of redwood forests, conifer understories, moist slopes of the Coast Ranges, areas influenced by ocean fog and sheltered shrub communities.

In a suitable forest, salal can cover much of the lower vegetation layer. Hundreds of leaves may be visible in one place. Beyond moist coastal and mountain habitats, however, the species becomes much less common. It is not an ordinary shrub on the dry, open floor of the Sacramento Valley.

WHEN EDIBLE PARTS ARE AVAILABLE

Mature leathery leaves remain on the shrub throughout the year, from January through December. Softer new leaves usually appear in spring during fresh growth. The constant presence of old foliage should not be confused with a continuous season of tender growth.

Flowers appear in late spring and summer. California flowering records include March through July, with considerable local variation.

Fruits usually ripen during August–October. Some berries remain on the branches in late autumn, and a naturally dried harvest can provide food beyond the fresh berry season.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe berries. Dark, mature fruits can be eaten fresh. Their flesh may be sweet and somewhat mealy, with many small seeds.

Indigenous peoples of the Pacific coast, including communities of Northern California, gathered salal fruit. Fresh berry use is documented among the Pomo and neighboring peoples, and a Karuk Tribe educational booklet also lists salal among edible berries.

Naturally dried berries. Ripe fruits were mashed and dried without cooking for storage. Such dried berries were useful after the fresh harvest had ended.

Salal fruit is a seasonal food. Spring leaves, flowers and shoots are important identification features but are not included among the confirmed raw food parts in this article.

HOW TO AVOID CONFUSION

Salal has relatively large leathery leaves with finely toothed margins, white or pink bell-shaped flowers and dark fruits in short clusters.

Evergreen huckleberry, Vaccinium ovatum, has noticeably smaller leaves and a different arrangement of berries. Other evergreen forest shrubs also produce dark fruit, so color does not replace examining leaves, flowers and the overall shrub structure.

SOURCES

USDA Forest Service, Gaultheria shallon: https://research.fs.usda.gov/feis/species-reviews/gausha

Washington Native Plant Society, identification and berry food use: https://www.wnps.org/native-plant-directory/125:gaultheria-shallon

Karuk Tribe, Native Edible Berries: https://nctcc.org/wp-content/uploads/2017/05/G8L2NativeEdibleBerries_booklet.pdf

Turner et al., Traditional Plant Foods of Canadian Indigenous Peoples: https://www.hscdsb.on.ca/wp-content/uploads/2022/03/Indigenous-Plant-Foods.pdf

Annual sunflower — wild yellow flower heads and raw mature kernels · Helianthus annuus

Helianthus annuus

On sunny California clearings in summer, tall, rough stems rise above the grasses with broad, heart-shaped leaves and bright yellow flower heads. Wild sunflower heads are generally smaller than the enormous heads of garden cultivars, yet they belong to the same species: Helianthus annuus.



Annual sunflower (Helianthus annuus) — yellow flower heads and rough leaves

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

As a head dries, numerous achenes ripen in its center. Their kernels can be eaten raw after the hard hulls are removed. In the wild, this is a small, seasonal food, while the large, easily handled seeds sold commercially result from generations of plant selection.

HOW TO IDENTIFY IT

Annual sunflower grows from seed and completes its life cycle within one season. The upright stem is relatively thick and covered with coarse hairs. A plant may grow from knee height to several meters, depending on water and soil.

Leaves are broad, heart- to egg-shaped, toothed and borne on long stalks. They may be opposite on the lower part of the stem and alternate farther up. Their surfaces feel rough.



Annual sunflower (Helianthus annuus) — yellow flower heads and rough leaves

Clematis · CC BY-SA 4.0 · Wikimedia Commons

A flower head has long yellow ray florets along its edge and numerous tiny tubular florets in the center. Wild plants may produce several heads on a branching stem.

After pollination, each central floret produces a dry achene with a firm hull. As the seeds ripen, the head darkens and droops. Black, gray or striped achenes become visible within it. Wild achenes are often much smaller than commercial sunflower seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Helianthus annuus as native to California, with records from Sacramento, Yolo, San Joaquin, Stanislaus, Riverside and other counties.

It grows on sunny open land, former agricultural sites, field margins and roadsides, especially where the soil has been disturbed. California Flora Nursery describes a local wild form from the Lake Berryessa area.

Cultivated sunflowers are also common around cities and gardens. One tall stem alone cannot establish that a plant belongs to a wild population. In dry regions the height and number of flower heads depend greatly on available moisture.

WHEN EDIBLE PARTS ARE AVAILABLE

Seedlings with their first broad leaves appear as the weather warms in spring. Through summer the plant grows rapidly and forms flower heads.

In the Central Valley, flowering is often visible from June through September, though timing differs elsewhere. Several weeks pass between flowering and fully mature dry seeds.

The principal raw seed harvest is in late summer and autumn, when heads turn brown and achenes separate easily. Green immature seeds are not equivalent to mature stored food: they have not yet developed their usual edible kernels.

WHAT CAN BE EATEN WITHOUT COOKING

Hulled, fully mature kernels. A USDA NRCS species guide explicitly confirms that Helianthus annuus seeds were eaten raw, roasted, dried and ground. For this atlas, the suitable methods are only those requiring no fire: remove the hard outer hull from a ripe achene and eat the kernel raw.

It is oily and mildly nutty. Wild kernels are small, so gathering a substantial portion takes much more work than using seeds of cultivated sunflower varieties.

Cold-ground raw kernels. After hulling, the kernels can be crushed without heating. Historical pinole preparations often include roasting, so such recipes must not be presented as uncooked food. Grinding a raw mature kernel itself requires no fire, but the resulting mixture should be eaten fresh or stored only under very dry, clean conditions.

Petals and flower buds. Some sources regard petals as edible, but the USDA guide describes boiling young buds. This article does not recommend eating entire raw heads or green stems. Reject any seeds contaminated by mold, pests or chemical treatments.

HOW TO AVOID CONFUSION

The genus Helianthus includes many closely related yellow-flowered plants. Perennial Helianthus tuberosus, for example, forms underground tubers, while its tall stems and flower heads can resemble annual sunflower.

Other yellow composites have ray florets around a central disk but differ in leaf arrangement and fruit structure. Annual sunflower is identified by its rough hairy stem, broad rough toothed leaves, flower head and mature achenes.

Do not gather dry heads from ornamental or agricultural fields if their chemical-treatment history is unknown. Sunflower seeds can cause allergies in susceptible people.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=4040

USDA NRCS, annual sunflower plant guide: https://plants.usda.gov/DocumentLibrary/plantguide/pdf/cs_hean3.pdf

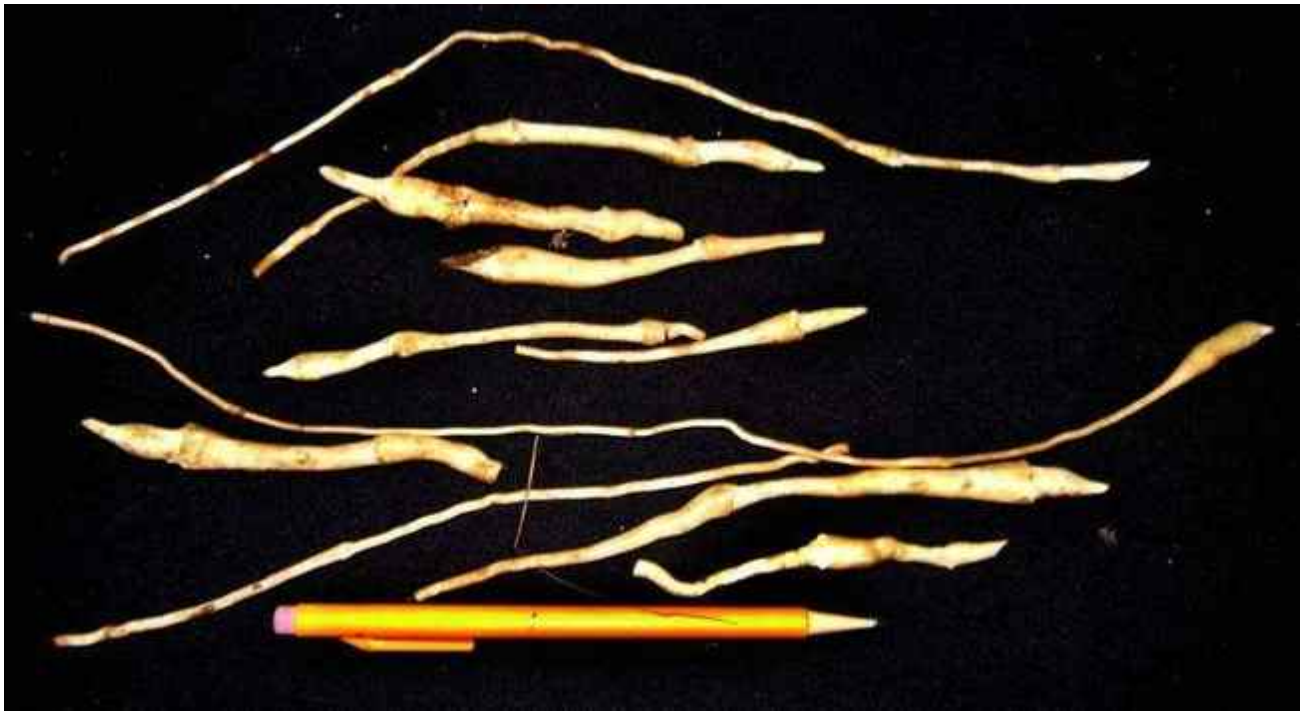
Royal Botanic Gardens, Kew: https://www.kew.org/plants/sunflower

North Carolina State University Extension: https://plants.ces.ncsu.edu/plants/helianthus-annuus/

Jerusalem artichoke — crisp underground tubers in late autumn · Helianthus tuberosus

Helianthus tuberosus

In autumn, tall stems with yellow flower heads resembling little sunflowers may remain standing in an abandoned vegetable garden. Beneath the soil, knobby, irregular tubers grow at the ends of slender rhizomes.



Jerusalem artichoke (Helianthus tuberosus) — tall flowering plant with yellow heads

David L. Van Tassel (Desmanthus4food) · CC BY-SA 3.0 · Wikimedia Commons

This is Jerusalem artichoke, Helianthus tuberosus, a relative of sunflower introduced to California from central North America. Its tubers can be eaten raw. They are crisp, faintly sweet and somewhat reminiscent of water chestnuts.

HOW TO IDENTIFY IT

A large perennial in the daisy family, usually approximately one and a half to three meters tall. The shoots are upright, rough and frequently covered with short hairs.

The leaves are broad, oval and toothed, with pointed tips. On the lower stem they may grow opposite one another, while higher leaves are often alternate.



Jerusalem artichoke (Helianthus tuberosus) — tall flowering plant with yellow heads

David L. Van Tassel (Desmanthus4food) · CC BY-SA 3.0 · Wikimedia Commons

Yellow flower heads develop at the ends of the branches, generally around 5–10 centimeters across. Long yellow ray florets surround a darker central disk.

Underground, long rhizomes produce elongated, knobby tubers, with skins that may be white, pink or purple. Inside, the tuber is pale, firm and moist.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Helianthus tuberosus as nonnative in California and rarely recorded outside cultivation.

Scattered observations exist around the San Francisco Bay Area, coastal ranges and some inland counties. Many stands originate from former gardens: even a small piece of tuber can regrow and may allow the plant to spread invasively.

It is possible to grow Jerusalem artichoke in a Sacramento Valley garden, but it is not a common wild forest vegetable. Gathering on private property requires permission.

WHEN EDIBLE PARTS ARE AVAILABLE

In spring, new shoots emerge from overwintered tubers and grow tall throughout summer.

Flowering generally occurs in late summer and autumn, after which the stems turn yellow. Underground tubers enlarge as autumn approaches.

They can be found after the aboveground stems die and through winter, as long as the soil can be dug. After cool weather, tubers may taste sweeter.

Identify and note the plant's location while the characteristic flowering stems are still visible; do not try to identify unknown underground parts later by guesswork.

WHAT CAN BE EATEN WITHOUT COOKING

Tubers. Plants For A Future explicitly confirms raw consumption of Helianthus tuberosus tubers.

Dig up a securely identified tuber, wash every trace of soil away with clean drinking-quality water, trim damaged areas and peel the skin if necessary.

It can be sliced thinly and eaten fresh. The flesh is juicy, dense, mildly sweet and nutty.

These tubers contain abundant inulin, a carbohydrate that can cause substantial gas in many people. Start with a very small portion rather than a large serving.

Mature leaves, coarse stems and flower heads are not listed here as raw foods.

HOW TO AVOID CONFUSION

Many Helianthus species form tall stems and yellow heads. Annual sunflower, Helianthus annuus, often has a larger main head and a different root system, although it can sometimes branch as well.

Some other perennial sunflowers closely resemble Jerusalem artichoke in height and foliage, but do not produce its characteristic edible knobby tubers.

Do not dig up an unknown plant just to see whether it has an edible underground part. First identify a mature flowering plant, then verify the stand and the tubers. The edibility of Jerusalem artichoke must never be extended to roots of unrelated yellow-flowered members of the daisy family.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=8486

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Helianthus+tuberosus

Dame's rocket — young mustard-flavored leaves beneath violet flower clusters · Hesperis matronalis

Hesperis matronalis

At the edge of a cool woodland or an old homestead, a tall herb with clusters of fragrant purple flowers may appear in late spring. Each flower has four petals, and the fragrance becomes stronger toward evening. This is dame's rocket, a European and Asian introduction found only in scattered places in California. Attractive as the blossoms are, the main documented food part requiring no fire is the young leaf, gathered before flowering.



Dame's rocket (Hesperis matronalis) — purple four-petaled blossoms and leafy stem

Kurt Stüber · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Dame's rocket is a biennial or short-lived perennial herb, usually about 50–100 centimeters tall. In its first year it forms a rosette of large, elongated leaves covered with short hairs.

The following spring, an upright stem grows, bearing alternate lanceolate or ovate-lanceolate leaves with toothed margins and short stalks. The foliage feels rough.

At the upper end of the stem is an elongated, branching cluster of flowers with four fairly broad petals. Their color ranges from white through pink to deep purple. Six stamens are visible in the center of each flower. Later, long, narrow, cylindrical seedpods develop. By summer, the stem becomes coarse.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Hesperis matronalis as nonnative in California, with only a few dozen observations. It is more likely to occur in cool or somewhat damp disturbed ground, beside woodland roads, old houses and abandoned gardens than on open, hot desert slopes.

Many visible plants in towns are still ornamentals. In other parts of North America, dame's rocket can spread invasively, so do not transplant it from a wild patch into a new area.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves develop after the cool winter period or in early spring. For raw food, the useful stage is the rosette before flowering, when leaves are softer and less bitter.

Flowering in California can occur from late spring through summer, later in cooler places. Long seedpods develop during summer, while the leaves become tough and unpleasantly bitter.

With enough autumn moisture, new-generation rosettes may appear, but they are difficult to identify confidently without mature plants nearby.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future confirms that these can be eaten raw in salads as a substitute for cress-like greens. Their mustard flavor is strong and often bitter, so a small addition to milder leaves is more appropriate than a large serving on its own. Clean off dust and gather only from an uncontaminated site.

The seeds are described as suitable for sprouting, but home-grown sprouts can carry pathogenic bacteria and are not recommended for untreated food during a trip.

The flowers are pleasantly fragrant, but the sources used for this article do not separately establish their raw food use. The root and old stems are not eaten.

HOW TO AVOID CONFUSION

Some Phlox species have similarly showy clusters of pink or purple flowers, but their flowers have five petals, whereas dame's rocket has four.

Other members of the mustard family generally have smaller flowers or different leaves and fruits. Garden stock, Matthiola incana, also has four petals, but usually has grayer, more felted leaves and differently arranged flowers.

A single lilac-colored flower is not enough to identify dame's rocket. Check the leaf rosette, hairiness, inflorescence and cylindrical seedpods together. Never taste the young leaf of an unidentified plant.

SOURCES

Calflora, California occurrence: https://www.calflora.org/app/taxon?crn=4114

Plants For A Future, raw young leaves: https://pfaf.org/user/Plant.aspx?LatinName=Hesperis+Matronalis

Wikimedia Commons, photographic reference: https://commons.wikimedia.org/wiki/Hesperis_matronalis

Rose of Sharon — raw summer petals and tender leaves of a garden shrub · Hibiscus syriacus

Hibiscus syriacus

During the height of a California summer, large flowers unfold in older gardens, each with five delicate petals and often a dark reddish patch near their bases. An individual flower lasts only a short time, but the shrub produces new buds for weeks.



Rose of Sharon (Hibiscus syriacus) — large summer flower and toothed leaves

PapiPijuan · CC BY-SA 4.0 · Wikimedia Commons

This is Hibiscus syriacus, also called rose of Sharon or shrub althea. Fresh petals and tender young leaves really are eaten raw, although most shrubs encountered in California were planted as ornamentals.

HOW TO IDENTIFY IT

This deciduous shrub is generally two to four meters tall, with upright branches forming a broad, vase-shaped crown.

The alternate leaves are relatively small, ovate or three-lobed, with coarse teeth along the margins and three conspicuous veins arising near their bases.



Rose of Sharon (Hibiscus syriacus) — large summer flower and toothed leaves

Manuel Anastácio · CC BY 2.0 · Wikimedia Commons

The large flowers grow singly in the leaf axils. They are often 6–10 centimeters across and may be white, pink, purple or bluish, depending on the cultivar.

Five broad petals surround the characteristic long staminal column, bearing numerous stamens and stigmas at its tip. Many cultivars have a dark spot at the base of each petal.

After pollination, a dry, five-valved seed capsule forms.

WHERE IT GROWS AND HOW COMMON IT IS

Rose of Sharon originated in East Asia; it is not a wild woodland species native to California. Calflora records only occasional individuals outside cultivation, whereas the shrub is much more familiar in private gardens.

With irrigation it tolerates California's warm summers, so it can be seen near houses and in parks throughout the Sacramento Valley.

Ornamental shrubs are often treated with insecticides. A flower from a treated shrub does not become a safe food merely by rinsing it.

WHEN EDIBLE PARTS ARE AVAILABLE

Leaves unfold in spring after the cool season. The youngest leaves are softest at the beginning of growth, before they enlarge and become coarse.

Flowering generally begins in summer and may continue into early autumn, sometimes from July through September. Each bloom remains in good condition for just one or two days, so fresh, undamaged petals should be gathered on the day the flower opens.

In autumn the seed capsules dry, and leaves yellow and fall.

WHAT CAN BE EATEN WITHOUT COOKING

Flowers. The University of California Agriculture and Natural Resources includes Hibiscus syriacus among plants with edible flowers. Their flavor is mild, slightly nutty.

Fresh petals can be eaten raw after separating them from the flower base and removing the stamens if they interfere with eating. The petals feel a little mucilaginous and work as a small addition to greens.

Young leaves. Plants For A Future explicitly records their raw use. The flavor is gentle, but older foliage can be rather tough, so choose only soft young leaves.

Roots and mature seed capsules are not confirmed foods for this uncooked use.

HOW TO AVOID CONFUSION

Swamp rose mallow, Hibiscus moscheutos, commonly has larger flowers and broader leaves and favors wet habitats.

Garden hollyhock, Alcea rosea, carries its flowers along a tall herbaceous flowering stalk rather than on a woody shrub.

Ornamental hibiscuses have many cultivars, including double-flowered types that can be harder to identify by flower structure. Do not assume that any unknown, chemically treated flowering bush is edible because it resembles a familiar garden hibiscus.

Accurate identification and a site free of chemical treatments are essential for fresh food.

SOURCES

Calflora, California records: https://www.calflora.org/app/taxon?crn=12559

University of California ANR, edible flowers: https://ucanr.edu/sites/bcmg/files/319325.pdf

Plants For A Future, young leaves: https://pfaf.org/User/plant.aspx?latinname=Hibiscus+syriacus

Flower-of-an-hour — creamy flowers with a dark eye and tender spring leaves · Hibiscus trionum

Hibiscus trionum

During summer in a warm agricultural district of California, a low herb may bloom with unusual creamy flowers. Its petals look almost translucent in strong sunlight, while a dark purple-brown patch marks their bases.



Flower-of-an-hour (Hibiscus trionum) — cream flower with dark maroon center

Meteorquake (David Merrick) · CC BY 4.0 · Wikimedia Commons

Each flower lasts just a few hours, giving the species its English common name, flower-of-an-hour. Hibiscus trionum is an introduced weed whose soft young leaves and shoot tips can be eaten raw.

HOW TO IDENTIFY IT

This is an annual herb, usually 25–70 centimeters tall, with upright or spreading, branching stems covered in short, stiff, star-shaped hairs.

The alternate leaves have stalks and are commonly divided into three to five deep, narrow lobes. The middle lobe is generally longer than those on either side, and margins can be irregularly toothed.



Flower-of-an-hour (Hibiscus trionum) — cream flower with dark maroon center

bdk (Bdk) · CC BY-SA 3.0 · Wikimedia Commons

Flowers grow singly in leaf axils and face upward. They are several centimeters across, with five cream or pale yellow petals marked by a conspicuous dark spot at their bases.

A short staminal column with projecting stigmas stands in the flower's center. After the petals wilt, an inflated calyx surrounds a dry, five-chambered capsule containing many dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora includes Hibiscus trionum among California's nonnative plants. Its records come from disturbed ground, agricultural districts and land beside fields.

It appears, for example, in the plant list of Yolo Bypass Wildlife Area and among observations from San Joaquin County.

This is neither a typical Sierra Nevada woodland herb nor the woody shrub Hibiscus syriacus. It is a relatively small annual of open, warm ground.

Herbicides and insecticides are frequently used near crops; growth exposed to them is unsuitable for raw eating.

WHEN EDIBLE PARTS ARE AVAILABLE

Young shoots and their distinctively divided leaves appear after the soil warms in spring.

In warmer lowland districts, flowering may begin in summer and continue into early autumn. Each individual flower generally opens in the morning, remains visible for only a few hours and then closes.

Tender leaves are available earlier, before the tissues become coarse and hairy. Once numerous dry capsules form, the plant quickly finishes its annual life cycle.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and the softest shoot tips. Plants For A Future specifically confirms raw use of young Hibiscus trionum leaves and shoots.

Their texture is slightly mucilaginous, with a mild, grassy flavor. A few clean, soft leaves can be chopped into another salad without heating. Hairy mature leaves are less pleasant and are not recommended.

The root is described as edible in the reference but is very fibrous; no separate, clearly confirmed uncooked preparation is provided, so it is excluded.

Flowers and seed capsules are likewise not presented here as raw food.

HOW TO AVOID CONFUSION

Hibiscus syriacus, described elsewhere in the atlas, is a woody shrub with larger white, pink or purple flowers and differently shaped leaves.

Hibiscus trionum has leaves divided into narrow lobes and a cream-colored flower with a sharply contrasting dark eye.

Other members of the mallow family may also have five petals and short staminal columns, but they do not necessarily have this combination of an inflated calyx and dry capsule.

Identify young greens only beside confidently identified mature flowering individuals, and never gather from chemically treated agricultural land.

SOURCES

Plants For A Future, raw young leaves and shoots: https://pfaf.org/User/Plant.aspx?LatinName=Hibiscus+trionum

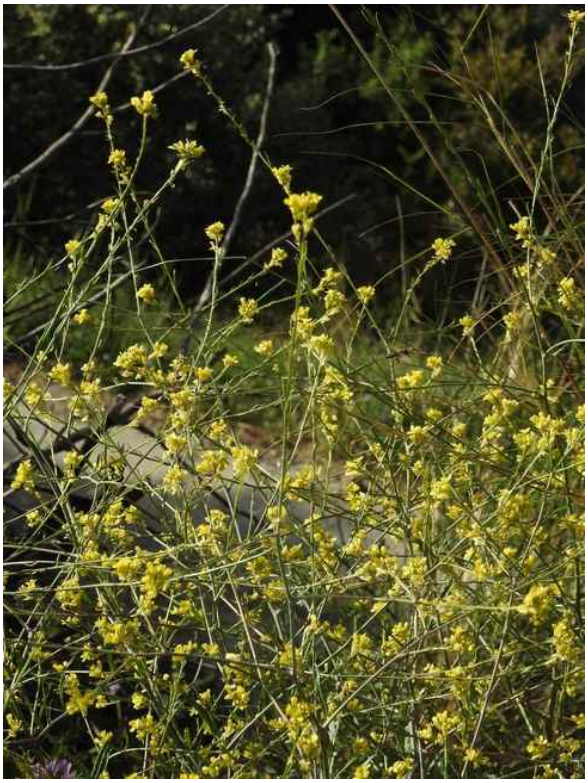
Burke Herbarium, identification: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Hibiscus+trionum

Calflora, California list: https://www.calflora.org/app/ipl?list_id=px601

Shortpod mustard — pungent winter rosettes and close-fitting seedpods · Hirschfeldia incana

Hirschfeldia incana

In California's dry districts, some mustard plants start blooming before consistent summer warmth arrives. In this species, lower leaves form a rosette; later a branching stem rises with yellow flowers, followed by short pods pressed closely against the stem.



Shortpod mustard (Hirschfeldia incana) — flowering yellow mustard with short pods

Robert Flogaus-Faust · CC BY 4.0 · Wikimedia Commons

This is Hirschfeldia incana, shortpod mustard. Its young greenery is eaten raw, with a distinctly sharp, mustard-like flavor.

HOW TO IDENTIFY IT

This is an annual or short-lived perennial herb, often about one meter tall and sometimes taller.

Lower leaves are deeply divided into lobes, with the terminal lobe usually broader than the lateral ones. Their surfaces are rough, and both the leaves and stem may be covered with short hairs.



Shortpod mustard (Hirschfeldia incana) — flowering yellow mustard with short pods

Lies Van Rompaey · CC BY-SA 4.0 · Wikimedia Commons

The upper leaves are smaller and gradually become nearly entire. Each flower has four yellow petals, typical of the mustard family, Brassicaceae.

The long flowering stalk later carries short, oblong seedpods, frequently pressed close to its axis. Their shape is useful for distinguishing this species from mustards with longer, more spreading pods.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Hirschfeldia incana in many California counties, including Sacramento, Placer and Yolo, as well as Southern California.

This is an introduced, sometimes invasive plant of dry open hillsides, pastures, vacant lots and roadsides. It can form dense stands in suitable habitats.

The risk of contamination is especially high in the same disturbed places where the plant is most conspicuous. Abundance along a road does not make it a safe source of raw food.

WHEN EDIBLE PARTS ARE AVAILABLE

After the first rains in a mild valley, young rosettes usually develop in winter.

Flowering can continue from spring into summer, but finishes quickly on very dry sites. As the plant ages, its leaves become tougher and more bitter. Small young leaves are useful only during the brief period before the flowering stem develops vigorously.

Seedpods form after flowering and mature later in the season; their short shape is an identification clue, not an invitation to eat whole dry pods.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future describes the traditional use of young plants in Greece with cold oil and lemon juice and separately notes that the leaves are eaten raw.

Their flavor is distinctly mustard-like and they are better as a small pungent addition to other greens than as a large portion. Collect leaves only from clean, correctly identified plants.

Seeds. The same species reference permits raw use of the seeds. They can be crushed and mixed with cold water to make an intensely sharp condiment. This is not a recommendation to eat whole, dry pods or to consume large portions of the ground seeds.

Old stems, tough leaves and pods as entire structures are not included.

HOW TO AVOID CONFUSION

Black mustard, Brassica nigra, produces longer, narrow seedpods, unlike the short fruits of Hirschfeldia incana. Brown mustard, Brassica juncea, has a different combination of leaf and fruit characters.

Four yellow petals are widespread in the mustard family. For reliable identification, wait until the fruits have developed and compare the lower leaf rosette and upper stem as well.

Plants growing beside roads or on former industrial land may be contaminated in ways that cannot be detected from leaf color or smell.

SOURCES

Calflora, shortpod mustard: https://www.calflora.org/app/taxon?crn=4196

Plants For A Future, raw leaves and seeds: https://pfaf.org/user/Plant.aspx?LatinName=Hirschfeldia+incana

Calflora, counties: https://www.calflora.org/app/countytaxon?crn=4196

Smooth cat's-ear — mildly bitter young leaves on sandy California meadows · Hypochaeris glabra

Hypochaeris glabra

After cool rains, a small rosette of narrow green leaves may appear on a low California meadow. Later, a slender, branching stem rises above it with yellow flower heads resembling little dandelions.



Smooth cat's-ear (Hypochaeris glabra) — basal leaves and branching yellow flower heads

Christian Fischer (Fice) · CC BY-SA 3.0 · Wikimedia Commons

This is smooth cat's-ear, Hypochaeris glabra, an introduced European weed. Its very young leaves can be eaten raw, although they are bitter and work better as a small addition to other greens.

HOW TO IDENTIFY IT

An annual herb, usually 10–40 centimeters tall, with a basal rosette of long oblong leaves. Their margins may be nearly entire, slightly toothed or shallowly lobed.

Leaf surfaces are smoother than those of the closely related Hypochaeris radicata, although a few individual hairs may be present.



Smooth cat's-ear (Hypochaeris glabra) — basal leaves and branching yellow flower heads

Harry Rose (Macleay Grass Man) · CC BY 2.0 · Wikimedia Commons

One or several slender flowering stalks rise from the center of the rosette and frequently branch. Yellow flower heads form at the ends of those branches and consist of numerous strap-shaped florets.

After flowering, achenes with white feathery tufts develop. Small membranous scales in the center of the flower head are characteristic of the genus. The root is normally a slender taproot.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records more than six thousand observations of Hypochaeris glabra in California.

It grows on the coast, in central valleys and foothills, along many woodland margins and particularly on open sandy or disturbed soil.

The California Invasive Plant Council reports that it occurs in most parts of the state apart from certain deserts and the Great Basin. Around Sacramento it may grow in meadows or vacant ground after rain.

Plants from lawns and road verges may have been treated with herbicides.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes begin growing after autumn and winter rains. In lowlands, tender leaves are available in winter and early spring, before the stalks become long.

Flowering generally takes place in spring and early summer and may continue longer in cooler places. Once the fluffy seeds mature and soil dries, the plant quickly yellows.

For raw food, the important feature is a soft, new leaf rather than a fixed calendar date.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future, using the alternative spelling Hypochoeris glabra, separately confirms eating the leaves raw or cooked.

They taste somewhat bitter; the reference regards the plant as an occasional fallback wild food rather than a delicate salad green.

A small number of young leaves can be chopped into a cold mixture. A Spanish research paper describes eating tender plant galls raw, but their origin is ambiguous, so ordinary young leaves are the only practical food part recommended here.

Roots, old flowering stalks and feathery seeds are not included in this uncooked diet.

HOW TO AVOID CONFUSION

Hypochaeris radicata usually forms a perennial rosette with rougher, hairier leaves, often larger flowering stalks and heads.

True dandelion, Taraxacum officinale, typically has a hollow, unbranched leafless stalk bearing a single head, whereas cat's-ear stalks can branch.

Some native Agoseris species also have yellow heads but differ in involucral bracts and the structure of the seeds.

A single yellow flower head does not establish the species. Examine the basal rosette, leaf hairiness and flowering stalks together.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=4313

Plants For A Future, under Hypochoeris glabra: https://pfaf.org/User/Plant.aspx?LatinName=Hypochoeris+glabra

California Invasive Plant Council: https://www.cal-ipc.org/plants/profile/hypochaeris-glabra-profile/

Cat's-ear — hairy spring rosettes and branched yellow flower stalks · Hypochaeris radicata

Hypochaeris radicata

On California lawns, a low rosette of dandelion-like leaves may appear, but the leaves are covered with short, stiff hairs. Later, branching, almost leafless flower stalks rise above it, bearing several yellow heads.



Cat's-ear (Hypochaeris radicata) — hairy rosette and yellow flower heads

Christian Fischer (Fice) · CC BY-SA 3.0 · Wikimedia Commons

This is Hypochaeris radicata, commonly called cat's-ear or false dandelion. Its young leaves can be used as raw salad greens in the cool season, although they are much more bitter after summer heat.

HOW TO IDENTIFY IT

This is a perennial herb with a basal rosette and a thickened root. Leaves are elongated, tapering toward their bases, often divided into deep, irregular lobes.

Their surfaces feel rough because of scattered hairs. The leaves can lie very close to the ground, especially on frequently mown lawns.



Cat's-ear (Hypochaeris radicata) — hairy rosette and yellow flower heads

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

When flowering begins, long, slender stalks develop with almost no true leaves. Unlike dandelion stalks, they may branch noticeably and bear more than one yellow flower head.

The strap-shaped florets have small teeth at their tips. Mature achenes bear feathery tufts that form a pale, fluffy seed head.

A fully developed flower stalk can rise half a meter or more, even though the green basal rosette stays low. Observing the same plant before and during flowering is useful: species differences are much less obvious in the early rosette stage.

WHERE IT GROWS AND HOW COMMON IT IS

University of California IPM records Hypochaeris radicata in northwestern California, the northern Sierra foothills, Sacramento Valley, western central California and the southern coast.

It grows on pastures, in gardens, along trails, on lawns and on other disturbed ground. After a rainy winter, individual rosettes can be very common. On dry, trampled ground their leaves remain short and coarse.

Once established, the plant tolerates some drought. However, tender fresh food is more likely where the soil is still moist. This is an introduced species, not a native woodland shrub.

WHEN EDIBLE PARTS ARE AVAILABLE

Seeds can germinate from autumn through spring, depending on moisture and temperature.

The most tender leaves are usually available in winter and early spring, especially in the Sacramento Valley.

When flowering stalks begin elongating in spring, older leaves often grow rougher. Yellow flower heads occur from late spring into summer and sometimes autumn on watered lawns. Dry seed heads may remain even longer.

Flowering is the best time to confirm identification, though not necessarily the best time to gather raw leaves.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future explicitly confirms raw use as a cool-season salad green.

Young leaves are softer and less bitter than the foliage of a flowering plant. Tear or chop them and mix with other greens, without expecting the neutral flavor of cultivated lettuce. Even well-selected leaves remain somewhat hairy, and not everyone likes their texture.

Only the young growth stage. In a dry summer plant, leaves may be extremely bitter and far too rough.

Neither flower heads nor roots are treated in this article as independently verified raw food. General recipes for 'wild dandelions' cannot simply be transferred to Hypochaeris radicata.

For food without fire, select only clean fresh foliage from a securely identified plant.

HOW TO AVOID CONFUSION

True dandelion, Taraxacum officinale, usually bears one flower head on each hollow, unbranched, leafless stalk. Cat's-ear often has branching stalks and more noticeably hairy leaves.

Some Leontodon and Crepis species and other members of the daisy family are similar. A single rosette cannot reliably identify cat's-ear.

White latex, a yellow flower and divided leaves occur in many unrelated species and do not replace botanical identification. Plants in treated fields or city lawns may carry chemical contamination.

SOURCES

UC IPM, common cat's-ear: https://ipm.ucanr.edu/weeds-identification-gallery/common-catsear/

Plants For A Future, raw young leaves: https://pfaf.org/user/Plant.aspx?LatinName=Hypochoeris+radicata

Plantarium, scientific Russian name: https://www.plantarium.ru/page/view/item/20544/part/0.html

Hinds' black walnut — rich raw kernels from Sacramento's river woodlands · Juglans hindsii

Juglans hindsii

Near old riparian forests and along some Sacramento streets, large deciduous trees grow with long compound leaves. In autumn, round green or blackened fruits lie beneath them, hiding very hard nuts. This is Juglans hindsii, Northern California black walnut, or Hinds' walnut.



Hinds' black walnut (Juglans hindsii) — compound leaves and round walnut fruits

antrozousamelia (Amelia Tauber) · CC BY 4.0 · Wikimedia Commons

Its pale kernel can be eaten raw and has a rich nutty flavor. But the species was widely planted and crossed with other walnuts in California. Identifying a genetically pure wild tree from one fruit alone is often impossible, while the few original natural populations deserve particular protection.

HOW TO IDENTIFY IT

A deciduous tree with a single large trunk and a broad crown, reaching 15–20 meters in favorable conditions. The bark becomes dark gray and deeply furrowed with age.

Leaves are alternate and pinnately compound, often consisting of 11–19 elongated, toothed leaflets. Crushed leaves have a strong walnut odor, but an unknown leaf should never be tasted to identify it.



Hinds' black walnut (Juglans hindsii) — compound leaves and round walnut fruits

dankillam (Dan Killam) · CC BY 4.0 · Wikimedia Commons

Long male catkins hang from branches in spring; smaller female flowers grow at the tips of young shoots.

Later, round fruits develop with thick, green, fleshy outer husks. As they ripen, the husks darken, soften and stain the skin.

Beneath each husk lies a nearly spherical, hard, grooved shell with internal partitions. An irregularly shaped edible kernel occupies its chambers. Before removing the husk, the fruit resembles a round green ball rather than a store-bought walnut.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Juglans hindsii as endemic to California, with observations in Sacramento, Yolo, Butte, Solano, Colusa and other counties.

Its historical range is linked to floodplains and riparian woodlands of Northern California. Many modern records, however, do not demonstrate a pure native population: the tree was widely used as a rootstock and crossed with Juglans regia, Juglans major and other walnuts.

California conservation documents emphasize the rarity of some surviving original stands and the difficulty of separating hybrids.

Seeing a black walnut beside the Sacramento River does not therefore mean that it is a rare original tree that may be stripped for food. Collecting permitted fallen nuts from a clearly planted tree is very different from disturbing a protected natural grove.

WHEN EDIBLE PARTS ARE AVAILABLE

In spring, male catkins and young compound leaves appear after the buds open.

Round green fruits develop throughout summer. In autumn, their outer husks begin to darken and sometimes split. The California Department of Fish and Wildlife describes nut maturity as an autumn event.

Nuts generally fall from September through November, depending on weather and the individual tree. A firm green husk can still surround a nut that has not fully ripened.

For uncooked food, use a completely mature nut with an intact, pale kernel. Fruit left for weeks in wet soil may become moldy.

WHAT CAN BE EATEN WITHOUT COOKING

Kernel of a fully mature nut. Plants For A Future directly confirms eating Juglans hindsii kernels raw. Their flavor is distinctly that of black walnut, often stronger than cultivated English walnut, Juglans regia.

First remove the green or blackening outer husk, taking care not to stain or irritate the skin. Then crack the very hard woody shell with a suitable tool and extract the pale pieces of kernel.

Neither the fleshy outer husk nor the shell is food. The fresh kernel needs no heating.

Freshness and storage. Oil-rich kernels become rancid, particularly if stored out of their shells in hot conditions. A musty smell, darkening or visible mold means the nut should be discarded. Avoid nuts from dirty roadsides or treated trees.

Do not strip rare natural trees, dig beneath them or damage their roots. Leaves, bark and raw green husks are not recommended.

HOW TO AVOID CONFUSION

Cultivated English walnut, Juglans regia, often has fewer, larger leaflets, a smoother shell and a different tree appearance.

Southern California walnut, Juglans californica, is usually smaller and has a different natural range.

Juglans major and many hybrids may closely resemble Hinds' black walnut. Reliable identification of a tree's original ancestry may require botanical and sometimes genetic investigation.

The name Hinds' walnut should not be assigned automatically to every black walnut bearing spherical fruit. For food without fire, the important distinction is between a fully mature raw kernel and unsuitable, potentially irritating outer parts, together with legal and ecological limits on gathering.

SOURCES

Calflora, county records: https://www.calflora.org/app/countytaxon?crn=8943

Plants For A Future, raw nut kernels: https://pfaf.org/USER/Plant.aspx?LatinName=Juglans+hindsii

California Department of Fish and Wildlife, conservation: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=115808

NatureServe, species conservation record: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.160550/Juglans_hindsii

California juniper — blue fleshy cones in dry desert woodlands · Juniperus californica

Juniperus californica

In the dry foothills of Southern California, low, spreading trees sometimes stand with several twisted trunks and a gray-green crown. On female trees, bluish round cones become visible as they mature.



California juniper (Juniperus californica) — gray-green branchlets and bluish fleshy cones

David McSpadden · CC BY 2.0 · Wikimedia Commons

These are not true berries but fleshy cones. A historical account from Antelope Valley describes eating their soft outer pulp without heating.

HOW TO IDENTIFY IT

California juniper is an evergreen conifer, usually a small tree or large shrub. It often grows with several trunks branching out close to the ground.

Its bark is gray-brown, fibrous and sometimes cracked. The branches make an irregular, spreading crown.



California juniper (Juniperus californica) — gray-green branchlets and bluish fleshy cones

Thayne Tuason · CC BY 4.0 · Wikimedia Commons

Mature juniper foliage does not resemble the broad leaves of an ordinary shrub. Instead, tiny, scale-like leaves lie closely against slender branchlets. This gives the whole plant its fine-textured, gray-green appearance.

Female trees develop rounded, fleshy seed cones with a bluish, waxy coating. Depending on maturity, they may appear greenish, gray-blue or deep blue. Hard seeds lie inside the cones, surrounded by a softer fleshy layer.

Cones of different years may sometimes be visible together on the same branch.

WHERE IT GROWS AND HOW COMMON IT IS

Juniperus californica occurs in arid areas of California and neighboring regions, particularly among chaparral, desert scrub and pinyon-juniper woodlands of Southern California.

It can be seen on Antelope Valley slopes, around Joshua Tree and on stony plains where taller trees would receive too little water.

In suitable open woodland, it can be locally common and form whole plant communities. It is not a dominant species of the damp redwood forests on the northern coast.

Not every juniper in one area produces many cones. The Rare Juniper Trail description at Arthur B. Ripley Desert Woodland notes that certain female trees bear particularly heavy crops.

WHEN EDIBLE PARTS ARE AVAILABLE

The tiny green, scale-like foliage remains on the branches throughout the year.

Cone development takes much longer: the fleshy cones can remain on the tree through more than one growing season. California State Parks notes that a new crop begins developing in spring and that mature cones were gathered in August.

Green, bluish and fully mature cones may occur close together. A blue coating alone does not establish either the species or full maturity.

This is not a shrub berry ripening quickly after a spring flower; the fleshy structure develops on a conifer.

WHAT CAN BE EATEN WITHOUT COOKING

Pulp of fully mature fleshy cones. The Rare Juniper Trail account describes how Indigenous peoples of desert areas gathered California juniper cones, crushed them and separated the soft outer part from the hard internal seeds. The pulp was eaten raw.

The soft outer material must be distinguished from the hard seeds. This documented method does not mean the whole cone, seeds included, was chewed or eaten.

Dried supplies. Some separated pulp was dried, ground and saved. Historical accounts describe using those stores later; preparations that require cooking are outside this article.

Dried food material could therefore remain available beyond the August gathering period, provided it is genuinely dry and clean.

Other juniper species differ greatly in composition and suitability as foods. Do not treat every aromatic, blue cone on a conifer as equivalent to the edible part of this species.

HOW TO AVOID CONFUSION

California juniper has mature scale-like foliage, fibrous bark, a spreading, frequently multistemmed form and bluish fleshy cones.

Other juniper species may differ in leaf shape, cone arrangement and geographic range. Ornamental junipers in city parks can belong to species not suitable for eating.

The food identification here concerns Juniperus californica specifically, not anything simply called 'juniper.'

One blue cone, without leaves or the form of the whole plant, cannot establish the species. The ripe soft outer part should not become a large daily food: the ethnobotanical evidence documents one method and location, not the unrestricted consumption of every juniper.

SOURCES

California State Parks, Rare Juniper Trail, stop 10: https://parks.ca.gov/?page_id=30549

USDA Forest Service, Juniperus californica: https://research.fs.usda.gov/feis/species-reviews/juncal

Calflora, Juniperus californica: https://www.calflora.org/app/taxon?crn=4531

Canada lettuce — tender young rosette leaves of a tall wild lettuce · Lactuca canadensis

Lactuca canadensis

On a cool, moist woodland edge, a tall upright lettuce may grow with long, toothed leaves and many small yellow flower heads. In spring, before the stem elongates, its leaves are relatively soft and have a flavor reminiscent of slightly bitter cultivated lettuce.



Canada lettuce (Lactuca canadensis) — toothed leaves and branching yellow flower heads

Frank Mayfield (gmayfield10) · CC BY-SA 2.0 · Wikimedia Commons

This is Canada lettuce, Lactuca canadensis, a species originating in eastern North America that has been recorded only rarely in California. For food without fire, the useful part is early, tender foliage.

HOW TO IDENTIFY IT

An annual or short-lived perennial member of the daisy family, often 50 centimeters to two meters tall.

A young plant forms a rosette of large oblong leaves, sometimes with deep lateral lobes, pointed teeth and a large terminal lobe.

Later, the stem rises upright and branches near its upper end. A broken stem releases white milky latex.

Upper leaves often become smaller, sometimes narrowing until they are almost entire. The numerous small yellow flower heads contain strap-shaped florets and grow in branched clusters.

After flowering, narrow, flattened achenes form with white feathery tufts for wind dispersal.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Lactuca canadensis as an introduced species in California, with approximately fifteen observations.

It is not a characteristic chaparral shrub or an ordinary weed of the Central Valley. Individual plants may occur on damp disturbed ground, beside woodland edges and near settlements, chiefly where moisture remains available in summer.

Much more widespread tall lettuces of other species can look nearly identical. A tall yellow-flowered wild lettuce should not be assigned to Lactuca canadensis without botanical evidence.

WHEN EDIBLE PARTS ARE AVAILABLE

Tender rosettes develop in cool, damp weather, usually during spring. In mild conditions, new young leaves may appear after winter rains.

By late spring, the flowering stem begins to elongate. During summer, numerous small yellow flowers and fluffy seeds form, while the leaves become tough and increasingly bitter.

For eating cold, choose only the early rosette before the stalk extends.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future separately confirms eating Lactuca canadensis foliage raw.

Tender basal leaves may be washed and finely chopped into a cold green mixture. They are mildly to noticeably bitter compared with cultivated lettuce.

Large quantities of older foliage are not useful: bitterness and the amount of milky sap increase as the plant ages. Do not collect or consume the latex separately.

Tough stems, roots, flowers and seeds are not included as confirmed raw foods.

HOW TO AVOID CONFUSION

Prickly lettuce, Lactuca serriola, often has a conspicuous row of small prickles along the underside of the leaf midrib and holds its leaves differently around the stem.

Lactuca saligna is distinguished by very narrow, almost linear stem leaves.

Common sow-thistle, Sonchus oleraceus, also releases white sap but usually has larger flower heads and a different fruit shape.

To identify Canada lettuce, inspect leaves at different heights, the mature inflorescence and achenes. Do not taste an early, unidentified rosette.

SOURCES

Calflora, California status: https://www.calflora.org/app/taxon?crn=4547

Plants For A Future, raw young leaves: https://pfaf.org/User/Plant.aspx?LatinName=Lactuca+canadensis

Burke Herbarium, species characters: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Lactuca+canadensis

Garden lettuce — crisp young leaves of an occasional escaped crop · Lactuca sativa

Lactuca sativa

In a cool California vegetable garden, large loose rosettes of tender green, bronze or reddish leaves can be seen in spring. If the plants keep growing, tall, branching stems rapidly rise from their centers, carrying numerous little yellow flowers.



Garden lettuce (Lactuca sativa) — tender basal leaves and mature flowering stems

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

This is garden lettuce, Lactuca sativa, a common cultivated vegetable but an extremely uncommon self-sown escape outside California gardens. The tender leaves can be eaten raw after cleaning, with no heating required.

HOW TO IDENTIFY IT

An annual or biennial herb that usually forms a low rosette about 10–35 centimeters tall before flowering.

Leaves are broad, soft and succulent. Depending on the cultivar, they may be smooth, curly or strongly toothed, green or reddish brown, with a prominent midrib.



Garden lettuce (Lactuca sativa) — tender basal leaves and mature flowering stems

Rasbak · CC BY-SA 3.0 · Wikimedia Commons

As the flowering stem elongates, it becomes upright and can reach one meter or more. Upper leaves shrink and partly clasp the stem.

Damaged tissues release white milky latex. Small yellow flower heads consist of several strap-shaped florets and form a loose, branching inflorescence.

After flowering, small, flattened achenes with white feathery tufts disperse on the wind.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Lactuca sativa among nonnative vegetable plants with only isolated records outside cultivation — roughly fifteen observations.

Self-sown individuals may occur beside former vegetable plots, compost and irrigated ground, occasionally along disturbed streams. They do not form widespread natural populations in genuinely wild forests or deserts.

Garden lettuce grows readily around Sacramento during cool weather, but crops in another person's garden belong to that person. Unknown seedlings from contaminated compost should not be collected for uncooked food.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves are juiciest during moderate temperatures: late autumn, winter and spring in California valleys, and during cooler coastal summers.

With heat and long daylight, the plant bolts quickly; leaves become tougher and more bitter. Yellow flower heads generally open in summer, followed by lightweight seeds.

Once an escaped plant is flowering, it is rarely a source of pleasant raw greens.

WHAT CAN BE EATEN WITHOUT COOKING

Only young leaves. Plants For A Future explicitly describes lettuce as a raw vegetable green with a mild, sometimes slightly sweet flavor.

Rinse tender leaves with drinking-quality water, shake off excess moisture and eat them directly or tear them into a cold mixture with other greens.

Red-leaved cultivars may be a little more bitter. Older plants produce more bitter latex and are better left alone.

Seeds and sprouts are used as foods in some circumstances, but an untreated wild harvest does not provide reliable microbiological assurance for safely eating them raw. They are therefore excluded, as are roots and flowering stems.

HOW TO AVOID CONFUSION

Prickly lettuce, Lactuca serriola, a widespread wild relative, often has a row of small prickles along the underside of its leaf midrib. Its leaves may stand almost vertically. Garden lettuce normally has softer leaves forming a distinct cultivated rosette.

Canada lettuce, Lactuca canadensis, can also grow tall, but differs in its upper stem leaves and the small flower heads.

Sow-thistles, Sonchus species, have different leaf and flower-head structures, although they also release white sap.

A single young rosette next to a garden cannot prove the species is cultivated lettuce: mature features are needed for reliable identification.

SOURCES

Calflora, California records: https://www.calflora.org/app/taxon?crn=10034

Plants For A Future, edible young leaves: https://pfaf.org/USER/Plant.aspx?LatinName=Lactuca+sativa

Prickly lettuce — spiny leaf midribs and tender bitter young greens · Lactuca serriola

Lactuca serriola

In summer, tall green plants with deeply cut leaves rise in California gardens and beside roads. Lift one leaf and a row of short, stiff prickles is visible along the midrib on its underside. Later, the upper part of the plant branches into numerous small yellowish flower heads. This is Lactuca serriola, prickly lettuce, an introduced relative of garden lettuce.



Prickly lettuce (Lactuca serriola) — deeply lobed leaves and prickly midrib

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

Its young leaves can be eaten raw. As the plant grows, however, they become much more bitter and prickly. The white milky sap is not itself a food.

HOW TO IDENTIFY IT

This annual or biennial plant first forms a rosette. The elongated leaves of many individuals are deeply divided into lateral lobes, whereas those of others are nearly entire.

The leaves are often held vertically, almost like compass needles, but this is not a universal identification character. Small stiff bristles commonly line the midrib on the lower leaf surface, and the margins may also feel rough.



Prickly lettuce (Lactuca serriola) — deeply lobed leaves and prickly midrib

Stilfehler · CC BY-SA 4.0 · Wikimedia Commons

Once flowering begins, a tall upright stem develops, often higher than a person, branching in its upper part. Leaves higher on the stem become smaller and partly clasp it at their bases.

Damaged tissues release white latex. The inflorescence comprises numerous small, pale yellow heads that later produce achenes with light-colored feathery tufts.

The progression from a soft rosette to a tall, branched flowering plant, together with the prickly lower midrib, is important for recognition.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora reports more than five thousand records of Lactuca serriola across California, including Sacramento, Yolo, Placer and El Dorado counties.

It is among the common weeds of disturbed soil, agricultural-field edges, construction sites, vacant lots and roadsides. In the Central Valley, tall summer stems are especially noticeable after spring growth.

A dense patch of mature plants does not mean they are useful for raw food: their leaves are tough, they contain abundant latex and roadside vegetation is often contaminated. A suitable gathering area must be clean and free from chemical treatment.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes appear on moist, cool ground after autumn rain and in early spring. Before the stem elongates, their leaves are softer and less bitter.

By late spring, lettuce grows rapidly. From summer into early autumn it produces small flower heads, followed by wind-dispersed seeds.

During a dry summer the foliage of flowering plants becomes coarse. Autumn seedlings may form a new generation, but this does not make an old, dry individual tender again.

WHAT CAN BE EATEN WITHOUT COOKING

Only young, tender leaves. Plants For A Future expressly confirms their raw use and notes that the softest leaves are best suited to salad.

A few young leaves may be torn into small pieces and mixed with other cold greens. Mature foliage becomes sharply bitter and prickly, so the word 'edible' should not be taken to imply that older growth is practical food.

Milky latex is not food. Historic accounts describe medicinal use of concentrated, dried lettuce latex, but that must never be confused with eating a young leaf. This food guide does not propose collecting or swallowing the concentrated sap.

Young shoots are primarily described in the species source after cooking, while seed oil requires processing; neither is included here as an independently confirmed uncooked food.

Large servings may irritate digestion. People with allergies to members of the daisy family may also need to avoid this raw green.

HOW TO AVOID CONFUSION

Lactuca virosa and other wild lettuces have similar milky latex but differ in combinations of leaf and flower characters. Dietary advice cannot automatically be transferred between them.

Sonchus oleraceus and Sonchus asper also bear yellow heads and produce latex, yet their leaves and the way they attach to the stem are different.

At a very early stage, Lactuca serriola can resemble dandelion. Reliable identification requires examining prickles along the leaf midrib, leaf shape, stem structure and mature inflorescences.

Latex and bitterness are not tests for identifying an unknown herb.

SOURCES

Calflora, prickly lettuce: https://www.calflora.org/app/taxon?crn=4550

Calflora, county records: https://www.calflora.org/app/countytaxon?crn=4550

Plants For A Future, raw young leaves: https://pfaf.org/user/Plant.aspx?LatinName=Lactuca+serriola

Henbit dead-nettle — soft winter leaves and pink tubular flowers · Lamium amplexicaule

Lamium amplexicaule

After cool autumn rains, low plants with soft, rounded leaves appear in California gardens. In spring, small pink-purple flowers open in the axils of the upper leaves, like miniature bells with two lips.



Henbit dead-nettle (Lamium amplexicaule) — clasping upper leaves and pink blooms

Agvania~commonswiki · CC BY-SA 4.0 · Wikimedia Commons

This is henbit dead-nettle, Lamium amplexicaule. It does not sting the skin, despite belonging to a group whose common names often include 'nettle'. Its tender leaves and flowers are both documented as foods that can be eaten without heating.

HOW TO IDENTIFY IT

An annual herb, usually only a few centimeters to about 30 centimeters tall. The stem is four-sided and often reddish near its base.

Leaves grow opposite one another, in pairs at the same node. The lower leaves have stalks and are rounded, with shallow rounded teeth and soft hairs.



Henbit dead-nettle (Lamium amplexicaule) — clasping upper leaves and pink blooms

TeunSpaans · CC BY-SA 3.0 · Wikimedia Commons

Higher on the stem, the leaves have almost no stalks; their broad bases clasp the stem. This character explains amplexicaule, meaning 'stem-clasping'.

Flowers occur in whorls in the upper leaf axils. Their tubular corollas are pink or purple; the upper lip stands upright like a hood and the lower lip opens outward toward visiting insects.

Some plants also produce tiny closed flowers capable of self-pollination without opening. The fruit separates into four small, dry units.

A round winter leaf alone is insufficient for identification. The upper clasping leaves, square stem and characteristic corolla should be examined together.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Lamium amplexicaule as a nonnative California annual of disturbed ground. It may form low patches on irrigated lawns, in former vegetable gardens, vacant lots, beside paths and around field margins.

Around Sacramento it is most apparent during cool, moist weather; on hot, exposed summer ground it disappears quickly.

This is neither a woodland shrub nor an evergreen perennial. Each generation completes its life cycle, leaving seeds until the next rains.

On moist, fertilized garden soil it can form groups, but plants on chemically treated lawns should not be gathered.

WHEN EDIBLE PARTS ARE AVAILABLE

Young plants emerge after autumn moisture returns. In the Central Valley, their main green growth is usually visible in winter and early spring.

Flowers open from late winter through May, sometimes longer in mild, damp places. As temperatures rise, the leaves grow tougher and the plant dries out.

For food, the most useful parts are young leaves before full flowering and occasional open flowers from fresh shoots. Dry summer remains are not a new edible crop.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future directly confirms their raw use in Lamium amplexicaule.

They are soft, with a mild grassy flavor and a faint herbal note. Finely tear the leaves and mix them with other clean greens. Young leaves are more pleasant than older ones, whose thicker tissues and hairs make large servings unappealing.

Open flowers. The species reference also lists them as edible raw. Their little corollas are tender and can add a barely noticeable sweetness to cold greens.

Do not gather flowers independently from the leaves of an unidentified plant: examining both together is part of reliable identification.

Stems, roots and mature seeds are not proposed here as separate foods. Do not gather raw leaves beside dirty pavements or after chemical treatment.

HOW TO AVOID CONFUSION

Purple dead-nettle, Lamium purpureum, retains stalks on its upper leaves, which are frequently triangular and purple. In henbit, upper leaves are nearly sessile, rounded and clasp the stem.

True nettles of the genus Urtica have stinging hairs and quite different small greenish inflorescences.

Many other plants in the mint family have square stems, so that character alone proves nothing. Do not taste a plant to check its identity before a complete identification.

Soft little leaves readily retain dirt, fertilizer residue and animal waste, especially on lawns.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=4561

Plants For A Future, raw leaves and flowers: https://pfaf.org/user/Plant.aspx?LatinName=Lamium+amplexicaule

Purple dead-nettle — tender winter leaves beneath purple tips · Lamium purpureum

Lamium purpureum

On a damp California lawn, a low green herb sometimes appears with tips colored lilac or purple. Small, tubular pink flowers open among its upper leaves.



Purple dead-nettle (Lamium purpureum) — purple-tinted upper leaves and flowers

Arthur Badel · CC BY-SA 4.0 · Wikimedia Commons

This is Lamium purpureum, purple dead-nettle, a relative of henbit. Its young leaves are eaten raw. But not every purple weed should be given this name: in California, purple dead-nettle is much less evenly distributed than some of the most abundant winter weeds.

HOW TO IDENTIFY IT

Usually an annual plant up to 30 centimeters tall, with a soft, square stem.

The leaves are arranged in opposite pairs. The lower leaves are roundish or heart-shaped, with large, rounded teeth. They have long stalks and can resemble small mint leaves.



Purple dead-nettle (Lamium purpureum) — purple-tinted upper leaves and flowers

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

Closer to the tip, leaves become smaller, more crowded and frequently purple. Unlike Lamium amplexicaule, their stalks remain visible: they do not clasp the stem with broad, sessile bases.

Flowers are clustered among the upper leaves. Each has a pink-purple, two-lipped corolla with a raised, hoodlike upper lip and an open lower lip, sometimes marked with dark spots.

Small dry nutlets remain after pollination and are hardly visible from a distance.

The shoots are somewhat hairy but lack the stinging hairs of true nettles.

Purple color depends on temperature and light, so a plant without bright purple leaves is not automatically a different species.

WHERE IT GROWS AND HOW COMMON IT IS

In California this is a nonnative species of moist, disturbed sites: meadows, gardens, roadsides and lawns.

Regional records include Butte, Placer, El Dorado, Napa, Sonoma, Humboldt and Santa Cruz counties, among others. It is not equally common across the state.

In the dry, hot Sacramento Valley, individual plants are more likely on irrigated land or in cool shade than on an exposed summer slope.

Spring green patches may disappear until the next rainy winter. A plant growing uninvited in a garden can still belong to its property owner.

WHEN EDIBLE PARTS ARE AVAILABLE

Autumn rains help seeds germinate. From late autumn through early spring, young specimens bear their softest leaves.

Regional observations place flowering often between February and July, depending on elevation, rainfall and temperature.

At one location, young plants can grow beside older individuals that have already formed seeds. By the end of the dry season, tender green growth has almost vanished.

The important factor is growth stage, not the calendar date: leaves of a young winter plant are softer than those of an old flower stalk.

WHAT CAN BE EATEN WITHOUT COOKING

Only young leaves. Plants For A Future directly confirms eating Lamium purpureum leaves raw.

Tender leaves can be chopped and added to a cold vegetable mixture. Their flavor is mild and herbaceous; in mature plants the hairs and sometimes bitterness become more pronounced.

A small fresh serving is not a recommendation to subsist almost entirely on this plant.

Purple upper leaflets are still leaves. While soft, they are the same edible plant part, not a separate part of the flower. The coloring does not itself make them unsuitable, but identity must be established from leaf and flower structure together.

Flowers, stems, roots and dry seeds are not supported by equally clear species-specific raw food evidence in the sources used here, so they are not recommended as food.

Do not gather raw leaves from treated parks, roadside strips or places used by animals.

HOW TO AVOID CONFUSION

Lamium amplexicaule has rounded upper leaves that are nearly sessile and clasp the stem. Purple dead-nettle usually has a more pyramidal, purple-tinted tip, with triangular, stalked upper leaves.

Young Urtica nettles can resemble it through their toothed foliage, but their stinging hairs can cause painful skin reactions. Avoid touching an unknown nettle-like plant during identification.

Many mint-family plants have square stems. The two-lipped pink flowers and paired leaf arrangement are more useful than color alone.

SOURCES

Plants For A Future: https://pfaf.org/USER/Plant.aspx?LatinName=Lamium+purpureum

California Species, regional records: https://californiaspecies.com/species/lamium-purpureum

Calflora: https://www.calflora.org/app/taxon?crn=4571

Field pepperweed — pungent spring shoots and flattened seedpods · Lepidium campestre

Lepidium campestre

In spring, a small mustard-family plant rises in dry open places, beginning with a rosette of toothed leaves. Later its stem stands above the surrounding grass, covered with tiny white flowers and rows of flattened oval seedpods.



Field pepperweed (Lepidium campestre) — toothed basal leaves and flat seedpods

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

This is field pepperweed, Lepidium campestre, a European species now established in California. Its young greenery has a sharp, cress-like flavor and can be eaten without heating.

HOW TO IDENTIFY IT

An annual or biennial plant, usually 20–60 centimeters tall.

Lower leaves form a basal rosette. They are oblong, stalked and toothed or shallowly lobed. Along the stem the leaves become progressively smaller and nearly stalkless; their bases may partly clasp the stem.

The upper stem branches and bears numerous small, white, four-petaled flowers.

The small fruits are oval to almost round, strongly flattened and hairy, only a few millimeters long. They become brown when ripe.

Unlike many hedge mustards, this plant has a short, flattened silicle, not a long cylindrical seedpod.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Lepidium campestre as a nonnative plant of disturbed California land, with several hundred observations. It is less widespread than Lepidium virginicum.

It grows on vacant ground, dry grassy slopes, beside old fields and sometimes on compacted soil.

Its season can differ in mountains and along the coast compared with the hot Central Valley. The presence of many plants beside a road does not make them suitable for gathering, because of dust, vehicle pollution and herbicide exposure.

WHEN EDIBLE PARTS ARE AVAILABLE

Young rosettes appear after rains and are especially conspicuous in cool weather. In mild lowlands this means winter and early spring; in colder districts growth begins later.

White flower clusters and developing seedpods usually appear from spring into early summer.

Once seeds turn brown and the stem becomes tough, there are few leaves left that are suitable for eating raw.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender shoot tips. Plants For A Future specifically confirms their raw use in Lepidium campestre.

Their flavor is sharp and slightly mustard-like. Finely chop the leaves and use them as a seasoning in a cold salad. They contribute a distinctive taste rather than serving as a major source of calories.

Reference works also mention using seeds as a spice, but this article restricts the reliably confirmed uncooked food to leaves and soft shoots.

Old, coarse leaves and papery mature seedpods are not recommended.

HOW TO AVOID CONFUSION

Virginia pepperweed, Lepidium virginicum, generally has narrower fruits and a different leaf arrangement.

Lepidium didymum releases a conspicuously strong odor when crushed and develops fruits with two rounded lobes.

Shepherd's purse, Capsella bursa-pastoris, has heart-shaped, triangular fruits.

The short, hairy, flattened seedpod and basal rosette structure are especially useful for identifying field pepperweed.

Do not identify a young plant solely from its peppery taste. Tasting an unknown green is no substitute for checking botanical characters.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=4670

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Lepidium+campestre

Wikimedia Commons, identification photographs: https://commons.wikimedia.org/wiki/Lepidium_campestre

Lesser swine-cress — low, pungent foliage and paired little fruits · Lepidium didymum

Lepidium didymum

After winter rain, a very low-growing herb sometimes appears beside California paths. Its slender shoots spread over the ground, and its deeply divided leaves have a strong peppery smell.



Lesser swine-cress (Lepidium didymum) — creeping growth and paired fruits

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

Close inspection reveals tiny whitish flowers and flat fruits that seem to consist of two joined halves.

This is Lepidium didymum, formerly called Coronopus didymus, an introduced pepperweed. Its young leaves are eaten raw in small amounts for their sharp, cress-like flavor. It is not a plant for a large daily salad.

HOW TO IDENTIFY IT

This pepperweed usually completes its life cycle in one season, occasionally two. Numerous slender, creeping or slightly ascending shoots spread out from a small base.



Lesser swine-cress (Lepidium didymum) — creeping growth and paired fruits

Julia Kruse · CC BY-SA 3.0 · Wikimedia Commons

The green mat remains low, although individual branches may extend several tens of centimeters.

Leaves are alternate, deeply pinnately divided into small lobes. Young leaves sometimes form a loose rosette; later they are spaced more widely along the stems.

The flowers are minute, with four whitish or barely visible petals. From a distance they almost disappear among the foliage.

After flowering, flat fruits develop with two rounded halves. This distinctive paired shape is reflected in didymum, meaning 'twin'.

As the fruits mature they become dry and brownish, and their seeds are extremely small.

A developed plant may display young leaves, flowers and older paired fruits at once. That combination is best for identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Lepidium didymum as nonnative in California and records it in San Diego, Orange, Los Angeles, Marin, San Francisco, Humboldt, Monterey, Santa Barbara and Sacramento counties.

It grows on disturbed ground, in gardens, along irrigated paths and on lawns. In a cool, damp coastal climate it can form low mats, but it is not as universally abundant in the Central Valley as dandelion or prickly lettuce.

On a hot, dry site the greenery dries rapidly.

A critical concern is its low, creeping growth directly against the soil, where it readily collects dust, fertilizer residue and animal feces.

WHEN EDIBLE PARTS ARE AVAILABLE

In the Sacramento Valley, seedlings appear after sustained autumn or winter rain.

Young, tender leaves are usually present during cool months and early spring. On the coast, with enough moisture, growth may occur in other seasons.

As branches lengthen, tiny flowers appear in the leaf axils and at shoot tips. Paired green fruits develop, then turn brown and dry.

Flowering dates differ by county; the summer calendar from British field guides should not be transferred directly to California.

For raw food, the important stage is young, soft foliage. Fruits are chiefly identification characters.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future expressly documents raw use of Lepidium didymum under its present and former names, including Coronopus didymus.

They taste very pungent, like cress or mustard, sometimes with an unusually strong smell. Tear the leaves finely and use only a small quantity as an aromatic addition to milder greens. Large amounts are uncomfortably sharp and unnecessary for a balanced meal.

Do not gather the seeds in place of the leaves. Although the plant produces many little fruits, the species source directly confirms leaves, not a separate raw use of mature seeds or dry paired fruits.

Roots and flowering stems are likewise not recommended as independent raw foods.

Lepidium didymum can grow on polluted ground; studies have investigated lead accumulation in this species. Never eat it raw from industrial sites or road margins, even after washing.

HOW TO AVOID CONFUSION

Similar low mustard-family plants include Lepidium virginicum, whose fruits are nearly round with a slight notch, but do not appear so distinctly paired.

Coronopus squamatus, another swine-cress, differs in fruit structure and leaves.

A tiny white flower alone cannot distinguish these species. At the rosette stage, a peppery smell is not a reliable identification method: inspect fruits, leaves and branching instead.

Raw leaves from treated lawns or polluted fields are unsuitable for food.

SOURCES

Calflora, species: https://www.calflora.org/app/taxon?crn=10940

Calflora, counties: https://www.calflora.org/app/countytaxon?crn=10940

Plants For A Future, under Coronopus didymus:
https://pfaf.org/User/Plant.aspx?LatinName=Coronopus+didymus

The Ferns, botanical name:
https://tropical.theferns.info/viewtropical.php?id=Lepidium+didymum&redir=Coronopus+didymus

Perennial pepperweed — white flower clouds and pungent young leaves · Lepidium latifolium

Lepidium latifolium

On moist ground in the Sacramento Valley, dense stands of tall, gray-green stems sometimes develop, topped in summer by white clouds of many tiny flowers.



Perennial pepperweed (Lepidium latifolium) — tall stems topped with white clusters

AnRo0002 · CC0 · Wikimedia Commons

This is Lepidium latifolium, perennial pepperweed, an invasive perennial from Eurasia. It spreads aggressively, displacing native plants in brackish grasslands and riverbank communities.

Its young spring leaves can be eaten raw as a pungent addition to food. Yet gathering in a wetland presents special risks from polluted water and herbicide treatment.

HOW TO IDENTIFY IT

Perennial pepperweed is an herbaceous perennial with a deep, widely spreading root system.



Perennial pepperweed (Lepidium latifolium) — tall stems topped with white clusters

AnRo0002 · CC0 · Wikimedia Commons

Numerous upright shoots emerge from the same underground base, sometimes growing to 1.5–2 meters or more by summer.

Young lower leaves are large, oblong, several centimeters wide and stalked, with entire or shallowly toothed margins.

Upper stem leaves are smaller and sometimes almost sessile, but do not clasp the stem in the way found in some related white-flowered mustard species.

The foliage and stems are gray-green, with a slight waxy bloom.

At the ends of the branches, a broad panicle develops, containing countless minute, white, four-petaled flowers. Later, small, flattened oval fruits form.

An adult plant can look like a white cloud. For food identification, however, the lower leaves, tall shoots and inflorescence must be examined together.

WHERE IT GROWS AND HOW COMMON IT IS

The California Invasive Plant Council reports Lepidium latifolium on wet and seasonally moist land throughout California.

It is especially conspicuous in the Sacramento–San Joaquin Delta, Bay Area brackish marshes, meadows, canal edges and river floodplains.

San Francisco Estuary Institute has documented large patches in the South Bay and Delta.

The plant spreads through both seeds and root fragments, making control difficult. Some invaded sites receive repeated herbicide applications during a season. An absence of visible spray residue is not proof that leaves are safe to eat.

WHEN EDIBLE PARTS ARE AVAILABLE

Fresh shoots emerge from rhizomes after winter cooling and moisture. In spring, young lower leaves are softest, often appearing in March or April, though earlier or later at individual sites.

Stems grow rapidly in late spring. Dense white flower clusters are usually visible from May through July, followed by drying fruits.

By autumn the aboveground plant yellows, but its roots remain alive.

Leaves of fully grown summer stems are tougher and more pungent. The useful raw-food period is the brief stage of young growth.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future confirms their raw consumption in Lepidium latifolium.

They have a very sharp, mustard- or horseradish-like flavor. Use them in small portions as a cold seasoning. Young leaflets are softer than the coarse foliage of a tall flowering stem.

Do not confuse leaves with seeds and roots. The species source also describes seeds as a seasoning, but that is a different method of use. The principal reliably confirmed uncooked food here is young foliage.

Deep roots are not recommended raw: digging brings up potentially contaminated soil, and broken root fragments may help spread this invasive plant.

Never gather raw greens from wetlands where waterborne pathogens, heavy metals or chemical treatments may be present.

Do not treat perennial pepperweed as an ordinary, completely safe substitute for cultivated cabbage in large servings.

HOW TO AVOID CONFUSION

Hoary cress, Cardaria draba, can also create white flower clouds, but is generally lower, and its upper leaves clasp the stem.

Lepidium virginicum is much shorter, with numerous tiny rounded seedpods.

Other mustard-family plants look similar before flowering. Check lower and upper leaves, the mature inflorescence and fruit structure together.

A peppery scent alone is inadequate for identification. White flowers in a wet meadow do not establish that the site is safe for gathering food.

SOURCES

California Invasive Plant Council: https://www.cal-ipc.org/plants/profile/lepidium-latifolium-profile/

Calflora: https://www.calflora.org/app/taxon?crn=4691

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Lepidium+latifolium

San Francisco Estuary Institute: https://www.sfei.org/nis/pepperweed.html

Clasping pepperweed — tender spring greens beneath stem-clasping leaves · Lepidium perfoliatum

Lepidium perfoliatum

In spring, small mustard-family plants with little yellow flowers sometimes appear on relatively dry vacant lots and saline hillsides. The upper leaves of some of these plants look as though the stem runs straight through them: the leaf bases wrap tightly around the shoot.



Clasping pepperweed (Lepidium perfoliatum) — stem-clasping upper leaves and seedpods

Evan (GBIF occurrence 6185691936) · CC BY 4.0 · Wikimedia Commons

This is Lepidium perfoliatum, clasping pepperweed, a spring green with a sharp flavor and distinctive characters when mature.

HOW TO IDENTIFY IT

An annual herb, usually 10–50 centimeters tall, though plants on moist soil may grow higher.

A basal rosette develops first. Its leaves are deeply divided into narrow lobes and may resemble miniature dill or mustard leaves.



Clasping pepperweed (Lepidium perfoliatum) — stem-clasping upper leaves and seedpods

Zach Earl · CC BY 4.0 · Wikimedia Commons

Higher along the stem, the leaves become broader and less divided. They are roundish to heart-shaped, with deep bases that clasp the stem and appear almost pierced by it.

This change from dissected lower leaves to broadly clasping upper leaves is especially characteristic.

The flowers are small and yellowish, with four petals, arranged in short racemes. The fruits are little round or oval, flattened seedpods growing along the lengthening flower clusters. As they mature, they turn straw-brown.

WHERE IT GROWS AND HOW COMMON IT IS

In California, Lepidium perfoliatum is a nonnative plant.

It does not occur in all the state's climatic zones. It is found chiefly in open disturbed places, dry fields, roadsides and saline soils, particularly in more continental areas.

It may be locally conspicuous, but is not a typical wild salad green of every Sacramento park.

Because of its habitat, gathering must exclude highways, storage yards, treated agricultural land and railway embankments.

WHEN EDIBLE PARTS ARE AVAILABLE

After the cold season and the first spells of warmer spring weather, finely divided basal leaves develop.

The stem then grows with its characteristic rounded upper leaves. Small yellow flowers open and flat fruits develop.

At low, warm sites the entire cycle may finish during spring; in cool valleys it may continue into early summer.

Young leaves are generally softer and more pleasant before large numbers of seedpods mature.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. Plants For A Future documents the raw use of Lepidium perfoliatum leaves.

They are used as a small, pungent addition, much like other peppery herbs in the mustard family. Choose tender leaves while the plant is actively growing and has not become fibrous.

Seeds are known from some sources as spice material after special preparation, but there is insufficient evidence here to recommend eating them raw without fire.

Roots and mature, tough stems are not included either.

The strong peppery odor released by crushing a leaf does not establish that the plant is safe and is no substitute for identification.

HOW TO AVOID CONFUSION

Other pepperweeds, including Lepidium virginicum, L. didymum and L. campestre, can have similarly small flowers and numerous little seedpods.

However, the upper leaves of L. perfoliatum clasp the stem conspicuously, while the lower leaves are divided into very narrow lobes.

Some related mustards have similar flowers but completely different fruit shapes.

Gathering leaves from a lone rosette is unreliable before the characteristic upper leaves and fruits have developed. For an unusual find, compare the plant against several species-specific botanical photographs.

SOURCES

Calflora, species record: https://www.calflora.org/app/taxon?crn=4707

Plants For A Future, raw leaves: https://pfaf.org/user/Plant.aspx?LatinName=Lepidium+perfoliatum

Wikimedia Commons, species photograph: https://commons.wikimedia.org/wiki/File:Lepidium_perfoliatum_(GBIF_6185691936).jpg

Garden cress — tender peppery leaves from occasional garden escapes · Lepidium sativum

Lepidium sativum

In an old vegetable garden or on loose, damp soil after cool rains, a patch of thin stems with small green leaves may appear.



Garden cress (Lepidium sativum) — small white flowers and tender divided leaves

Katrin Gilger · CC BY-SA 2.0 · Wikimedia Commons

If the plants are not cut, they soon elongate and produce tiny white flowers.

This is garden cress, Lepidium sativum, a familiar cultivated vegetable rarely recorded outside cultivation in California.

Its young leaves and tender shoots can be eaten raw, but an accidental seedling in polluted soil is not equivalent to clean, intentionally grown greens.

HOW TO IDENTIFY IT

An annual plant, generally 15–50 centimeters tall once its flowering stalk has elongated.

At first it forms a small rosette, with leaves that may be deeply divided into narrow segments.

The upper stem leaves become more entire, linear or narrowly lance-shaped and sessile. The stem is slender, green, branching and only slightly hairy.

The small flowers have four white or pinkish petals arranged in a cross, and six stamens.

After flowering, small, nearly circular or broadly oval flat seedpods develop, each notched at the tip and containing several seeds.

Correctly identified tender leaves release a distinct peppery aroma when rubbed, but tasting an unknown specimen is not a method of identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Lepidium sativum as a nonnative annual with isolated records beyond cultivation, including Sacramento, Yolo, Contra Costa, Marin and San Diego counties.

In California, therefore, this is primarily a garden salad plant, not a common wild mustard.

Self-sown plants may appear around old garden beds and compost piles, but such places can contain fertilizer residues and pathogens.

Do not gather raw foliage unless soil cleanliness is known. Many similar wild Lepidium species lack separate confirmation of the same raw food uses.

WHEN EDIBLE PARTS ARE AVAILABLE

Garden cress develops rapidly during cool, damp weather. Tender leaves appear only days after seed germination.

In warm lowlands it quickly produces a flowering stem during spring, and summer leaves become coarser and especially sharp.

Growth is also possible after rain during a mild California winter.

For raw food, choose little leaves before flowering, cut from a clean, familiar site rather than mature seedpods.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves and tender shoots. Plants For A Future directly describes both as foods eaten raw.

Their flavor is markedly peppery, so a small quantity is enough to season milder leaves. The tender foliage may be chopped and mixed into a cold vegetable dish.

Garden cress seeds are sometimes used as a condiment, but their taste is very sharp and they commonly require separate preparation; they are not recommended as an uncooked wild food here.

Cress sprouts, like all raw sprouts, can carry pathogenic bacteria, particularly when grown in unclean water. For a trip, use known clean, fresh foliage rather than unidentified sprouts found in the field.

HOW TO AVOID CONFUSION

Lepidium virginicum often has narrower flat seedpods and a different basal leaf form.

Lepidium nitidum is smaller and bears little glossy fruits.

White four-petaled flowers are common among mustard-family plants, so a peppery flavor cannot establish the species.

Examine both lower and upper leaves and fully formed seedpods. Never eat an unidentified spicy-smelling herb from a car park or a treated field.

SOURCES

Calflora, California counties: https://www.calflora.org/app/countytaxon?crn=9145

Plants For A Future, garden cress: https://pfaf.org/User/Plant.aspx?LatinName=Lepidium+sativum

Virginia pepperweed — tiny flat fruits and peppery spring greens · Lepidium virginicum

Lepidium virginicum

On open land in California, a low herb sometimes grows with shoot tips covered in dozens of small, flat, round fruits. Close up, each resembles a tiny flattened coin with a notch at its tip.



Virginia pepperweed (Lepidium virginicum) — slender flowering stems with round flattened pods

Jomegat · CC BY-SA 3.0 · Wikimedia Commons

This is Virginia pepperweed, Lepidium virginicum, a native California member of the mustard family. Its tender young leaves and green, immature seedpods can be eaten raw.

Their flavor resembles peppery cress, but an abundant scattering of fruits is not a reason to eat large quantities.

HOW TO IDENTIFY IT

Virginia pepperweed is usually an annual, sometimes persisting as a short-lived biennial.



Virginia pepperweed (Lepidium virginicum) — slender flowering stems with round flattened pods

Robert H. Mohlenbrock / USDA-NRCS · Public domain · Wikimedia Commons

Young plants first form a basal leaf rosette. The lower leaves are oblong, with uneven marginal teeth and shallow lobes. Upper leaves along the branched stem are much narrower.

Once flowering begins, a loose, branching panicle develops from thin shoots. Its flowers are tiny and whitish, with four petals that can be difficult to see.

Numerous flattened, rounded seedpods soon take their place. Each has a small indentation at the tip and sits on a thin stalk along the stem.

As they dry, the pods turn yellowish and brown, and their seeds remain extremely small.

A young rosette is easy to confuse with another weed. The characteristic developed fruits and leaves on the same plant are therefore important for identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Lepidium virginicum as native to California and shows numerous observations across the state.

The plant favors sunny, open habitats: paths, fallow land, field edges, roadside embankments and pastures.

The Watershed Nursery describes it as adaptable to clay, loam and rocky soils.

Several species of Lepidium occur around Sacramento and its foothills. The common description 'pepper grass' is insufficient for determining the exact species.

Some local subspecies differ in hairiness and detailed fruit characters, especially relevant when identifying herbarium specimens.

WHEN EDIBLE PARTS ARE AVAILABLE

After rains, the basal rosette quickly produces young leaves. In lowlands, they are softer in winter and early spring; in cool districts this growth begins later.

Little white flowers develop during spring, followed by green, flattened fruits. In moister places, flowering and fruiting may continue into summer.

When the green growth dries, these fresh edible parts are no longer available.

Pods on one plant mature at different times: those lower down may already be dry, while nearer the top they remain young and green.

WHAT CAN BE EATEN WITHOUT COOKING

Tender leaves. Plants For A Future specifically documents raw use of young Lepidium virginicum leaves.

They have a sharp cress-like flavor and are best used as a small seasoning for milder greens. Tender leaves are less bitter than older ones.

Green, immature seedpods. The species source also confirms eating the soft, unripe fruits raw.

They are tiny but distinctly peppery and are more useful as a condiment than as a large vegetable harvest.

Dry seeds are known as a pepper substitute, but that concentrated use should not automatically become a principal product of a raw-food diet.

Roots and mature coarse stems are not included among foods eaten without fire.

Only gather a plant identified by its combined botanical characters, never from the flavor of a single green shoot.

HOW TO AVOID CONFUSION

Other California pepperweeds include Lepidium didymum and Lepidium latifolium, which differ in fruit shape and overall growth habit.

Shepherd's purse, Capsella bursa-pastoris, has triangular, heart-shaped pods, rather than nearly round, flattened fruits with a little notch.

Many small mustard-family plants are hard to distinguish before fruiting. If only a rosette is available, postpone gathering.

Plants from gardens and roadsides may have been exposed to herbicides, while tiny leaves close to the ground readily accumulate dust and contaminants.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=4712

The Watershed Nursery: https://www.watershednursery.com/nursery/plant-finder/lepidium-virginicum/

Plants For A Future: https://pfaf.org/user/Plant.aspx?LatinName=Lepidium+virginicum

Anderson's wolfberry — ripe red berries on a thorny Mojave shrub · Lycium andersonii

Lycium andersonii

On a rocky Mojave Desert slope, among creosote bushes, a low shrub with long, sharply pointed branches can sometimes be seen.



Anderson's wolfberry (Lycium andersonii) — thorny desert shrub bearing red fruits

Stickpen · Public domain · Wikimedia Commons

After rainfall, it develops small pale flowers, followed by juicy red berries.

Anderson's wolfberry, Lycium andersonii, is native to California's deserts. Its fully ripe fruit can be eaten fresh, although the crop depends heavily on rainfall and not every bush bears fruit every year.

HOW TO IDENTIFY IT

This is a deciduous or partly deciduous, strongly branching shrub, generally half a meter to one and a half meters tall.



Anderson's wolfberry (Lycium andersonii) — thorny desert shrub bearing red fruits

Mary Winter · CC0 · Wikimedia Commons

Older branches are grayish and terminate in sharp spines. Young shoots are more slender.

Leaves are simple and narrow, ranging from linear to obovate, sometimes grouped in small clusters on short branchlets.

During prolonged drought, the shrub may shed almost all its leaves.

Flowers are small, occurring singly or in little groups. Each has a funnel-shaped whitish or pale violet corolla with five lobes.

After flowering, rounded or egg-shaped berries form. When mature, they become red or sometimes orange-red. Inside is soft flesh with small seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora documents more than two thousand observations of Lycium andersonii in California.

The species grows chiefly in desert counties, including Inyo, San Bernardino, Riverside, Imperial and San Diego.

It occurs on dry, rocky hillsides, in sandy or gravelly washes and among creosote bushes.

It is not characteristic of Sacramento's valley floor or the wet forests of Northern California.

A shrub may stand alone on dry ground, while after a wet winter several plants may become conspicuous nearby.

WHEN EDIBLE PARTS ARE AVAILABLE

Flowering most often follows cool winter rains, sometimes beginning in late winter and continuing through spring.

Berries develop after flowering, chiefly in spring and early summer. In a year with additional rainfall, the shrub may produce another crop.

Red color without softness does not guarantee full maturity. The best fruit is evenly colored, slightly soft and detaches readily from its stalk.

The berries dry quickly or are eaten by animals, so the useful period may be brief.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe berries. Plants For A Future separately confirms eating Lycium andersonii fruit raw or naturally dried.

The little fruits are juicy, with a flavor ranging from mildly sweet to slightly astringent. On some plants, the taste recalls a mixture of tomato and berry.

Eat fresh, mature berries in small amounts.

In a dry climate, clean ripe berries may dry without heat. Check them carefully for mold before eating.

Twigs, spines, leaves, roots and unripe berries are not included in this raw-food list.

HOW TO AVOID CONFUSION

Lycium fremontii and Lycium pallidum occur on the same desert slopes.

They also have thorny branches, tubular flowers and small berries. Distinguishing them requires comparing flower form, leaf width and mature fruit.

Some other members of the nightshade family in California produce berries that remain toxic even when ripe. A red berry alone can never establish that a shrub is edible.

Sharp thorns and polluted washes beside roads add further risks. Do not gather fruit that has not been positively identified.

SOURCES

Calflora, native range and observations: https://www.calflora.org/app/taxon?crn=5230

Plants For A Future, raw and dried fruit: https://pfaf.org/User/Plant.aspx?LatinName=Lycium+andersonii

Goji berry — ripe red autumn fruit on arching shoots · Lycium barbarum

Lycium barbarum

Beside old plantings and on disturbed, rather dry slopes, a shrub may appear with long, thin, arching branches, small purple flowers and elongated red berries. This is one of the two well-known East Asian goji species, Lycium barbarum, commonly called goji berry or Chinese wolfberry.



Lycium barbarum — arching wolfberry branches with bright red ripe goji berries

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

Only fully ripe, red fruits are recommended here as food without heating. Green berries and the leaves of an unidentified shrub must not be eaten.

HOW TO IDENTIFY IT

A deciduous shrub usually one to three meters high, sometimes bearing long, whip-like shoots that lean on neighboring vegetation.

Its branches are thin and grayish brown, with some short branch tips forming spines. Leaves are simple, alternate or clustered on short shoots, ranging from narrowly lance-shaped to oval, with smooth margins.



Lycium barbarum — arching wolfberry branches with bright red ripe goji berries

MPF (original Wikipedia uploader) · CC BY-SA 3.0 · Wikimedia Commons

The flowers grow singly or in small groups in the leaf axils. They have a short calyx and a purple tubular corolla opening into five spreading lobes.

Later, small oval red or orange-red berries develop, approximately one to two centimeters long and containing numerous small seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Lycium barbarum is not a native desert shrub of California.

Jepson eFlora and regional floristic materials record its escape from cultivation on disturbed ground and near older plantings.

It is much less common in the wild than native desert relatives such as Lycium andersonii or L. fremontii, and may grow beside fences or abandoned gardens.

Not every shrub bearing goji berries is a wild, publicly accessible plant: most bushes near residences are cultivated on private property.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves appear in spring. Purple flowers then begin opening, usually from late spring into summer.

The berries enlarge during the warm season and turn bright red chiefly from the second half of summer into autumn.

One shrub may bear both green unripe fruit and ripe red fruit at the same time.

For food, choose only soft, fully colored, undamaged berries. Clean berries darken and shrivel during natural drying but must never develop a moldy smell.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe red berries. Plants For A Future expressly confirms the raw consumption of Lycium barbarum fruit.

They have a mildly sweet flavor with a distinctive, slightly grassy note. They can be eaten fresh in small portions or dried naturally under clean conditions.

The species reference regards unripe fruit as a potential safety concern, so it is excluded.

Young shoots and leaves are generally described after cooking; this article does not treat them as confirmed raw foods.

Roots, bark and spines are not eaten.

HOW TO AVOID CONFUSION

Lycium chinense, described separately in the atlas, is so similar that one red berry is insufficient to determine the species.

Distinguishing characters include the relative lengths of the purple corolla lobes and tube, leaf form and flower stalk.

Native desert wolfberries usually grow in different natural habitats and have their own distinct morphology.

Some members of the nightshade family produce poisonous berries. Neither taste nor red color can serve as a safety test.

If the flowering shrub cannot be identified, leave the berries uncollected.

SOURCES

Plants For A Future: https://pfaf.org/user/plant.aspx?latinname=Lycium+barbarum

Burke Herbarium: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Lycium+barbarum

California Species: https://californiaspecies.com/species/lycium-barbarum

Chinese wolfberry — fully ripe goji berries on slender arching branches · Lycium chinense

Lycium chinense

An old fence or abandoned planting may contain a shrub with long, thin, arched shoots and small violet flowers.



Lycium chinense — slender shoots bearing narrow leaves and ripe red goji berries

Alex Abair · CC BY 4.0 · Wikimedia Commons

Later it develops elongated, bright red berries, known as one of the kinds of goji fruit.

This is Lycium chinense, Chinese wolfberry, introduced from East Asia. It has been recorded in North America, including California, but is far rarer outside cultivation than familiar native desert wolfberries.

HOW TO IDENTIFY IT

A deciduous shrub, generally 0.5–3 meters high, with grayish bark and thin, curving branches. Some shoots bear short spines.

Leaves are simple, narrow or oval, with entire margins. They often form groups of several on short branchlets; their length and width vary greatly with age.

The flowers occur singly or in groups of two to four on short stalks. The corolla is pale violet or lilac, funnel-shaped, with five spreading lobes.

Elongated red berries, usually about one to two centimeters long and containing many small seeds, ripen later.

WHERE IT GROWS AND HOW COMMON IT IS

Flora of North America records Lycium chinense as an introduced species, including in California.

It is usually associated with abandoned hedges, older gardens, fields and disturbed roadside sites.

However, records of the two East Asian wolfberries, L. chinense and L. barbarum, have often been confused.

Consequently, not every established goji planting should be taken as a confirmed wild record of Lycium chinense.

Cultivated bushes may occur in the Sacramento Valley, but there is no evidence here of extensive natural populations.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves open after winter dormancy. Pale violet flowers follow; in North America flowering generally occurs from May to August, depending on the climate.

Berries form after flowering and turn red through summer and autumn.

Only completely ripe, red, soft berries are suitable as food. Green or partly colored fruit is excluded.

Once gathered, the delicate fruit is best eaten promptly or carefully dried in a clean, dry place.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. Plants For A Future separately confirms eating the berries raw and after natural drying.

The fruit is sweetish, sometimes with a faint grassy or anise-like note.

The species reference also mentions young leaves and soft shoots as edible raw. However, this shrub belongs to the nightshade family, and related plants can be poisonous.

For practical gathering without flawless identification and a clean, known planting history, this article takes the more conservative approach of recommending only completely ripe berries, in moderate amounts.

Roots, bark, green berries and rigid branches are not food.

HOW TO AVOID CONFUSION

Lycium barbarum is nearly impossible to distinguish from Chinese wolfberry using red berries alone.

Flora of North America recommends comparing, in particular, the length of the corolla lobes relative to the tube, as well as the leaves and the position of the flowers.

Native desert wolfberries such as Lycium andersonii and L. fremontii typically occur in different habitats and have distinguishable floral and fruit characters.

Do not confuse a wolfberry with an unknown member of the nightshade family, some of which have dangerously poisonous fruits.

Without a flowering specimen, it is better not to claim identification of the exact species by sight alone.

SOURCES

Flora of North America: https://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=200020538

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Lycium+chinense

Burke Herbarium: https://burkeherbarium.org/imagecollection/taxon.php?Taxon=Lycium+chinense

Fremont's wolfberry — orange-red desert berries after winter rain · Lycium fremontii

Lycium fremontii

In the desert canyons of Southern California, a thorny shrub grows that can look almost leafless for much of a dry year.



Fremont's wolfberry (Lycium fremontii) — desert shrub with orange-red mature fruits

Stickpen · Public domain · Wikimedia Commons

After winter rains it develops small gray-green leaves and lilac tubular flowers. Soft orange and red berries follow.

This is Lycium fremontii, Fremont's wolfberry, a native desert relative of cultivated goji.

Its fully ripe fruit can be eaten raw or dried for later use without fire. Green unripe berries and leaves should not be regarded as safe merely because this plant is related to cultivated goji.

HOW TO IDENTIFY IT

Fremont's wolfberry is a woody shrub that can reach two to three meters in height and nearly as much in width.

Branches divide extensively, and many end in a stiff spine.

During a moist season, small, rather thick leaves emerge. They are oval, obovate or spoon-shaped, usually with smooth margins, and are often clustered along short side shoots.

In severe drought, leaves shrink or almost disappear.

The small tubular flowers have five spreading lobes, ranging from pale purple to lilac. They grow singly or in groups in the leaf axils.

An oval or oblong berry develops after each flower. Unripe berries are green; fully mature fruits turn orange or bright red and become soft and juicy.

Numerous tiny, soft seeds usually occur within the fruit and are eaten with its flesh.

Following an unusual summer rain, one branch may carry flowers, green berries and ripe berries together.

WHERE IT GROWS AND HOW COMMON IT IS

Lycium fremontii is characteristic of the Sonoran and Mojave Deserts, particularly arid desert washes, gravelly hillsides and sites with deeper roots in somewhat saline ground.

Botanical references place it in California and other southwestern states.

It is not an ordinary native fruit shrub of the Sacramento Valley. It should be sought only during a trip to suitable southern desert habitat.

On dry ground, isolated plants may grow among creosote bushes.

Fruit production depends on weather, although the species is considered a relatively dependable berry producer for the desert.

Gathering can be prohibited in national parks and other protected lands.

WHEN EDIBLE PARTS ARE AVAILABLE

After a cool desert winter, leaves and lilac flowers appear. The species reference gives February–March as a flowering period in suitable climates.

Fruit develops in spring and early summer.

Depending on rainfall, small, soft orange-red berries may ripen from April to June.

Some years bring an additional modest crop after summer rain, but such a crop cannot be relied on in advance.

Hard green berries are not equivalent to ripe fruit.

During prolonged drought the plant may lose its leaves and look almost dead, without any guarantee that old fruit remains fit to eat.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe, soft berries. Plants For A Future separately confirms raw consumption of Lycium fremontii.

The mature fruits are sweetish and juicy, sometimes with a tomato-like note and slight bitterness.

They can be eaten a few at a time or mashed into a cold fruit mixture.

The small, soft seeds of a ripe berry are generally eaten with the pulp.

Large servings may upset the stomach, so moderation is particularly important.

Naturally dried berries. The species reference also describes drying the fruit for later use.

Use only undamaged, fully ripe berries, dried without mold or contamination.

Raw leaves, flowers, roots and unripe berries are not documented raw foods in this article.

Local food history. Different desert wolfberries of the American Southwest played a role in the seasonal diets of Indigenous communities.

For Lycium fremontii specifically, the consumption of ripe berries is documented. Hot preparations and sauces are outside this account of food without fire.

HOW TO AVOID CONFUSION

Lycium andersonii resembles this plant in its small leaves, spines and orange-red berries, but differs in flower and shoot details and aspects of geographic range.

Lycium pallidum often has paler, larger flowers.

Confusion with other desert members of the nightshade family is particularly dangerous: some have poisonous green or even mature fruits.

Do not identify wolfberry from an orange berry or a thorn alone.

A tubular flower, characteristic clusters of leaves, a soft mature berry and a confirmed botanical identity are needed.

If the species or ripeness is uncertain, leave the berries untouched.

SOURCES

Plants For A Future: https://pfaf.org/User/Plant.aspx?LatinName=Lycium+fremontii

Wikimedia Commons, plant photograph: https://commons.wikimedia.org/wiki/File:Lyciumfremontii.jpg

Calflora: https://www.calflora.org/

Laurel sumac — dark chaparral fruit on Southern California coastal slopes · Malosma laurina

Malosma laurina

In the coastal mountains of Southern California, a large evergreen shrub with long leaves and reddish young shoots grows across dry hillsides and canyons.



Laurel sumac (Malosma laurina) — glossy lanceolate leaves and clusters of dark fruit

Justin Taylor (blugeoner86) · CC BY 2.0 · Wikimedia Commons

In summer, numerous small fruits remain on the ends of its branches.

Laurel sumac was among the food plants used by the Chumash. Its ripe fruit was mashed, dried and eaten without cooking over a fire.

HOW TO IDENTIFY IT

This shrub often stands taller than a person and under favorable conditions can reach three to five meters or more.

The crown is dense and rounded, with long shoots and gray-brown bark. Young leaf stalks and veins are sometimes reddish.

The leaves are simple, alternate and leathery, narrow-elliptical or lance-shaped, approximately 5–10 centimeters long, with smooth, entire edges.

They are often folded slightly along the central vein, like a shallow little boat.

In spring, large branched panicles of minute whitish-cream flowers emerge at the ends of the shoots.

The fruit is very small and rounded. It changes from greenish to dark, almost black as it matures; a hard stone lies inside.

WHERE IT GROWS AND HOW COMMON IT IS

Malosma laurina is native to Southern California, especially the coastal mountains from Santa Barbara and Ventura through Los Angeles, Orange and San Diego to the Mexican border.

It grows in chaparral and coastal sage scrub, on sunny dry slopes, in rocky canyons and beside roads.

Calflora lists thousands of observations in Southern California, but this shrub is not a common wild plant of the Sacramento Valley.

WHEN EDIBLE PARTS ARE AVAILABLE

The evergreen leaves remain on the branches throughout the year. That does not make them edible.

Young flower panicles appear chiefly in spring and early summer; fruit then develops gradually.

On warm southern slopes, the small fruits usually mature in summer and early autumn.

After prolonged drought, individual shrubs may produce few fruits.

Only fully ripe fruit is suitable for this uncooked food preparation, not green immature ovaries.

WHAT CAN BE EATEN WITHOUT COOKING

Ripe fruit. A USDA Forest Service species profile based on research into Chumash food plants describes mashing, drying and eating Malosma laurina fruits raw after removing dry, inedible material.

For a fire-free method, separate ripe fruits from twigs, mash the thin fleshy portions, dry them naturally under clean conditions and thoroughly remove coarse skins and hard stones.

This is not a juicy table berry: the fruit is tiny and the useful flesh is thin.

Do not crack or chew the seeds.

Bitter bark, leaves and roots are not confirmed foods for eating without heat.

HOW TO AVOID CONFUSION

Rhus integrifolia, the lemonade berry, generally has broader oval, leathery leaves, often paler beneath, and differently colored fruits. It is treated in a separate atlas article.

Rhus ovata, sugar sumac, differs through broader, stiff leaves and features of its inflorescences.

A single dark fruit does not reliably distinguish these shrubs.

They belong to the sumac family; contact with certain relatives can cause skin reactions in susceptible people.

Do not gather unidentified fruit or transfer dietary information from one related species to another.

SOURCES

Calflora, species: https://www.calflora.org/app/taxon?crn=5348

USDA Forest Service, Malosma laurina: https://www.fs.usda.gov/psw/publications/beyers/psw_2018_beyers010_montalvo_malosma-laurina.pdf

USDA FEIS, species review: https://research.fs.usda.gov/feis/species-reviews/mallau

Apple — ripe fruit from old California orchard trees · Malus domestica

Malus domestica

Beside an abandoned orchard, along an old farm track or near a former settlement, an apple tree may stand that has received no care for years.



Apple tree (Malus domestica) — leafy branch bearing mature apples

H. Zell · CC BY-SA 3.0 · Wikimedia Commons

In spring it is covered with pale pink flowers. During summer the fruit enlarges among its leaves, and in autumn the tree may produce a crop of tart or sweet apples.

It is often easier to tell that the tree once grew in an orchard than to identify its original cultivar.

Ripe apples can be eaten fresh without heating.

HOW TO IDENTIFY IT

This is a deciduous tree, usually three to ten meters high, with a spreading crown and short fruit-bearing spurs.

As the tree ages, its trunk bark turns gray and develops cracks. Young shoots may be slightly hairy.

Leaves are alternate, oval or elliptical, toothed along their margins and visibly veined. Their undersides are often paler and downy.

Flowers open in small clusters. Buds are pink; the five-petaled flowers become white with a faint pink shade once open.

Fruit varies greatly with cultivar: it may be green, yellow or red, round or somewhat elongated.

A five-part calyx remains at the end opposite the stalk.

When the fruit is cut open, it normally shows five seed chambers and smooth, dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Garden apple is an introduced fruit tree.

Calflora records escaped apple trees, including under the name Malus pumila, closely related to the currently accepted name Malus domestica.

Former orchards, isolated seedling trees and plants beside woodland edges, streams and old houses may persist outside active cultivation.

In the Sacramento Valley and foothills, an abandoned planting is more likely than a natural apple forest: self-seeding does not make a tree native.

Gathering depends on the landowner's rights and the absence of pesticide treatment.

WHEN EDIBLE PARTS ARE AVAILABLE

In mild lowlands, flowering usually occurs in March–April, later in cool foothills and mountains.

Fruit develops through spring and summer. Ripening depends on the cultivar: early apples become edible in summer, while late varieties ripen from September through November.

Maturity is not determined by skin color alone.

A ripe apple separates more readily from its stem, develops a characteristic fragrance and has the flavor expected of its cultivar.

Avoid fallen apples that are dried out, worm-damaged or moldy.

WHAT CAN BE EATEN WITHOUT COOKING

Flesh of ripe apples. It can be eaten raw with a clean peel or after peeling and is a juicy food that is easy to slice without cooking.

Some old seedling trees produce small, very sour apples. These can still be edible, but not every apple is pleasant when fresh.

Slices of ripe flesh can be dried without heating on clean mesh if the climate permits thorough drying without mold.

Do not chew or grind the seeds with the fruit: apple seeds contain cyanogenic compounds. It is better to discard the core.

Leaves, bark and branches are not used as food here.

HOW TO AVOID CONFUSION

The fruit of native Pacific crabapple, Malus fusca, is normally much smaller. That species is associated with wet northern forests, while cultivated apple more often occurs near former settlements.

Ornamental crabapples can be very similar, and individual characters overlap in hybrids.

European pear, Pyrus communis, frequently has shinier, less hairy leaves, while its flesh contains gritty stone cells not usually present in apples.

Do not assume any tree bearing round, yellow fruit is an apple. Examine its flowers, leaves, fruit and seed chambers.

SOURCES

Calflora, Malus species: https://www.calflora.org/species/sci-M.html

Plants For A Future, Malus domestica: https://pfaf.org/USER/Plant.aspx?LatinName=Malus+domestica

University of British Columbia, Malus pumila: https://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Malus+pumila

Pacific crabapple — small tart autumn fruit in wet northern coastal forests · Malus fusca

Malus fusca

In the moist coastal forests of Northern California, a low tree or large shrub is sometimes covered in white flowers during spring.



Pacific crabapple (Malus fusca) — slender branches carrying small mature fruit

Gordon Leppig & Andrea J. Pickart / U.S. Fish and Wildlife Service · Public domain · Wikimedia Commons

By autumn, numerous tiny apples appear among the foliage, their colors ranging from yellow to deep red.

This is Malus fusca, the Pacific or Oregon crabapple.

Its fully ripe fruits can be eaten raw, although they are distinctly more sour than cultivated apples. The inner seeds are not food: Calflora explicitly warns against consuming the seeds of this species.



Pacific crabapple (Malus fusca) — slender branches carrying small mature fruit

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually a deciduous shrub or small tree with several trunks, sometimes forming dense coastal thickets.

The branches are flexible and bear many short fruiting spurs on older shoots; some branches may end in thornlike twigs.

Leaves are alternate and stalked, oval or elliptical, with small marginal teeth. On vigorous shoots, leaves may have three shallow lobes.

Young leaves are softer and slightly hairy. Mature leaves are dark green above and paler underneath.

In spring, small five-petaled white, occasionally pinkish flowers appear in short clusters.

After pollination, tiny apple-like fruits form, often slightly elongated and far smaller than supermarket apples.

Their color changes from greenish yellow to red or purple.

Remnants of the flower persist at the fruit tip, and inside are several separate seed chambers with brown seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Malus fusca as native to California, with relatively few observations, chiefly from northern coastal wetlands, riparian ground and moist forest.

Oregon State University describes its natural range along the Pacific coast from Alaska to Northern California, often beside creeks, along marsh margins and in woodland.

It is not an ordinary urban wild apple in the Sacramento Valley. Near houses, cultivated Malus domestica or escaped garden seedlings are much more likely.

In suitable places elsewhere along the Pacific coast, Pacific crabapple may form dense thickets, but its natural range within California is relatively narrow.

It is not an orchard crop distributed throughout the state.

WHEN EDIBLE PARTS ARE AVAILABLE

Fresh leaves unfold in early spring.

White or pale pink flowers generally appear in April–May, later in particularly cool northern habitats.

After pollination, small fruits grow for several months, remaining green and hard through summer.

By late summer and autumn, they turn yellowish or reddish and gradually soften.

Plants For A Future notes that the fruit can become less sour after the first autumn cold weather.

In very wet coastal habitats fruit spoils quickly, so an autumn crop is not necessarily available for long even on the same tree.

WHAT CAN BE EATEN WITHOUT COOKING

Fully ripe flesh of the little apples. Plants For A Future directly confirms raw consumption of Malus fusca fruit.

Fruits are small, commonly about one to two centimeters across, with a pronounced tart flavor.

Cut each apple open and eat its fresh flesh after removing the seed-bearing core.

Oregon State University also notes the edibility and sour character of these fruits. They are better suited to a small cold fruit addition than to a large sweet dessert.

Cold mashed pulp. Fully ripe seedless fruit can be mashed and combined with less sour fruit.

This does not require fire, but it quickly browns and spoils without refrigeration.

Calflora explicitly warns of toxic seeds in this species, so do not chew them or grind the core into the pulp. Seeds of other Malus species may also contain cyanogenic compounds.

Leaves, bark, young shoots and seeds are not included as raw foods.

Never gather fruit from sprayed trees or from contaminated marsh water.

HOW TO AVOID CONFUSION

Cultivated apple, Malus domestica, sometimes escapes cultivation and bears small fruit, but differs in its shoot structure, leaves and origin.

Some Pyrus pears resemble little apples, though their flowers and fruit structure differ.

Certain California hawthorns, Crataegus species, also bear miniature apple-like fruit, but often have stronger thorns and more deeply divided leaves.

Malus fusca is especially associated with wet northern coastal habitats, small elongated fruits and many short fruiting spurs.

A single fallen little apple cannot establish the tree's species; examine flowers, leaves and a complete shoot.

SOURCES

Calflora, species: https://www.calflora.org/app/taxon?crn=5350

Plants For A Future, raw ripe fruit: https://pfaf.org/user/Plant.aspx?LatinName=Malus+fusca

Oregon State University, Pacific crabapple: https://landscapeplants.oregonstate.edu/plants/malus-fusca

Cretan mallow — soft immature fruits of a large spring mallow · Malva multiflora

Malva multiflora

On coastal fields and near old gardens in Central California, a rather tall, bushy annual with large, rounded leaves sometimes grows after winter rain.



Cretan mallow (Malva multiflora) — broad lobed leaves and pale pink flowers

Robert Flogaus-Faust · CC BY 4.0 · Wikimedia Commons

In spring it produces delicate pink, five-petaled flowers. Then little round fruits appear, divided into segments.

This is Cretan mallow, now known as Malva multiflora. Older sources often call it Lavatera cretica or Malva pseudolavatera.

For eating without fire, the separately confirmed food part is the soft, immature fruit.

HOW TO IDENTIFY IT

An herbaceous annual or biennial, sometimes taller than one meter, with sturdy, branching stems covered in short hairs.

Leaves are alternate, roundish or broadly kidney-shaped, on long stalks. They usually have five to seven shallow lobes with rounded teeth, and their undersides show radiating veins.

Flowers occur in groups in the leaf axils. They have five open, pinkish-lilac petals with darker veins.

Below the principal sepals are smaller additional bracts characteristic of the mallow family.

After flowering, a round, flattened fruit develops from separate segments, resembling a miniature cheese wheel.

The immature segments are green and soft; mature ones dry and harden.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Malva multiflora as nonnative and reports several hundred observations along the California coast and in central counties.

It grows in open, disturbed sites, old gardens, beside dirt roads and on grassy slopes near settlements, especially after winter rain.

An important taxonomic point is that Malva pseudolavatera, Lavatera cretica and Malva multiflora have often been used for the same species in local lists.

The B1ALIVE registry counts this plant once, under its currently accepted scientific name.

WHEN EDIBLE PARTS ARE AVAILABLE

Young leaves appear in winter after rainfall.

Flowers may open in early spring on smaller plants; flowering can persist longer on the cooler coast.

Soft fruits develop soon after individual flowers fade, usually in spring and early summer.

While the fruit segments remain green and can be separated easily with a fingernail, they are still tender. Later they darken, dry and become hard.

The suitable stage for eating without fire is the short interval between flowering and the hardening of the seeds.

WHAT CAN BE EATEN WITHOUT COOKING

Only tender, immature fruits. A scientific study of the ethnobotanical use of Lavatera cretica in Spain directly describes eating immature fruit raw as a small seasonal snack.

The fruit can be separated from its calyx and eaten fresh while its segments remain soft and clean. The flavor is mild and somewhat vegetal.

Young leaves and shoots of this same species were described in the reviewed ethnobotanical sources as stewed together with other foods, not eaten raw.

They are therefore not included in this fire-free food guide.

Mature hard seeds, roots and old stems are likewise excluded.

HOW TO AVOID CONFUSION

Malva parviflora is often shorter and has smaller flowers.

Malva nicaeensis can resemble this species but differs in its fruits, leaves and hairiness.

Garden Malva sylvestris generally has larger, brighter pink flowers with pronounced veins.

Round mallow leaves alone are not sufficient for species identification. Examine the flower, additional calyx bracts and immature fruit together.

It is especially important not to confuse taxonomic synonyms with separate species.

Do not collect raw food beside treated lawns or roads.

SOURCES

Calflora, accepted species: https://www.calflora.org/app/taxon?crn=14660

Ethnobotanical research into Lavatera cretica: https://pmc.ncbi.nlm.nih.gov/articles/PMC4329632/

Calflora, related taxonomic name: https://www.calflora.org/app/taxon?crn=11818

Common mallow — tender leaves and green cheese-wheel fruits · Malva neglecta

Malva neglecta

After cool rains, a low herb with rounded, slightly folded leaves appears in California gardens.



Common mallow (Malva neglecta) — soft rounded leaves and immature green segmented fruits

Mirishkorlik · CC BY-SA 4.0 · Wikimedia Commons

It spreads beside paths and lawn edges, opens little pale flowers in spring and later produces flattened fruits resembling miniature wheels of cheese.

This is Malva neglecta, one of the two common weedy mallows in California.

Its tender leaves can be used raw, but the flowers and mature fruits are important for identifying it confidently.



Common mallow (Malva neglecta) — soft rounded leaves and immature green segmented fruits

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual, biennial or short-lived perennial herb.

Its stems often lie along the ground and spread outward for several tens of centimeters; with sufficient moisture, their tips rise.

A pronounced taproot grows from the plant's base.

Leaves are alternate, on long stalks, round or kidney-shaped, with five to seven shallow rounded lobes.

Their margins are gently wavy or finely toothed, and the soft leaf surfaces may carry hairs.

Small whitish, pale pink or light lilac flowers open in the leaf axils.

Each flower has five petals, usually notched at their tips, and may be no larger than a fingernail.

A fruit divided into many separate, rounded segments develops after flowering.

At first it is green and soft, then it dries. The mature segments are usually smooth.

These fruits help distinguish Malva neglecta from the very similar Malva parviflora.

WHERE IT GROWS AND HOW COMMON IT IS

University of California IPM identifies Malva neglecta and Malva parviflora as the state's two most widespread weedy mallows.

The first especially favors garden beds, path edges, lawns, parks and disturbed, irrigated soil.

In the Sacramento Valley, new rosettes may appear after rain and on land that does not dry out completely during summer.

The presence of a herb near houses does not mean it is safe to gather, because lawns and ornamental beds are often treated with herbicides.

In warm places with sufficient moisture, the plant may form large patches.

On a completely dry, sunny slope during summer, the greens soon become tough or disappear.

This is an introduced species whose spread is partly associated with human activity.

WHEN EDIBLE PARTS ARE AVAILABLE

Autumn and winter. After the rains begin, new plants germinate and tender leaves form. In a mild climate, some older individuals stay green through winter.

February–May. Young plants carry many leaves, then open their pale flowers. Green fruits develop afterward. In cool gardens the sequence can continue longer.

May–September. Irrigated sites may produce fresh flowers and green fruits, while plants on dry ground develop hard mature fruits.

The season of truly soft leaves ends before the plant itself necessarily disappears.

WHAT CAN BE EATEN WITHOUT COOKING

Tender young leaves. They are edible raw and can be torn into a cold salad.

Mallow greens are slightly mucilaginous when chewed and not strongly pungent.

For a first serving, use only a small amount of clean greens from a positively identified plant. Older leaves become coarser and less pleasant.

Soft, green fruits. While the little 'cheese wheels' have not dried, immature fruit with soft seeds can be eaten raw.

Plants For A Future confirms raw immature seeds of Malva neglecta, as well as tender young leaves and shoots.

The taste of the young fruit differs from its dry mature counterpart. Do not automatically recommend hard, mature seeds as food in large amounts.

Flowers are important for identifying the species, but they are not included among the confirmed foods recommended here.

Large amounts of plants from heavily fertilized or polluted soil are unsuitable for raw eating.

HOW TO AVOID CONFUSION

Small-flowered mallow, Malva parviflora, is so similar that young rosettes sometimes cannot be separated reliably.

UC IPM gives concrete distinguishing characters: the petals of Malva neglecta are longer, and mature fruit segments are smooth.

Malva parviflora has shorter petals and wrinkled mature fruit segments.

Other plants with round leaves may lack five-petaled flowers and the distinctive cheese-wheel fruit.

Never identify an unknown edible green by a rounded leaf alone.

If it is growing on a treated lawn, beside heavy traffic or among animal waste, do not eat it even when the species is correctly identified.

Washing does not remove chemicals absorbed into plant tissues.

SOURCES

University of California IPM, mallows and distinguishing characters:
https://ipm.ucanr.edu/home-and-landscape/mallows/

Utah State University Extension, common mallow:
https://extension.usu.edu/planthealth/ipm/ornamental-pest-guide/weeds/w_common-mallow

North Carolina State Extension, Malva neglecta:
https://plants.ces.ncsu.edu/plants/malva-neglecta/common-name/cheese-plant/

Plants For A Future, leaves and immature seeds:
https://pfaf.org/user/Plant.aspx?LatinName=Malva+neglecta

Bull mallow — soft spring leaves and unripe rounded seed fruits · Malva nicaeensis

Malva nicaeensis

On a spring vacant lot or beside an old field, a low mallow sometimes grows with rounded, lobed leaves and little pale pink flowers.



Bull mallow (Malva nicaeensis) — rounded lobed leaves and pale pink flowers

Ariel Palmon · CC BY-SA 3.0 · Wikimedia Commons

After flowering, flattened round fruits develop in their place, divided into segments like miniature heads of cheese.

Bull mallow, Malva nicaeensis, was introduced from the Mediterranean but now occurs outside plantings in California.

Its young leaves and still-soft seeds can be eaten raw.

HOW TO IDENTIFY IT

An annual or short-lived herbaceous mallow, usually around 20–60 centimeters tall.

Its green, branched shoots often carry some hairs.

The leaves are alternate, on long stalks, rounded or kidney-shaped, with five to seven shallow lobes and rounded teeth along the margins.

Veins spread out from the base of each leaf in a conspicuous radiating pattern.

Flowers appear singly or in small groups in the leaf axils.

They have five pale whitish-pink petals, often with faint darker veins, and a characteristic staminal column in the center.

The fruits are round and flattened, consisting of a ring of small segmented nutlets that harden as they mature.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Malva nicaeensis as nonnative and includes hundreds of observations in California.

The plant is found in open disturbed places in coastal and Southern California, on old fields and vacant lots, beside dirt roads and near settlements.

It can occur in the Sacramento Valley, but other mallows, particularly Malva parviflora, are more abundant there.

Their similarity means that an individual species of mallow cannot be named confidently from a round leaf alone.

WHEN EDIBLE PARTS ARE AVAILABLE

In the mild Mediterranean climate, young greens develop after the first autumn and winter rains.

Tender leaves are most suitable during winter and spring while the plant grows actively.

Flowering begins in spring and may continue through early summer, sometimes later where enough moisture remains.

Soft, round fruits form rapidly after flowers fade, and their segments gradually harden.

For eating the seeds raw, choose only parts that have not yet hardened.

WHAT CAN BE EATEN WITHOUT COOKING

Leaves. Plants For A Future explicitly lists the leaves of Malva nicaeensis as edible raw.

Their flavor is gentle and their texture slightly mucilaginous, like that of other edible mallows.

They can be mixed into a cold leafy dish; young, still-soft leaves are most pleasant.

Immature seeds. The same species reference separately describes eating them raw.

They are tiny and soft with a mild, nutty flavor. Remove them from fruits that have not yet hardened, rather than swallowing the coarse, dry shell of a mature fruit.

Roots, old stems and coarse mature fruits are not confirmed uncooked foods here.

HOW TO AVOID CONFUSION

Malva parviflora and Malva neglecta look very similar.

University of California IPM recommends comparing petal lengths and the shapes of mature fruit segments to distinguish these common mallows.

Bull mallow also requires examining its flowers, fruits and characteristic hairiness together.

The taller Malva sylvestris generally has larger, brighter pink flowers with prominent veins.

A low plant's rounded leaf is not enough for positive identification.

Plants growing in heavily fertilized soil may accumulate nitrates. Gather raw food only from clean, untreated sites.

SOURCES

Calflora: https://www.calflora.org/app/taxon?crn=5353

Plants For A Future, raw leaves and immature seeds: https://pfaf.org/User/Plant.aspx?LatinName=Malva+nicaeensis

UC IPM, comparison of mallows: https://ipm.ucanr.edu/home-and-landscape/mallows/

Little mallow — tender Sacramento greens and soft green cheese-wheel fruits · Malva parviflora

Malva parviflora

After rain in California's open spaces, round green leaves appear, resembling little hands with shallow lobes.



Little mallow (Malva parviflora) — rounded green leaves and segmented immature green fruits

Especies-mendoza-23 · CC BY-SA 4.0 · Wikimedia Commons

Later, nearly inconspicuous whitish flowers open in their axils. Each develops a round fruit divided into sections, like a miniature wheel of cheese.

This is little mallow, Malva parviflora, a very widespread herb in California whose young leaves and immature fruits are eaten raw.

HOW TO IDENTIFY IT

Little mallow grows as an annual herb, sometimes surviving for more than one season.



Little mallow (Malva parviflora) — rounded green leaves and segmented immature green fruits

Forest and Kim Starr · CC BY 3.0 us · Wikimedia Commons

Several branching stems emerge from its base, usually reaching about 20–80 centimeters. Young stems are soft but become much tougher with age.

The leaves grow alternately along the stem on long stalks.

They are nearly circular, with heart-shaped bases and five to seven shallow lobes. The margins are wavy with small rounded teeth, and the surface may be slightly hairy.

Young leaves are tender and rich green.

Seedlings initially display heart-shaped cotyledons; the characteristic round true leaves develop later.

Small flowers appear in groups beside the bases of the leaf stalks.

They are white or faintly pink, generally about one centimeter across, with five petals. They are much less showy than the flowers of many cultivated mallows.

Following flowering, a recognizable green 'wheel' forms from closely packed, wedge-shaped sections, each containing a single seed.

While immature, this fruit is green and soft. Later it dries and separates into its individual sections.

The fruit shape inspired the English common name cheeseweed.

WHERE IT GROWS AND HOW COMMON IT IS

Malva parviflora originated in the Old World and is now found across most of California, apart from some of the harshest, driest parts of the Great Basin.

It is especially common in the Central Valley, including around Sacramento, in gardens, vineyards, fields, roadsides and abandoned lots.

Little mallow takes advantage of winter rain.

On loose, fertile ground individual plants can become large, and groups often grow beside fences and paths.

Dense, closed forest is not its principal habitat: it favors open or slightly shaded ground.

WHEN EDIBLE PARTS ARE AVAILABLE

In the Sacramento Valley, young green plants often emerge in autumn after the first rains.

In lowlands, soft leaves are available in winter and spring, roughly November–April. With regular moisture, growth can continue much longer.

Flowering occurs from late winter through spring and may continue into autumn.

University of California IPM reports that flowers can be found almost year-round under favorable conditions.

Green fruits develop soon after flowers, so a single plant may bear flowers and immature 'cheese wheels' at the same time.

WHAT CAN BE EATEN WITHOUT COOKING

Young leaves. While still soft, they can be eaten raw as salad greens.

They are tender and slightly mucilaginous when chewed.

Plants For A Future specifically documents the raw use of Malva parviflora leaves.

Immature fruits. The soft green 'wheels' are also eaten raw while each segment is still juicy, rather than dry and hard.

As the fruit matures, it becomes less succulent and tougher.

This use is documented for the green fruits of little mallow in food references and for its immature seeds in Plants For A Future.

Do not automatically add mature seeds, flowers or tough adult stems to the same raw-food list.

Their structures are useful for identification, but this article recommends only the parts with species-specific confirmation of uncooked consumption.

As with other leafy weeds, the chemistry of the leaves may vary with soil conditions.

Plants from heavily fertilized fields, roadside strips or treated areas are not suitable for raw gathering.

Never eat an unidentified mallow: Malva parviflora and the closely related Malva neglecta can look alike before fruiting.

HOW TO AVOID CONFUSION

Malva neglecta also has rounded leaves and small fruits, but its flowers often have visibly longer petals that project beyond the sepals.

In Malva parviflora, the petals are usually approximately as long as the sepals, and the mature fruit segments have a characteristic wrinkled surface.

In young plants these differences are difficult to see, so examine flowers and fruits, not just round leaves.

UC IPM gives a useful comparison of the two most common California mallows: Malva parviflora has shorter petals and wrinkled mature fruit segments, while Malva neglecta has longer petals and smooth mature fruit segments.

This distinction is especially useful in late spring and summer when flowers and 'cheese wheels' can be seen together.

SOURCES

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Plants For A Future, raw leaves and immature seeds: https://pfaf.org/USER/Plant.aspx?LatinName=Malva+parviflora

UC Irvine Natural History, fruit characters: https://nathistoc.bio.uci.edu/plants/Malvaceae/Malva%20parviflora.htm

Common mallow — large mauve flowers, tender leaves and green cheese wheels · Malva sylvestris

Malva sylvestris

On a neglected plot in California, a tall herbaceous plant may rise above the surrounding vegetation, with broad, rounded leaves and large pinkish-mauve flowers marked by darker lengthwise veins. Later, flat green disks resembling tiny wheels of cheese appear where the flowers were. This is Malva sylvestris, a European mallow that has sometimes escaped ornamental and food plantings. Its young leaves, flowers and very young, unripe fruits with their seeds can be eaten raw. However, leaves grown in soil heavily fertilized with nitrogen may accumulate undesirably high levels of nitrates.



Common mallow (Malva sylvestris) — rounded leaves and large dark-veined mauve flowers

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Depending on the climate, common mallow is an annual, biennial or short-lived perennial herb. Its upright or ascending, branched stems often reach half a meter to a meter and bear fine hairs. The alternate leaves have long stalks and a broadly rounded outline, divided into five to seven shallow lobes with rounded, toothed margins. Their veins fan outward from the point where the leaf stalk joins the blade. Higher on the stems are large five-petaled flowers, pinkish-mauve to purple, with prominent dark veins. In the center is the characteristic column of fused staminal filaments. After flowering, a flat fruit develops, made up of rounded segments arranged around an axis like a miniature wheel. At its youngest stage the fruit is green and succulent; when ripe it dries and separates into hard nutlets. A mature plant is conspicuously taller and more brightly flowered than the low-growing Malva neglecta.

WHERE IT GROWS AND HOW COMMON IT IS

Malva sylvestris is native to Europe. In California it is chiefly encountered near homes, former plantings and disturbed ground. It should not be mistaken for a typical abundant native chaparral shrub or Sierra forest plant. Unlike the widespread mallows Malva parviflora and Malva neglecta, it often occurs as an ornamental or escaped garden plant. In irrigated soil in the Sacramento Valley it may remain green for a long time, whereas in hot, dry sites its summer leaves quickly become coarse. The food information here applies to this particular botanical species, not to every large-flowered garden mallow. Roadside trees and surrounding ground may have been treated with herbicides or exposed to contamination.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New round leaves emerge following the cool, wet season, and stem growth accelerates in warmer weather. Young leaves are especially tender in spring. Large flowers generally appear in spring and summer, sometimes continuing into autumn where plants receive irrigation. Flat green fruits form a few weeks after pollination. The stage at which they can be eaten raw is brief: their segments must still be soft. As they mature, the fruits become dry and hard. During hot droughts the leaves may yellow and fall, while irrigated plants continue producing fresh growth. Leaves can remain visible long after they have passed their tender edible stage.



Common mallow (Malva sylvestris) — rounded leaves and large dark-veined mauve flowers

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly records raw use of Malva sylvestris. The leaves are soft, slightly mucilaginous and pleasantly mild. They can be chopped into a fresh green mixture. As with other mallows, the texture is somewhat soothing and slippery. Avoid leaves from sites with excessive nitrogen fertilizer: PFAF warns that this mallow can accumulate high nitrate levels in such soil.

Flowers. Fresh mauve petals and the tender parts of the flower are also specifically listed as raw food. They taste pleasant and yield only a small quantity, but can be added to a salad. This article concerns their use as food, rather than the ornamental purpose of the flower.

Very young green "cheese wheels." PFAF also lists the unripe seed-bearing parts as edible raw: small green disks while they remain soft and have a nutty flavor. Fully dry mature seeds, roots and coarse old stems are not included here. The species reference also advises people with certain gallbladder conditions to avoid this plant.

HOW NOT TO CONFUSE IT

Malva parviflora generally has much smaller, pale pink flowers, although its leaves and cheese-wheel fruits resemble those of common mallow. Malva neglecta is usually low-growing, with spreading shoots and small pinkish flowers. Certain ornamental hibiscus and lavatera plants also have similar petals, but their fruit structures and growth habits differ. Reliable identification requires the combination of a large dark-veined mauve flower, a palmately lobed leaf and a segmented green fruit. Never taste the fruit of an unidentified plant merely because it resembles a little wheel. Raw greens from chemically treated flower beds are unsuitable for food.

SOURCES

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Chinese mallow — large tender leaves and unripe fruits of old vegetable plots · Malva verticillata

Malva verticillata

In loose, moist soil beside an old garden bed, one may encounter a tall mallow with broad, tender, rounded leaves. Later, small pale pink flowers appear among the foliage, followed by flat, round fruits divided into sections like miniature cheese wheels. This is Chinese mallow, an East Asian leafy crop that is very rarely encountered outside cultivation in California. Its tender leaves and still-green, immature seeds can be eaten raw.



Chinese mallow (Malva verticillata) — broad rounded leaves and small pale pink flowers

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual, sometimes biennial, herbaceous mallow usually 50–150 centimeters tall. Its upright, branching stems have short hairs. The alternate leaves are borne on long stalks. With sufficient moisture they become very large: rounded to kidney-shaped, often 10–15 centimeters wide, with five to seven shallow lobes and rounded teeth. Veins radiate from the base of the blade. The relatively small flowers are whitish-pink or pale mauve, with five petals and a characteristic central staminal column; they occur in small clusters in the leaf axils. The flat, rounded fruit is divided into numerous individual segments, which become hard and dry when fully mature.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Malva verticillata as nonnative and records about fourteen occurrences across California. Likely encounters are almost all associated with gardens, farmland, former vegetable beds and accidentally dispersed seed. It is not one of the common mallows of vacant lots throughout the Sacramento Valley; Malva parviflora and Malva neglecta are much more frequent there. Chinese mallow favors moist, fertile ground and can self-seed near compost. However, soil enriched with excess nitrogen or treated with chemicals makes its leaves unsuitable as raw food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

With sufficient moisture, the first leaves appear after spring warmth or during a mild winter. The large young blades are most tender before the flower stalk elongates. Flowers develop during summer, and small green fruits follow shortly after the blossoms wither. While their segments remain soft, the immature seeds have a delicate texture and pleasant nutty taste. Toward the end of the season the fruits darken and harden. In hot, dry weather the leaves become tougher and the production of fresh growth slows.



Chinese mallow (Malva verticillata) — broad rounded leaves and small pale pink flowers

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms their raw use. They have a mild flavor and a slightly mucilaginous texture and can be chopped into a cold salad.

Young green seeds. The same species reference records that they can be eaten raw before the fruits harden. A young fruit can be separated into its soft segments and eaten in small quantities.

Mallows have an important limitation: leaves grown in heavily nitrogen-fertilized soil can accumulate elevated nitrate levels. It is therefore particularly important not to gather greens near compost, manure or treated fields. Roots, mature dry seeds and tough stems are not recommended here.

HOW NOT TO CONFUSE IT

Malva parviflora is usually shorter, with smaller flowers and differently textured fruit segments. Malva sylvestris often has much larger, brighter pink flowers. Malva multiflora may also grow tall and form similar round fruits, but its leaves and calyx differ. A large, rounded leaf is not enough to identify Chinese mallow: compare flowers, hairs and mature fruits. A cultivated mallow with curly leaves may be a variety of this same species rather than a separate plant.

SOURCES

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- https://pfaf.org/user/Plant.aspx?LatinName=Malva_verticillata

Strawberry cactus — sweet red fruits among hooked spines · Mammillaria dioica

Mammillaria dioica

On rocky slopes in Southern California, a small cactus may be found barely rising above the ground. Its surface is covered with white spines, among which longer, darker hooks stand out. When its fruits ripen, elongated bright-red berries emerge near the top of the stem. Among the Kumeyaay people of Southern California and Baja California, these fruits were a known food eaten raw.



Mammillaria dioica cactus — tubercled stem with spines and elongated red fruit

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

In Kew's botanical classification, this species is also called Cochemiea dioica.

This is a small succulent, usually solitary or with several stems, approximately 5–25 centimeters high. Unlike prickly pears, its stem is not divided into flat pads. It is cylindrical and covered in numerous tubercles. At the tip of each tubercle is a cluster of whitish straight spines and one or more central spines, sometimes curved into hooks. Flowers emerge near the apex; they are light yellow, cream or whitish, with numerous narrow petals. The fruit is elongated, smooth and bright red, resembling a small berry rather than a rounded prickly pear fruit. It contains tiny dark seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Mammillaria dioica as native to Southern California. Its habitats include coastal sage scrub, rocky chaparral, some dry slopes and desert areas of San Diego and Imperial counties. Plants occur in Anza-Borrego and other protected natural areas, but their presence does not grant permission to collect them. The species does not grow wild on the Sacramento plain. Individual plants often shelter beneath low shrubs that protect them from intense direct sun.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering in Southern California occurs mainly in spring and early summer, sometimes following rain. Red fruits develop later in the warm season; during drought there may be no fruit crop. A calendar month alone does not establish ripeness: a ripe fruit is deeply red and softer than an immature one. Buds and fruits may be visible at the same time on different stems.

WHAT IS EATEN WITHOUT FIRE

Ripe red fruits. The San Diego Archaeological Center's ethnobotanical reference, drawing on studies of the Kumeyaay, records the use of Mammillaria dioica fruits as food. Botanical accounts specifically describe the fruits as eaten raw. Once the cactus has been confidently identified, only a ripe, soft red fruit is taken, with care to avoid the stem spines. It may be eaten fresh; its flavor is sometimes compared to a mixture of strawberry and kiwi. The stem, spines and unripe fruits are not established foods eaten without fire.

HOW NOT TO CONFUSE IT

Mammillaria tetrancistra and other small cacti may have similar hooked spines. Prickly pears have conspicuous flat stem segments, while some Echinocereus species have larger flowers and prominently ribbed stems. A small tuberculate cactus alone does not establish the species: the shape of the central spines, pale flowers, elongated red fruit and precise location all matter. Cacti grow slowly; digging up an entire plant for a few fruits is unacceptable.

SOURCES

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Pineappleweed — the pineapple scent of green flower heads · Matricaria discoidea

Matricaria discoidea

Along trampled footpaths, on open waste ground and beside garden paths grows a short herb with delicate, almost lace-like leaves. Its small greenish-yellow flower heads do not resemble ordinary daisies: there are no white petals around the edge. Gently crushing one releases a fruity scent reminiscent of pineapple. The flower heads of this species are eaten raw in small quantities as a fragrant addition to food.



Pineappleweed (Matricaria discoidea) — finely divided leaves and green conical flower heads

Eike Wulfmeyer · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

Pineappleweed is an annual plant, generally 5–30 centimeters tall. One or several soft green stems rise from its base. The alternate leaves are divided two or three times into narrow, almost threadlike segments. Early in growth, leaves form a small rosette; later they occur on branching shoots. Each flower stalk ends in a convex, oval or conical head of tiny yellowish-green tubular florets. There are no white ray florets along its edge. The heads often resemble tiny green thimbles. The aboveground parts, particularly the flower heads, may smell fruity and herbaceous.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Matricaria discoidea native to California and records more than two thousand observations. It occurs along the coast, in inland valleys, near Sacramento, in foothills and in inhabited mountain areas. It thrives in open disturbed ground, trail edges, compacted places, yards and pastures. Yet these are precisely the places that may be contaminated: do not gather plants from parking lots, dog exercise areas or herbicide-treated lawns. The site must be clean and accessible for lawful gathering.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the Sacramento Valley, seeds may germinate after winter rains. Young plants grow through winter and spring, and the flower heads are especially noticeable in spring and early summer. On the coast and in cool mountains, flowering may continue into August. In hot, dry places the tender shoots quickly turn yellow. For food, select fresh, clean heads before they turn brown, shed their parts or develop mold.



Pineappleweed (Matricaria discoidea) — finely divided leaves and green conical flower heads

Jacques Maréchal · CC BY-SA 2.0 fr · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Flower heads. Plants For A Future specifically confirms that the heads of Matricaria discoidea are eaten raw. They have an unusual sweet-spicy fragrance and a slightly grassy taste. A few fresh heads are enough, added whole or finely chopped to cold food. Penn State Extension also describes the leaves as edible, but for raw food gathered in the field it is preferable to use primarily young, fresh flower heads, for which raw consumption is explicitly documented. Dried plant parts, roots and seeds are not treated here as independently established food products.

HOW NOT TO CONFUSE IT

German chamomile, Matricaria chamomilla, has conspicuous white ray florets when flowering; pineappleweed does not. Tansy and some wormwoods also have small yellow flower heads, but their leaves and inflorescences are structured differently, and eating them may be unsafe. Pineapple scent alone must never be used for identification: compare the finely divided leaves, absence of white rays, shape of the heads and the plant's overall short habit. People allergic to the aster family should avoid eating it.

SOURCES

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Black medic — small leaves, yellow flowers and dark pods · Medicago lupulina

Medicago lupulina

On a spring meadow, low creeping shoots with trifoliate leaves and small heads of yellow flowers can sometimes be seen among the grasses. During summer, some of the flower clusters develop into tiny, dark, almost black pods. This is black medic, also known as hop clover. Its young leaves and flowers are eaten fresh, although, unlike mild salad greens, it may be noticeably bitter and is suitable only as a small addition to food.



Black medic (Medicago lupulina) — trifoliate leaves, small yellow flower clusters and dark pods

Atubeileh (Arabic Wikipedia uploader) · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or short-lived perennial member of the pea family. Its shoots usually creep or rise slightly above the ground, reaching 10–50 centimeters in length. Each leaf consists of three small leaflets. They are rounded or obovate, sometimes with a tiny notch at the tip and small teeth nearer their ends; their surfaces often carry short, soft hairs. Stipules can be seen at the base of the leaf stalks.

The flowers form small, dense clusters on slender stalks. Each individual flower is tiny, bright yellow and shaped like a miniature pea flower. After flowering, short, slightly curved pods form, generally containing a single seed. As they ripen, they turn brown to nearly black. These small, dark fruits, together with the yellow flower clusters, are useful identification features.

With adequate moisture, black medic forms low vegetation over the soil. During heat and drought, its leaves can dry rapidly and the plant becomes harder to spot.



Black medic (Medicago lupulina) — trifoliate leaves, small yellow flower clusters and dark pods

Robert Flogaus-Faust · CC BY 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

In California, this introduced plant grows in open grassland and disturbed sites, including lawns, the edges of pastures and meadows. It prefers loose or moderately compacted ground with seasonal moisture, rather than permanently flooded soil.

On suitable meadows it may occur in patches among clovers, other medics and low-growing legumes. Most such places are clearings and open slopes, not dense forest. Plants along roads or on treated lawns are unsuitable for food gathering because of chemical residues and contamination.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Late autumn to spring. After rains, young shoots develop with tender three-part leaves. In lowlands this period can begin in winter, while in colder places it begins in spring.

Spring to early summer. Bright yellow flowers appear. Leaves are generally softer while the plant is growing actively and the ground remains moist.

Summer to autumn. Some plants produce small black pods. On dry ground the foliage quickly becomes coarse and dries out. The seeds themselves are not included as raw food.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future describes their raw use in small quantities. Their taste resembles mild legume greens, although some plants are distinctly bitter or sharp. They are better regarded as a modest addition to a fresh green mixture than as a main vegetable.

Yellow flowers. These too are eaten fresh, by removing small, tender clusters from their stalks. Their flavor may be milder than that of the leaves. Gathering is limited to the flowering season.

Seeds. For the genus Medicago, concerns include canavanine and other biologically active substances; evidence on the safety of regularly eating the raw seeds of this species is insufficient. Mature dark pods are therefore not included as food.

Black medic is a low-yield wild green. Its edible parts are small and the flavor varies, while saponins and other compounds make it unsuitable for large daily portions. Young growth and clean soil are essential considerations.

HOW NOT TO CONFUSE IT

Medicago polymorpha, bur clover, also has trifoliate leaves and yellow flowers, but its pods are conspicuously coiled and may bear hooked prickles. Medicago lupulina has small, kidney-shaped or slightly curved darkening pods, without large spiny spiral coils.

Trifolium dubium, lesser trefoil, looks particularly similar because of its small yellow flowers, but its fruits and flower-cluster structure differ from the black pods of Medicago. White clover, Trifolium repens, has white and generally larger flowers. Three leaflets alone are not enough to identify the plant: inspect flowers and preferably mature fruits.

SOURCES

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Bur clover — tender spring leaves and hooked spiral pods · Medicago polymorpha

Medicago polymorpha

After winter rain, a low green herb with leaves arranged in threes grows in meadows and along paths in the Sacramento Valley. In spring, tiny yellow flowers appear among the leaves, followed by unusual spiral fruits covered with hooks. This is Medicago polymorpha, or bur clover. Despite the English name California burclover, it is not native to California: it came from the Mediterranean region. Its young leaves and fresh flowers can be eaten without heating, but mature spiny pods are not food.



Bur clover (Medicago polymorpha) — trifoliate foliage, yellow flowers and hooked spiral pods

John Tann · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an annual herb, often low and spreading, although on moist, loose soil it may reach half a meter in height. The thin green stems branch from the base and may lie along the ground. Leaves are alternate, each consisting of three rounded or obovate leaflets with small teeth chiefly near the tip. The middle leaflet sometimes has a pale marking. Stipules at the base of the leaf stalk are often conspicuously toothed. The very small yellow, pea-shaped flowers occur in groups of several in the leaf axils. The most distinctive feature of an older plant appears after flowering: tightly coiled fruits resembling tiny green snails, covered with many fine, hooked prickles. When dry, the spirals turn brown and catch on socks, fur and clothing. This is not an ordinary long, smooth pea pod. Mature dry plants leave a rough, prickly mat, and their leaves lose their tenderness.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records thousands of observations of Medicago polymorpha across nearly every region of California and explicitly identifies it as nonnative. There are many records from Sacramento County, as well as Yolo, Placer, Butte and numerous southern counties. Typical habitats include pastures, roadsides, old lawns, vacant lots and disturbed grassland. After a wet winter, it can form extensive low green patches, especially in sunny places. On grazed land, animal waste may contaminate plants gathered for raw food; on treated lawns, herbicides are a concern. The availability of a plant does not itself grant permission to gather it on private property.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seedlings emerge after substantial autumn rain and grow through winter and early spring. In the Sacramento Valley, young tender leaflets are especially available from December through March, depending on the weather; flowering often begins in late winter and spring. Green spiral pods form soon after the yellow flowers and gradually harden. By May or June, most plants in open sunny ground may have dried, leaving clinging, dry fruits. Development can continue longer in the cool coastal climate. For raw food, the best period is before tough prickles become abundant, while the leaves remain tender and the flowers are just opening.



Bur clover (Medicago polymorpha) — trifoliate foliage, yellow flowers and hooked spiral pods

Ixitixel (Christian Hummert) · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms their raw use. They somewhat resemble clover in flavor, with a mild grassy taste and sometimes slight bitterness. The leaflets can be gathered, washed with clean drinking water and added in small amounts to a cold mixture of greens. Older leaves become coarse, so the whole plant should not be harvested indiscriminately.

Small yellow flowers. The same species reference lists them as edible raw. These tiny, bright-yellow flowers have a mild flavor and are suitable only as a small addition to food. Avoid plants from dirty pastures where manure may have contaminated them.

Seeds and pods. The species reference describes the seeds as cooked food; this does not establish that they can be eaten raw. Mature spiral pods bear spines and hooks that can injure the mouth. They must not be chewed, even if some green leaves are still present nearby.

Food history. Medicago polymorpha was traditionally used as a spring green in parts of the Mediterranean region. In California it has naturalized and become a common weed. The food use described here concerns its young aboveground parts.

HOW NOT TO CONFUSE IT

White clover, Trifolium repens, also has three leaflets, but its flower heads are white and rounded, and its fruits do not form hooked spirals. Red clover, Trifolium pratense, is taller and bears pink-purple flower heads. Other Medicago species have yellow flowers and coiled fruits, but the shape of the hooks, number of turns and leaflet sizes differ. At the stage when only young three-part leaves are present, precise identification is difficult. It is useful to wait until some plants show flowers and coiled fruits. Never gather greens solely because a plant has three leaflets.

SOURCES

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Alfalfa — young leaves and shoots around former fields · Medicago sativa

Medicago sativa

Along the edges of old fields, in meadows and near ditches, green clumps with three-part leaves and small violet flowers sometimes grow. This is alfalfa, one of California's best-known perennial forage crops, which has escaped cultivation in some places. Young leaves can be eaten fresh, but not in large portions: high nutritional value does not eliminate the concerns posed by naturally occurring compounds or agricultural contamination.



Alfalfa (Medicago sativa) — tall leafy stems with clusters of violet pea-shaped flowers

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial with a strong, deep root from which several upright or ascending shoots emerge each year, typically 30–90 centimeters tall. The alternate leaves consist of three narrow oval leaflets, often with fine teeth toward their tips. Narrow stipules occur at the base of each leaf stalk. Lilac, purple and sometimes blue, pea-shaped flowers are borne in short clusters on long flower stalks. Each flower has a large upper petal and two lateral petals, as in many legumes. The fruit is a small, spirally coiled legume pod, generally containing several turns and seeds. Young shoots are soft, while the bases of older stems become woody.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Medicago sativa is not native to California and records hundreds of observations. Most cultivated plants grow in forage fields, but self-sown alfalfa can occur along field edges, former irrigation channels and open grassy places. It is readily encountered in agricultural landscapes of the Sacramento Valley. These are also places where herbicides or other agricultural chemicals may have been applied. Fields are private property, and gathering without the owner's permission is not allowed.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Following winter rains or spring warming, new shoots emerge from the root. Their most tender leaves are available in spring and early summer; later the plants elongate, flower and become coarse. With enough moisture, mowing or rain may be followed by another flush of young growth. Flowering generally takes place in late spring and summer, although it may continue longer in warm climates. For raw food, choose the youngest healthy leaves, free from dust.

WHAT IS EATEN WITHOUT FIRE

Young leaves and tender shoot tips. Plants For A Future specifically lists them as edible raw for Medicago sativa. Their flavor is mild and somewhat grassy, and the leaves can be finely chopped and added to other greens. Raw portions should remain small: the plant contains saponins, and large amounts may cause adverse reactions. Cautions are particularly important for people with certain autoimmune conditions.

Alfalfa sprouts are often eaten raw in homemade salads, but seeds used for sprouting can carry dangerous bacteria. For this reason, this guide does not recommend sprouting seeds gathered at random in the wild. Tough stems and mature seed pods are not included.

HOW NOT TO CONFUSE IT

Medicago polymorpha, discussed separately, has a low, creeping growth habit and distinctive prickly, coiled fruits; ordinary alfalfa has taller stems and predominantly purple flowers. In Trifolium clovers, flowers form denser rounded heads and the fruits are different. Not every plant with three leaflets should be treated as edible alfalfa: some legumes contain undesirable or toxic compounds. Identification should take into account the leaves, flower cluster and mature fruit.

SOURCES

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Lemon balm — lemon-scented leaves near old gardens · Melissa officinalis

Melissa officinalis

In an old California garden, one sometimes encounters a plant whose broad green leaves smell of lemon when rubbed gently. During summer, tiny whitish flowers appear along its stems, almost hidden among the toothed foliage. This is Melissa officinalis, or lemon balm. It is not native to California: it was often grown near homes and later spread nearby. Fresh leaves can be eaten raw as an aromatic addition to cold foods and water, but this species must not be confused with just any lemon-scented garden herb.



Lemon balm (Melissa officinalis) — broad toothed green leaves on square stems

Mockingbird291 · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb in the mint family, commonly several tens of centimeters tall. Its square stems are often slightly branched and covered with fine hairs. Leaves occur in opposite pairs. They are broad, rounded-ovate to heart-shaped, with conspicuous teeth around the edges and a network of veins giving them a slightly wrinkled surface. Their stalks are distinct, especially on lower leaves. The upper surfaces are bright green, the undersides paler and sometimes more hairy. Small white or pale yellow flowers occur in clusters in the leaf axils; each has a two-lipped corolla. After flowering, minute nutlets form rather than juicy berries. The underground base survives winter and produces new shoots in spring. Tender shoot tips may smell pleasant, but scent alone is not enough to establish the species.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies Melissa officinalis as a nonnative plant recorded on disturbed ground in California. Records are relatively few, numbering several hundred, so it would be inaccurate to describe the species as widespread in the wild throughout the state. Likely places include old gardens, the edges of irrigated plots, abandoned homesteads and streamside areas near habitation. In the Sacramento Valley, lemon balm dries back in summer without water, but may remain green for a long time in moist, shaded gardens. A self-sown patch outside a fence does not mean it can be gathered without the owner's permission. The plant commonly grows where fertilizers and garden treatments are used.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After a cool winter, tender new leaves emerge from the base. They are especially easy to find in spring, before the shoots grow tall. With sufficient moisture, lemon balm continues growing in summer and bears small pale flowers; lower leaves sometimes become coarse after flowering. During prolonged heat, aboveground growth ages and may partially disappear on dry ground. Irrigation and cooler weather can produce another flush of tender growth in autumn. Leaves are the main food throughout the growing season, but younger leaves have the most pleasant fragrance and texture.



Lemon balm (Melissa officinalis) — broad toothed green leaves on square stems

Alex Abair · CC BY 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fresh young leaves. Plants For A Future explicitly records their raw use. They have a pleasant lemon scent and a lightly spicy flavor. A few leaves can be chopped and added to cold greens, fresh fruit or vegetables. A large portion of strongly aromatic leaves may overpower other foods, so lemon balm is generally used as a seasoning rather than a large salad on its own.

Cold water flavored with leaves. Clean leaves can be gently bruised and placed in drinking water briefly, then the drink consumed fresh. This is neither hot tea nor a medicinal infusion; no boiling water is required. Species references also discuss lemon balm essential oil and medical applications, but concentrated oils must not be treated as equivalent to ordinary fresh leaves. Flowers, seeds and roots lack the same direct documentation for raw food use and are not included here as foods.

HOW NOT TO CONFUSE IT

Spearmint, Mentha spicata, usually has narrower leaves with sharper teeth and flowers arranged in terminal spikes; lemon balm has broad, heart-shaped leaves and axillary flower clusters. Some ornamental members of the mint family also have square stems and a lemon scent, but belong to different species with different properties. An unknown plant must not be gathered by fragrance alone: garden hybrids can differ in scent. Identification requires inspecting the entire stem, leaves, flowers and growing site. On treated garden soil, leaves that look clean may still be unsuitable for raw consumption.

SOURCES

- https://www.calflora.org/app/taxon?crn=5408
- https://pfaf.org/User/Plant.aspx?LatinName=Melissa+officinalis

Wild mint — aromatic leaves beside wet meadows · Mentha canadensis

Mentha canadensis

Near damp woodland edges, streams and the margins of marshes, a low plant with upright stems and a familiar cool mint scent may be encountered. Its leaves grow in opposite pairs, and small pinkish-lilac flowers form clusters in the axils of the upper leaves. This is a native wild mint, also known in botanical references by the older names Mentha arvensis var. canadensis and M. arvensis var. villosa.



Canadian wild mint (Mentha canadensis) — opposite toothed leaves and axillary lilac flower whorls

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with creeping underground rhizomes and upright aboveground stems, usually 15–50 centimeters tall. The stems are square in cross section and often softly hairy. Opposite leaves are lance-shaped or ovate, with distinctly toothed margins and noticeable short stalks. Crushing a leaf releases a recognizable mint fragrance. The small flowers have tubular, two-lipped corollas, usually pinkish or lilac, arranged in dense whorls in leaf axils; unlike many cultivated mints, they usually do not form a separate long terminal spike. After flowering, small nutlet-like fruits develop within the calyx.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Mentha canadensis as native to California and lists several hundred observations. It grows in cool, moist places along streams, lakes and marshes, in damp meadows of northern counties and in mountain valleys. Suitable natural sites are few in the dry central Sacramento Valley, so it should not be expected on every vacant lot. Plants beside roads, sewage outflows or grazed water sources are unsuitable for raw gathering.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New shoots emerge from rhizomes in spring when sufficient moisture is available. The most tender leaves grow from spring through early summer. Flowering usually takes place during summer, sometimes continuing into early autumn. In cool mountain locations, the schedule shifts with snowmelt. After the first severe cold weather, aboveground growth dies back, but the plant regrows the following year.



Canadian wild mint (Mentha canadensis) — opposite toothed leaves and axillary lilac flower whorls

Mjhuft · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fresh leaves. Plants For A Future describes the raw leaves of American wild mint, under the older name Mentha arvensis var. villosa, as an aromatic addition to salads. Just a few are enough: their flavor is strong and cooling, with slight bitterness. Tender young leaves can be bruised in cold water to flavor a drink without heating, but the main directly documented food is the raw leaf itself. Flowers and roots are not separately recommended here because the principal species account concerns the leaves.

HOW NOT TO CONFUSE IT

Spearmint, Mentha spicata, usually produces a conspicuous terminal flower spike, whereas the flowers of Canadian wild mint are concentrated in the leaf axils. Clinopodium douglasii is a low, creeping herb with much smaller rounded leaves. It is especially important not to confuse native wild mint with pennyroyal, Mentha pulegium, which also smells minty but contains hazardous compounds. Similarity of smell alone is not enough for identification as food. Check the stem, leaves, flowering pattern and confirmed species name.

SOURCES

- https://www.calflora.org/app/taxon?crn=10635
- https://pfaf.org/USER/Plant.aspx?LatinName=Mentha+arvensis+villosa
- https://commons.wikimedia.org/wiki/File:Mentha_canadensis_kz01.jpg

Peppermint — refreshing young leaves at old wet garden sites · Mentha × piperita

Mentha × piperita

In a cool, moist corner of an old garden, a dense patch of aromatic herbs sometimes persists. Rub a leaf gently and it releases a very strong, cool mint scent with a distinct peppery note. Toward the end of summer, short lilac flower clusters rise above the foliage. This is peppermint, a hybrid of water mint and spearmint that sometimes escapes cultivation in California. Its tender leaves are eaten raw as a small seasoning, but concentrated essential oil is not used as a substitute for leaves.



Peppermint (Mentha × piperita) — toothed opposite leaves and terminal lilac flower spikes

H. Zell · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with creeping underground shoots, forming patches usually 30–80 centimeters tall. The upright square stems often have a purplish tinge and may be hairless or sparsely hairy. Leaves are opposite, arranged in pairs, ovate-lanceolate, 3–8 centimeters long, with pointed tips, clearly toothed margins and short stalks. When damaged, they release a strong menthol scent. The very small pinkish-lilac, two-lipped flowers are grouped into dense whorls that form a terminal spike, with small leaves beneath some clusters. The hybrid rarely produces viable seeds and spreads mainly by vegetative shoots.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Mentha × piperita as a nonnative perennial hybrid with roughly a hundred observations outside cultivation in California. It persists around moist former gardens, irrigation channels, cool shaded woodland edges and places where garden divisions were discarded long ago. Its patches generally depend on continued soil moisture; they quickly thin out on dry, exposed slopes. Peppermint should not be considered the common wild mint of every watercourse, since native Mentha canadensis and other introduced mints also grow in the state.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves emerge in spring after the winter cold. Where moisture remains steady, the softest shoot tips are available from April into early autumn, especially after new side shoots develop. Flowers generally appear in summer and toward autumn. After extreme heat or insufficient watering, leaves become smaller and tougher, but the patch may regrow after rain. For raw use, choose small tender leaves before they reach their coarse autumn condition.



Peppermint (Mentha × piperita) — toothed opposite leaves and terminal lilac flower spikes

Dinnye · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms raw use of Mentha × piperita and some of its cultivated forms. The flavor is very intense and cooling, so two or three leaves in cold water or a prepared vegetable mixture are usually sufficient. A leaf may be gently bruised with the fingers to release its fragrance into drinking water without heat. Leaves can also be dried naturally in shade and kept as seasoning. Concentrated peppermint oil is not used, as large doses can cause toxic reactions. Flower spikes and roots are not included in this particular list of foods eaten raw.

HOW NOT TO CONFUSE IT

Spearmint, Mentha spicata, generally has a greener, sweeter scent without such a strong menthol cooling sensation, and more elongated terminal inflorescences. Mentha canadensis grows in cool wet places and often bears flower whorls directly in the leaf axils. Hazardous pennyroyal, Mentha pulegium, differs in its flowering pattern, oval leaves and other botanical features. It must not be substituted for peppermint as food, especially in concentrated form. Mint scent alone is not sufficient if an adult flowering plant has not been reliably identified.

SOURCES

- https://www.calflora.org/app/taxon?crn=5412
- https://pfaf.org/user/Plant.aspx?LatinName=Mentha+x+piperita
- https://pfaf.org/USER/Plant.aspx?LatinName=Mentha+x+piperita+officinalis

Spearmint — fragrant leaves beside gardens and ditches · Mentha spicata

Mentha spicata

Near an old vegetable garden or along the edge of a damp ditch in California, a spreading herb may release a strong, familiar mint scent when a leaf is rubbed gently. In summer, narrow spikes of tiny lilac flowers appear at the tips of its shoots. This is Mentha spicata, or spearmint. It is not a native wild mint of California, but a plant that has escaped from gardens. Fresh leaves can be added to cold food and drinking water. The essential precautions are to identify the species accurately and avoid gathering plants from polluted ditches.



Spearmint (Mentha spicata) — toothed green leaves and narrow flowering spikes

Schumi4ever · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Spearmint is a perennial herb with creeping underground shoots and upright green stems, usually 30–80 centimeters tall. The stem is square in cross-section. Leaves grow in opposite pairs, with successive pairs turned at right angles to each other. The blades are oblong-ovate or lance-shaped, with fairly large, sharp teeth along their edges. Leaf stalks are short or almost absent; the upper leaf surface may be slightly wrinkled and somewhat hairy. In summer, each shoot ends in a narrow, elongated spike containing numerous small pinkish, lilac or whitish flowers. Each flower has a two-lipped corolla, though from a distance the flowers merge into a dense cluster. Tiny nutlets develop after flowering. Underground shoots spread sideways, producing new stems some distance from the parent plant.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora treats Mentha spicata var. spicata as a nonnative perennial found in many counties, including Sacramento, Butte, Placer, Sonoma and Monterey. It grows near old gardens, along damp paths, on the banks of irrigation ditches and streams, and in irrigated thickets. On dry, exposed valley slopes, it does not usually form persistent carpets without water. Its presence near homes often points to former cultivation rather than a naturally occurring native population. In the cool coastal climate, spearmint may remain green for much of the year; on hot, unirrigated sites, it quickly wilts in summer.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young green stems emerge from underground shoots in spring. Tender leaves develop as the plant grows and can be picked before flowering, when their aroma is often most pleasant. In summer, the plant produces elongated flower spikes and blooms through the warmer months, sometimes into autumn. After drought or cold weather, the aboveground growth ages and partly dies back. With irrigation, new soft leaves may appear for much of the year. For cold food, young leaves gathered before late flowering are more practical than coarse, older flowering tips.



Spearmint (Mentha spicata) — toothed green leaves and narrow flowering spikes

Bulgariana · CC BY 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fresh leaves. Plants For A Future explicitly confirms their raw use for Mentha spicata. They are intensely aromatic and refreshing, with a cool mint flavor and sometimes a hint of sweetness. A few clean leaves can be torn into a cold salad, added to fresh fruit, or gently bruised in drinking water to make a flavored beverage without heating. This is a seasoning, not a plant to eat in huge portions on its own.

Cold flavored water. Fresh leaves can be steeped briefly in clean drinking water and the drink consumed the same day, without preparing a hot infusion. Sources also describe mint tea and essential oil, but tea

requires heating, and concentrated essential oil should not be swallowed as food. Those methods are not part of this guide to eating without fire.

Flower spikes, roots and mature seeds are not separately established as raw foods. Mint growing in wastewater ditches or along herbicide-treated banks is unsuitable for consumption.

HOW NOT TO CONFUSE IT

California has a native Mentha canadensis, which usually has flowers arranged differently, in the leaf axils; Mentha spicata bears most of its flowers in an elongated terminal spike. The cultivated hybrid Mentha × piperita often has darker leaves and a different scent, but mint hybrids are difficult to identify by aroma alone. It is especially important not to mistake edible mint for Mentha pulegium, or pennyroyal, whose essential oil is highly toxic. A scent that merely “smells like mint” is not evidence of safety. Check the stem, leaf, flowering shoot and habitat together.

SOURCES

- https://www.calflora.org/app/countytaxon?crn=5416
- https://pfaf.org/User/Plant.aspx?LatinName=Mentha+spicata
- https://www.calflora.org/app/taxon?crn=5416

Common ice plant — sparkling bladder cells and tender coastal greens · Mesembryanthemum crystallinum

Mesembryanthemum crystallinum

On saline slopes in Southern California, a low plant sometimes appears to be covered in millions of dewdrops. Even on a sunny day the drops do not disappear: they are transparent bladder cells on the leaves and stems. This is Mesembryanthemum crystallinum, the crystalline or common ice plant, an introduced annual succulent of southern African origin. Its young, juicy leaves and stems are known as foods eaten without heating. Their slight saltiness does not make the plant a source of fresh water.



Common ice plant (Mesembryanthemum crystallinum) — fleshy leaves covered with sparkling bladder cells

Winfried Bruenken (Amrum) · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

This spreading annual herb generally forms a low mat, with several fleshy branches radiating from the base. Young leaves are green, oval or spoon-shaped, thick and succulent, on short stalks or almost stalkless. The stems and leaves are covered with large transparent bladder cells that resemble glass beads under magnification. As the plant ages, some parts turn red and the lower branches darken. The relatively small flowers are white or pinkish, with many narrow petals, appearing singly or in small groups. After flowering, rather dry, star-shaped seed capsules form, not large sweet berries. At the end of the season, the whole plant can look reddish and dried out. The transparent surface bladders are a particularly important feature, absent from most other California ice plants.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Mesembryanthemum crystallinum as nonnative and moderately invasive. Most observations are from San Diego, Orange, Los Angeles, Ventura and Santa Barbara counties; records far from the southern coast are much less frequent. It grows in sunny disturbed ground, saline sites, ocean-facing slopes, and sandy or rocky soils. It is not a commonly encountered wild vegetable in the Sacramento Valley and should not be presented as an ordinary green of local freshwater parks. On some saline sites, the plant can accumulate a great deal of salt, which is noticeable in the flavor of its leaves.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Tender, juicy leaves emerge after winter rains, particularly in open, sunny places with the mild climate of Southern California. Growth is delayed during cold or dry years. Flowers usually develop in late spring and summer, though botanical calendars vary in other latitudes, so local observations matter. As the soil dries and salts concentrate, leaves turn red and become coarser. Young, tender growth is the best match for eating without heat. Old, dried stems and seed capsules do not offer the same edible parts.



Common ice plant (Mesembryanthemum crystallinum) — fleshy leaves covered with sparkling bladder cells

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young fleshy leaves. Plants For A Future explicitly lists them as edible raw in Mesembryanthemum crystallinum. A leaf is crisp and full of juice, with a slightly sour, salty taste. It can be cut up and added in small amounts to cold greens. The bladder cells remain part of the leaf's surface and do not need to be removed as if they were spines.

Tender green stems. The same reference confirms that soft stems can be eaten raw. Only young, succulent parts are suitable, not fibrous old lower branches.

Fruits and seeds are mentioned in some food catalogs, but those sources do not describe a precise, reliably safe method of eating them raw. They are therefore excluded from this practical list. The leaves and sap can contain substantial salt and organic acids, so large daily portions are not recommended. Plants growing in industrial areas may absorb contaminants, and washing cannot guarantee removal of substances already in their tissues.

HOW NOT TO CONFUSE IT

Mesembryanthemum nodiflorum has narrower, cylindrical leaves and small flowers; Carpobrotus edulis has large triangular leaves and much bigger flowers. Some salt-marsh plants do not have true broad leaves at all. Sparkling droplets alone are enough only to suggest an identification: confirm the leaf shape, branching pattern and flowers. Do not taste an unknown succulent to identify it “by its saltiness.” Gathering may be prohibited on restored natural dunes, and roadsides or sewage ditches are not appropriate places to collect raw food.

SOURCES

- https://www.calflora.org/app/taxon?crn=5460

- https://www.calflora.org/app/countytaxon?crn=5460
- https://pfaf.org/User/Plant.aspx?LatinName=Mesembryanthemum+crystallinum

Coyote mint — violet flower heads and a cold spiced drink · Monardella villosa

Monardella villosa

At a relatively dry woodland edge in California, an aromatic herb can be found with gray-green leaves and rounded heads of pinkish-lilac flowers. It grows among foothill oaks and shrubs, where greenery emerges after spring rains but the soil dries quickly in summer. This is coyote mint. A particularly convenient use without fire is documented for this plant: fresh leaves and flower heads are steeped in clean, cold water.



Coyote mint (Monardella villosa) — gray-green foliage and rounded heads of lavender flowers

Eugene Zelenko · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with several slender stems, usually 20–60 centimeters tall. The lower portions of the shoots become woody with age. Opposite leaves are small, from rounded-oval to elongated, often gray-green because of short hairs. Their margins are entire or very finely toothed. The foliage releases a spicy, mint-like scent when touched lightly. Flowers at the stem tips form compact, almost spherical heads with conspicuous leaflike bracts. Their tubular corollas are pale pink, lavender or lilac. By midsummer, the flower heads stand out above the rounded green clump.

WHERE IT GROWS AND HOW COMMON IT IS

Monardella villosa is native to California. Calflora records it in foothill oak woodlands and chaparral across central and northern parts of the state. It may grow in dense groups on rocky ground but is not necessarily common in damp, shaded lowlands. Some geographic subspecies and related Monardella species have very restricted ranges. An unusual plant should therefore be checked against the local flora to confirm its precise taxon. Plants must not be gathered in protected areas.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young leaves emerge in spring after rains and have an especially pleasant fragrance before the heat of drought. Flowering is most frequent in late spring and summer and can continue longer in cool foothill locations. In exceptionally dry years, the leaves become small and tough. A cold beverage can be made from fresh green leaves and open, healthy flower heads, not wilted or moldy ones.



Coyote mint (Monardella villosa) — gray-green foliage and rounded heads of lavender flowers

U.S. National Park Service (NPS) · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fresh leaves and flower heads. Plants For A Future describes a specific method for Monardella villosa: steeping these parts in cold water to produce a fragrant drink with a mild, spicy bitterness. A California Native Plant Society publication also lists the leaves, flowers and seeds as edible. For cautious field use, however, the specifically documented cold infusion is preferable. Lightly bruise the leaves and flowers with clean fingers, leave them briefly in cold drinking water, then remove the plant material. Food use of the roots or old woody shoots is not established.

HOW NOT TO CONFUSE IT

Monardella odoratissima and certain other monardellas also have dense, rounded flower clusters and a strong scent. Coyote mint differs from Mentha canadensis in its spherical terminal flower heads, rather than flower whorls in leaf axils. Clinopodium douglasii has low, creeping shoots with flowers borne singly in the leaf axils. Identification depends on flowers, leaves and location, not just a spicy aroma. Do not use an unidentified Salvia or Monardella plant as a substitute.

SOURCES

- https://www.calflora.org/app/taxon?crn=5665
- https://pfaf.org/user/Plant.aspx?LatinName=Monardella+villosa
- https://cnps-yerbabuena.org/wp-content/uploads/Container-Native-Plants-San-Francisco-CNPS-YB_sm.pdf

Water blinks — tender greens by streams and the risk of contaminated water · Montia fontana

Montia fontana

Along the edges of cold streams and in wet mountain meadows of California, low, tender vegetation with tiny succulent leaves sometimes appears. During flowering, very modest white flowers can be seen among the leaves, unlike the showy flowers of garden plants. This is Montia fontana, or water blinks. Its tender leaves and young stems are known to be eaten raw in some countries. But beside a stream, the main safety concern is not taste: it is the quality of the water. Even correctly identified greens may carry microorganisms that cannot be seen.



Water blinks (Montia fontana) — succulent opposite leaves and tiny white flowers in damp ground

Rob Philpott (photo; uploaded by E Wusk) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Montia fontana is a small herbaceous annual or short-lived perennial, sometimes forming a thin carpet. Its stems are soft and juicy, creeping or slightly ascending, and may root at the nodes. The small leaves are opposite, oval, spoon-shaped or somewhat elongated, with smooth margins and no hard teeth or sharp points. In young plants, the bases of a leaf pair may be slightly joined. Tiny white flowers with several petals occur singly or in small groups at the ends of slender shoots. On close inspection, small capsules containing very fine seeds can be seen after flowering. Compared with many chickweeds, the leaves are fleshier and the stems often translucent green. The plant produces larger, more tender leaves on wet soil; in drought it quickly becomes smaller and inconspicuous.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Montia fontana as native to California and places it in wetland–riparian communities. Typical sites include springs, cool streams, persistently damp edges of mountain meadows, small wet hollows and shallow channels with clean, moving water. On the hot, dry Sacramento Valley floor, it does not form permanent green carpets without water; many natural occurrences are associated with cooler mountain or coastal habitats. Even where locally abundant, streams near settlements may receive runoff or wastewater. The word “spring” in a plant's name is no proof that nearby water is safe to drink.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Tender leaves develop when soil remains wet for an extended time: in cool spring weather, after snowmelt or year-round at certain springs in mild climates. Botanical references from temperate regions describe flowering from late spring into autumn, but summer drought in California's lower mountains may end it sooner. On a high, moist meadow, tender foliage can persist through most of summer. Older leaves on dry stream margins become more bitter. What matters for food is growth that remains green and soft before the stems dry out, not a calendar date alone.



Water blinks (Montia fontana) — succulent opposite leaves and tiny white flowers in damp ground

E Wusk · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly records their raw use in Montia fontana. They have a mild, slightly grassy flavor and, when tender and moist, resemble simple salad greens. A small amount can be torn into pieces and eaten fresh after washing with clean drinking water.

Young succulent stems. Food Plants International, in a reference available through ECHOcommunity, also expressly describes their raw use in salads. Only soft green shoot tips are suitable, not coarse, older or dead parts. Raw flowers, seeds and roots are not separately confirmed as foods by these sources and are not recommended here.

Water quality matters more than washing. Do not gather these greens directly from streams of unknown sanitary quality, below pastures, sewage channels or watering places, or beside busy roads. Washing with clean water can remove surface dirt, but it does not guarantee removal of every pathogen or contaminant present in plant tissue. For food use, greens cultivated in clean soil with controlled irrigation are preferable to chance populations from unknown waters.

HOW NOT TO CONFUSE IT

Claytonia sibirica also favors damp northern woodland but generally has larger oval leaves and conspicuous pink flowers. Common chickweed, Stellaria media, grows on moist ground but differs in its hairy stem and deeply divided white petals. Other tiny aquatic herbs may look almost identical before flowering. A small wetland seedling should never be identified, much less eaten, merely because it resembles salad greens. Examine leaves, flowers and mature capsules, confirming that the features belong to one plant. If water quality is uncertain, do not gather the plant, even if the identification is correct.

SOURCES

- https://www.calflora.org/app/taxon?crn=5685
- https://pfaf.org/user/Plant.aspx?LatinName=Montia+fontana
- https://www.echocommunity.org/es/resources/04cff150-4056-4eed-a34d-f471acf7f03f

White mulberry — sweet ripe fruits from a spreading tree · Morus alba

Morus alba

In California yards and beside old orchards, a deciduous tree may be found with numerous soft white, pinkish or dark-purple compound fruits scattered beneath it in summer. They resemble short, elongated berries. This is white mulberry, Morus alba. The species name does not mean its fruits must be white: on some trees they are almost black. Fully ripe fruits can be eaten raw, but the white sap of its twigs and unripe fruits may cause poisoning.



White mulberry (Morus alba) — spreading leafy branches bearing ripe compound fruits

B.navez · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

White mulberry is a fast-growing deciduous tree, often 8–15 meters tall with sufficient water. Older specimens have wide, spreading crowns and brownish-gray trunks. Young twigs may have pale lenticels. The alternate leaves vary remarkably in shape: an individual branch may bear both unlobed, heart-shaped leaves and leaves divided into several lobes. Their edges are toothed. The upper surface may feel smooth, while the veins are conspicuous underneath.

The inconspicuous greenish flowers grow in short, catkin-like clusters without showy petals. After flowering, fleshy compound fruits develop, each formed from many tiny individual fruits. Young fruit clusters are firm and pale. When fully ripe, they become soft, sweet and easily detached from the branch. They remain white or cream-colored on some trees, but turn pink or deep purple on others.

White latex appears when young shoots are broken or leaves are damaged. It is not an edible juice and is an especially important warning feature.



White mulberry (Morus alba) — spreading leafy branches bearing ripe compound fruits

Gaurav Dhwaj Khadka · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS IN CALIFORNIA

Morus alba is native to Asia. It has long been cultivated in California for shade and fruit, and Calflora also documents escaped plants. Trees occur in gardens, near settlements, on disturbed ground and sometimes beside waterways. In the Sacramento Valley, they can grow well with access to water and summer heat, but white mulberry must not be presented as a common native tree of natural forests.

Seedlings establish less readily on open dry ground without water. Most conspicuous trees near homes are former plantings. Fruit growing on private property is not automatically available for gathering.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves emerge and inconspicuous flowers develop in spring. After pollination, green fruit clusters grow rapidly. In the Central Valley, the first ripe fruits often appear in late May or June, with most harvesting in summer. Depending on the cultivar and site, the season lasts several weeks and may extend into August.

Leaves gradually yellow in early autumn, and the tree stands bare through winter. It does not bear fruit then. Naturally dried ripe mulberries can be kept beyond the season, but the safety of the stored fruit depends on thorough drying.

WHAT IS EATEN WITHOUT FIRE

Fully ripe, soft compound fruits. North Carolina State University Extension explicitly says that ripe Morus alba fruit is eaten raw. It is sweet, sometimes rather bland, with thin skin and numerous tiny edible seeds. Because of its tender texture, it can be crushed gently between the fingers and eaten without heating.

Naturally dried ripe fruits. The university reference also describes dried mulberries as food. Clean, fully ripe fruits can be dried under suitable conditions, but they spoil quickly if kept damp; moldy fruit must not be stored or eaten. Drying does not make unripe fruit safe.

HOW NOT TO CONFUSE IT AND WHAT TO AVOID

Red mulberry, Morus rubra, generally has rougher, hairier leaves. The upper leaf surface of white mulberry is often smoother, though hybrids and cultivars complicate identification. Fruit color is not a reliable distinction: Morus alba can have black fruits too. Identify a mature tree from the combination of leaves, catkin-like flowers, compound fruits and twigs.

One essential exception: white latex from twigs and unripe fruits is not food. NCSU warns that consuming them may cause gastrointestinal disturbances and neurological symptoms. Leaves and young branches are not recommended as raw salad greens. Do not taste hard green mulberries to identify the species, or gather fruit from dirty ground or chemically treated plantings.

SOURCES

Calflora, Morus alba, occurrence in California and toxicity of unripe fruits: https://www.calflora.org/app/taxon?crn=5691 North Carolina State University Extension, Morus alba, ripe raw fruit, dried mulberries and toxic latex: https://plants.ces.ncsu.edu/plants/morus-alba/

Black mulberry — dark-purple, juicy fruit from old orchards · Morus nigra

Morus nigra

In summer, the pavement and grass beneath certain old trees become stained with dark spots from fallen, juicy fruits. If the branches also bear large, rough leaves and elongated purple-black compound fruits, the tree may be a black mulberry. It was brought to California from the Old World and occurs outside cultivation much less often than white mulberry.



Black mulberry (Morus nigra) — rough leaves and ripe dark-purple compound fruits

Miloslav Bahna · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Black mulberry is a deciduous tree with a broad, dense crown, usually 5–10 meters tall. Its large, simple, alternate leaves are heart-shaped at the base, with toothed edges; some are three-lobed. The dark-green upper surface is noticeably rough, while the underside is hairy. Small greenish flowers appear in short, catkin-like clusters. What looks like a single large berry is actually made up of numerous small, fused, juicy fruits. When fully ripe, the compound fruit is almost black, extremely soft and releases purple juice.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Morus nigra as a nonnative mulberry and records only isolated observations outside cultivation, including Sacramento, Los Angeles, San Bernardino and Ventura counties. It is therefore primarily a tree of old gardens and settlements, not a common wild food plant of California. It grows better in irrigated valleys than on dry, stony slopes. Fruit from a tree on private property may be collected only with the owner's permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves unfold in spring, and flowers appear in late spring. The fruits usually ripen in summer, sometimes over an extended period into early autumn. Immature compound fruits are pale at first, then turn red and finally very dark. Fully ripe fruits often fall with the slightest touch. They are best eaten fresh: after falling onto dirty ground they are easily damaged and begin to spoil quickly.

WHAT IS EATEN WITHOUT FIRE

Ripe, dark compound fruits. Plants For A Future explicitly confirms that Morus nigra fruits are eaten raw. They are sweet-tart, very juicy and stain hands and clothing. They can be eaten immediately after being picked from a clean branch, mashed into an uncooked purée, or dried naturally under clean conditions. Do not eat green or unripe fruits: Calflora warns of their toxicity. Sap from damaged twigs is not food either. Leaves and young shoots are not included in this raw-food selection, even though food uses have been described for some other mulberry species.

HOW NOT TO CONFUSE IT

The most common similar species is Morus alba, the white mulberry, whose fully ripe compound fruits may also be black. Fruit color alone does not identify a species. Morus nigra usually has thicker, rougher leaves and differently sized flower clusters; reliable distinction is best made from the botanical features of the entire tree. Blackberries grow on thorny, shrubby canes rather than on a large deciduous tree. Never taste unripe fruits of any mulberry to identify it.

SOURCES

- Calflora — Morus nigra: https://www.calflora.org/app/taxon?crn=12683
- Calflora — county observations: https://www.calflora.org/app/countytaxon?crn=12683
- Plants For A Future — Morus nigra: https://pfaf.org/User/Plant.aspx?LatinName=Morus+nigra

Red mulberry — nearly black juicy fruit from a rare escaped tree · Morus rubra

Morus rubra

In summer, dark-red stains from fallen soft fruits sometimes appear beneath the crowns of old garden trees. If the tree has large, rough leaves and its mature elongated compound fruits have become almost black, it may be a red mulberry. This species is native to eastern North America and has been recorded very rarely in California. Its fully ripe fruits are delicious raw, but unripe fruit clusters and the white milky sap of its branches must not be eaten.



Red mulberry (Morus rubra) — large rough leaves and fully ripe dark compound fruits

□□ □□ · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree usually 8–15 meters tall, sometimes higher, with a rounded crown and grayish bark that grows rougher with age. Its leaves are simple, alternate, often large, broadly ovate or heart-shaped, with toothed margins and pointed tips; some leaves on young shoots may be lobed. The upper surface is noticeably rough and the underside is usually covered in soft hairs. The small greenish flowers grow in short, hanging clusters; male and female flowers may develop separately. The mature fruit is not one berry but many small, succulent fruits forming an elongated compound fruit about two to three centimeters long. It starts greenish-white, turns red and becomes deep purple at full ripeness.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists approximately two observations of Morus rubra in California and does not consider it native to the state. It is therefore not an abundant wild berry of the foothills or a typical tree of the Sacramento Valley. Individual trees may persist in old gardens, botanical collections and near settlements where mulberries were planted in the past. Red mulberry can hybridize with white mulberry, making identification from a single fruit difficult; some urban plantings contain hybrids. Fruit must not be gathered on private property without permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves open in spring, and small catkin-like flower clusters appear at about the same time or shortly afterward. The fruits fill out in early summer and ripen gradually, usually from June through August, depending on temperature and location. Only the darkest, softest compound fruits, which separate easily from their stalks, are appropriate for eating. Firm red fruits are still unripe; they should not be eaten even when they resemble raspberries. In hot weather, fallen fruit ferments and spoils quickly.



Red mulberry (Morus rubra) — large rough leaves and fully ripe dark compound fruits

Douglas Goldman (DouglasGoldman) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe compound fruits. Plants For A Future explicitly confirms that Morus rubra is eaten raw. The flesh is juicy and sweet with a touch of acidity. It can be eaten fresh from a clean branch, mashed without heating, or naturally dried if the result remains free of mold. It contains numerous tiny seeds that are usually soft when chewed. Calflora specifically warns that unripe fruits and milky sap are toxic; neither should be tasted or used in drinks. Young leaves and shoots are mentioned in food descriptions, but reliable evidence for safe raw preparation of this particular species is ambiguous. Only ripe fruit is therefore included in this guide's raw-food selection.

HOW NOT TO CONFUSE IT

Morus alba, or white mulberry, is much more common in California, and its ripe compound fruits can be black as well as white. Fruit color does not reliably distinguish it from red mulberry. The leaves of Morus nigra are generally thicker and rougher, while that tree is often smaller and found chiefly in gardens. Blackberries ripen on thorny, shrubby canes, not tall woody trees. If a hybrid or an uncertain species is suspected, do not infer food safety solely from the appearance of its fruit.

SOURCES

- https://www.calflora.org/app/taxon?crn=12684
- https://pfaf.org/User/Plant.aspx?LatinName=Morus+rubra
- https://commons.wikimedia.org/wiki/Category:Morus_rubra_(fruit)

Western honey mesquite — sweet pods from a desert tree · Neltuma odorata

Neltuma odorata

In a dry wash in the Southern California desert in summer, a small tree may be seen with a light, feathery crown and long, straw-yellow pods. It looks thorny and unwelcoming, yet the ripe pulp inside the pod can be distinctly sweet. This is one of the mesquites of the desert south, a plant whose food-producing part is the pod rather than its green foliage.



Western honey mesquite (Neltuma odorata) — feathery leaves and long straw-yellow pods

Joe Decruyenaere (pixeltoo) · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A tree or large shrub, usually 3–9 meters tall, sometimes more, with spreading branches and deep roots. Young branches may carry paired, sturdy thorns. The leaves are twice-pinnate: several feather-like divisions extend from a common stalk, each bearing numerous small, narrow leaflets in rows. Long cylindrical clusters of tiny greenish-yellow flowers appear from spring onward. These develop into slender pods, usually straight or slightly curved, changing from green to straw-yellow. The outer surface of a ripe pod dries, while the seeds inside have hard coverings. Older botanical literature often recorded California plants as Prosopis glandulosa var. torreyana; modern taxonomic sources also use the name Neltuma odorata.

WHERE IT GROWS AND HOW COMMON IT IS

In California, this plant is associated chiefly with the southeastern deserts: sandy plains, low-lying ground, old streambeds and places where roots can reach deep moisture. It is particularly characteristic of areas below the San Bernardino Mountains and around the Coachella Valley, as well as parts of Imperial County. It should not be expected as a native tree around Sacramento. Trees in parking lots and landscaped grounds may have been planted and regularly treated with chemicals.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After a warm spring, flowering clusters give way to green pods. Their development depends on winter rainfall and moisture in the soil. Sweet pulp is most evident in fully mature pods, usually from early summer to early autumn. A dry pod may remain hanging on the tree for a long time, but the calendar alone cannot establish its quality. Damaged, darkened or moldy pods must not be collected.



Western honey mesquite (Neltuma odorata) — feathery leaves and long straw-yellow pods

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature pods. The USDA describes the sweet pulp of honey mesquite pods as food that is eaten without preliminary heating. What matters is not only the appearance of the pod, but its full maturity and cleanliness.

Dry food material. Traditionally, dry ripe pods were ground into a sweetish powder that could be mixed with cold water. Such meal contains pod material, but the hard seeds should not be cracked with one's teeth.

Reliable evidence for the safe raw consumption of young leaves, bark, roots or flowers of this particular taxon is not included in the source material used for this guide, so they are not treated as foods here.

Sweetness does not justify gathering pods from contaminated ground, highway edges or places near wastewater.

HOW NOT TO CONFUSE IT

The neighboring screwbean mesquite, Strombocarpa pubescens, has strikingly twisted spiral pods, while honey mesquite pods remain relatively straight. Another Southwestern mesquite, Neltuma velutina, often has more velvety leaves and shoots; one feature alone is not enough for a certain identification. Blue palo verde, Parkinsonia florida, has green bark and larger, brighter yellow flowers. Several ornamental legumes bear superficially similar pods, but the food uses of mesquite do not extend to them. Examine shoots, twice-pinnate leaves, flowers and mature fruits together to identify the tree.

SOURCES

- https://www.calflora.org/app/taxon?crn=14746
- https://plants.sc.egov.usda.gov/DocumentLibrary/plantguide/pdf/cs_prglt.pdf
- https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77303754-1

Sweet basil — fresh spicy leaves and summer flowers from old gardens · Ocimum basilicum

Ocimum basilicum

In summer, a small plant with smooth, aromatic leaves sometimes persists in a former vegetable bed or near a sunny fence. Rub a leaf between the fingers and it releases a sweet, spicy scent with clove-like or anise notes. Later, clusters of tiny white or lilac, two-lipped flowers develop at the stem tips. This is sweet basil, a cultivated culinary herb very rarely recorded outside gardens in California. Its fresh leaves and flowers are confirmed as edible raw.



Sweet basil (Ocimum basilicum) — smooth opposite green leaves and small flowering spikes

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually an annual herb in California's climate, about 20–70 centimeters tall, although it may live longer where frost does not occur. The upright, branching stem is square in cross-section and green or purple. Opposite leaves are oval, smooth or slightly wrinkled, with entire or faintly toothed margins and distinct stalks. When rubbed, glandular cells release a strong spicy fragrance. The two-lipped white, pinkish or lilac flowers grow in small whorls within a terminal spike-like inflorescence. Following flowering, several small dark nutlets form in each calyx; when wet, they develop a mucilaginous coating.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Ocimum basilicum as nonnative, with approximately ten observations outside cultivation, mainly in southern and coastal counties. Basil is almost always associated with vegetable gardens, pots, compost or accidental seedlings. It is grown with irrigation in the Sacramento Valley, but without summer water its tender leaves rapidly lose quality; frost kills the plant. Old garden beds and abandoned plots may be contaminated, and privately grown plants must not be harvested without permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The first leaves emerge from seed once spring weather is consistently warm. The most tender foliage develops from late spring through summer, provided plants receive regular water. In hot weather basil starts producing flowering clusters, and by late summer or autumn it forms many dark nutlets. Fresh flowers can also be used as seasoning, although leaves sometimes become more pungent after heavy flowering begins. With the first cold nights, the aboveground growth deteriorates quickly.

WHAT IS EATEN WITHOUT FIRE

Fresh leaves and flowers. Plants For A Future expressly confirms their raw use in Ocimum basilicum. Tender leaves can be finely chopped and added to tomatoes, vegetables, beans or other cold food. Their aroma is strong, so only a few are needed. White or lilac flowers are also edible raw as a small spicy addition. In dry weather, leaves may be dried naturally in shade on a clean mesh for later use as a cold seasoning.

The seeds are sometimes consumed after soaking in water as a mucilaginous food ingredient, but this guide does not present a field method for seeds gathered from unidentified self-sown plants. Essential oil is not a food substitute for the fresh herb.

HOW NOT TO CONFUSE IT

Ocimum americanum and some cultivated basils look similar and may be sold under overlapping names. Differences lie in leaf shape, bracts and the structure of the flower calyx. Spearmint, Mentha spicata, generally has sharply toothed leaves and a differently shaped elongated inflorescence, while oregano, Origanum vulgare, has smaller leaves and dense flower groups. A characteristic scent alone is not enough for identification, since many members of the mint family smell spicy. Examine the opposite leaves, square stem and two-lipped flowers.

SOURCES

- https://www.calflora.org/app/taxon?crn=12703
- https://pfaf.org/user/Plant.aspx?LatinName=Ocimum+basilicum

Osoberry — early white flowers and dark summer drupes · Oemleria cerasiformis

Oemleria cerasiformis

In early spring, when many deciduous shrubs are still bare, slender branches become dotted with drooping whitish flowers. By early summer, these are replaced by small fruits, orange-red at first and later almost black. Fully ripe osoberries, also known as Indian plums, can be eaten fresh, although they are not as sweet as cultivated plums.



Osoberry (Oemleria cerasiformis) — arching branches with early white flowers and dark ripe drupes

brewbooks · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A tall deciduous shrub, commonly 2–5 meters high, with slender, arching branches. Its simple, alternate leaves are elongated, generally 5–12 centimeters long, tapering toward both tip and base, with margins that are usually smooth or slightly wavy. Their undersides are paler. Pale lenticels are visible on slender twigs. Five-petaled, light-colored flowers form small, hanging clusters; male and female flowers usually occur on different shrubs. The oval fruits are approximately one centimeter long, each containing a single hard pit.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Oemleria cerasiformis as native to California. It grows in northern and coastal forests, damp canyons and woodland edges, sometimes in mixed evergreen forest. Where moisture is adequate, it can occur in groups. It is not an ordinary wild fruit tree of dry Sacramento streets.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Osoberry flowers very early, sometimes before the leaves have completely opened. The fruits set in spring and darken in late spring or early summer. Ripening may be later on the northern coast and at higher elevations. Birds often eat fully ripe fruits almost as soon as they become available.

WHAT IS EATEN WITHOUT FIRE

Ripe fruits. Oregon State University describes the fully ripe, nearly black fruits as suitable for eating, though they may be astringent. The soft, fresh fruit flesh is separated from its pit. Green or merely red fruits are usually still astringent. Eating the young leaves or pits without fire is not recommended here for this species, even though its leaves have an unusual cucumber-like scent.

HOW NOT TO CONFUSE IT

The small fruits of true plums, Prunus species, may look similar, but osoberry produces drooping clusters of white flowers early in the year and has characteristic, elongated, smooth-edged leaves. Many Prunus species have differently arranged flowers and different flower clusters. When eating the fruits of stone-fruit plants, never bite through or grind the pits: they are not part of the edible flesh.

SOURCES

- https://www.calflora.org/app/taxon?crn=5879
- https://landscapeplants.oregonstate.edu/plants/oemleria-cerasiformis
- https://plantdatabase.kpu.ca/PlantPrint/oece

Beavertail cactus — flat pads, almost invisible glochids and pink flowers · Opuntia basilaris

Opuntia basilaris

In the Mojave Desert, a low cactus with rounded, flat pads resembling a beaver's tail sometimes rises from rocky ground. Large, vivid pink flowers open above them in spring. This is Opuntia basilaris, the beavertail cactus, a species native to the American Southwest. Its fruits are edible and have been eaten fresh. Yet the near absence of long spines is deceptive: the surface is covered with countless tiny glochids that can lodge painfully in skin and mucous membranes.



Beavertail cactus (Opuntia basilaris) — rounded blue-green pads and vivid pink flowers

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The plant is usually low-growing and spreads sideways, forming clumps of flat, rounded segments. Each segment resembles a broad paddle or oval “tail,” is gray-green or bluish green, and several centimeters thick. Many plants lack large, long spines, but their surfaces contain numerous areoles bearing extremely short bristles called glochids. In sunlight, the glochids may look like reddish dots. Young segments develop at the tips of older ones. In spring, buds and large rose-pink to crimson flowers with numerous petals appear along the upper margins of the pads. Following flowering, relatively small, elongated fruits form. They are green at first, later becoming brownish or reddish. A ripe fruit contains soft flesh and seeds; its outer skin may also carry glochids. From a distance, this cactus can appear almost safe to touch, but that impression is entirely false.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Opuntia basilaris is native to California, especially characteristic of the Mojave Desert and Anza-Borrego, with numerous records from Inyo, San Bernardino, Riverside, San Diego and eastern districts. It is not an ordinary wild cactus of the Sacramento Valley. One important botanical limitation is that certain varieties are protected. These include var. treleasei, listed as endangered under federal and California protections, and the rare var. brachyclada. These varieties must not be collected. Even the more common var. basilaris may be protected against gathering in national parks and reserves. Food gathering requires a confidently identified plant on land where collection is expressly permitted, not simply any cactus encountered.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The pads remain green throughout the year, although severe drought can cause them to wrinkle. In California deserts flowering generally takes place in spring, especially after winter rain; pink flowers open from March to May in different locations. Green fruits then begin to form. Full ripeness often arrives in late spring or summer, depending on climate and elevation. Fruits may dry while still attached to the plant; not every brown fruit is fresh or fit to eat. The showy spring flowers are useful for identification, whereas soft, fully ripe fruit develops later.



Beavertail cactus (Opuntia basilaris) — rounded blue-green pads and vivid pink flowers

National Park Service · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruit pulp. A government ethnobotanical review prepared for the Nevada Test Site records that fleshy fruits of Opuntia basilaris var. basilaris were knocked from the plant and eaten fresh. Only the soft interior should be eaten, after complete removal of the skin and every glochid. Even a few nearly invisible bristles can cause painful irritation to the tongue and throat.

Cold preparation and peeling. Hold the fruit with a tool rather than bare fingers, cut it open and remove the entire outer surface with its areoles. Then inspect the tender pulp carefully. If complete removal of glochids cannot be assured, the fruit must not be eaten. A quick rinse with water is not sufficient. Although peeled young pads of some other Opuntia species are eaten, the species-specific sources used here reliably document primarily the fruits of Opuntia basilaris. Pads, flowers and roots are therefore not included in this guide's raw-food list.

HOW NOT TO CONFUSE IT

The cultivated Indian fig, Opuntia ficus-indica, is usually considerably larger and has different pads and fruits; it is covered separately. Opuntia engelmannii can also have large flat segments, but its spines and overall size differ. The low beavertail form, bluish rounded pads, pink flowers and abundance of short glochids are characteristic of Opuntia basilaris. The absence of long spines never demonstrates safety. Above all, avoid disturbing rare varieties, which can be difficult for nonspecialists to tell apart; when identification is uncertain, leave the plant alone.

SOURCES

- https://www.calflora.org/app/taxon?crn=5926
- https://www.calflora.org/app/taxon?crn=5929

- https://www.calflora.org/app/taxon?crn=5928
- https://www.osti.gov/servlets/purl/137690
- https://conservationgardenpark.jvwcd.gov/plants/1055/beavertail-cactus

Pancake prickly pear — purple fruit on a round-padded desert cactus · Opuntia chlorotica

Opuntia chlorotica

On rocky hills in southeastern California grows a prickly pear that becomes almost tree-like with age. Above its spiny trunk are numerous round, gray-green pads, as though a collection of small disks had been joined together. Yellow flowers open in spring, followed later by purple fruits. The pulp of fully ripe fruit of this species can be eaten raw, but only after complete removal of spines and nearly invisible glochids.



Opuntia chlorotica — rounded gray-green pads with golden spines and purple fruits

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial cactus with a thickened, spiny trunk, usually around one to two meters tall and sometimes taller. The flat pads are predominantly round, approximately 10–20 centimeters across, and bluish or grayish green. Regularly spaced areoles cover their surfaces. Each may bear several long yellow or golden spines, accompanied by bundles of tiny, brittle glochids. Older spines darken. The large flowers are usually yellow, sometimes with a reddish tint at the center. Ripe fruits turn violet or purple on the outside; the inner flesh may be pale with a pinkish tinge and contains numerous hard seeds.

WHERE IT GROWS AND HOW COMMON IT IS

According to Kew's Plants of the World Online, the species occurs naturally in southeastern California and neighboring desert states. In California it is characteristic of rocky slopes in the eastern Mojave Desert, Anza-Borrego and certain foothills extending from San Bernardino toward San Diego. Calflora includes Opuntia chlorotica among the native flora. It is neither a coastal forest cactus nor an ordinary species of the Sacramento Valley. Collection of cacti may be prohibited altogether in protected areas.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Yellow flowers appear chiefly in spring, approximately April through June depending on elevation. After flowering, the fruits enlarge through summer and ripen during the latter half of the warm season. Greenish unripe fruits and purple fruits may be present on the same plant. Gather only after full ripeness has been confirmed, when the skin has developed its deep color. Fruit production may be modest on exceptionally dry slopes.



Opuntia chlorotica — rounded gray-green pads with golden spines and purple fruits

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe fruit. The specialist botanical reference Useful Temperate Plants explicitly describes the fruits of Opuntia chlorotica as suitable for eating raw. They are considered less flavorful than those of certain other prickly pears, but this is a separate species with documented food use. Remove the entire skin, with all areoles and extremely fine glochids; only the cleaned inner flesh is eaten. When mashing the fruit without heat, the hard seeds may be removed by straining. Young pads of certain other prickly pears are eaten raw, but there is no separate, reliable description of that practice for this species in the sources used here, so the pads are not recommended.

HOW NOT TO CONFUSE IT

Opuntia engelmannii often has larger, more oval pads and a different shrub growth form. Opuntia basilaris is usually lower, with flatter pads that look nearly spineless but carry abundant glochids. Opuntia chlorotica is especially distinguished by rounded pads, large golden spines and a trunk that becomes woody with age. Fruit color alone cannot establish a species. Even after visible spines have been removed, microscopic glochids can injure the tongue and throat. Without suitable tools for safely peeling the fruit, leave it in place.

SOURCES

- https://www.calflora.org/app/taxon?crn=5931
- https://temperate.theferns.info/plant/Opuntia%2Bchlorotica
- https://ucanr.edu/sites/RiversideMG/files/390058.pdf

Engelmann prickly pear — crimson desert fruit and tender green pads · Opuntia engelmannii

Opuntia engelmannii

In hot, rocky places in the desert southeast of California, a shrubby cactus may grow with large, flat green pads. Its large yellow flowers open in spring, and crimson fruits ripen later in the year. Engelmann prickly pear provides two distinct parts that can be eaten without heating: the pulp of fully ripe fruit, and very young pads after every spine and glochid has been removed.



Engelmann prickly pear (Opuntia engelmannii) — broad flat green cactus pads and crimson fruit

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This cactus branches from the ground, sometimes reaching one to two meters in height and several meters across. Its stems consist of large oval or rounded, flat pads, usually 15–40 centimeters long, colored bluish green or bright green. Across their surfaces are areoles bearing several large, stiff spines and bundles of almost invisible, small hooked hairs called glochids. Flowers are generally large and yellow, sometimes shaded orange or reddish. Ripe fruits are elongated, with juicy, deep purple or crimson flesh and numerous seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Opuntia engelmannii as native, though records from California are relatively few compared with those of more familiar prickly pears. Within the state it is encountered mainly in desert and southeastern districts near the Arizona border, on dry gravelly slopes among desert shrubs. Engelmann prickly pear is not a widespread wild species in the Sacramento Valley. Pads or fruits must not be cut or gathered from protected desert lands without authorization.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New, tender green pads develop in spring after winter precipitation, before they have thickened and acquired numerous spines. Large flowers appear in spring and early summer. Fruits grow gradually through summer and usually acquire purple hues toward late summer or early autumn. One red patch on the skin does not prove ripeness: a fruit must be fully colored and have mature, juicy flesh.



Engelmann prickly pear (Opuntia engelmannii) — broad flat green cactus pads and crimson fruit

Heinrich Pniok (Alchemist-hp) · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe fruit pulp. Remove the entire outer skin with its areoles and glochids, then eat only the clean, purple inner pulp. It contains numerous hard seeds, which may be strained out after cold mashing.

Young pads. The National Park Service indicates that the young, flat stems of Opuntia engelmannii can be eaten raw after the spines are removed. But large, visible spines are only part of the hazard: microscopic glochids must also be removed completely, along with the outer layer. If it is impossible to prepare the food without allowing needles into the mouth, do not eat these raw parts.

HOW NOT TO CONFUSE IT

Opuntia phaeacantha, discussed separately, usually has smaller pads and a different arrangement of spines, but can look very similar. Opuntia littoralis inhabits the coastal belt and differs in a combination of pad and flower characters. Opuntia ficus-indica often has larger, flat pads and is frequently cultivated. A single red fruit cannot distinguish prickly pears at species level. Glochids can penetrate skin and mucous membranes even when the cactus surface looks smooth.

SOURCES

- https://www.calflora.org/app/taxon?crn=9170
- https://www.nps.gov/orpi/learn/nature/cacti.htm
- https://www.worldfloraonline.org/taxon/wfo-0001258261

Indian fig prickly pear — juicy fruits and young tender pads · Opuntia ficus-indica

Opuntia ficus-indica

In warm parts of California, large cacti with flat, fleshy green segments grow near old homesteads, stone fences and dry slopes. Large yellow or orange flowers appear along the upper edges of the pads, followed by oval fruits that turn yellow, orange or reddish purple as they ripen. This is Opuntia ficus-indica, the Indian fig prickly pear. Its ripe fruit pulp and young pads are eaten without fire after careful removal of spines. The principal practical hazard is the almost invisible glochids.



Indian fig prickly pear (Opuntia ficus-indica) — large flat pads and ripening oval fruit

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a large, shrubby or tree-like cactus. In old specimens the lower segments become woody, while branching chains of flat, oval, fleshy stem segments—called cladodes—extend above them. Some cultivated varieties have few long spines or almost none, yet small areoles with fine glochids remain. Young pads are thinner and more tender; mature ones thicken.

The flowers are large and have many petals, usually yellow and sometimes tinged orange. They grow on the margins of upper pads rather than on separate long flower stalks. Fruits develop directly from the flower ovaries and resemble small pears or ovals. Areoles with prickly bristles remain on their outer surfaces. Beneath the skin is juicy, somewhat sweet pulp containing numerous hard, edible seeds.

WHERE IT GROWS IN CALIFORNIA

Opuntia ficus-indica is an introduced species cultivated in California for many years. Calflora documents escaped plants in San Diego, Orange, Los Angeles, Santa Barbara and San Luis Obispo counties, among others. Isolated large clumps occur farther north in sheltered locations. This cactus is much more characteristic of mild coastal areas and warm, dry slopes than of frosty mountains.



Indian fig prickly pear (Opuntia ficus-indica) — large flat pads and ripening oval fruit

Frank Schulenburg · CC BY-SA 3.0 · Wikimedia Commons

Not every Californian prickly pear is Opuntia ficus-indica. Southern California has native species, including Opuntia oricola, with different pad sizes, spines and branching patterns. A well-tended cactus near a house may be a private planting rather than a freely accessible wild specimen.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New, flat pads begin to grow actively after spring warming. The most tender young pads are available in spring and early summer, before their skin thickens. In mild climates, some new growth can develop at other times when moisture is sufficient.

Flowering usually occurs in late spring and early summer. Fruits then set and ripen toward late summer and autumn, roughly August through November. A single plant may carry both fully colored and still-green fruits at once. Perennial pads stay green through winter, but this does not mean that fresh, tender pads or a ripe fruit crop are then available.

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruit. The juicy inner pulp is the part eaten. The University of California describes Opuntia ficus-indica as a fruit crop, and university guides to the genus Opuntia confirm that ripe, peeled fruits are eaten raw. The fruit is suitable for food only after the skin, including every areole, glochid and large spine, has been removed. Its flavor is sweetish and sometimes slightly grassy.

Young pads. Known as nopales or nopalitos, these are used as the vegetable part of the cactus. UC Davis describes harvesting specifically the young, tender growth before it becomes thick and fibrous. An NC State Extension reference for prickly pears indicates that thoroughly peeled pads can be eaten raw: the flesh has a mucilaginous texture and slightly sour flavor. Acidity is greater at certain times of the day, and the quality of young pads changes as they develop. Old, thick pads are unsuitable for this method.

HOW NOT TO CONFUSE IT AND WHAT TO WATCH FOR

Indian fig is distinguished from other Opuntia species by the size and shape of the plant, its large pads, flowers, fruits and origins. Even a specimen without noticeable long spines, however, may be covered with short, transparent glochids. University of California Agriculture and Natural Resources warns that they readily embed themselves in skin and mucous membranes. It is therefore unsafe to grab fruit with bare hands, bite it directly from the cactus, or merely wipe dust from its skin with a cloth.

Do not use unidentified prickly pears, rotting fruits or plants from chemically treated ornamental landscapes. If all glochids cannot be removed safely, the raw food should be left uneaten.

SOURCES

Calflora, Opuntia ficus-indica, records in California: https://www.calflora.org/app/taxon?crn=5938 University of California ANR, Know What You Grow: Prickly Pear, Opuntia ficus-indica: https://ucanr.edu/sites/default/files/2025-04/FactSheet_FruitVeg_Prickly%20Pear_2021.08.09.pdf UC Davis, Nopalitos, Cactus Stems, tender young pads: https://ucanr.edu/sites/default/files/2020-11/339182.pdf NC State University Extension, Opuntia, peeled raw fruits and pads: https://plants.ces.ncsu.edu/plants/opuntia/ UC ANR, Opuntia spp., glochids and protection: https://ucanr.edu/site/plant-safely-drought-tolerant-landscapes/opuntia-spp

Coastal prickly pear — purple fruit among spiny pads · Opuntia littoralis

Opuntia littoralis

On dry coastal slopes in Southern California, prickly pears often form broad green cushions among the surrounding shrubs. In summer, reddish-purple fruits appear at the ends of the flat pads. The fruit looks inviting, but its surface bears not only obvious spines but also nearly invisible, irritating glochids.



Coastal prickly pear (Opuntia littoralis) — oval spiny pads and reddish-purple fruit

NeoPrometheusX · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a perennial, shrubby cactus spreading sideways through succulent oval segments. The flat green “paddles” are actually stems, not leaves. Across each segment are small areas called areoles, from which clusters of spines emerge. In Opuntia littoralis, large pads may be around 20 centimeters long, while the clump itself rises to about one meter.

Large flowers open along the margins of the pads. They are yellow, sometimes with a reddish tint. Fruits are egg-shaped, greenish at first and becoming purplish red when ripe. The species is variable; plants can differ substantially in the density and length of their spines.

WHERE IT GROWS AND HOW COMMON IT IS

This cactus is native to coastal chaparral and scrub communities in Southern California. It occurs in Ventura, Los Angeles, Orange and San Diego counties, on rocky slopes, coastal bluffs and dry open sites. It is not a common wild species in the Sacramento Valley.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering occurs mainly in spring and early summer. In warm places, ripe fruits begin appearing in June or July; some plants bear fruit later. A red color alone is not proof that a fruit is soft and fully ripe.

WHAT IS EATEN WITHOUT FIRE

Ripe fruits. The Kumeyaay gathered the fruits and removed their spines mechanically, then ate them fresh or dried them. Inside is juicy flesh with hard seeds. For eating without heat, only the ripe fruit, completely cleaned of outer spines and glochids, is suitable. Glochids lodged in the lips, tongue or throat are particularly painful; a quick wipe with the hand does not make a fruit safe.

Drying without heat. Fruits could be stored after natural drying, but they first had to be ripe and free from spines.

HOW NOT TO CONFUSE IT

Other Southern California prickly pears, including Opuntia ficus-indica and Opuntia oricola, also have flat pads and edible fruits. Fruit color alone cannot identify a species: pad dimensions, areoles, flower features and habitat all need to be compared. The young pads of some prickly pears are used as vegetables, but traditional sources for Opuntia littoralis describe boiling or roasting its pads. Those cooked preparations are not included here among foods eaten without fire.

SOURCES

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- San Diego Natural History Museum: https://coasttocactus.sdnhm.org/plants/coast-prickly-pear
- Calflora, Opuntia littoralis: https://www.calflora.org/app/taxon?crn=5940

Chaparral prickly pear — red fruit on spiny pads · Opuntia oricola

Opuntia oricola

Among the shrubs of dry Southern California slopes grows a cactus with large, flat, green segments resembling oval paddles. Flowers open along their upper margins in spring, followed later by juicy, reddish fruits. This is Opuntia oricola, one of the native prickly pear species. A historical account from the San Pasqual Valley records two parts eaten fresh: flower buds and fruits.



Chaparral prickly pear (Opuntia oricola) — large green pads with prominent spines

Satxjoe · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Opuntia oricola is a shrubby or tree-like cactus. The lower portions of older plants become woody, while branching chains of large, flat, rounded segments extend above them. Each segment is green and fleshy, covered with small areas called areoles, from which large spines and almost invisible short bristles emerge.

The pads of this species may reach several tens of centimeters in length. Large spines often grow in conspicuous groups and are easy to see in sunlight; the tiny glochids are much harder to notice. Rounded flower buds develop on the upper portions of older pads. The flowers are generally yellow, sometimes reddish near the bases of their petals, and are followed by oval or nearly round fruits.

The fruit sits directly on the edge of a pad rather than hanging from a long branch. When ripe, its skin may turn red or reddish purple. As on the green pads, the fruit's surface retains small areoles bearing prickly bristles.



Chaparral prickly pear (Opuntia oricola) — large green pads with prominent spines

Steve Hillebrand, USFWS · Public domain (author claim) · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

This species is native to Southern California and Baja California, Mexico. It inhabits coastal chaparral, dry scrub, slopes and valleys from the San Diego area toward Los Angeles. San Pasqual Valley is one of the locations where this prickly pear is explicitly mentioned in a historical nature-trail guide published by California State Parks.

Under suitable conditions the cactus forms noticeable clumps, particularly in dry, sunny places. It is not a common species of the moist northern forests of California. Its food use therefore belongs to a particular geographical zone rather than to the whole state.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Green pads remain on the plant throughout the year, but their constant presence does not mean they are documented as a raw food of this species.

Flower buds appear in spring and early summer, before the flowers open. Fruits develop after flowering. In many coastal and foothill districts, fully ripe prickly pear fruits are available by late summer and autumn, approximately August through October. Weather and habitat affect the precise timing.

WHAT IS EATEN WITHOUT FIRE

Fresh flower buds. California State Parks explicitly states that Indigenous people of the San Pasqual Valley ate the flower buds of Opuntia oricola fresh. Their brief season ends when the flowers open. The account refers specifically to young flower buds. The same historical source describes the flat, green pads as cooked food, so pads are not included in this list of foods eaten without fire.

Ripe fruits. These were also eaten fresh. The edible part lies beneath the skin: soft pulp containing seeds. Fruits of many prickly pears are sweet or slightly tart, but their flavor varies considerably by plant and season.

Large spines and nearly invisible glochids remain on both fruits and buds. Even a tiny bristle can become embedded in the lining of the mouth. Never bite a fruit or bud directly from the plant or assume that apparently smooth skin is safe. The fruit and buds must not be tasted from the surface of the cactus without dealing safely and completely with the spines and glochids.

HOW NOT TO CONFUSE IT

Southern California is home to several native and introduced Opuntia species. They are distinguished by pad shape and thickness, spine numbers, flowers and geographic range. Opuntia oricola typically has large, flat pads, prominent long spines and a branching shrub-like habit. Do not transfer the food uses of young pads of other prickly pears to this species: the San Pasqual historical source describes fresh buds and fruit, whereas the green pads were prepared with heat.

SOURCES

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- Calflora, Opuntia oricola, botanical distribution: https://www.calflora.org/app/taxon?crn=5948
- Wikimedia Commons, images of Opuntia oricola: https://commons.wikimedia.org/wiki/Category:Opuntia_oricola

Brown-spined prickly pear — juicy fruits on dry rocky slopes · Opuntia phaeacantha

Opuntia phaeacantha

Low prickly pears with flat oval pads occur far from the ocean, among stones and sparse desert shrubs. In spring, large yellow flowers open above the spines; toward the end of the warm season, they are replaced by fleshy purple-red fruits. Their inner flesh can be juicy and somewhat sweet, but the outer surface requires special care.



Brown-spined prickly pear (Opuntia phaeacantha) — oval cactus pads, long spines and purple-red fruit

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a creeping cactus or one that forms a low shrub. The individual green pads are oval, often 10–25 centimeters long, joined together in branching chains. The plant can rise to roughly 30–90 centimeters and spread over several meters. Long, stiff spines emerge from areoles on the pads, sometimes pointing downwards or sideways; very fine glochids occur beside them.

The flowers are large and usually yellow, sometimes with a redder center. Fleshy fruits turn red or purple; a ripe fruit feels softer but still bears dangerous, tiny spines. Populations belonging to this complex vary considerably and may hybridize with related prickly pears.

WHERE IT GROWS AND HOW COMMON IT IS

In California, the species is associated with dry regions in the south and east of the state: desert districts, rocky slopes, pinyon–juniper woodland and certain mountain valleys. It is not a common prickly pear of irrigated Sacramento lawns. In suitable habitats, it can form extensive, conspicuous clumps.



Brown-spined prickly pear (Opuntia phaeacantha) — oval cactus pads, long spines and purple-red fruit

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WHEN THE EDIBLE PARTS ARE AVAILABLE

Most flowering occurs in late spring and early summer. The fruits enlarge during the warm months and ripen chiefly from midsummer into autumn. At higher elevations and after a cold spring, ripening may be delayed. Fruit color does not replace confirmation that a fruit is fully ripe.

WHAT IS EATEN WITHOUT FIRE

Ripe fruits. Traditional use of the fresh fruits of Opuntia phaeacantha is explicitly documented. After the spines and glochids have been completely removed, the juicy pulp and its seeds are edible. Fruits were also dried for storage and later use. Skin retaining traces of prickly hairs should not be regarded as food.

Young green pads. A university extension reference allows their use raw once all spines have been removed, although their texture is mucilaginous and they are difficult to clean. For someone without experience, because of the glochids, it is more practical to limit use to fruit that has already been peeled safely and thoroughly.

HOW NOT TO CONFUSE IT

Opuntia basilaris, described separately, often has flat pads almost devoid of long spines, whereas Opuntia phaeacantha more often bears conspicuous clusters. Numerous hybrid forms exist, and precise identification sometimes requires flowers and a comparative botanical key. Never taste an unknown cactus merely because it has “round, paddle-shaped” segments.

SOURCES

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- National Park Service, prickly pear species overview: https://www.govinfo.gov/content/pkg/GOVPUB-I29-PURL-gpo136141/pdf/GOVPUB-I29-PURL-gpo136141.pdf
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Oregano — fresh aromatic greens near old gardens and grassy slopes · Origanum vulgare

Origanum vulgare

On a sunny slope beside an old homestead in summer, low shoots sometimes grow with fragrant opposite leaves. The stems branch higher up, and small pinkish-lilac flowers open above them. Gently rubbing a leaf releases the familiar scent of oregano. This is Origanum vulgare, which in California is mainly cultivated as a culinary herb and only occasionally persists without care. Its leaves can be used raw, without heating.



Oregano (Origanum vulgare) — small opposite green leaves and pink-purple flower clusters

Wilfredor · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with short creeping rhizomes and upright, square stems, usually 20–60 centimeters tall. Leaves are opposite, carried on short stalks, oval and 1–4 centimeters long, with entire or barely toothed edges. Oil glands make them strongly aromatic when rubbed. Near the top of the stem, dense, short spike-like flower clusters form branched inflorescences. The bracts are often pinkish purple. The individual flowers are two-lipped, with small lilac, purple or pinkish corollas. After flowering, four tiny nutlets mature within the calyx. Older lower shoots become woody and coarse.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora places Origanum vulgare among nonnative plants and records only several dozen observations. In California, oregano is most likely to appear beside gardens, in former vegetable plots and near settlements; individual records are known from Sonoma, Santa Cruz, Orange, Santa Barbara, Yolo and Sacramento. Not every low, fragrant subshrub in dry chaparral should be identified as oregano. Gathering is unauthorized or unsafe on private land and chemically treated lawns, and cultivated ornamental forms may differ in fragrance and leaf size.

WHEN THE EDIBLE PARTS ARE AVAILABLE

With adequate moisture, new leaves appear in spring, while in a mild California winter the plant may remain partly green. The most tender growth develops in spring and early summer. Flowering usually begins in summer, with inflorescences persisting into early autumn. In hot drought, lower leaves become tough; in well-watered places fresh, soft tips may grow again. The herb can be gathered before and during flowering, but for fresh consumption the smallest young leaves are preferable.



Oregano (Origanum vulgare) — small opposite green leaves and pink-purple flower clusters

Sten Porse (Sten) · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Leaves. Plants For A Future specifically confirms raw use of oregano as an aromatic herb. A few young leaves can be finely chopped and added to vegetables, beans or other prepared cold food; the strong flavor means that a large serving is unnecessary. Flowers are also described as edible and can be included in small amounts when the plant has been identified confidently.

For storage, leaves may be dried naturally on clean mesh without heat and then crumbled into a dry seasoning. Concentrated essential oil must not be consumed as though it were equivalent to fresh leaves. Roots and tough stems are not included.

HOW NOT TO CONFUSE IT

Marjoram, Origanum majorana, has a similar scent and appearance but generally bears softer, grayish, hairy leaves and has differently shaped inflorescences. Native Monardella villosa is also aromatic, but its flowers form rounder heads and its botanical features differ. Spearmint, Mentha spicata, usually has broader, sharply toothed leaves and elongated flower spikes, whereas oregano has less-toothed margins and smaller flower clusters. Scent alone cannot establish an identification: examine the arrangement of the leaves, the flowers and the stem.

SOURCES

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Bermuda buttercup — yellow flowers and tart three-part leaves after rain · Oxalis pes-caprae

Oxalis pes-caprae

In late winter, a thick green carpet sometimes spreads across California's grassy slopes, with dozens of bright yellow flowers glowing above it. Each plant has three heart-shaped leaflets on a long stalk, while the flowering stem carries a group of brilliant blossoms. This is Bermuda buttercup, or Cape sorrel, an introduced South African plant that has spread widely along the California coast. Its leaves and flowers can be eaten raw only in very small amounts. Because of their high oxalic acid content, they are better treated as a tart seasoning than as salad greens.



Bermuda buttercup (Oxalis pes-caprae) — vivid yellow flowers above three heart-shaped leaflets

Daniel Feliciano · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

A low perennial herb growing from underground bulbs, usually 10–30 centimeters tall. Long, juicy stalks emerge from small bulbs, each bearing exactly three rounded, heart-shaped leaflets with a deep notch at the tip. The leaflets often fold in cloudy weather and during the evening. Separate, leafless flower stalks rise a little above the foliage, each carrying several flowers on long individual stalks. Flowers are bright yellow, approximately 2–3 centimeters across, with five petals and five small sepals. In California, the plant spreads mainly through small daughter bulbs underground rather than through seeds, forming dense colonies.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora has recorded thousands of observations of Oxalis pes-caprae. The California Invasive Plant Council emphasizes its distribution along the coast, through the Coast Ranges and in the Sacramento Valley, in coastal meadows, oak woodland, city lawns, gardens, roadsides and former fields. It can displace native spring herbs and is regarded as invasive. Abundance does not make every growing site suitable for food: parks may be treated with herbicides, highways generate road dust, and animal exercise areas may be contaminated.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After the first substantial autumn rains, green three-part leaves begin to grow. They become noticeable in lowlands during winter, while bright yellow flowers appear mostly from December to April depending on the region. Young, tender leaves continue developing while the ground remains moist and are the best choice for a very small raw seasoning. With the onset of the warm, dry summer, aboveground foliage quickly turns yellow and disappears, while the underground bulbs remain alive until the following season.



Bermuda buttercup (Oxalis pes-caprae) — vivid yellow flowers above three heart-shaped leaflets

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WHAT IS EATEN WITHOUT FIRE

Young leaves and fresh flowers. Plants For A Future explicitly confirms their raw use. They taste distinctly sour, somewhat like lemon-scented greens. A few thoroughly washed leaves or one or two flowers are sufficient to season other food. Leaves may lend a faintly sour flavor to cold water, but concentrated drinks should not be prepared.

In large quantities, oxalic acid can bind calcium and increase the risk of kidney problems. This raw green is not recommended for people with oxalate kidney stones. The underground bulbs are described as edible only after cooking and are not used here.

HOW NOT TO CONFUSE IT

Native redwood sorrel, Oxalis oregana, generally has whitish-pink flowers and grows in damp, shaded forests rather than forming broad yellow carpets on sunny coastal slopes. Oxalis corniculata, described elsewhere in this catalog, has more prostrate, branching stems and tiny yellow flowers, usually borne singly. Oxalis pes-caprae has several large yellow flowers on a shared flowering stalk and underground bulbs. Clover, Trifolium, is also three-leaved, but its leaflets lack such a deep heart-shaped notch and its flowers are pea-like. Three leaflets alone are never enough to identify an unknown green.

SOURCES

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- https://pfaf.org/User/Plant.aspx?LatinName=Oxalis+pes-caprae

Blue palo verde — tender green pods of the desert · Parkinsonia florida

Parkinsonia florida

In the southern deserts of California grows a tree that remains green even after drought has caused its tiny leaves to fall. In spring, its smooth, blue-green branches are covered with masses of bright yellow flowers. Blue palo verde produces bean pods, and the very young green pods can be eaten raw—unlike mature seeds, for which most documented food preparations involve heating.



Blue palo verde (Parkinsonia florida) — blue-green branches with yellow flowers and developing pods

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually a spreading tree 6–9 meters tall. Its trunk and branches have smooth, bluish-green surfaces that can carry out photosynthesis. Leaves develop during wetter periods and are twice-pinnate, with tiny leaflets; they may fall quickly in drought. Short spines are visible at branch nodes. In spring, flowers approximately 2–3 centimeters across open with five bright-yellow petals, one of which may bear orange markings. Following flowering, flattened, elongated pods hang from the branches and contain several seeds. Young pods are green and tender; mature ones become beige and dry. Some older floras call this species Cercidium floridum.

WHERE IT GROWS AND HOW COMMON IT IS

In the wild, Parkinsonia florida is associated chiefly with the Sonoran Desert, which extends across California's southeastern border. It favors dry washes, sandy terraces and sites that periodically receive runoff after heavy rain. Similar trees used in city landscaping in the Sacramento Valley may have been planted and do not indicate the natural range of the species. Flowering desert trees can sometimes be seen from far away because of their richly yellow crowns.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In warm lowland sites, showy flowering usually takes place in March and April. According to a University of Arizona reference, tender green pods are ready to gather in late April and May. They then dry quickly; by June and July the tree carries hard, mature seeds. After an extremely dry winter, growth may be delayed or weaker. Only the brief period when the pod remains soft is appropriate for this food use. The long-lasting green bark is not a food part.



Blue palo verde (Parkinsonia florida) — blue-green branches with yellow flowers and developing pods

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young green pods. The University of Arizona's botanical garden explicitly states that immature pods of Parkinsonia florida are eaten raw. While the pod walls are soft and green, they can be eaten without heating after the tree has been reliably identified and the pods cleaned. This is seasonal food, not something available year-round.

Mature seeds. Sources describe grinding them after roasting. They are therefore excluded from this guide to raw food. Bark, leaves and flowers must not be assumed edible merely because other legumes produce edible shoots. Gathering from treated ornamental plantings or roadsides is unsuitable.

HOW NOT TO CONFUSE IT

The closely related desert species Parkinsonia microphylla is noticeably shorter, with extremely small leaves. Its shoots end in spines, whereas blue palo verde typically bears spines at its nodes. The ornamental Parkinsonia aculeata differs in leaf structure, although its branches and thorns can look similar. A dry pod by itself is not enough: look at the blue-green branches, spine type and arrangement, leaves and flowers together. The food recommendation for P. florida must not be applied to every landscaping tree labeled “palo verde.”

SOURCES

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Blue passionflower — white-and-blue blooms and orange fruit with red arils · Passiflora caerulea

Passiflora caerulea

In warm, old gardens and among escaped climbing plants in Southern California, a vine with an extraordinary flower sometimes appears. Fine striped filaments in shades of blue and violet radiate around its white petals. Later, oval fruits hang on long stalks, green at first and then bright orange. In fully ripe blue passionflower fruit, only the juicy coverings around the seeds, called arils, are eaten. They are less flavorful than the pulp of commercial passion fruit.



Blue passionflower (Passiflora caerulea) — white petals and striped blue corona

Fedotova Elizaveta · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial climbing vine has thin, flexible stems and strong curling tendrils that fasten to branches and supports. The alternate leaves usually have five deeply divided, elongated lobes, though the number sometimes ranges from three to seven. The leaf blades are smooth and green, carried on long stalks. The large flowers are 7–10 centimeters across, with five whitish sepals, five white petals and an elaborate corona of many bluish-purple filaments. Five stamens and three stigmas rise at the center. The oval fruits, usually 4–6 centimeters long, turn orange-yellow when ripe. Inside are numerous seeds surrounded by a small amount of reddish, juicy tissue.

WHERE IT GROWS AND HOW COMMON IT IS

Passiflora caerulea is native to South America. In California it is grown beside homes and has escaped cultivation in places. Calflora records it chiefly in Los Angeles, Orange, Ventura and Santa Clara counties, with a few other locations including isolated records around Sacramento. A UCLA botanical account documents a naturalized vine in Griffith Park, Los Angeles. This is neither a typical wild forest or desert food in California nor an abundant native vine.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In Southern California's mild climate, leaves can persist for a long time, and flowering often continues from late spring into autumn. Greenish ovaries gradually enlarge; the fruits turn orange in late summer and autumn. In colder places, fruits may fail to ripen. Green fruits are not suitable for eating. The internal arils should be fully developed and juicy, while the fruit's outer skin should be completely colored.



Blue passionflower (Passiflora caerulea) — white petals and striped blue corona

Mezhenskyj · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only the reddish, juicy arils of fully ripe fruit. Research material from Vanderbilt University and a North Carolina State University reference confirm the edibility of ripe Passiflora caerulea fruit, but note that the flavor may be bland and the quantity of pulp small. Cut open a fully ripe orange fruit and use a spoon to remove the small amount of juicy seed coverings, eating them fresh. The tough rind, leaves, stems, flowers, roots and green fruit are not included as food. Calflora includes this species among potentially poisonous plants, so other plant parts must not be consumed.

HOW NOT TO CONFUSE IT

The cultivated Passiflora edulis, the familiar edible passion fruit, has different flowers, more substantial pulp and a ripe skin that is usually purple or yellow. Other introduced passionflowers can bear vivid red flowers and have differently shaped leaves. The blue passionflower blossom is distinctive, with white petals, a broad striped blue corona, five stamens and three stigmas. But without seeing the vine in flower, identifying the species from one orange fruit is unreliable. Above all, do not eat green fruit or any part of an unidentified vine.

SOURCES

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Garden parsley — aromatic greens and the danger of poisonous wild look-alikes · Petroselinum crispum

Petroselinum crispum

In a cool, old vegetable garden, a low rosette of bright-green, finely divided leaves may persist, giving off a familiar fresh fragrance. In its second season, a tall stem may rise above it with tiny greenish-yellow flowers grouped into umbels. This is garden parsley, occasionally recorded outside cultivation in California. Its young leaves are eaten raw. However, collecting an unidentified wild plant of the carrot family because it resembles parsley is extremely dangerous: deadly poisonous look-alikes grow nearby.



Garden parsley (Petroselinum crispum) — bright-green divided leaves in a basal rosette

DenesFeri · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A biennial herb usually 15–40 centimeters tall in its first year and 60–100 centimeters when flowering. The lower leaves form a dense basal rosette. They are long-stalked, divided two or three times into numerous bright-green, wedge-shaped leaflets. In cultivated leaf varieties, the blades may be flat with toothed margins or strongly curled; these are cultivars of the same species. In the second year, the stem is upright, grooved and branched, without a large, brown, woody base. Tiny yellow-green flowers are arranged in compound umbels at the branch tips. Following pollination, small, ribbed, two-part fruits develop. When damaged, the leaves release the characteristic scent of parsley.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Petroselinum crispum as nonnative and records approximately twenty observations outside vegetable gardens. Likely sites include abandoned garden beds, compost heaps, places where garden greens were discarded and ground near settlements. Parsley is frequently grown in the Sacramento Valley during cool weather, but genuine wild meadows contain many other carrot-family plants that are much more common. Particularly dangerous are poison hemlock, Conium maculatum, and water hemlock, Cicuta, both found in California in moist habitats. They must never be tasted or identified by smell alone.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves develop in cool autumn weather, through mild winters and in spring. As temperatures rise in the second year, a tall flowering stalk appears and the leaves become less tender. Flowering normally runs from late spring through summer, followed by seed formation and completion of the plant's life cycle. Young leaves, before the stem elongates, are best for raw use. Older plants develop a sharper aroma and coarser leaf stalks.



Garden parsley (Petroselinum crispum) — bright-green divided leaves in a basal rosette

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WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future directly describes their use as a raw culinary herb. A small quantity of washed, chopped leaves can be added to a prepared cold vegetable mixture. Flat-leaf and curly cultivated varieties are eaten in the same way, although dirt can lodge in the folds of curly leaves. Large servings are unnecessary: parsley contains biologically active compounds, particularly concentrated in its seeds and oil. PFAF warns about excessive amounts and use during pregnancy. Roots and seeds are not included as raw foods for gathering in the field. Do not taste even one leaf of an unidentified plant.

HOW NOT TO CONFUSE IT

Poison hemlock, Conium maculatum, can have similarly divided foliage, but it is deadly poisonous. Mature stems often bear purple blotches, and the foliage smells different; neither feature alone can guarantee safety. Cicuta douglasii grows near water and may have similarly divided leaves, but all its parts are dangerous. Young coriander, Coriandrum sativum, also resembles parsley, but its strong distinctive scent, leaf shapes and fruits differ. Without a reliable connection to a known garden planting and verification of flowering features, it is better not to gather parsley in the wild.

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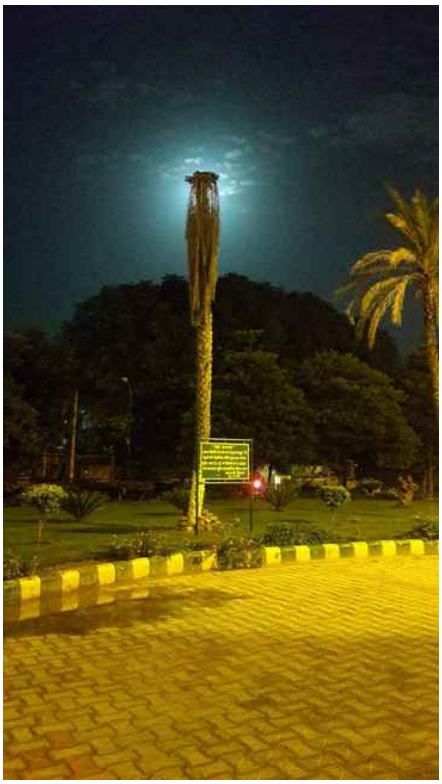
Date palm — sweet fruit on long hanging clusters · Phoenix dactylifera

Phoenix dactylifera

In the hot valleys of Southern California, long clusters of elongated fruit become heavy on tall palms during summer. As they ripen, the fruits change from green to yellow, reddish or brown, and their flesh grows soft and sweet. This is the cultivated date palm. It can be distinguished from California's native fan palm above all by its leaf structure and the size of its fruits.



Date palm (Phoenix dactylifera) — long pinnate leaves and hanging date clusters

Rajat Kalra (rohilla) · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Phoenix dactylifera forms a tall trunk marked with scars from fallen leaf bases. A crown of large, pinnate leaves rises at the top. Each leaf consists of numerous narrow, pointed leaflets arranged along a long central axis. Long, stiff spines may occur near the base of the leaf stalk.

Male and female inflorescences grow on separate trees. Following pollination, the female palms develop long, drooping clusters of fruits. Each fruit is oblong, generally several centimeters long, and contains one elongated, hard stone. The skin and flesh change in texture as they ripen. A brown fruit alone is not enough to identify an unknown palm.

WHERE IT GROWS AND HOW COMMON IT IS

The date palm is not native to California. It has long been cultivated in the southern part of the state, particularly in the hot Coachella and Imperial valleys, where summer heat is sufficient to produce a crop. Old ornamental plantings and occasional escaped specimens also occur. A palm growing near a home does not mean its fruits can be picked without the owner's permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Date palms flower in spring. Their fruit passes through several ripening stages; depending on the cultivar, these extend from late summer to well into autumn. In cooler areas, the fruit may not develop its characteristic sweetness. Some mature dates are soft and juicy, while others dry on the cluster until they resemble the dates commonly sold in shops.

WHAT IS EATEN WITHOUT FIRE

Fully ripe dates. Their sweet flesh is eaten fresh after removing the single hard stone. No heat is needed. A date that has dried naturally while hanging on the cluster can also be eaten without preparation, provided it remains clean and free of mold or rot. Heavy wrinkling is not always a sign of spoilage: for some cultivars, it is a normal stage of ripeness.

Other parts. The stone and tough pinnate leaves are not eaten as raw food. Very astringent green dates should not be treated as equivalent to ripe ones. On wild or casually planted palms, the taste of the fruit cannot be predicted from the crown's appearance alone.

HOW NOT TO CONFUSE IT

Canary Island date palm, Phoenix canariensis, has a more massive ornamental crown and different fruits, often containing little edible flesh. California fan palm, Washingtonia filifera, has large fan-shaped leaves and much smaller, nearly round fruits. Even on a genuine date palm, the origin and ripeness of the fruit must be known.

Falling heavy clusters and the spiny bases of the leaves create injury hazards. Do not climb a tree or pull on clusters that are out of reach.

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Cutleaf groundcherry — golden fruit inside a ten-ribbed husk · Physalis angulata

Physalis angulata

In summer, a low, branched herb may grow in loose soil beside an old field or a damp vegetable-garden edge. After an inconspicuous yellow flower, a thin green calyx swells around its fruit, resembling a paper lantern with prominent angles. Inside the fully mature husk is a small yellow-orange berry. This is Physalis angulata, a groundcherry recorded in the Sacramento Valley among other locations. Only its fully ripe berry flesh is eaten without heat.



Cutleaf groundcherry (Physalis angulata) — inflated angular husk surrounding a ripe yellow berry

João de Deus Medeiros · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual herb approximately 20–80 centimeters tall, with green stems that may be angular. The shoots are upright and strongly branched, mostly nearly hairless or bearing a few short hairs. Its alternate leaves are ovate or broadly lance-shaped, with uneven margins and often several large teeth. The flowers are solitary and nodding, on slender stalks. Each has a five-lobed, yellowish corolla, sometimes with a darker pattern at the center. Following pollination, the calyx grows rapidly until it completely encloses the fruit. The mature husk can become strongly inflated, with ten conspicuous ribs. Inside is a round, many-seeded berry, up to two or three centimeters across, that becomes yellow or golden orange when ripe.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora describes Physalis angulata as native to California and includes over one hundred observations. Records come from Butte, Colusa, Sacramento, Sutter, Yolo, San Joaquin and several other counties. It grows in open, disturbed ground, near vegetable gardens and fields, and in moist, sunny lowlands where rain or irrigation provides enough water. It is much less likely in woodland shade or on cold high-elevation slopes. Farmland and ditches may be affected by herbicides, wastewater and other contamination; raw berries should not be gathered there.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seeds germinate as spring warmth arrives, and the plant rapidly develops leaves. Yellow flowers appear in summer, particularly after adequate moisture. The husks grow and dry through late summer and autumn, while the berries inside gradually turn uniformly golden. Flowers, green fruits and ripe berries can all occur on one plant at the same time. Choose only a soft, fully colored berry that separates from its calyx; hard green fruit is unsuitable.

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries only. Plants For A Future and the Growables account explicitly confirm eating the ripe berries raw. Open a dry or lightening husk, discard it entirely, and eat only the golden berry inside, together with its small, soft seeds. The taste is sweet-tart and may recall gooseberry and tomato. Several clean, ripe berries can be mashed into cold water without heating. The papery calyx is inedible and described as toxic in the sources; leaves and stems are not raw foods either. Young leaves described in ethnobotanical accounts were cooked, not eaten raw.

HOW NOT TO CONFUSE IT

Physalis peruviana is usually more vigorous and hairy, with a bright-orange ripe berry in a dry husk. Physalis longifolia has narrower leaves and perennial underground shoots. Some Californian groundcherries are so similar that a single husk cannot reliably identify the species. Poisonous members of the nightshade family may have similar green foliage but different flowers and calyces. Never taste a berry from an unidentified husk, especially an unripe one or one from a plant that has not been identified by its flowers.

SOURCES

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Thickleaf groundcherry — yellow fruit in a papery husk on desert slopes · Physalis crassifolia

Physalis crassifolia

On a dry, sandy slope in Southern California, a low plant with gray-green leaves and small yellow flowers with a dark, spotted center may be hidden among the stones. Later, the flower develops into an inflated papery pouch with a round fruit ripening inside. This is Physalis crassifolia, thickleaf groundcherry, native to desert regions. Fully ripe fruits may be eaten raw, but green, unripe berries and the papery calyx enclosing them can be toxic. A beautiful “lantern” is not permission to eat the entire plant.



Thickleaf groundcherry (Physalis crassifolia) — gray-green leaves and an inflated papery fruit husk

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low perennial, often growing as a seasonal herb with several stems emerging from a common base, generally no more than 30–40 centimeters high. The spreading shoots can be slightly angular or zigzagging and carry short hairs. Leaves are alternate or clustered in pairs near branching points, oval and relatively thick, sometimes grayish-hairy, with smooth, slightly wavy or toothed margins. Flowers occur singly on slender stalks. Their broadly bell-shaped corollas are usually yellow, with several dark spots near the center. After pollination, the five-toothed green calyx expands rapidly and encloses the growing berry completely. It gradually becomes a dryish, papery lantern with visible veins. Inside is one rounded berry, initially firm and green. When fully ripe it grows softer and may turn golden yellow, while its husk becomes yellowish and dries. The berry's color must not be inferred from the color of the husk alone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora documents Physalis crassifolia among the desert plants of Southern California, including San Diego County and the Anza-Borrego Desert. Typical habitats are dry sandy or rocky slopes, desert washes and open disturbed places where seasonal vegetation appears following winter rain. It is not an abundant wild crop of the Sacramento Valley. On warm desert sites it occurs in scattered patches, sometimes with long distances between individual plants. The plants are small, fruits are sparse and often concealed beneath leaves, and actual yields for travelers are low. Only individuals with unambiguous species identification should be considered for food use.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves emerge from the base after winter and spring rains. Flowering is usually most evident in spring, but timing depends strongly on desert rainfall, so flowers may appear later in a particularly wet year. Following pollination, the green calyx inflates while the berry inside remains immature. During the warmer months, berries gradually soften and reach their full color. Ripeness is most often associated with late spring and summer, but the berry itself—not the month—is the best guide. As the soil dries, some aboveground growth dies back, leaving papery husks. A dry pouch containing darkened, moldy material is not food.



Thickleaf groundcherry (Physalis crassifolia) — gray-green leaves and an inflated papery fruit husk

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WHAT IS EATEN WITHOUT FIRE

Only fully ripe fruit removed from its husk. Plants For A Future explicitly describes eating Physalis crassifolia berries raw and separately warns that the surrounding papery calyx is toxic. Eat only a fully ripe, soft berry without green immature areas. Before eating, remove the entire husk, inspect the berry and, if dirty, wash it with drinking water. Flavor and sweetness vary considerably in wild plants; some fruits are rather astringent.

Parts not eaten. Do not eat green unripe berries, leaves, flowers, calyces, stems or roots. Toxic glycoalkaloids occur among the nightshades, and resemblance to cultivated tomatillo does not make all plant parts edible. Even a completely ripe berry should not be gathered if the species has not been identified by its flowers and leaves. Certain other nightshades bearing round berries are dangerous; tasting is never an acceptable method of identification.

This is an occasional dessert fruit, not a reliable foundation for independent food supplies. When ripeness is doubtful, leave the berry alone.

HOW NOT TO CONFUSE IT

Cultivated tomatillo, Physalis philadelphica, generally has larger fruit and a different habitat. Physalis peruviana bears orange fruit and is more commonly associated with cultivated or naturalized plants. Wild groundcherries Physalis hederifolia and P. angulata look similar, but differ in their leaves, hairiness, flower markings and calyx shape. The most dangerous confusion involves unfamiliar Solanum nightshades with small berries and without the characteristic papery lantern. Yet even a lantern does not make a green berry edible. The entire species must be identified from flower and leaf before a fully ripe fruit is considered; stop gathering if any detail remains uncertain.

SOURCES

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Longleaf groundcherry — greenish-yellow berries from a very rare escaped plant · Physalis longifolia

Physalis longifolia

In an isolated abandoned field in Northern California, a tall groundcherry may be found with elongated leaves and pale yellowish-white flowers. As its fruits develop, inflated papery coverings form around them, enclosing greenish-yellow berries. This is longleaf groundcherry, a plant widely known in central North America but extremely rare in California records. Its ripe berries have indeed been eaten fresh and naturally dried. None of the green vegetative parts is included in the food list.



Longleaf groundcherry (Physalis longifolia) — narrow leaves and papery husks enclosing greenish-yellow ripe fruit

NY State IPM Program at Cornell University · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with underground shoots and upright, branching stems, usually 30–100 centimeters tall. Leaves are alternate and relatively narrow, elongated-ovate to lance-shaped, with pointed tips and uneven margins, often about 3–8 centimeters long. Stems generally have few hairs, or the hairs are short. Solitary, nodding flowers grow in the leaf axils, with five-part, pale yellow corollas that may have dark spots near their bases, and five stamens. After flowering, the calyx expands into a papery lantern with visible veins. Inside is a rounded berry containing many soft seeds. When fully ripe, the berry is yellow-green, not necessarily orange.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Physalis longifolia var. longifolia as nonnative in California, with about eight older records, mainly from Siskiyou County and an isolated report from Santa Barbara. The California Department of Food and Agriculture has separately examined its status as an undesirable weed. It is therefore not a common food plant of the Sacramento Valley and should not be spread deliberately through wild planting. A field occurrence can be documented in photographs, but rhizomes or seeds must not be moved to another site.

WHEN THE EDIBLE PARTS ARE AVAILABLE

On suitable moist, loose soil, perennial shoots regrow as spring temperatures rise. Flowers normally open in summer, and the papery husks and berries ripen in late summer and autumn. In the cooler northern climate the growing season may be short, and some fruits remain green. Only a fully ripe, soft berry of the characteristic yellowish-green color is suitable for raw use. It must not be confused with an early, hard, green fruit that has only just begun to form and is unsafe.

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries only. An ethnobotanical study by Kindscher and colleagues devoted specifically to Physalis longifolia describes ripe fruits eaten fresh and after natural drying. The fresh berry's taste was compared to tart strawberry with a slight fizz, and dried fruit to a combination of raisins and dried cranberries. In the field, remove the ripe berry from its husk, discard the entire lantern and use only the flesh. Leaves, stems, roots, unripe berries and calyces are unsuitable for raw food. Only clean, fully ripe fruit free of mold should be dried.

HOW NOT TO CONFUSE IT

Physalis angulata is generally an annual with more angular stems and husks, whereas longleaf groundcherry forms perennial stands and has narrower leaves. Physalis pubescens is shorter and noticeably softly hairy. Cultivated tomatillo, Physalis philadelphica, produces larger fruit that fills its husk. Many groundcherries are difficult to tell apart without mature flowers, so finding a single papery lantern does not establish that a berry is safe. The green parts of many nightshades are toxic.

SOURCES

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Cape gooseberry — golden fruit inside a papery lantern · Physalis peruviana

Physalis peruviana

In warm parts of California near old vegetable gardens, a bushy herb sometimes grows with soft, hairy leaves and small, nodding yellow flowers. After flowering, a thin dry covering inflates around each fruit, resembling a paper lantern. Inside a fully mature, light-brown husk is a round orange berry with a sweet-tart flavor. It can be eaten raw, but only after complete ripening and removal of the calyx.



Cape gooseberry (Physalis peruviana) — orange ripe berry inside an opened papery husk

Blanka Luppová · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A short-lived perennial, or an annual in cooler places, often around half a meter to one and a half meters tall. Its stems are branching, greenish and softly hairy. The alternate leaves are broadly ovate, stalked, with toothed or irregular margins. Solitary, drooping, bell-shaped flowers are yellowish with darker spots in the center. After pollination, the calyx enlarges into a thin, inflated covering with prominent lengthwise veins, enclosing the berry completely. When ripe, the fruit is smooth and round, approximately 1–2 centimeters across, golden yellow or orange, with numerous small seeds set in juicy pulp.

WHERE IT GROWS AND HOW COMMON IT IS

Cape gooseberry comes from South America. In California it is found chiefly in cultivation and in isolated escaped populations in warm regions, as documented in Calflora observations. It is most likely to appear near former vegetable gardens, orchards and other places where seeds from cultivated fruit may have been discarded. It is not a characteristic wild plant on the Sierra Nevada's exposed rocky slopes. The species is sensitive to severe frost and may persist more readily near the coast or in the south.

WHEN THE EDIBLE PARTS ARE AVAILABLE

As the warm season begins, shoots and leaves emerge, followed by nodding flowers. Fruits set in summer and ripen from late summer into autumn, particularly in warm places. The crucial signs of readiness are a dry, light-brown calyx and a completely orange, soft berry inside it. While the husk remains green and the berry firm, it must not be eaten. Some mature fruits fall to the ground while still enclosed in their intact dry husks.



Cape gooseberry (Physalis peruviana) — orange ripe berry inside an opened papery husk

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WHAT IS EATEN WITHOUT FIRE

Fully ripe berries only. Plants For A Future specifically confirms raw use of the fruit of Physalis peruviana. Remove and discard the dry calyx, and eat the orange berry fresh. Its vivid, sweet-tart flavor recalls both tomato and tropical fruit. Ripe berries can be dried naturally without heat, provided they are kept clean and mold-free. Importantly, leaves, stems, roots, green unripe fruits and the papery lantern itself are not safe food; botanical references describe their toxicity.

HOW NOT TO CONFUSE IT

Physalis crassifolia, a native desert groundcherry, is smaller and differs in its calyx and hairiness, although it also has an inflated fruit covering. Cultivated tomatillo, Physalis philadelphica, usually has a different fruit size and ripe color. Not every berry enclosed by a lantern is edible: even within Physalis, safety depends on the species and stage of ripeness. Reliable identification requires the dark-spotted flower, distinctive hairy plant, husk and ripe berry.

SOURCES

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Tomatillo — large green fruit that fills its paper husk · Physalis philadelphica

Physalis philadelphica

Near an old vegetable garden in a sunny part of California, a tall groundcherry sometimes grows with broad leaves and yellow flowers marked with dark spots inside. Later, a papery covering inflates around each developing fruit, which grows until it almost entirely fills the husk. This is tomatillo, the Mexican husk tomato, familiar from green sauces but also eaten raw. Only fully formed, healthy fruits, with the entire calyx removed, are used as food.



Tomatillo (Physalis philadelphica) — large green fruit filling a papery calyx

Genet · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual branching herb that may reach 50–120 centimeters with sufficient moisture. The stems are green, upright or spreading, often slightly hairy. The alternate leaves are broadly ovate, stalked, with large uneven teeth and pointed tips. Flowers grow singly and hang down, with five yellow petal-like lobes and contrasting purple or brownish spots at the center. After fertilization the calyx enlarges into a big, inflated lantern. The rounded mature fruit is usually 3–5 centimeters across and may be green, yellow-green or purple, depending on the cultivar. As it grows, the berry fills the husk completely and sometimes splits it, revealing its smooth skin.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Physalis philadelphica as a nonnative annual recorded in agricultural and disturbed places in California. It is grown for its edible fruits. Occasional self-sown plants arise where tomatillos were previously cultivated or where seeds arrived with discarded vegetables. In the Sacramento Valley it may be encountered in gardens, but it is not a typical inhabitant of wild mountain forests. Fields may have received pesticides, and fruits grown in private garden beds belong to their owners.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seeds germinate after the arrival of spring warmth, and the plant grows until flowers appear during summer. Fruits set in the warm season and normally reach a sufficient size from the second half of summer into autumn. Unlike many other groundcherries, tomatillos are commonly eaten mature while still green: what matters is a fully developed fruit filling its papery calyx, not necessarily a yellow skin. Very small, still-hard developing fruits and green husks are not used. A single plant may bear fruits at different stages of maturity.



Tomatillo (Physalis philadelphica) — large green fruit filling a papery calyx

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WHAT IS EATEN WITHOUT FIRE

Fully developed berries. Plants For A Future explicitly allows raw use of Physalis philadelphica fruit. Remove the entire papery calyx and wash the skin with drinking water to remove any sticky coating. The flesh is firm and tart, somewhat reminiscent of a green tomato and apple. It can be sliced into a cold salad or mashed with other vegetables without heating. For this species, green skin does not necessarily mean an unripe fruit; readiness is established by the size and condition of the fully formed berry. Leaves, stems, husks and very young fruits are not raw food.

HOW NOT TO CONFUSE IT

Physalis peruviana bears smaller, orange ripe berries and is usually more hairy. Physalis angulata has smaller fruits and often an angular husk that is less tightly filled by its berry. Physalis pubescens stays shorter, with generally small, golden-yellow ripe berries. Tomatillo is recognized by its large husk, filled nearly to its edges, although cultivated varieties are highly variable. When an isolated plant is found outside a garden, do not determine edibility solely from a lantern without seeing its flowers and overall growth habit.

SOURCES

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Hairy groundcherry — sweet-tart golden berries within a soft husk · Physalis pubescens

Physalis pubescens

At the edge of an old vegetable garden or on a warm, disturbed site in California, a low, softly hairy herb may appear with nodding yellow flowers. Later it forms small, round berries concealed within a papery calyx. Fully ripe berries are golden yellow and pleasantly sweet-tart, but green fruit and the enclosing husk are inedible. This is hairy groundcherry, an uncommon escape from cultivation or accidentally introduced plant in California.



Hairy groundcherry (Physalis pubescens) — softly hairy foliage and papery husks with ripe golden berries

Roger Culos · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual, most often 20–60 centimeters high, with upright or spreading, branching stems and short, soft hairs on younger parts. Alternate, ovate leaves have pointed tips and irregular margins that may be weakly toothed or almost smooth; they can feel slightly velvety. Solitary flowers hang on slender stalks, with five yellowish petal-like lobes, sometimes marked dark near the center. After fertilization, the calyx expands into a softly hairy papery pouch that completely surrounds the fruit and becomes light brown as it dries. Inside is a small, smooth, rounded berry, usually about 1–1.5 centimeters across, containing many soft seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Physalis pubescens as a nonnative annual or short-lived herb with several dozen observations. It is not an abundant wild berry throughout the state. Records are associated with disturbed land, former vegetable gardens, agricultural plantings and isolated sunny vacant lots. Plants may occur in the Central Valley after irrigation or rain, but not every groundcherry in the Sacramento Valley belongs to this species. Regional floras sometimes associate records under the older name Physalis pruinosa with it, and modern garden cultivars are especially variable.

WHEN THE EDIBLE PARTS ARE AVAILABLE

During warm weather, new plants grow rapidly after germination. Flowers appear in summer and fruits ripen from the second half of summer through autumn. A distinctive feature is that a fruit may fall before it has fully ripened, while its papery husk remains intact. In a clean, dry location, such a fruit may be left to finish ripening naturally without heat until the husk dries and the berry becomes evenly golden yellow. Greenish, firm berries must not be eaten.

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries only. Plants For A Future specifically confirms raw use of Physalis pubescens. Remove the berry from its dry lantern, discard the entire calyx, and eat only the soft golden flesh with its small seeds. The flavor is sweet-tart, sometimes slightly bitter, resembling a mixture of gooseberry and tomato. Fruits can be dried naturally without heat only under clean, dry conditions; mold develops readily in damp climates. The source explicitly calls the calyx toxic, and leaves and stems are not established as raw foods.

HOW NOT TO CONFUSE IT

Physalis angulata, described separately, often has a more angular inflated husk and less soft hairiness on its leaves. Physalis peruviana is usually larger, sometimes with more noticeable dark marks in the yellow flower. Physalis philadelphica is grown for much larger fruits that fill the calyx. A single golden berry is not enough to establish the species: inspect stems, hairiness, flowers and the shape of the mature husk. Unidentified nightshades can have poisonous fruits, so neither color nor taste provides a safety test.

SOURCES

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Lodgepole pine — two short needles and tiny seeds of mountain forests · Pinus contorta

Pinus contorta

At higher elevations around Lake Tahoe, tall, relatively slender pines with short, stiff needles are a familiar sight. Some grow in dense, straight stands, while others lean in the wind near moist mountain meadows. Small oval cones hang from the branches; in autumn, tiny winged seeds fall from them. This is Pinus contorta, or lodgepole pine. Its mature seed kernels can be eaten raw. However, the yield is small, and one Californian subspecies—the extremely rare Bolander pine—is protected and must not become a target for gathering.



Lodgepole pine (Pinus contorta) — paired short needles and small oval cones

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HOW TO IDENTIFY IT

The size of the tree varies with its habitat. On the coast it may be stocky and resistant to wind, while in high mountain forest it may have a straight, slender trunk 15–20 meters tall or more. Its brownish-gray bark is scaly and thinner than the deeply furrowed, reddish bark of ponderosa pine. The chief feature of a living twig is that the needles occur in pairs. They are relatively short and stiff, often bent or slightly twisted, measuring about three to eight centimeters. Cones are oval, several centimeters long, on short stalks; their scales are relatively thin and often have small projections. In some populations, cones open promptly, while in others they remain closed for a long time and may open after intense heating during wildfire; this differs among subspecies. The seeds are small, with conspicuous papery wings, thin hard shells and tiny pale kernels. Identification requires seeing paired needles and a cone on the actual tree, rather than relying on a single fallen cone on the forest floor.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Pinus contorta as native to California and distinguishes several subspecies. In high-elevation forests of the Sierra Nevada, subspecies murrayana is common, especially on moist plateaus and around the Tahoe Basin. The coastal subspecies contorta is more typical of northern coastal plant communities. The rare endemic subspecies bolanderi is known primarily from a few sites in Mendocino County and has California Rare Plant Rank 1B.2; it must not be collected. Thus, the species name alone does not establish whether collecting is lawful or appropriate. At suitable elevations, lodgepole pine can form large, dense stands, particularly after fire, but trees deep inside dark forest tend to bear fewer cones than those along open edges.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young buds and pollen-producing structures open in spring. Female cones develop for more than one season, gradually turning brown and woody. Most ordinary mountain populations produce mature seeds by late summer and autumn, although ripening is later at high, cool sites. Cones from several past years may hang on the branches at once. An old, closed, brown cone does not necessarily contain fresh seeds, especially on trees from populations whose cones remain closed for years. Only fully mature, fresh seeds separated from opened cones are suitable for raw food. Tiny kernels spoil readily in snow or wet soil, so they should not be stored without drying.



Lodgepole pine (Pinus contorta) — paired short needles and small oval cones

Steve Hurst / USDA-NRCS PLANTS Database · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seeds. Plants For A Future explicitly confirms their raw use for Pinus contorta. Remove the papery wing from a tiny seed, carefully crack its thin shell and take out the soft, pale kernel. The kernel is oily but so small that gathering a noticeable serving requires many mature seeds. It can be eaten fresh or crushed without heating. Unlike pinyon pines, lodgepole pine is not a particularly efficient food source for independent travel.

Do not harm the tree. PFAF also mentions inner bark and resinous substances, but removing bark injures a living pine, and resinous exudates should not be recommended as a regular food without separate, precise assessment. Therefore, only mature kernels are included in the public food guidance. Do not break branches, collect seeds from rare natural populations, or gather close to pesticide-treated areas.

Protection of subspecies. The California endemic Pinus contorta ssp. bolanderi has a high conservation status. It must not be collected for its nuts, even though food information concerns the species as a whole. Seeds with musty smells, signs of decay or insect damage must not be eaten.

HOW NOT TO CONFUSE IT

Ponderosa pine, Pinus ponderosa, generally has longer needles in bundles of three and larger cones. Jeffrey pine, Pinus jeffreyi, also bears three long needles and reddish bark. High-elevation whitebark pine, Pinus albicaulis, has five needles per bundle and differently formed cones and occurs at high altitudes. A young Pinus contorta can resemble other two-needle pines, so paired needles alone are insufficient: cone size and habitat must also be considered. Different pines can grow beside one another near Tahoe, and a fallen dry cone does not establish which tree stands above it. If a rare subspecies or protected land is involved, do not gather.

SOURCES

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Coulter pine — giant cones and large edible pine nuts · Pinus coulteri

Pinus coulteri

On the dry ridges of California's coastal mountains grows a pine whose cones are larger and heavier than most familiar pine cones. They resemble enormous wooden balls, with powerful, sharp hooks on every scale. This is Pinus coulteri, the Coulter pine, also called big-cone pine. Large seeds ripen inside its cones and can be eaten raw. Yet a falling cone poses such a serious danger that safe gathering matters more than the harvest itself: never stand beneath a crown carrying mature cones.



Coulter pine (Pinus coulteri) — exceptionally large cone with thick hooked scales

Didier Descouens (Archaeodontosaurus) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The tree is usually ten to twenty meters tall, though it can grow higher on favorable sites, with thick dark-gray bark and a relatively spreading crown. Its needles grow in bundles of three. Each needle is fairly long and stiff, dark green or grayish green. Young female cones develop high in the crown after spring pollination and continue growing into the following year. A mature cone measures several tens of centimeters and is extremely substantial; the exposed end of each cone scale bears a sturdy, sharp hook. Inside are large, elongated seeds with hard shells and short wings. Small male pollen cones appear in clusters during spring. Old open cones may remain attached to the tree for years after their seeds have dispersed. Thick, hooked scales, three-needle bundles and the whole tree's appearance are the key identification features.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies Pinus coulteri as native to California, with numerous records in Monterey, San Benito, Santa Clara, Riverside, Orange, Los Angeles and San Diego counties, including dry mountain slopes and ridges near the coast. The US Forest Service describes scattered small stands on rocky slopes, sometimes at elevations approaching two thousand meters. This is not a typical naturally growing tree around Sacramento; it is more likely to be encountered in the mountains of Central or Southern California, or in a botanical garden. It can grow in groups on suitable slopes, but good cone crops do not occur every year. Some trees open their cones soon after ripening, while others keep them closed for longer.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Male pollen cones usually appear in May and June, but there are no edible mature seeds then. According to the US Forest Service, the large seed cones mature in August and September of the second year after pollination. On trees whose cone scales open promptly, seeds fall between October and November. Some cones remain closed for several years, so finding an old brown cone does not guarantee a fresh seed crop. These times can shift in cooler mountain locations. The best source is fully mature, naturally opened cones and the clean seeds that have fallen from them. Even nearby, however, beware of falling heavy cones.



Coulter pine (Pinus coulteri) — exceptionally large cone with thick hooked scales

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seed kernels. Plants For A Future confirms that the seeds of Pinus coulteri are eaten raw. They are relatively large and contain oily kernels with a mild nutty flavor. Remove the short wing and crack the thick, hard shell with a suitable tool, without heating, then eat the pale interior. Discard seeds containing mold, darkened or damaged kernels, insects, or a musty smell. Fresh kernels may also be crushed without heat into a small amount of nut paste.

Do not attempt dangerous cone harvesting. Some cones weigh several kilograms and are covered with sharp hooks. Never shake the tree, knock cones down with a stick, climb beneath them, or stand under the branches in windy weather. Even a cone lying on the ground should be handled only with heavy gloves, without pressing against the hooks.

Pollen, tree resin, young green cones and bark have no separately confirmed practical raw food use in the sources for this article and are not recommended here.

HOW NOT TO CONFUSE IT

Gray pine, Pinus sabiniana, also has three needles per bundle and large cones, but generally has longer needles, a much more open crown and cone scales with smaller projections. Pinus ponderosa usually bears much smaller, lighter cones. Sugar pine, Pinus lambertiana, has five needles per bundle and long cones without Coulter pine's heavy, hooked scales. Do not identify Coulter pine from a detached souvenir cone that might have been brought from elsewhere. Examine the tree, living branches and positions of its cones. Gathering in protected forests is permitted only where the applicable rules allow it.

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Jeffrey pine — three needles, inward-curving cone prickles and raw kernels · Pinus jeffreyi

Pinus jeffreyi

In forests around Lake Tahoe, a pine stands out among tall trunks with reddish-brown bark deeply divided into plates. Its long needles grow three to a bundle, and the bark may smell of vanilla in a sunny spot. In autumn, oval cones with opening scales can be found beneath the tree. This is Pinus jeffreyi, Jeffrey pine, characteristic of California's mountain forests. Its seeds can be eaten raw after the shells have been removed, though they are much smaller than the large pinyon nuts of singleleaf pine.



Jeffrey pine (Pinus jeffreyi) — three-needle bundles and cone scales with inward-curving prickles

Willem van Bergen · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a large evergreen tree with a straight, stout trunk that often reaches several tens of meters in height. The bark is dark on young trees; on old pines it forms massive yellowish-red or brown plates separated by deep grooves. Long needles, generally fifteen to twenty-five centimeters, occur in bundles of three. Small female cones develop at the tips of spring growth, while pollen-producing male cones appear in groups near the base of new shoots. Mature seed cones are oval and about ten to twenty centimeters long, composed of thick woody scales with small points, often bent inward. They are less painful to touch than the outward-pointing prickles on ponderosa pine cones. Winged seeds develop inside the cone. When the scales open, seeds disperse and the empty cone remains on the ground. A tree's appearance changes with age, so bark, needles, cones and habitat must be considered together.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Pinus jeffreyi is native to California, with thousands of records from Placer, El Dorado, Plumas, Nevada, Siskiyou, Mono and many other mountain counties. It is especially characteristic of yellow pine and red fir forests and is one of the dominant pines of the Lake Tahoe Basin. It occurs much less naturally on the hot urban floor of the Sacramento Valley, but becomes common on a journey up into the Sierra Nevada. Jeffrey pine often tolerates serpentine soils and dry mountain slopes where other conifers struggle. The presence of mature trees does not guarantee a substantial seed crop every year: squirrels and birds depend on these seeds, and opened cones quickly lose their contents.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Fresh growth and pollination occur at the tips of branches in spring; mature seeds are not yet available then. Cones develop over two seasons. Toward the end of the second summer they turn brown, gradually open and disperse their seeds. Fresh seeds are most likely available in late summer and autumn, approximately September and October, depending on altitude and weather. Cones lying beneath snow in winter are often already empty or damaged by moisture. Only the kernel of a mature seed that has not darkened or developed moldy odors is suitable for eating.



Jeffrey pine (Pinus jeffreyi) — three-needle bundles and cone scales with inward-curving prickles

Steve Hurst / USDA-NRCS PLANTS Database · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seed kernels. Plants For A Future explicitly confirms their raw use. Seeds about a centimeter long have thin papery wings and hard outer shells. Remove the wing, carefully crack the shell with a mechanical tool, and take out the pale, oily kernel. Its flavor is nutty, sometimes slightly resinous. Because the seeds are relatively small, gathering them is labor-intensive; Jeffrey pine does not provide as convenient a food yield as a pinyon pine.

Do not confuse this with other substances produced by the tree. Historical reports of eating crystallized resinous exudates do not mean that ordinary turpentine or pine resin is a safe raw food. Resin, needles, green cones and bark are not included as foods in this article. The tough shells should not be chewed.

Safe gathering. Do not stand below heavy falling cones, shake tall trees, or break branches. Pick up clean, fresh seeds only where gathering is permitted, checking them for insects, rancidity and mold.

HOW NOT TO CONFUSE IT

Ponderosa pine, Pinus ponderosa, is particularly similar, also bearing bundles of three long needles and large plates of reddish bark. But the points of Jeffrey pine cone scales usually curve inward and feel less sharp, while those of ponderosa pine point outward and often catch on the hand. Coulter pine bears enormous cones with powerful hooks. Gray pine, Pinus sabiniana, has a much more open crown and long, bluish-gray needles. A faint vanilla scent from the bark is only an auxiliary character, never a reason to identify the tree by smell alone. Inspect living needles and a characteristic cone belonging to the same tree.

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Sugar pine — the Sierra's longest cones and edible raw seeds · Pinus lambertiana

Pinus lambertiana

High above trails in the Sierra Nevada stand powerful pines with straight, thick trunks and astonishingly long, hanging cones. Some cones look like elongated wooden garlands, and large seeds spill from their opening scales in autumn. This is Pinus lambertiana, sugar pine, one of the tallest pine species in the world. Its mature seeds can be eaten raw. Despite the name, this article is not about sugar or syrup preparation: the practical food eaten without fire is the seed kernel.



Sugar pine (Pinus lambertiana) — very long pendant cones and bundles of five needles

Richard Sniezko / US Forest Service Dorena Genetic Resource Center · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

An adult sugar pine can grow several tens of meters tall; old trees develop a very thick, dark-gray trunk. Younger crowns are more regular, while those of older trees are broad and often asymmetric. Needles grow five to a bundle and are relatively slender and softer than the needles of gray pine, generally several centimeters long. Small male pollen cones appear in spring. Female cones develop over two seasons, gradually becoming long, cylindrical, pendulous structures. Some grow thirty to fifty centimeters long or more. Their scales are relatively thin and lack the heavy, sharply curved hooks typical of Coulter pine. Winged seeds develop on the seed-bearing scales. As the mature cone dries, its scales open and the seeds fall. Empty cones from previous years may remain beneath the tree for a long time.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Pinus lambertiana as native to California, with many observations from Placer, El Dorado, Plumas, Tuolumne, Shasta, Siskiyou, Tulare and other mountain counties. For a traveler leaving Sacramento, it is a characteristic tree of the Sierra's mixed-conifer forests above the hot valley. It also occurs in some coastal mountain ranges. The tree favors well-drained slopes and deep forest soils. The US Forest Service emphasizes that good seed crops come from mature trees, while young specimens may produce almost no cones for many years. There can be many empty cones around one old pine in autumn, but rodents and birds usually gather the seeds quickly.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Pollination takes place in spring, before any fresh, mature nuts are available. Large cones develop over two years and change from green to light brown. According to the US Forest Service, seeds may begin dispersing in lower forest zones in late August, while at higher elevations dispersal generally concludes by late October. September and October are therefore the main guide for finding a fresh, mature crop. Some years have poor fruiting, and old hanging cones are no guarantee of viable seeds. Dry seeds left in damp forest litter for too long may spoil.



Sugar pine (Pinus lambertiana) — very long pendant cones and bundles of five needles

Richard Sniezko / USDA Forest Service · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seed kernels. Plants For A Future confirms their raw use. Remove the papery wing from a seed, carefully crack its firm outer shell, and eat the pale kernel inside. The flavor is slightly sweet and nutty, sometimes with a faint resinous note. Kernels can be eaten individually or mashed into an oily mixture without heating. Avoid seeds with musty odors or signs of mold.

What this method does not include. Historically, sweet substances were obtained from sugar pine, but some preparations required water evaporation and therefore cooking with fire. The species reference also cautions that concentrated sweet exudates can have a laxative effect if consumed in large amounts. Do not gather or drink them as an all-purpose syrup. Needles, pollen, bark and young green cones are not included in this raw-food selection.

Even a relatively slender, long cone falling from a tall tree can be dangerous. Never stand directly beneath mature cones, shake the branches or try to knock a cone down from above.

HOW NOT TO CONFUSE IT

Western white pine, Pinus monticola, also has five needles per bundle and can bear elongated cones. Sugar pine cones are usually much longer, and the crown and trunk of an old sugar pine are more massive. Pinus sabiniana and Pinus coulteri usually have three needles per bundle, with shorter, heavy cones bearing thicker scales. A dry cone found far from a tree is not enough for identification; someone may have carried it there. Examine a living branch with five needles, the bark and a mature cone. Do not break open rotten fallen cones in search of doubtful seeds.

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Singleleaf pinyon — nuts of the eastern mountains and one needle per bundle · Pinus monophylla

Pinus monophylla

In eastern California, small pines with dense, rounded crowns rise above dry rocky slopes. Their softly silvery needles seem to grow singly, while small cones bearing large pine nuts ripen among the branches. This is Pinus monophylla, singleleaf pinyon, one of the principal natural sources of pinyon nuts. Its mature seeds can be eaten raw without heat. For someone traveling from Sacramento, this is not a familiar tree of the valley: it belongs to the eastern mountains, juniper woodland and dry upland foothills.



Singleleaf pinyon (Pinus monophylla) — gray-green single needles and small rounded cones

Clinton Steeds · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The tree usually grows three to ten meters tall, occasionally higher, with a short, curved trunk and broad crown. Its bark becomes gray-brown and fissured with age. The most important identification feature is one fairly long, thick needle in each bundle. Most other pines bear two, three or five needles together; here even the tip of a living branch is often distinctive. The needles are gray-green, slightly curved and stiff, distinctly shorter than those of gray foothill pine. Small pollen cones develop on young branches, and female seed cones enlarge slowly over several growing seasons. A mature cone is nearly round, with thick, widely spreading scales. Inside are large, elongated seeds with relatively thin but tough brown shells; wings are almost absent. The empty cone can remain on the branch after its nuts fall.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Pinus monophylla native to California, with numerous observations in interior mountains and pinyon–juniper woodland. Typical areas include the White Mountains, Inyo and Mono counties, the eastern side of the Sierra Nevada and the desert mountains of the south. The tree does not grow everywhere around Sacramento; it requires different elevations, a drier mountain climate and the appropriate plant community. It forms open woodlands with junipers on suitable slopes. Mature trees can carry many cones in productive years, but the crop varies greatly and is quickly taken by birds and small mammals.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Pollination takes place in late spring, when small female cones do not yet bear edible nuts. Seeds develop over two growing seasons. Mature cones begin opening toward the end of summer and in autumn. Pinyon nuts are often gathered in September and October, allowing for mountain elevation and weather. The tree itself remains green year-round, but needles do not mean nuts are available. Some trees on the same slope may produce few large cones. Fallen nuts must be examined after wet weather: sprouting, mold or an unpleasant smell rule out their use.



Singleleaf pinyon (Pinus monophylla) — gray-green single needles and small rounded cones

Steve Hurst / USDA-NRCS PLANTS Database · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature pinyon kernels. Plants For A Future explicitly confirms that Pinus monophylla is eaten raw. Its oily kernel has a mild nutty flavor with a slight almond-like note. It is obtained by cracking the dry shell of a fully mature brown seed without heat. The kernel can be eaten immediately, or gently mashed and mixed with other clean foods. The useful food is the kernel, not the woody scales of the cone or the hard outer shell. Freshness matters: rancid nuts should not be eaten.

Nuts for storage. Fully ripe pinyons may keep longer inside their dry, intact shells than as exposed kernels. Store them in a cool, dry place and check for insects and mold. A reference also mentions resin as a substance for chewing, but it is not a food crop for this guide and is excluded.

Do not break live branches to obtain cones: ripening takes a long time, and the crop is needed by the animals that disperse the seeds.

HOW NOT TO CONFUSE IT

Other pinyons and related pines occur in the east. Pinus edulis normally has two needles per bundle, compared with one in Pinus monophylla, although hybrids and variations occur in some regions, so this feature is not always sufficient on its own. Gray pine, Pinus sabiniana, has three long needles and much larger cones. A single thick needle, short tree with a rounded crown, and a small, widely opened cone together offer the strongest combination of features. Do not clear the ground or damage branches for a few seeds where rare native vegetation grows.

SOURCES

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Ponderosa pine — small oily seeds beneath tall orange-brown bark · Pinus ponderosa

Pinus ponderosa

Climbing from the Sacramento Valley into the Sierra's coniferous forests, one can see enormous straight pines with orange-brown plates of bark. Their long needles occur in bundles, and oval prickly cones lie on the forest floor in autumn. This is Pinus ponderosa, ponderosa pine. Mature seeds contain edible raw kernels, though they are small and considerably harder to gather than large pinyon nuts. The useful food is neither the cone itself nor the green needles, but a healthy, fully mature seed whose kernel has been mechanically extracted.



Ponderosa pine (Pinus ponderosa) — orange plated bark, long needles and oval cones

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HOW TO IDENTIFY IT

An adult ponderosa pine often reaches twenty to thirty meters or more. On old trunks, the bark is divided into large flat yellow-orange plates separated by deep, dark furrows; younger trees have darker bark. The long, fairly stiff, green needles usually occur in bundles of three, but some populations have two. In spring, small male pollen cones and the beginnings of female cones appear on new shoots. Seed cones develop over two growing seasons and become ovoid at maturity, roughly seven to fifteen centimeters long. Their scales bear noticeable sharp projections, usually directed outward. As cones ripen, the scales open and release small, papery-winged seeds. Old empty cones remain on the ground; large woody scales are not nuts. Each seed has a firm outer shell enclosing a pale, relatively oily kernel.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Pinus ponderosa as native to California, widespread in mountain and foothill conifer forests. Many records come from the Sierra Nevada, Cascade Range and northern mountain counties, including Placer, El Dorado, Plumas and Shasta. The species is not a ubiquitous wild tree in the middle of the hot Sacramento plain; it becomes much more familiar when traveling uphill on Highway 50 or Interstate 80. It forms a substantial part of yellow pine forest, often occurring in large stands on well-lit slopes. Mature trees produce cones, but yields differ greatly from year to year. Even many cones on the ground do not guarantee good seeds remain, as animals quickly collect them.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The tree develops new needles and pollen in spring, while the female cones remain tiny. Over two years a cone enlarges, stays green for a time, then turns brown. By the end of its second summer, ripe cones begin opening their scales. Fresh seeds usually disperse in autumn, approximately September through November, sometimes later in colder mountain areas. The key food signs are a dry, mature cone and clean seeds that have fallen after it opened. A green spring cone is not yet a source of mature nuts. Seeds that spend winter in wet forest litter are especially vulnerable to mold, germination and insect damage.



Ponderosa pine (Pinus ponderosa) — orange plated bark, long needles and oval cones

Kaibab National Forest / US Forest Service · CC BY-SA 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seed kernels. Plants For A Future explicitly confirms raw use of Pinus ponderosa seeds. They are relatively small, around eight millimeters, contain oil and have a slightly resinous, nutty flavor. First remove the papery wing, then crack the dry shell with a small tool to take out the pale kernel. It can be eaten alone or mashed without heat into a nut mixture. Shells, woody cone scales and undeveloped greenish seeds are not foods.

Parts not eaten. Some historical food accounts mention inner bark, but removing it damages a living tree, and this method is unnecessary for a traveler or this catalog. Turpentine, resin and needles must not be treated as safely edible kernels merely because they come from the same pine. Young pollen cones are also not included among the documented raw foods in this article.

Gather only fresh, undamaged seeds. Darkened kernels, mold, a rancid odor or insect damage all mean they should be discarded. Observe gathering rules on protected land, and do not stand under hanging heavy cones during windy weather.

HOW NOT TO CONFUSE IT

Jeffrey pine, Pinus jeffreyi, discussed separately, closely resembles ponderosa pine: both may have three long needles and orange bark. Jeffrey pine cone scale points tend to curve inward and feel softer, whereas those of ponderosa pine generally point outward. Gray pine, Pinus sabiniana, has a much more open crown and unusually long bluish-gray needles. Sugar pine, Pinus lambertiana, bears five needles per bundle and extremely long, hanging cones. A single fallen cone is not enough: inspect a living branch, needle arrangement and bark. If the species cannot be established confidently, do not collect kernels.

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Parry pinyon — large edible nuts in mountain cones · Pinus quadrifolia

Pinus quadrifolia

In mountain woodlands near the Mexican border grows a small pine with short, dense needles and rounded cones. In late summer and autumn, its opening cones release rather large seeds. This is Parry pinyon, one of the native pinyon pine species whose nuts can be eaten raw, without roasting.



Parry pinyon (Pinus quadrifolia) — bundles of short needles and rounded seed cones

andy71 (Andy Kleinhesselink) · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Most often this is a small, multistemmed tree with an irregular crown, approximately four to ten meters high; it may be shorter on exposed slopes. Needles grow in bundles of four most commonly, but sometimes in bundles of three or five, and are several centimeters long. They are relatively stiff and gray-green or bluish green. Bark on young branches is fairly smooth, darkening and cracking as it ages. Cones are sturdy, from several centimeters to around ten centimeters long. They begin green, turn brown as they ripen and then open. Inside are large seeds with fairly hard shells, substantially larger and more useful as food than the seeds of many tall pine species.

WHERE IT GROWS AND HOW COMMON IT IS

The USDA Forest Service records natural populations of Pinus quadrifolia only in Southern California, chiefly in the mountains of eastern San Diego County, southwestern Imperial County and an isolated group in southern Riverside County. These woodlands occur on rocky slopes at elevations of about 1,200–2,500 meters. Parry pinyon is not a common pine of the Sierra Nevada, much less of Sacramento's parks. In some areas it grows alongside singleleaf pinyon, so identification requires counting the needles in a bundle.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New needles appear in spring, but they are not treated as food in this guide. Cones require time to develop and ripen; most open in late summer and autumn, often September or October. In some years, trees produce almost no crop. For food while traveling, use clean seeds that have already fallen or are found in naturally opened, fully mature cones. Green, tightly closed cones are difficult to use without fire.



Parry pinyon (Pinus quadrifolia) — bundles of short needles and rounded seed cones

andy71 (Andy Kleinhesselink) · CC BY 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Seeds from mature cones. Plants For A Future expressly states that Pinus quadrifolia seeds can be eaten raw, and the USDA confirms their importance as food among peoples of the Southwest. Each nut has a hard outer shell, which is cracked to obtain the pale inner kernel for eating fresh. Fresh seeds contain oil, so they may turn rancid during prolonged storage. Use only clean, sound kernels with no moldy odor. Needles, resin, inner bark and green cones are not included in the documented raw foods of this species.

HOW NOT TO CONFUSE IT

Singleleaf pinyon, Pinus monophylla, normally has one needle per bundle. Jeffrey pine, Pinus jeffreyi, and ponderosa pine, P. ponderosa, generally have bundles of three much longer needles. Parry pinyon is also recognized by its small stature, mountain habitat and characteristic cones. A single conifer twig can be misleading, especially in hybrid or transitional populations. Do not collect nuts in specially protected areas or damage cones on scarce trees.

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California gray pine — large foothill pine nuts and heavy spiny cones · Pinus sabiniana

Pinus sabiniana

On dry slopes around the Sacramento Valley grows an unusual pine: its open crown appears almost transparent, and long gray-green needles hang in loose clusters. Beneath the trees, massive woody cones with sharp scale tips sometimes lie on the ground. This is Pinus sabiniana, California gray pine or foothill pine. Its large seeds provide genuine seasonal food that can be eaten raw after the shells have been cracked. But the greatest hazard is not the nut: a heavy cone may fall from a considerable height.



California gray pine (Pinus sabiniana) — sparse crown and long gray-green needles with large spiny cones

Eric in SF · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Mature trees are often ten to twenty meters tall, with irregular trunks and long, widely spreading branches. The crown is relatively open, especially on old trees growing alone. Needles are long, often twenty to thirty centimeters, arranged in bundles of three. They are gray-green and sometimes bluish. The bark of old trunks is rough, dark gray and deeply fissured. Male pollen cones appear on young twigs in spring, while small female cones slowly enlarge later. A mature large cone can reach about fifteen to thirty centimeters and bears broad, thick scales with sturdy, curved points. The seeds are large and dark, with firm shells and short wings. An old, empty, opened cone can remain hanging or on the ground for a long time, but no crop remains inside it. Three long needles, a sparse crown and a powerful cone together make up the reliable identification pattern.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Pinus sabiniana is native to California, with many records from Butte, El Dorado, Placer, Amador, Calaveras, Yuba and slopes of the Coast Ranges. For Sacramento, it is a particularly nearby and practically relevant species: the tree grows in foothill oak woodland, on sunny rocky slopes and in open woodland, whereas not every part of the urban valley floor supports natural regeneration. The US Forest Service describes isolated trees and small groups on dry slopes where summer rain is scarce. In a productive year many nuts may occur beneath an old pine, but birds and squirrels gather them actively, and collection is restricted in protected areas.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Small spring cones are not ready-to-eat food. According to the US Forest Service, large seed cones mature in September and October, and the seeds may fall from October through February. Thus the most obvious food season begins in autumn as cones turn brown and open. Seeds released from opened cones may be found on the ground, but they quickly become wet after rain or are taken by animals. Crops differ among trees, and productive years alternate with poor ones. An old cone still hanging on a branch in spring does not establish that its seeds remain inside.



California gray pine (Pinus sabiniana) — sparse crown and long gray-green needles with large spiny cones

Awinch1001 · CC BY 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature, shelled seed kernels. Plants For A Future directly confirms the raw use of Pinus sabiniana seeds. They are fairly large and oily, with a slightly sweet, nutty flavor and a faint resinous note. To obtain the kernel without fire, find a fully mature seed, carefully break its hard shell with a mechanical tool, and remove the pale inner portion. Do not chew the shell. The kernel can be eaten alone or mashed cold. Discard darkened, musty or rancid kernels.

Raw seeds are not the same as green cones. Some historical accounts describe young cones being cooked with fire; that does not make them food eaten cold. The source also mentions inner bark as emergency food, but removing it damages the tree and is not recommended here. Nor are needles presented as raw food in this article.

Do not stand beneath heavy cones or try to knock them down with a stick: a substantial, spiny cone can injure the head and hands. Choosing mature seeds that have already fallen on clean ground is safer.

HOW NOT TO CONFUSE IT

Coulter pine, Pinus coulteri, bears even more massive cones, but its needles are generally shorter and also grow in bundles of three; it occurs principally in Southern California's coastal mountains. Sugar pine, Pinus lambertiana, has five needles per bundle and long, elongated cones rather than rounded heavy ones. Ponderosa pine, Pinus ponderosa, usually has three needles but a denser crown and much smaller cones. One cone on the ground is insufficient: inspect living branches, needle bundles and the whole tree. Fresh resin spots and sharp points on cone scales can hurt the skin, so hand protection matters even when picking up empty cones.

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Buck's-horn plantain — deeply divided leaves of the salty coast · Plantago coronopus

Plantago coronopus

On a coastal trail in California, a low rosette of unusually narrow leaves may appear. Each leaf resembles a small pair of antlers, deeply divided into pointed side lobes. Later, slender flower stalks rise above the rosette, each bearing a narrow green spike. This is Plantago coronopus, buck's-horn plantain, a relative of common broadleaf plantain that is much more closely associated with saline coastal habitats. Young tender leaves are eaten raw in mixed salads, a use supported by both botanical references and the Italian tradition of mixed wild greens.



Buck's-horn plantain (Plantago coronopus) — narrow deeply lobed rosette leaves and slender spikes

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HOW TO IDENTIFY IT

The plant is usually an annual or short-lived perennial with a dense, low basal rosette. Its leaves are narrow, elongated and deeply lobed, with several pairs of thin lateral teeth that give each blade the appearance of a horned ribbon. They may be somewhat hairy or smooth, green or slightly bluish. Size varies greatly, from a few centimeters on a trampled shore to much larger leaves on damp, fertile soil. Upright, leafless flower stalks emerge from the center of the rosette. At their tips are dense, elongated spikes of numerous tiny flowers lacking showy petals. During flowering, pale anthers on long filaments can be seen. Small, dry seeds develop after ripening. Strong lengthwise veins in the leaves resemble those of other plantains, but the deep lateral divisions are the principal distinguishing feature.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Plantago coronopus as nonnative in California, with over a thousand observations, chiefly in coastal strand, coastal salt marsh and other shoreline communities. It grows on sandy and compacted soils, beside coastal roads, at the margins of seaside meadows and in mildly saline ground. Scattered introduced occurrences are possible in the Sacramento Valley, but this is not an ordinary plant of dry forest trails. Along the shore it may form small groups among pickleweed and other salt-tolerant species. Such areas may receive contaminated runoff and may be subject to the rules of nature reserves.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the mild coastal climate, seedlings and new growth appear after autumn and winter rains. Tender leaves are particularly accessible in cool months and early spring. Flower stalks usually develop in late spring and summer. As the spikes ripen, lower leaves may grow coarser and more fibrous. In hot, dry places, green growth diminishes considerably. On cool, moist coastal soil, young rosettes may stay tender for longer. For raw food, select soft leaves before the mature fruiting stage and before coarse fibers develop.



Buck's-horn plantain (Plantago coronopus) — narrow deeply lobed rosette leaves and slender spikes

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms raw consumption of Plantago coronopus and describes it as one of the more pleasant-tasting members of the genus. The leaves are slightly bitter and have a characteristic firm texture; they work well mixed with softer fresh greens. In Italy, it is known as an ingredient in the mixed salad called misticanza, which requires only chopping fresh leaves, not heating them.

Only the tender leaf stage. The lengthwise veins of older leaves become tough. Some culinary methods suggest briefly blanching the plant, but that is not a method included in this catalog. Flower spikes, mature seeds and roots are not recommended here as separate raw foods, because the species-specific source chiefly supports young leaves.

Do not gather raw greens from saline marshes of unknown water quality: washing cannot remove contaminants already absorbed by the plant's tissues.

HOW NOT TO CONFUSE IT

Plantago lanceolata also has narrow leaves, but they are mainly entire, with parallel veins, whereas buck's-horn plantain leaves are deeply lobed. Plantago major has broad oval leaves and noticeably longer flower spikes. On the coast, some plants in the daisy family also have finely divided leaves, but their flower heads differ from the characteristic plantain spike. If a plant has been mown down, wait for a new inflorescence on a neighboring specimen for confident identification. A leaf resembling antlers is not by itself enough reason to taste an unknown herb.

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Ribwort plantain — narrow leaves and dark flower spikes · Plantago lanceolata

Plantago lanceolata

Among short grasses beside Californian paths, a rosette of narrow green leaves is often visible. Thin leafless stalks rise from its center, each tipped by a short dark flower spike. This is Plantago lanceolata, ribwort or narrowleaf plantain. Unlike broadleaf plantain, its leaves are not wide and oval. Young foliage is known to be eaten raw, but older leaves become fibrous and tough.



Ribwort plantain (Plantago lanceolata) — lance-shaped basal leaves and short dark flower spikes

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial herb forms a basal rosette. Its leaves are long, narrow and lance-shaped, usually only a few centimeters wide and markedly longer than they are broad. Three to five strong lengthwise veins run from the base to the tip. The blade narrows gradually into a short stalk. Young leaves may be hairy, with pale hairs visible near the base. An important character is the absence of an ordinary leafy stem: the leaves emerge almost directly from the ground. Thin, stiff flower stalks grow from the rosette, bearing small oval or cylindrical spikes. During flowering, pale stamens extend from them, making the dark head appear surrounded by a light-colored ring. Small dry seed capsules develop later. The root system has a pronounced taproot that allows the plant to endure a period of drought.

WHERE IT GROWS AND HOW COMMON IT IS

UC Integrated Pest Management identifies Plantago lanceolata as one of California's two most common weedy plantains. It grows in gardens, along field edges and paths, in pastures and on lawns. It favors open sites with disturbed soil; even a regularly mowed lawn can retain its low rosettes. This species is quite common in the Sacramento Valley following rains and on irrigated ground. Without water, leaves may become short and coarse; it is considerably less frequent in deserts and cold high-elevation areas. The abundance of plants beside roads does not make them appropriate for food: their rosettes sit close to soil and are easily contaminated.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In lowlands, tender new leaves appear most readily with the return of autumn rains. Through winter and early spring, the rosette produces soft growth, especially in moderate temperatures. Flower stalks become more common by May. UC IPM records plantain flowering from about May through August or September, with individual spikes persisting longer in mild areas. Leaves may not disappear in summer, but they gradually become more fibrous. New rains may trigger another flush of young leaves. Dry, mature spikes remain after the most useful season for fresh foliage has passed.



Ribwort plantain (Plantago lanceolata) — lance-shaped basal leaves and short dark flower spikes

Alex Abair · CC BY 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Tender young leaves. Plants For A Future confirms that leaves of Plantago lanceolata are eaten raw. Their taste is mildly bitter and grassy, and young leaves are far more pleasant than mature ones. They can be added in modest amounts to mixtures of fresh greens. Even young leaves have strong lengthwise fibers; it is better to leave out the coarse central portion when preparing them raw. On an older plant, a large leaf can be so fibrous that its technical edibility has little practical value.

Spikes, flower stalks, roots and mature seeds are mentioned here chiefly for identification. The species-specific reference principally describes seeds after cooking, so they should not be presented as a separate raw food without evidence. There is no reason to dig up the plant for a handful of young leaves.

HOW NOT TO CONFUSE IT

Broadleaf plantain, Plantago major, has broad, oval leaves and a long cylindrical spike; ribwort plantain has elongated leaves and a relatively short spike. Some grasses also have narrow leaves with parallel veins, but their leaves grow alternately on stems and their inflorescences are entirely different. A single leaf without its rosette and flowering stalk is insufficient for reliable identification. Avoid collecting on lawns that might have received herbicides, beside motor roads and in animal exercise areas. Narrowleaf plantain can grow on heavy-metal-contaminated soil, so foliage that looks clean is not necessarily chemically clean.

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Broadleaf plantain — a green rosette with strong veins and edible seeds · Plantago major

Plantago major

On a trampled path, beside an irrigated lawn or between vegetable beds, an almost flat rosette of broad leaves is a common sight. Thin stalks rise above it and end in green flower spikes. This is broadleaf plantain, a plant that persists for years even where the soil has been compacted. Its young leaves are eaten, while tiny mature seeds can be gathered later in the season.



Broadleaf plantain (Plantago major) — broad oval rosette leaves with strong lengthwise veins

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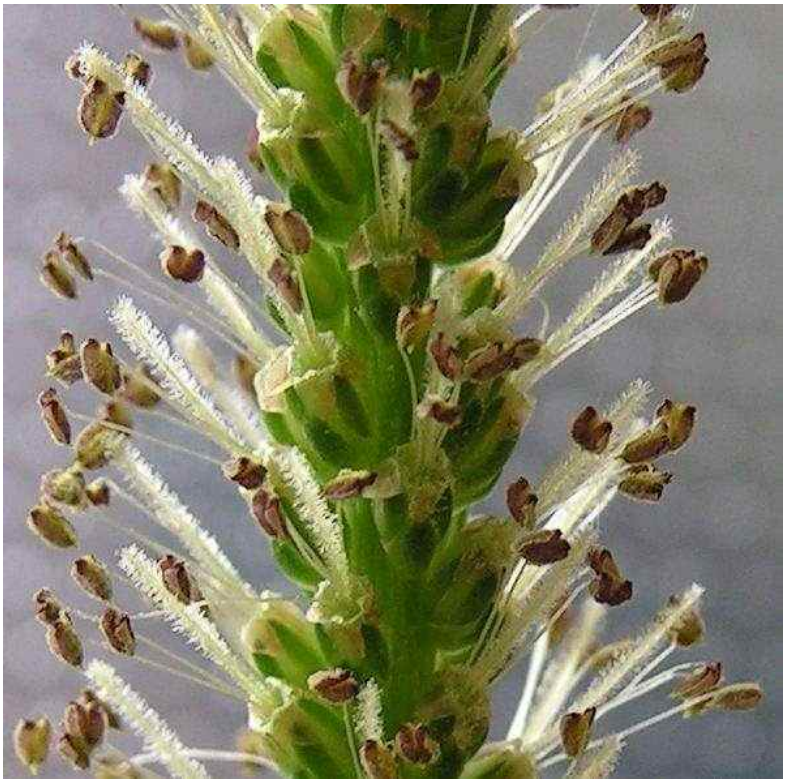
HOW TO IDENTIFY IT

Broadleaf plantain is a perennial herb. There is almost no conspicuous aboveground stem bearing alternate leaves. Instead, the leaves emerge directly from a short basal crown in a rosette. Each leaf is generally broad, oval or egg-shaped, about five to eighteen centimeters long.

The principal distinguishing feature is five to seven prominent veins running from the base toward the tip. The veins are almost parallel and are especially obvious beneath the leaf. They are tough: when a leaf is torn, thin fibrous strands may pull away. The leaf blade has an entire or gently wavy margin without deep teeth. Young leaves are soft and tender, while older ones become firmer and more fibrous.

Long, leafless flowering stalks rise from the center of the rosette. Each bears an elongated, dense spike of numerous tiny, greenish flowers. Individual flowers are inconspicuous, though small pale stamens sometimes project from them. Following flowering, the spike gradually darkens as numerous brown seeds ripen in small capsules.



Broadleaf plantain (Plantago major) — broad oval rosette leaves with strong lengthwise veins

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WHERE IT GROWS AND HOW COMMON IT IS

Plantago major originated in Eurasia. It is now widespread in California, particularly where people regularly disturb the ground. It is found in urban parks, gardens, irrigated lawns, vegetable plots, roadsides and footpaths.

The plant tolerates trampling well. Its rosette often remains nearly level with the soil, so people walk past or even step on it. In damp, moderately shaded places, it can be extremely common. It is far less frequent in dry deserts without water.

In the Sacramento Valley, broadleaf plantain is easy to notice in irrigated yards and near paths. But not all roadside greens are suitable for food: plants at the edge of roads and on treated lawns may be contaminated.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The rosette's leaves can persist for much of the year in mild climates. In lower areas of California, tender new leaves become particularly noticeable after rains and during spring growth. On continuously irrigated sites, new growth can continue into summer.

According to UC Integrated Pest Management, flowering in California usually occurs from April through September. Seeds ripen along the spikes as flowering ends, mainly in summer and early autumn. Old spikes dry out, and mature leaves become tougher by that time.

WHAT IS EATEN WITHOUT FIRE

Young leaves. They are eaten raw while still soft and before coarse fibers develop. North Carolina State University Extension explicitly identifies broadleaf plantain as edible greens and states that the young leaves are suitable for eating raw. Their flavor is mildly grassy. As they age, the veins become stronger and leaves are less practical to eat without cooking.

Mature seeds. Small brownish seeds occur along the dry spike. They are edible too; university references list them as a separate food part of Plantago major. The seeds may be separated from dry capsules and used without heating, in small quantities. Excessive quantities can have a laxative effect for some people.

Plantain is easy to recognize by its long flower stalks, but the stalks themselves are not the same food as tender leaves. For food use, separate the mature seeds rather than consuming the whole tough stalk.

HOW NOT TO CONFUSE IT

Narrowleaf plantain, Plantago lanceolata, also grows in California. Its leaves are longer and narrower, with pointed tips, and its flower head is short and compact. Plantago major has broader leaves and a flowering or fruiting spike extending along a substantial portion of the upper stalk.

Other plants can form low rosettes, but the prominent, nearly parallel veins of a broad leaf together with leafless flower stalks help distinguish broadleaf plantain. Until flowers appear, examine the entire rosette rather than a single leaf.

As seeds ripen, the spike changes from green to brown, but the leaves remain identifiable by their strong arching veins. UC IPM describes Plantago major as a widespread Californian perennial, with exceptions for deserts and certain high-elevation areas. NCSU Extension explicitly confirms young leaves eaten raw; the seeds are also identified as edible, but should not be promoted for large portions, especially for people with low blood pressure.

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Sea plantain — tender narrow greens on saline ocean shores · Plantago maritima

Plantago maritima

On California's Pacific coast, where salt water sometimes wets low meadows, a small perennial grows with a dense rosette of narrow green leaves. Its inconspicuous flowers rise on leafless stems in short spikes. This is Plantago maritima, sea plantain, also known as goose tongue. Young leaves can be eaten raw. The plant has no large, showy flower, so it is easy to overlook among salt-tolerant grasses. For raw consumption, the principal risk is dirt and polluted shoreline water.



Sea plantain (Plantago maritima) — narrow fleshy basal leaves and short cylindrical flower spikes

Cwmhiraeth · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Sea plantain is a perennial herb with a sturdy base and a basal rosette. The leaves are narrow and linear, sometimes slightly fleshy, with smooth margins or very fine, almost imperceptible teeth. They are generally a few millimeters wide and may reach several tens of centimeters in length. Unlike broadleaf plantain, this species has no broad, oval leaf blades. Thin leafless flower stalks emerge from the rosette and bear dense, cylindrical spikes composed of many tiny greenish flowers. During flowering, pale anthers extend on slender filaments. Later, small, dry seed capsules form. Mature leaves have the characteristic longitudinal veins of plantains, although their narrow shape can make the surface look almost uniform. The plant often grows low on wet, saline ground; on drier, raised ground it becomes shorter and tougher. Identification should include both the rosette of narrow, undivided leaves and a characteristic plantain flower spike.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Plantago maritima is native to California and places it in coastal strand, coastal salt marsh and wetland–riparian communities. Records are more numerous in Marin, Mendocino, Humboldt, San Mateo, Santa Cruz, Sonoma and other coastal counties. Freshwater lawns in the Sacramento Valley are not its typical natural habitat. On the coast, the species may form small groups in low salt meadows, sometimes beside pickleweed. Many such places, however, are protected as habitats for birds and other wildlife. Green leaves beside a tidal marsh do not mean that the ground is hygienically safe for gathering raw food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves can persist for much of the year on the mild coast, but especially tender new growth follows winter and spring rains. Flower spikes usually develop in late spring and summer. Plants For A Future lists flowering from June to August and seed ripening from August to September. In California, exact timing may shift with fog and salty storms. Older leaves grow coarse and fibrous in summer, while the freshest rosettes on moist ground remain tender longer. The young leaf stage is the principal food opportunity; a mature spike is useful mainly for confirming the species.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms raw use of Plantago maritima and notes that this species has relatively little of the tough fiber found in other plantains. The leaves are slightly salty, sometimes with a mild nutty note. A few young blades can be finely chopped into a mixture of cold greens. Older leaves become too fibrous.

Small seeds. The species account lists seeds as eaten raw or cooked. They are extremely small and laborious to gather, but once fully ripe they can be removed carefully from clean, dry spikes and used as a modest addition to food. Crushing them in a cold mortar requires no fire. Large mouthfuls of dry mucilaginous seed material can swell on contact with water, so it is better to mix seeds with adequate drinking water rather than eat handfuls dry.

The water problem. Raw leaves gathered from polluted salt marshes, downstream of drainage ditches or places where livestock congregate should not be considered safe. Rinsing with drinking water removes some surface dirt but does not guarantee freedom from absorbed pollutants or pathogenic organisms. Rules governing protected coastal wetlands prohibit collection in designated areas.

HOW NOT TO CONFUSE IT

Plantago coronopus, buck's-horn plantain, described earlier, has deeply lobed narrow leaves resembling small antlers. The leaves of Plantago maritima are generally entire, fleshy and long. Plantago lanceolata has a broader blade with conspicuous arching veins and a characteristic short, dark spike. Many narrow-leaved grasses and rushes grow alongside these species in salt meadows, but their inflorescences and leaf bases differ. Narrow leaves on salty ground alone cannot establish a safe identification. Find a plantain flower stalk emerging from the same plant.

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Prostrate knotweed — low jointed shoots close to the ground · Polygonum aviculare

Polygonum aviculare

Between paving stones, at the edge of a garden and on trampled ground, a thin green herb often spreads out with many little leaves. Its shoots radiate outward, and nearly invisible whitish-pink flowers hide in the leaf axils. This is prostrate knotweed, also known as common knotgrass. While its new growth is tender, the young leaves and shoots can be eaten raw.



Prostrate knotweed (Polygonum aviculare) — tiny alternate leaves and jointed creeping shoots

Dalgial · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual plant with thin, strongly branching stems ranging from about ten centimeters to half a meter long. Some stems creep over the ground, while their tips may rise slightly. The small, simple, alternate leaves are elliptical or lance-shaped, with smooth margins and a conspicuous midvein. Around the stem at every node is a thin, translucent tube, called an ochrea, formed by fused stipules. This is an important feature of the knotweed family. The tiny flowers occur singly or in small clusters in the leaf axils; they are greenish white, often edged with pink. After flowering, minute, three-angled, brown nutlets develop.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Polygonum aviculare as nonnative and records it in many parts of California, including the Sacramento Valley, the coast, foothills and other disturbed areas. Its low growth allows it to withstand trampling, but this does not make urban walkways suitable sources of food. Do not gather plants for raw consumption beside parking lots, treated lawns, roads or places where animals are walked. Choose clean ground where the species can be identified unambiguously.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In mild climates, seeds may germinate in winter or spring after rain. Young, tender shoots usually appear from late winter through spring and may also grow during summer on irrigated ground. Tiny flowers open through spring and summer, with seeds gradually ripening in the latter part of the season. Once the stems become fibrous, they are no longer suitable for eating fresh.



Prostrate knotweed (Polygonum aviculare) — tiny alternate leaves and jointed creeping shoots

Mark Marathon · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves and very tender shoot tips. Plants For A Future explicitly lists raw use of the young leaves and plants of Polygonum aviculare. The greens have a relatively neutral, grassy flavor, sometimes slightly astringent. For cold food, select soft new leaves, remove them from tough parts of the stem and use modest portions. Seeds are also described as edible raw, but they are very small and difficult to collect in useful quantities; they are a secondary food for a field diet. Because the plant contains tannins and may contain oxalates, large servings are unnecessary.

HOW NOT TO CONFUSE IT

Persicaria maculosa and other knotweeds often grow more upright, have larger leaves and bear pink flowers in spikes. The flowers of Polygonum aviculare are tucked directly into the axils of its small leaves, and its stems frequently form a dense mat. Some prostrate amaranths also grow along the ground but lack the membranous ochreae at the nodes. Identification should be based on the joint structures and the little flower clusters, not just on the plant's low habit.

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Common purslane — succulent summer leaves, shoots, flowers and seeds · Portulaca oleracea

Portulaca oleracea

During summer in irrigated parts of California, reddish, fleshy stems often creep across the soil, covered with small, rounded leaves. Tiny yellow flowers open among them in sunshine. Common purslane grows rapidly, sometimes forming an almost continuous mat, and provides several edible parts at once: leaves, stems, flowers and very small seeds.



Common purslane (Portulaca oleracea) — succulent rounded leaves and reddish creeping stems

Ethel Aardvark · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low-growing annual herb. Numerous smooth, succulent stems radiate from one base, often reddish brown in color. They spread along the ground or rise slightly. Individual shoots may be several tens of centimeters long, sometimes approaching a meter.

The leaves are small, generally from half a centimeter to three centimeters long, thick, smooth and shiny, resembling little spoons. Their stalks are barely visible. Leaves may occur in pairs or alternately on the stem, particularly closer to its base.

Flowers develop near the shoot tips and in the leaf axils. Their five bright-yellow petals usually open only in strong sunlight. After flowering, a small seed capsule forms. Its upper portion opens like a little lid, releasing numerous extremely fine, dark seeds.



Common purslane (Portulaca oleracea) — succulent rounded leaves and reddish creeping stems

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Purslane occurs throughout most of California, chiefly in disturbed or cultivated soil. It is abundant in vegetable gardens, ornamental gardens, irrigated fields, near lawns, in vineyards and on warm roadsides. In the Sacramento Valley, summer growth can be especially conspicuous: when an area receives regular moisture, separate plants soon spread until their leaves nearly meet.

Sun and warmth suit purslane particularly well. It is much less common in the dense shade of cool forests. The fleshy stems and leaves help it survive dry periods, although active growth is usually strongest in warm, moist soil.

Purslane originated in the Old World and is now eaten as a green in many countries. In India, the Middle East, the Mediterranean and Mexico, it is part of familiar plant-based dishes, including fresh salads.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In Southern California, purslane may germinate in late winter or early spring after warming. In the Central Valley, its vigorous growth is more typical from late spring, particularly June through September. Tender leaves and young stems develop throughout active growth. Flowering usually continues from May to September, with considerable differences by region and year.

Seeds ripen after flowering, beginning in summer. In warmer places, one plant can simultaneously produce new leaves, open flowers and shed mature seeds. Frost ends its annual life cycle.

WHAT IS EATEN WITHOUT FIRE

Leaves. Young succulent leaves are eaten raw, either alone or in a green salad. Their flavor is somewhat sour and slightly salty. It can vary during the day: morning greens are sometimes noticeably more acidic.

Young stems. While a green or reddish stem is still soft and juicy, it can also be eaten raw. Its texture resembles crisp greens rather than a woody twig.

Flowers and buds. The yellow flowers and tender buds are edible too. North Carolina State University Extension explicitly lists raw flowers along with leaves and stems. These are a small addition during flowering, not a separate large harvest.

Mature seeds. They can be eaten raw. Because they are tiny, they are gathered after the capsules ripen and sometimes ground into powder. Historical and botanical references describe purslane seeds used as food in different regions of the world; Plants For A Future specifically notes their raw use.

Purslane contains soluble oxalates. North Carolina State University Extension warns of possible harm from eating large quantities. It is sensible to use purslane moderately in a raw salad, especially for anyone who needs to limit oxalates. Do not gather it from herbicide-treated lawns, industrial areas or roadside soil.

HOW NOT TO CONFUSE IT

Spotted spurge, Euphorbia maculata, grows on similarly dry lawns. It too spreads with reddish shoots, but its leaves are much thinner, often with a dark spot, and broken stems release white, milky sap that irritates the skin. True purslane has smooth, juicy leaves and stems and no such white sap.

Purslane can readily be mistaken for prostrate spurges growing on the soil, especially Euphorbia maculata. Spurge leaves are visibly thinner, its stems may be hairy, and white, irritating latex emerges when a stem breaks. Purslane has smooth, fleshy foliage and stems, and its sap is not milky white. UC Integrated Pest Management warns that spurges can irritate the skin and digestive tract. Identification must rest on several characteristics together, never on tasting a plant to see what it is.

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American plum — sweet-tart summer fruit of thorny thickets · Prunus americana

Prunus americana

At an old site, a small tree may be found that is covered in white flowers during spring, even before its leaves have completely opened. In summer, small, round yellow and red plums ripen on short branches. American plum is native to central and eastern North America but is recorded only as an extremely uncommon introduced tree in California. The ripe flesh of its fruits is edible without heating.



American plum (Prunus americana) — white blossoms and small yellow-to-red ripe plums

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is usually a large shrub or small tree, between two and six meters tall, often forming thickets through root suckers. Short, pointed shoots resembling thorns sometimes appear on its branches. Older trunks have irregular gray-brown bark. The alternate leaves are elliptical or oval, several centimeters long, with pointed tips and conspicuous teeth; the surface is somewhat rough. Five-petaled white flowers appear singly or in groups of two or three along short twigs, often before the foliage has fully developed. Fruits are round, usually two to three centimeters across, golden yellow, red, or yellow with a red blush, with a firm, tart skin. Each contains one large stone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Prunus americana as nonnative and has only about five observations from the entire state. It should therefore not be sought as a common fruit shrub of the Sierra Nevada or the Sacramento plain. More realistic places to encounter it are old plantings, introduction gardens and occasional seedlings near former homesteads. Natural Californian plant communities have other Prunus species, including the native plum Prunus subcordata, discussed separately. Fruit from a surviving old orchard must not be gathered without the owner's permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flowers open in spring, generally March or April when weather permits. The fruits grow after flowering. In California, the small plums may ripen from late summer, sometimes sooner in a warm location. Ripeness is shown by the characteristic color of the individual tree, softer flesh and a slightly sweet aroma. Unripe green fruit remains firm and very sour. Fruits at different stages of ripeness can occur on the same tree.

WHAT IS EATEN WITHOUT FIRE

Ripe fruit flesh. Raw consumption of Prunus americana fruit is specifically documented. Its flesh is juicy, from sweet-tart to intensely sour, and in some forms the skin is firm and astringent. A ripe plum can be eaten fresh after completely removing the single stone. When mashing the flesh without heat, remove stones first rather than crushing them. Ripe fruits may be dried without fire if kept clean and free of mold. Do not eat the seed inside the stone: Calflora specifically warns of dangers from seeds, leaves and stems.

HOW NOT TO CONFUSE IT

Native Prunus subcordata differs in the combination of its leaf shape, ripe plum color, natural habitat and shoot structure. The introduced cherry plum, Prunus cerasifera, can have very similar fruits and blossoms, especially in garden hybrids. One small red plum is insufficient to identify a tree reliably; examine leaves and flowers and consider where it grows. For every stone-fruit species, the essential rule remains the same: edible flesh does not mean the kernel within the stone is edible.

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Apricot — golden fruit from old orchards · Prunus armeniaca

Prunus armeniaca

At an abandoned farm or near an old homestead, a tree may be covered in delicate whitish-pink blossoms in spring before its foliage thickens. By early summer, round orange-yellow fruits with fine velvety hairs ripen on its branches. This is the common apricot, a tree brought to California for its crop. Fully ripe, juicy flesh is edible without heating; the stone and everything inside it are excluded from food.



Common apricot (Prunus armeniaca) — soft orange-yellow ripe fruits on a leafy branch

Elena Chochkova (Eola) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree usually three to eight meters tall, with a broad crown and gray-brown bark. Young shoots are reddish brown and sometimes glossy. Leaves are alternate, rounded or broadly ovate, with heart-shaped or slightly wedge-shaped bases, short pointed tips and finely toothed edges. Flowers grow singly or in pairs on short branches; each has five white or pale-pink petals and numerous stamens. Fruits are round or slightly egg-shaped, usually three to six centimeters across, with a longitudinal seam and light fuzz on the skin. Their flesh is golden or orange, surrounding a single flattened, hard stone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Prunus armeniaca as nonnative, with approximately thirty observations outside normal cultivation. Apricots should therefore be sought principally near old orchards, former farms, homesteads and rural buildings, rather than treated as a typical oak woodland tree. They are well known in California's Central Valley fruit-growing districts, including around Sacramento, but most trees are on private land. Do not gather fresh fruit in orchards with unknown pesticide treatment or where picking is not authorized.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Blossoms open in warm valleys in late winter or early spring. After fruit set, apricots grow through spring. Early cultivars may ripen from late May, with the main crop in June and July; cooler areas ripen later. A fully ripe apricot becomes fragrant, the skin changes almost entirely from greenish to yellow or orange, and its flesh yields more easily to gentle pressure. Firm green fruits are not suitable for eating fresh.



Common apricot (Prunus armeniaca) — soft orange-yellow ripe fruits on a leafy branch

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WHAT IS EATEN WITHOUT FIRE

Only fully ripe flesh. Eat it directly from the tree, removing the skin if desired. Split the fruit along its natural seam and remove the stone completely. The flesh is sweet and juicy, sometimes with noticeable tartness. Clean ripe halves can be dried naturally during dry weather on insect-protected mesh, without heat or mold. Calflora separately warns against eating apricot seeds, leaves and stems. The kernels inside the stones are especially dangerous: they may contain amygdalin, from which cyanide can form. Never crack or grind the stones for food.

HOW NOT TO CONFUSE IT

Peach, Prunus persica, typically has long, narrow leaves and larger, more heavily fuzzy fruits; apricot has a rounder leaf blade. Cherry plum, Prunus cerasifera, can have similar leaves, but fruiting time, stone form and fruit hairiness differ. Cultivars and hybrid fruit trees vary considerably, so an apricot should not be identified from flesh color alone. Examine flowers, leaves and mature fruit together. Edible apricot flesh never implies that its seed is safe.

SOURCES

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Sweet cherry — juicy summer fruit on escaped trees · Prunus avium

Prunus avium

At an old property or in a hedgerow, a tall tree sometimes grows with smooth, grayish bark and glossy, toothed leaves. Its branches carry white blossoms in spring, and by summer sweet, long-stalked drupes hang among the foliage. This is sweet cherry, a familiar orchard tree that sometimes occurs outside cultivated plantings.



Sweet cherry (Prunus avium) — glossy toothed leaves and long-stalked ripe cherries

Orchivard · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous tree often grows taller than ten meters. Bark on young trunks is smooth with horizontal lenticels, later darkening and cracking. Leaves are simple, alternate and elongated, with pointed tips and fairly large marginal teeth. Small glands can often be seen near the base of a leaf blade or on its stalk. The five-petaled white flowers generally occur in clusters of several on short shoots. The fruits are round or heart-shaped, borne on long stalks, and contain one hard stone.

WHERE IT GROWS AND HOW COMMON IT IS

Prunus avium is an introduced European fruit-tree species. Calflora records only isolated escaped occurrences in California; most trees near towns were planted by people. Old trees and seedlings can be found in the Sacramento Valley and foothills, but there is no basis for calling sweet cherry a common wild forest species in California.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering occurs in the cool spring, sometimes beginning in late winter in warm locations. Fruits ripen in late spring and early summer, most often from May through July. Timing depends on the cultivar, elevation and temperature. Ripe fruits may be yellow, red or nearly black: softness and the characteristics of the particular tree should also be considered.

WHAT IS EATEN WITHOUT FIRE

Ripe fruit flesh. A fully ripe sweet cherry is eaten fresh without cooking. Its flesh is juicy and usually sweet, surrounding a single stone. Fruit may be dried naturally if it can be kept clean and protected against fermentation or mold. Leaves, fruit stalks, branches and seeds are not suitable raw foods. Above all, never crack or grind the stones.

HOW NOT TO CONFUSE IT

California also has other Prunus species, including escaped cherry plum, sour cherry and native wild cherries. Relevant differences include the length of the fruit stalks, arrangement of flower clusters, glands on the petioles, and the size and color of ripe fruit. Do not assume that every cherry-like tree is sweet cherry. Calflora separately warns that this species' seeds, leaves and stems should not be eaten.

SOURCES

- https://www.calflora.org/app/taxon?crn=9204
- https://pfaf.org/user/Plant.aspx?LatinName=Prunus+avium

Cherry plum — white spring blossoms and small summer plums · Prunus cerasifera

Prunus cerasifera

In early spring, some California trees become covered in white blossoms before their leaves are fully open. By summer, small, round yellow or red plums develop on their branches. This is Prunus cerasifera, cherry plum, an introduced tree frequently grown for ornament but also found outside gardens. The flesh of fully ripe fruit is edible without fire, while stones, leaves and young twigs may contain compounds that release cyanide.



Cherry plum (Prunus cerasifera) — small smooth yellow and red plums on a tree

FotoosVanRobin · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Cherry plum is a deciduous tree usually three to seven meters tall, sometimes taller. Its crown is rounded or broadly spreading. Some forms have dark-red or purple foliage, while others have ordinary green leaves. The bark is gray-brown; young twigs are slender and sometimes form short lateral shoots.

The leaves are alternate, oval or ovate, with pointed tips and finely toothed margins. They are noticeably smaller than the broad leaves of a fig tree. Flowers appear very early, generally singly or a few together on short shoots. Each has five rounded, white petals and numerous yellow stamens. In ornamental purple-leaved cultivars, the flowers may be pinkish.

Following flowering, green, round stone fruits begin to develop. These resemble small plums, generally about two to three centimeters across, with smooth skins. As they ripen, they turn yellow, red or purple. There is one hard stone inside. The flesh changes from tart to sweet as ripening progresses.



Cherry plum (Prunus cerasifera) — small smooth yellow and red plums on a tree

Wouter Hagens · Public domain · Wikimedia Commons

WHERE IT GROWS IN CALIFORNIA

Calflora records Prunus cerasifera as a nonnative species with limited invasiveness. It has been observed in numerous counties, including Sacramento, Sutter, Butte, Placer, Marin and Santa Clara. It commonly occurs in old gardens, on settlement margins, around abandoned homesteads, along small roads and beside waterways. Many fruiting trees seen in cities may have originated in cultivated plantings.

The species withstands hot summers in the Sacramento Valley when water is available, but does not form widespread thickets in dry, waterless grassland. Some ornamental cultivars yield few fruits or none at all. Finding a branch with purple leaves does not guarantee an edible, mature fruit crop.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering in the low Central Valley often occurs in February and March; in cooler districts it shifts to March and April. Leaves unfold soon after the flowers. Small, green fruits appear during spring.

Fruits enlarge for several months and most often ripen in warm parts of California from June through August, sometimes later in cooler locations. Size and timing vary greatly among cultivars. Trees gradually shed their leaves in September and October. Bare winter branches provide no fresh fruit.

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruit flesh. Plants For A Future explicitly confirms raw consumption of Prunus cerasifera. Once a fruit is soft and somewhat sweet, the flesh can be eaten fresh after removing the hard stone. Some trees bear small, sour plums; they need not be as sweet as supermarket varieties.

Fresh mashed flesh. The skin and soft portion can be mashed without heating. Ripe fruits spoil quickly once their skins are damaged. Natural drying would require appropriate conditions and removal of the stone, but this article does not suggest that small wild plums are a guaranteed long-term food supply.

Do not eat, crack or grind the stones together with the flesh. Plum kernels and those of other Prunus species may contain cyanogenic glycosides. Calflora explicitly cautions against eating the seeds, leaves and stems of Prunus cerasifera. Edible mature flesh does not make the entire stone fruit edible.

HOW NOT TO CONFUSE IT

Other Prunus species—European plum, blackthorn, cherries and ornamental hybrids—can have similar blossoms and leaves. Not every white-flowering spring tree is a cherry plum. Identification requires considering fruit shape, its single large stone, toothed leaves, flowering time and features of the tree together. Ornamental purple-leaved plums often have very few fruits, and hybrid ancestry can make exact names difficult.

Do not gather fruits from chemically treated ornamental trees, places with heavy roadside pollution or private property without permission. Never crack an unidentified stone to test its kernel's flavor.

SOURCES

Calflora, Prunus cerasifera — California distribution and seed/leaf warning: https://www.calflora.org/app/taxon?crn=6887 Calflora, county-level observations: https://www.calflora.org/app/countytaxon?crn=6887 North Carolina State University Extension, Prunus cerasifera — botany and toxicity: https://plants.ces.ncsu.edu/plants/prunus-cerasifera/ Plants For A Future, Prunus cerasifera — raw flesh of ripe fruit: https://pfaf.org/User/Plant.aspx?LatinName=Prunus+cerasifera

European plum — sweet summer fruit from abandoned orchards · Prunus domestica

Prunus domestica

In old California orchards, fruit trees sometimes survive long after the houses have disappeared. White flowers cover their branches in spring, and in summer round or oval plums of many different colors ripen. European plum seldom becomes an abundant wild tree, but surviving old plantings may yield fresh fruit requiring no preparation.



European plum (Prunus domestica) — ripe oval plums with a blue waxy bloom

Hiuppo · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

A medium-sized deciduous tree with a spreading crown. The simple, alternate leaves are oval or elliptical, with toothed margins. They are darker above, often slightly hairy beneath. White, five-petaled flowers open singly or in pairs on short twigs in spring. The fruits are drupes, varying among cultivars from round to elongated, and may be green, yellow, red, blue or purple, often covered in a bluish, waxy bloom. Each contains one hard stone.

WHERE IT GROWS AND HOW COMMON IT IS

Prunus domestica is an introduced cultivated fruit tree, not a native plum of the Sierra or coastal forests. Calflora records it outside cultivation, though observations are few. Occasional trees may occur in old orchards, beside houses, canals or former rural properties. Permission is required to gather fruit on privately owned land.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering generally occurs in spring before the leaves have fully opened. Ripe fruits appear from summer into autumn. Early cultivars can ripen in July, while late cultivars ripen much later. Color should therefore be assessed together with softness and the fragrance characteristic of the cultivar. Hard, very sour fruits have often not ripened fully.

WHAT IS EATEN WITHOUT FIRE

Ripe plum flesh. It is eaten fresh without heating. The skin may be removed if desired, and the stone must always be discarded. Natural drying of ripe plums creates food with a more concentrated flavor, but the fruit must remain clean and free of mold.

Flowers. Plants For A Future mentions their raw use as a small decorative addition to food. Picking many flowers reduces the future fruit crop.

The seed inside the stone, leaves, twigs and bark are not included as food.

HOW NOT TO CONFUSE IT

California has native Prunus subcordata and the introduced cherry plum, Prunus cerasifera. They differ in fruit size and shape, flower arrangement, shoots and leaves. Hybrid garden plums are especially difficult to determine to species. When uncertain, it may be reasonable to identify only the genus Prunus rather than invent an exact species name. Calflora explicitly warns of the toxicity of the stones, leaves and stems of European plum.

SOURCES

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- https://pfaf.org/user/Plant.aspx?LatinName=Prunus+domestica

Sweet almond — nutritious cultivated kernels and the danger of bitter forms · Prunus dulcis

Prunus dulcis

California almond orchards are conspicuous in late winter, when many white and pale-pink flowers open on bare branches. After pollination, green, velvety fruits develop, looking little like the familiar dried almond. During summer, the outer hull splits, revealing a hard shell with a kernel inside. Only sweet edible cultivars produce kernels suitable for eating raw; bitter forms can contain dangerous amounts of amygdalin.



Sweet almond (Prunus dulcis) — split dry outer hull exposing the hard almond shell

Manfred Heyde · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A small deciduous tree, generally three to eight meters tall, often with a broad, vase-shaped crown. The bark is gray-brown and young twigs relatively smooth. Leaves are alternate, narrow and lance-shaped, with pointed tips, finely serrated edges and a clear midvein. Five-petaled flowers appear in early spring before the full foliage, white to pinkish with numerous stamens. The developing fruit is initially green, oblong-oval and finely hairy. Toward the end of summer, the fleshy hull dries and splits, exposing the hard, often pitted shell. Inside is one large, wrinkled, brown-skinned kernel, botanically a seed.

WHERE IT GROWS AND HOW COMMON IT IS

Prunus dulcis is not native to California. It is exceptionally important to agriculture in the state, particularly in the Central Valley, including the Sacramento and San Joaquin valleys. Self-sown trees and survivors beside abandoned orchards are possible, but an escaped individual cannot automatically be considered a sweet edible cultivar. Bitter and sweet forms look alike, and seedlings may differ from their parent trees. Harvesting on farmland without permission is prohibited, and fruit hulls may have been exposed to agricultural chemicals.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White or pinkish flowers frequently appear in February and March. The green outer hull enlarges through spring and summer. Toward late summer, often beginning in August, it dries and splits to expose the hard inner shell. Exact timing depends on the cultivar and weather. Only sound, fully mature kernels from a known sweet edible cultivar are suitable for raw use; they must be dry and free of mold or rancidity. A tree yielding bitter kernels of unknown origin is unsuitable for gathering.

WHAT IS EATEN WITHOUT FIRE

Kernels of confirmed sweet varieties only. After natural ripening, remove the outer hull, carefully crack the hard shell, and extract the intact kernel. A confirmed sweet cultivar may be eaten raw, chewing thoroughly. Raw kernels can also be ground cold with drinking water to produce an almond suspension without heat.

There is an important exception: bitter almonds can contain hazardous concentrations of cyanogenic compounds. In the field, cultivar identity cannot be established from leaves or flowers alone, and tasting a suspicious kernel is not a reliable safety test. Therefore, kernels from unknown self-sown trees are not recommended.

HOW NOT TO CONFUSE IT

Peach, Prunus persica, has similar narrow leaves and pink flowers but develops sweet, juicy fruit flesh around a more massive stone. With almond, the outer hull eventually dries and splits, and only the kernel of a sweet cultivar is eaten. California wild almonds such as Prunus fasciculata and related shrubs are not food equivalents of orchard almonds; their kernels may be bitter and dangerous. Never transfer the edibility of store-bought sweet almond to seeds from an arbitrary wild stone-fruit species.

SOURCES

- https://pfaf.org/User/Plant.aspx?LatinName=Prunus+dulcis
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Bitter cherry — small red drupes of northern mountains and dangerous seeds · Prunus emarginata

Prunus emarginata

At an open site after wildfire or along the edge of a Northern California forest, a small tree with slender grayish branches often grows. In spring it bears small white blossoms, followed by tiny, bright-red drupes. This is Prunus emarginata, bitter cherry. Soft, ripe fruit flesh has been eaten raw in some food traditions, though its bitterness makes it unpleasant to many people. Stones, leaves and twigs must not be eaten: Calflora warns that these parts are toxic.



Bitter cherry (Prunus emarginata) — red drupes and green toothed leaves on a branch

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This plant is a deciduous shrub or small tree, often multistemmed, with slender, smooth, reddish-brown or grayish bark. Young shoots are upright and may have short side branches. Alternate leaves are oval or elongated, with fine teeth around the margins. Some leaves have a slightly notched tip, reflected in the epithet emarginata, but this feature is not constant. White, five-petaled flowers with yellow stamens appear in small clusters in spring. They develop into little round fruits, green at first, then vivid red and soft. Each drupe contains one relatively large, hard stone. Unlike cultivated sweet cherry, the fruit is often only about one centimeter wide. Leaves turn yellow and fall in autumn; the tree can produce numerous shoots after damage.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Prunus emarginata native to California and records more than two thousand observations. It grows in northern and mountain counties, including the Sierra Nevada, in forest communities where fallen trees, fire or clearing have brought sufficient light. It can occur on rocky slopes, beside forest roads and in clearings. It is much less common on the dry urban floor of the Sacramento Valley than in foothill woodland. In a suitable habitat, several young trees can form a group, but an abundance of little red fruits does not make them a major food source: the taste is extremely bitter.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flowers appear in spring, often April and May in low foothills, later at higher elevations. Small green drupes form soon afterward. Through summer the fruit enlarges and gradually turns red. Full ripeness in cool mountain areas is usually from July through September, perhaps earlier at warmer sites. Even a red fruit can remain very astringent; color does not guarantee a pleasant flavor. As leaves yellow and fall in autumn, birds may rapidly take the fruit. Only ripe flesh, not spring leaves or seeds, is a raw food.



Bitter cherry (Prunus emarginata) — red drupes and green toothed leaves on a branch

Walter Siegmund (Wsiegmund) · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only the soft flesh of a fully ripe red drupe. Plants For A Future explicitly records raw consumption of Prunus emarginata while warning of its very strong bitterness. Carefully separate the flesh from its large stone, without cracking or chewing the stone. A fruit may still be unpleasant when fully ripe; in that case there is no reason to force oneself to eat it. It is an occasional flavoring, not a reliable sweet harvest.

Stones are strictly excluded. Calflora explicitly states that seeds, leaves and stems of this species must not be consumed. Cyanogenic compounds may occur in stone-fruit species, and grinding a kernel can increase the risk of poisoning. Never make an uncooked mash from whole berries containing crushed pits or use an almond-like kernel flavor as a safety test.

Coarse or unripe fruits are not included in the raw-food list. Do not gather from treated road verges, chemically treated forest sites or places with contaminated water.

HOW NOT TO CONFUSE IT

Prunus subcordata, Klamath plum, bears larger fruits with different flesh and somewhat differently arranged white flowers. Prunus virginiana var. demissa, western chokecherry, described separately, has long clusters of many flowers and dark ripe fruit bunches. Bitter cherry usually has smaller flower clusters and bright-red, bitter drupes. Ornamental Prunus trees may occur near woodland settlements. Accurate identification requires leaves, flowers, branching pattern and mature fruit—not just one red cherry. The kernels of unidentified stones must never become part of the diet.

SOURCES

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- https://commons.wikimedia.org/wiki/File:Bitter_cherry_Prunus_emarginata_branch.jpg

Hollyleaf cherry — evergreen leaves and red fruit of California chaparral · Prunus ilicifolia

Prunus ilicifolia

In the dry canyons of Southern California grows an evergreen shrub or small tree with thick, sharply toothed leaves resembling holly. Small white flowers appear among them in spring, followed by glossy red cherries. This is Prunus ilicifolia, hollyleaf cherry, a native species of California chaparral. The thin flesh of its ripe fruits is edible, but each fruit contains a very large, hard stone. Seeds, leaves and branches contain cyanogenic compounds and must not be eaten raw.



Hollyleaf cherry (Prunus ilicifolia) — glossy evergreen toothed leaves and red drupes

Z3lvs · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an evergreen shrub or small tree, often two to five meters tall, or taller in favorable conditions. The bark is dark gray and the branches are quite dense. Its leaves grow alternately on short stalks. They are dark green, leathery and glossy, oval to almost round. The margins carry sharp, triangular teeth, as in some hollies, but careful observation shows the characteristic succession of individual leaves along the branch. Small creamy-white flowers appear in racemes in spring. Each has five petals and conspicuous stamens. After flowering, green drupes develop, gradually enlarging and turning red. A ripe fruit is round, usually about one and a half centimeters across, with a thin layer of reddish flesh surrounding one large stone that occupies most of its volume.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Prunus ilicifolia as native to California and lists many observations from Los Angeles, San Diego, Riverside, Orange, San Bernardino, Santa Barbara and Monterey counties. It is part of chaparral, oak woodland and dry canyon vegetation. It occurs only rarely as a natural plant in the Sacramento Valley, although it is sometimes grown in gardens. Its subspecies include mainland hollyleaf cherry and the larger island form, ssp. lyonii. To identify a wild plant, consider the local subspecies' range and morphology, not merely a nursery label reading “California cherry.”

WHEN THE EDIBLE PARTS ARE AVAILABLE

In Southern California, flowering often occurs in April and May, sometimes earlier after a warm winter. Small green ovaries enlarge and turn red by summer. Ripe fruit may become available in late summer and early autumn, depending on elevation and rainfall. The tough green leaves remain visible all year, but they are not food. One season can bring abundant fruit and another very little. The stone remains large regardless of fruit size or variety.



Hollyleaf cherry (Prunus ilicifolia) — glossy evergreen toothed leaves and red drupes

Reinerschmitt · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only the flesh of completely ripe red fruit. Plants For A Future and botanical material from the California Native Plant Society confirm the food use of Prunus ilicifolia fruit flesh. It is thin and astringent, sometimes sweet-tart, and represents only a small part of the fruit. The soft red flesh can be eaten fresh after being carefully separated from the stone without damaging its hard covering. Crushing the entire fruit together with its kernel is not acceptable.

Fresh flesh separated from stones. Several ripe fruits may yield a small quantity of cold fruit mash, but all stones must first be removed. Seeds, kernels, leaves and young shoots are not intended for consumption

here: Calflora expressly warns of their toxicity. Traditional ways of processing the stones may involve complicated preparation and heating, so they are excluded from a diet without fire.

Unripe green fruit is not equivalent to ripe red fruit, even if birds peck at it.

HOW NOT TO CONFUSE IT

California holly and other evergreen shrubs may have similar tough, toothed leaves, but their flowers and fruits differ. Cherry laurel, Prunus laurocerasus, is also a Prunus species with toxic leaves and seeds; it usually has longer leaves and darker fruit. True hollies of the genus Ilex have different flowers and berries that may be poisonous. Leaf shape alone is inadequate for identification. Look for the white flower racemes and red drupes containing one large stone. Never taste an unidentified cherry or bite into its pit kernel.

SOURCES

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- https://pfaf.org/USER/Plant.aspx?LatinName=Prunus+ilicifolia
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Peach — juicy summer fruit from former orchards · Prunus persica

Prunus persica

On an old farm in spring, a peach tree is often conspicuous before its leaves appear: its bare branches are covered with bright pink blossoms. A few months later, fuzzy yellow-and-red fruits hang from the branches; some forms bear smooth-skinned nectarines. These belong to one botanical species, Prunus persica. It is not native to California, but is found among escaped cultivated plantings. The completely ripe flesh can be eaten raw without preparation.



Peach (Prunus persica) — fuzzy ripe yellow-and-red fruit among narrow green leaves

Yair Haklai · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A small deciduous tree, usually three to six meters tall, with broad, spreading branches. The bark of young twigs is smooth and reddish brown, darkening and cracking on older trunks. Leaves are simple, alternate, long and narrowly lance-shaped, with pointed tips and finely toothed edges, much narrower than apple leaves. Flowers occur singly or in pairs on short shoots. They are bright or pale pink, with five petals and numerous stamens. The fruit is round, sometimes slightly flattened, with a lengthwise seam; its skin is fuzzy, or smooth in nectarines. The flesh can be white, yellow or reddish around the hard, grooved central stone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Prunus persica as nonnative in California and records approximately a hundred observations outside cultivation. Most trees in the state grow in planted orchards in the central and southern valleys, suburbs and agricultural properties. Individual seedlings and old trees may persist near vanished buildings and roads. In the wild Sierra Nevada, peach is not a characteristic native stone-fruit tree but a planted species or an escape from cultivation. Many trees receive pesticide treatments; gathering depends on both a clean site and the owner's permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the Sacramento Valley, the first pink blossoms often open in late winter or early spring, sometimes before the leaves have fully unfolded. Small developing fruits grow through spring and ripen from May or June in early cultivars through September in late ones. A ripe peach generally smells stronger, feels softer near the stalk and detaches more easily from the branch. Some cultivars retain fairly firm flesh even when ripe, so their flavor also matters. Do not eat fallen, rotten fruit.

WHAT IS EATEN WITHOUT FIRE

Ripe peach flesh. It can be eaten fresh with clean skin or after peeling. Cut the fruit and carefully separate its juicy flesh from the central stone. A nectarine is not a separate species and is eaten in the same way. Raw fruit purée may be made from ripe, pitted flesh without heating; natural drying under clean conditions is also possible without fire. The food reference mentions flowers eaten raw, but for field gathering it is safer to limit use to the fruit. The seed within the stone, leaves, bark and young twigs may contain cyanogenic compounds and should not be eaten.

HOW NOT TO CONFUSE IT

Prunus americana and the native Prunus subcordata have smaller fruits and differ in leaf form, flowering and origin. European plum, Prunus domestica, generally has broader leaves and a differently shaped central stone. Apricot, Prunus armeniaca, can resemble a small peach externally, but its leaves are broader and nearly round, while its fruit hairs and stone differ. Never identify a peach from pink flowers alone: ornamental cherries and almonds can have pink petals too. Do not bite or grind its stone.

SOURCES

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Japanese plum — sweet summer plums from old fruit plantings · Prunus salicina

Prunus salicina

In California, plums with red, yellow or dark-purple skins often come from Japanese plum. The name covers numerous cultivars and their hybrids, ripening chiefly in summer. Where an old fruit tree has survived near a former farm, it may still produce large, juicy drupes that can be eaten fresh. Unlike many native wild plums, Japanese plum is almost always associated with cultivation.



Japanese plum (Prunus salicina) — ripe red and yellow plums with smooth skin

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree, generally three to eight meters tall, with a branching crown. The bark is often smooth and reddish brown on young branches, turning gray on older trunks. Alternate leaves are elongated-oval, with tapering tips, finely serrated margins and clearly visible lateral veins. White, five-petaled flowers appear in spring, singly or in small groups on short shoots, before the leaves fully unfold. The fruits are round or somewhat elongated and vary greatly between cultivars, from three to seven centimeters across or larger. Their skin is smooth, sometimes bearing a waxy bloom. One hard stone with characteristic grooves lies within the juicy flesh.

WHERE IT GROWS AND HOW COMMON IT IS

A UC Davis study of plum growing in California reports that most of the state's fresh-market plums derive from Prunus salicina. Historically, orchards were concentrated in the Central Valley, particularly the San Joaquin Valley, though individual trees are also grown farther north. There is no evidence of large, self-sustaining wild populations of Japanese plum in California. Trees found beside abandoned homesteads are most likely remnants of orchards or their seedlings. A fruiting tree on a private farm is not automatically open for gathering.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering usually takes place in late winter or early spring, depending on cultivar, elevation and weather. The first fruits ripen in late spring and early summer, with many cultivars ripening in June through August. Mature plums develop the color characteristic of the cultivar, a noticeable aroma and moderately yielding flesh, although some cultivars remain relatively firm. In green-skinned cultivars, ripeness cannot be judged solely by a change in color. Fruits at different stages of ripeness may hang from the same tree.

WHAT IS EATEN WITHOUT FIRE

Fully ripe flesh. Plants For A Future explicitly confirms raw consumption of Prunus salicina fruits. Plums may be eaten fresh, with or without their skin, after the central stone has been completely removed. The flesh is usually sweet and very juicy, while the skin can have a pleasant sourness. Without heat, pitted fruit may be mashed into a thick mixture or pressed for juice. Under some conditions ripe halves may be air-dried naturally if protected from mold. The seed inside the stone, leaves, bark and branches are not part of a raw diet: members of Prunus can contain cyanogenic compounds.

HOW NOT TO CONFUSE IT

European plum, Prunus domestica, often bears somewhat smaller and more elongated fruit, but the many cultivars make identification from a single drupe unreliable. Cherry plum, Prunus cerasifera, usually has smaller round fruit and is often grown as an ornamental tree. Native Prunus subcordata has smaller leaves and fruits and quite different natural habitats. Determine the species using leaves, flowers, stone and the tree's history together. Never chew the kernel inside the stone of any of these plums.

SOURCES

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Black cherry — dark summer fruit with a dangerous stone · Prunus serotina

Prunus serotina

Near old rural buildings and former plantings, a tree sometimes grows with glossy, toothed leaves and long, narrow clusters of white flowers. Later, small dark drupes appear on these same clusters, resembling tiny cherries. This is black cherry, common in the eastern forests of North America but very rare outside cultivated plantings in California. Its ripe flesh can be eaten raw; the inner stone and green parts of the plant cannot.



Black cherry (Prunus serotina) — glossy toothed leaves and racemes of dark drupes

Gmihail (Serbian Wikipedia) · CC BY-SA 3.0 rs · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree or large shrub with a straight trunk, often from a few to twenty meters tall. Young bark is smooth with horizontal lenticels; older trunks darken and become covered with small scales. Simple, alternate leaves are oblong-elliptical, with pointed tips and fine marginal teeth, glossy above. Pale hairs can sometimes be seen on the underside near the midrib. Long, hanging racemes of numerous small, five-petaled white flowers develop in spring. By late summer, these fruiting racemes bear round drupes about six to ten millimeters across. They turn from red to glossy purple-black, each containing one hard stone.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Prunus serotina as nonnative in California, with only about two recorded escapes from cultivation. The species is therefore known chiefly as a garden or collection tree, not a widespread forest berry. Occasional trees may occur near old homesteads and parks, but accurate identification requires more than the color of the fruit. Gathering from urban plantings or private property is acceptable only where permission has been granted.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flower clusters bloom in late spring after the leaves have opened. Fruit develops through summer, turning red, then nearly black by late summer and autumn. One raceme may bear fruits at different stages of ripeness. For raw food, use only soft, fully dark drupes with intact skins. Greenish and pink fruits are bitter and unsuitable. Birds rapidly eat the ripe crop, so an individual tree may have little fruit left.

WHAT IS EATEN WITHOUT FIRE

Fully ripe flesh. Plants For A Future's species account explicitly allows raw consumption of Prunus serotina fruit, noting that its flavor varies from sweet to bitter. There is little flesh around the single stone. The fruit may be gently crushed to separate the stone without damaging it, or the flesh eaten while spitting out the entire stone. Never grind the stones together with the pulp. The seeds, leaves and shoots contain cyanogenic compounds; do not brew or chew green twigs. In the field, eating large quantities without first removing the stones is unsuitable.

HOW NOT TO CONFUSE IT

Native Prunus virginiana var. demissa also has long white racemes and dark fruits, but is generally a shrub or small tree and differs in its leaves, petiole glands and drupes. Prunus emarginata usually has flowers arranged in different clusters, while garden sweet cherry, Prunus avium, bears flowers in small bunches rather than long racemes. A single dark berry does not distinguish these species. Cracked or ground stones of any Prunus are especially dangerous: the edibility of the flesh does not extend to the seed.

SOURCES

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- https://pfaf.org/User/Plant.aspx?LatinName=Prunus+serotina

Klamath plum — red and yellow fruit of Northern California mountains · Prunus subcordata

Prunus subcordata

In the northern foothills of California, a small wild plum sometimes appears with white spring blossoms and reddish or yellowish fruit in summer. This is Prunus subcordata, Klamath plum, also called Sierra plum. Its fruit is generally smaller than that of cultivated varieties, but the ripe flesh can be eaten raw. Its large stone is important: kernels of Prunus seeds may contain cyanogenic substances. Never crack these stones or make a powder from the entire fruit.



Klamath plum (Prunus subcordata) — small ripe reddish and yellow plums on branches

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The plant grows as a shrub or small deciduous tree a few meters tall, often producing shoots around the main trunk. Young branches are relatively slender, sometimes ending in short, pointed side shoots. Alternate leaves are oval or slightly heart-shaped at the base, with fine marginal teeth and an obvious midvein. White flowers open singly or in small groups in spring before the leaves are fully expanded. Each flower has five petals and yellowish stamens at the center. The green ovary develops after pollination into a true drupe: a round or slightly oval fruit containing one large, hard stone. As it ripens, the skin may become yellow, pinkish red or reddish purple, sometimes with a waxy bloom. The flesh softens and smells like plum. Leaves and immature green fruit do not indicate a ready food crop.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Prunus subcordata as native to California, especially characteristic of the north and the foothills. It has many observations in Modoc, Shasta, Tehama and Siskiyou counties, with records also from parts of the northern Sierra and lower foothills. Sacramento County has only scattered observations, and Klamath plum is not a common orchard tree of the urban valley. It grows on open slopes, in oak woodland and along forest edges, sometimes in small groups. Different forms and wild populations vary in fruit color, so red or yellow alone cannot determine the species.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flowers appear on branches in spring, generally March through May depending on elevation and temperature. Hard green fruits form afterward. Through summer they enlarge and gradually take on their ripe color. On cooler slopes, ripening happens later, sometimes in late August or early September. Fruits on the same tree can ripen unevenly: hard green ones may hang beside soft red ones. Leaves yellow and fall in autumn, and fruit that remains on the tree may quickly drop and spoil. The raw-food season relates only to ripe fruit, not spring leaves.



Klamath plum (Prunus subcordata) — small ripe reddish and yellow plums on branches

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe plum flesh. Plants For A Future explicitly confirms that Prunus subcordata fruit is eaten raw. The flavor ranges from sour to sweet-tart, sometimes with pleasant mild astringency. Cut a soft, ripe fruit and eat its flesh after completely removing the single large stone. The kernel within the stone is not eaten. Plants For A Future warns about amygdalin and prunasin, which can release hydrocyanic acid. Even if another source allows eating selected seeds after checking their flavor, that risk is not acceptable for this atlas of food eaten without fire.

Fresh mashed flesh. Ripe plums may be pitted and mashed cold into a small purée. Do not crush whole fruits together with their kernels. Moldy, spoiled or hard unripe fruits should not be eaten. Leaves and twigs are also excluded from food, since Prunus species may contain toxic cyanogenic compounds.

HOW NOT TO CONFUSE IT

Cherry plum, Prunus cerasifera, described earlier, also has small plum-like fruit but is chiefly associated with gardens and escaped cultivated trees. Native Prunus subcordata has different leaves and flowering shoots and a more northern natural range. Bitter cherry, Prunus emarginata, has smaller, bitter red drupes. Similar leaves across Prunus species are not enough for identification, especially before flowering. Examine the tree, white blossoms and mature plum with one large stone. Never bite unknown stone-fruit kernels to identify a tree.

SOURCES

- https://www.calflora.org/app/countytaxon?crn=6897
- https://pfaf.org/User/Plant.aspx?LatinName=Prunus+subcordata
- https://www.calflora.org/app/taxon?crn=6897

Western chokecherry — astringent dark fruit beside mountain streams · Prunus virginiana var. demissa

Prunus virginiana var. demissa

In cool California canyons and beside mountain streams grows a small tree that produces clusters of white blossoms in spring. Later, bunches of tiny dark-red fruits hang from the same branches, eventually becoming almost black. This is Prunus virginiana var. demissa, western chokecherry, a native variety of North American chokecherry. The completely ripe flesh can sometimes be eaten raw, though it is very astringent. More important is the danger from its kernels: seeds, leaves and young branches may contain cyanogenic substances.



Western chokecherry (Prunus virginiana var. demissa) — clusters of dark mature cherries

Thayne Tuason (ThayneT) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is usually a deciduous shrub or small tree, several meters tall, with multiple stems. Its bark is grayish brown, with small, pale lenticels visible on young branches. The alternate leaves are oval or elongated, with small sharp teeth along the margins and prominent lateral veins. In spring, after the leaves have begun to unfold, elongated racemes of numerous small white flowers appear. Unlike the solitary blossoms of wild plums, here the long inflorescence is conspicuous, and each flower is attached to its own short stalk. After flowering, round green fruits develop, each containing a single hard stone. Ripening proceeds from green through red to dark burgundy or almost black. The flesh softens and may acquire a faint bloom. Spoiled fallen fruits may accumulate beneath the tree; they are not used.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Prunus virginiana var. demissa as a native variety with over a thousand observations in California. Most records are from Siskiyou, Shasta, Plumas, Modoc and other northern or mountain counties, with occurrences also in cooler canyons farther south. Records in Sacramento County are scattered: it is not an abundant chokecherry in every city park. It grows at forest edges, on slopes, by streams and in open conifer woodland where the soil retains moisture. It can regenerate through root suckers after severe fires. Cultivated Prunus species near homes may easily be mistaken for the same variety, so habitat cannot replace botanical identification.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flower racemes appear in spring after foliage growth begins, often from April through June depending on elevation. Hard green fruits set by early summer and gradually turn red. In late summer and autumn, approximately August or September, some clusters achieve full, dark ripeness. Timing is later in high, cool places; on low, dry slopes the harvest may be poor. Astringency often declines as the fruit fully ripens, but some cherries remain harsh even when almost black. There is no fresh crop after the winter leaf fall. A fruit in the intermediate red stage must not be assumed ripe merely because of its appealing color.



Western chokecherry (Prunus virginiana var. demissa) — clusters of dark mature cherries

John Rusk · CC BY 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only completely ripe fruit flesh. Plants For A Future, in its account of Prunus virginiana, notes that dark, juicy fruit can sometimes be eaten raw when fully ripe, although it is generally very astringent. For California's var. demissa, this practice should reasonably be limited to confidently identified ripe flesh, carefully separated from the stone. If its astringency makes the fruit unpleasant, there is no reason to force oneself to eat it for the sake of “wild food.”

Do not crush or chew the stones. Calflora explicitly notes the toxicity of the seeds, leaves and stems of this variety. A broken stone can release dangerous cyanogenic compounds from its kernel. Traditional methods of making paste from whole cherries may have involved complex processing unsuitable for a modern guide to food without fire. Do not make raw powder, grind an entire cluster or eat the kernels.

Unripe berries, leaves, roots and branches are not safe foods in this article.

HOW NOT TO CONFUSE IT

Black cherry, Prunus serotina, also has long white racemes and dark fruits, but differs in its leaves, petiole glands and geographic range. Prunus emarginata usually has shorter groups of blossoms and small bitter fruits. Cherry plum, Prunus cerasifera, described earlier, generally bears solitary flowers or small clusters rather than long racemes. When identifying a mature western chokecherry, look for small oval, finely toothed leaves, long spring flower clusters and dark fruits with one stone. None of these species should be identified by taste, much less by breaking open kernels to test them. Prunus leaves and wilted branches may be dangerous to humans and animals.

SOURCES

- https://www.calflora.org/app/taxon?crn=6898
- https://www.calflora.org/app/countytaxon?crn=6898
- https://pfaf.org/User/Plant.aspx?LatinName=Prunus+virginiana

Pomegranate — juicy scarlet arils inside autumn fruit · Punica granatum

Punica granatum

In California's warm, dry climate, a shrub with narrow, glossy leaves and vivid orange-red flowers sometimes escapes from a garden into nearby land. By autumn, round, firm fruits ripen on its branches, packed with juicy, ruby-red seeds. Pomegranate is not native to California, but occasional escaped plants have indeed been recorded in the state.



Pomegranate (Punica granatum) — open ripe fruit with ruby-red juicy arils

Fanghong · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a deciduous shrub or small tree, generally two to five meters tall, with dense branching; some short shoots end in a sharp point. The leaves are small, smooth, shiny and opposite or nearly opposite, with entire margins. Large flowers grow near shoot tips, each with a bright, fleshy red calyx and several crumpled scarlet petals. After the petals fall, a rounded fruit develops with a tough rind and a visible “crown” formed by the remains of the calyx. Inside, membranous partitions divide the fruit into chambers packed with juicy coverings around seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Punica granatum as nonnative and records it from several California counties, including Sacramento, Yolo, Los Angeles and Riverside. Almost always, an occurrence is connected to gardens, abandoned lots or seeds from cultivated fruit. It would be inaccurate to call pomegranate a common food of California forests. Escaped plants are uncommon and prefer sunny, warm, relatively dry places.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves emerge in spring and bright flowers appear in late spring and early summer, sometimes continuing longer. Fruits enlarge over several months and ripen principally from September to November, though some cultivars in warmer southern areas begin earlier. A ripe fruit is usually heavy and has the color characteristic of its cultivar. The rind may be red, pink or yellowish. Deep cracks can sometimes appear on overripe fruit.



Pomegranate (Punica granatum) — open ripe fruit with ruby-red juicy arils

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Juicy seed coverings. Inside a pomegranate, the edible part is not the rind but the red, pink or translucent juicy arils surrounding the seeds. They may be eaten whole and fresh, or mashed and strained to produce a cold drink. Some people chew the soft seeds within the arils, while others discard them; they are not equivalent to the poisonous pit kernels of cherries. The rind, bitter white membranes and root are not ordinary raw foods. Fruit acidity varies by cultivar.

HOW NOT TO CONFUSE IT

No familiar California berry shrub has quite the same thick, rounded, leathery rind crowned by a remnant of the flower calyx, with numerous juicy red arils enclosed in chambers. Fruits of some ornamental shrubs with red skins may resemble tiny pomegranates externally, but their internal structure differs. Cutting open an unknown fruit does not automatically make it a pomegranate: examine leaves, flowers and fruits together. An escaped adult shrub may still stand on private property, where gathering requires the owner's consent.

SOURCES

- Calflora — Punica granatum: https://www.calflora.org/app/taxon?crn=6949
- Calflora — county records: https://www.calflora.org/app/countytaxon?crn=6949
- UC ANR — pomegranate cultivation and harvest: https://ucanr.edu/site/small-farms/pomegranates

European pear — late-summer fruit from abandoned orchards · Pyrus communis

Pyrus communis

On a former orchard lot or beside an old farm, a tree sometimes remains with a rounded crown, white spring blossoms and characteristic pear-shaped fruit in summer. Even when the rest of the garden has long disappeared, the pear tree may continue bearing fruit without care. European pear came to California through horticulture and has escaped cultivation in some places. Its fully ripe flesh can be eaten raw, although fruit from seedlings may be very hard.



European pear (Pyrus communis) — rounded crown, glossy leaves and ripe pear-shaped fruit

Prazak · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree usually five to fifteen meters tall, with a straight trunk and dense crown. Wild seedlings sometimes produce short, thorn-like branchlets. Its simple, alternate leaves are nearly round or oval, with pointed tips and finely toothed edges; the upper surface is often glossy. Clusters of white five-petaled flowers open on short fruiting shoots in spring. Their stamens are numerous, and the anthers may be pinkish or dark. The fruit is typically pear-shaped, with a broad, rounded end and narrower part near the stalk, although some cultivars bear almost spherical pears. Several seed chambers containing dark-brown seeds surround a firm core.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Pyrus communis as nonnative to California, with occasional plants outside cultivation, particularly around settlements, old orchards and agricultural land. It is not a typical species of natural oak woodland or desert canyons. Forgotten pear plantings may be encountered in the Sacramento Valley and foothills, but most remain private property. Individual seedlings may occur some distance from the parent orchard when animals disperse the seeds.

WHEN THE EDIBLE PARTS ARE AVAILABLE

White flowers appear in spring. Fully ripe pears become available from late summer into autumn, with ripening times varying among cultivars.

WHAT IS EATEN WITHOUT FIRE

Ripe flesh. Plants For A Future explicitly confirms the use of Pyrus communis fruit raw. Cultivated varieties can have sweet, juicy flesh; wild seedlings may yield coarser, grainier and more astringent fruit. After natural ripening without heat, the flesh may be eaten fresh after removing the core and all seeds. Calflora explicitly cautions against eating the seeds because they contain cyanogenic compounds. Bark, leaves, shoots and roots are not included as food. A rotten fruit's sweet smell does not make it fit for eating fresh.

HOW NOT TO CONFUSE IT

Pyrus calleryana, ornamental Callery pear, is similar but usually bears smaller fruits and may have numerous thorns. It is often planted in towns and can also spread beyond cultivation. Domestic apple, Malus domestica, differs in its leaves, hairiness and fruit structure. A young tree without fruit is difficult to identify, and cultivated pear hybrids vary greatly. Even if a tree is certainly a pear, check separately for chemical treatments and land ownership.

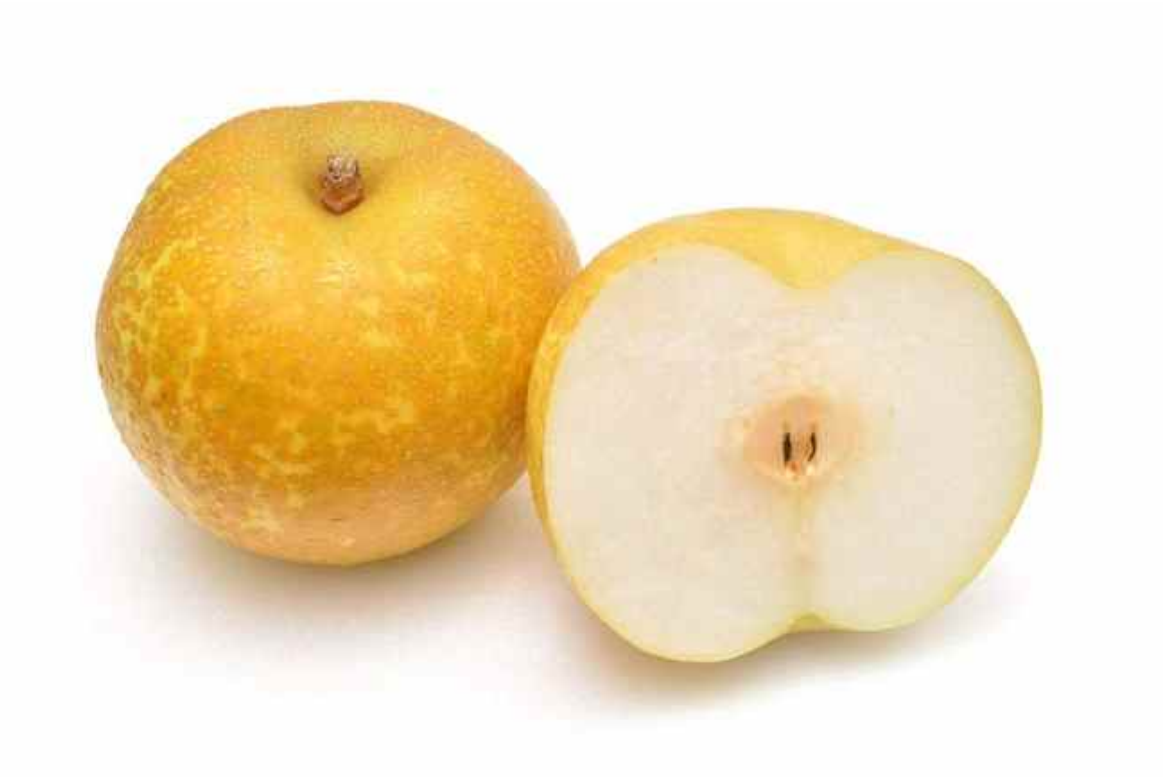
SOURCES

- https://www.calflora.org/app/taxon?crn=8729
- https://pfaf.org/user/plant.aspx?latinname=Pyrus+communis
- https://commons.wikimedia.org/wiki/File:Pyrus_communis.jpg

Asian pear — round, crisp fruit of late summer · Pyrus pyrifolia

Pyrus pyrifolia

On old rural properties in California, a tree sometimes appears with glossy toothed leaves and large, rounded fruits that resemble apples more than familiar elongated pears. When cut open, however, the juicy flesh contains the characteristic gritty stone cells of a pear. This is Asian pear, cultivated in the Sacramento Valley for many years. Its fully ripe fruits are eaten raw without waiting for the flesh to become very soft.



Asian pear (Pyrus pyrifolia) — round bronze-gold ripe pears on branches

Ocdp · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous tree with a compact or spreading crown, commonly three to eight meters tall in orchards. Young branches are smooth, with visible buds and short fruit-bearing shoots. Alternate leaves are broadly ovate, stalked, with pointed tips, pronounced midveins and finely toothed margins. White, five-petaled flowers occur in small groups at about the same time as the leaves, or slightly earlier. Fruits are often nearly spherical, several centimeters or more in diameter in cultivated varieties. The skin may be yellowish, golden brown, greenish or bronze, often with many tiny pale lenticels. Inside is firm, juicy flesh surrounding several seed chambers with brown seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Asian pear is an East Asian tree, not a California native. UC Agriculture and Natural Resources confirms its long cultivation in Fresno, Tulare, Kern, Placer and Sacramento counties, as well as other parts of the state. There is no evidence that it is an abundant escaped forest pear: most trees remain in orchards. Old surviving plantings can sometimes be found, but fruit may not be picked from another person's land without permission.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering generally occurs in spring, around March and April in mild parts of the Sacramento Valley, and later in cooler areas. Fruits grow through summer; some cultivars ripen in August, others in September or October. Unlike many European pears, Asian pears are usually eaten crisp, straight from the tree. Softness is not a necessary test of ripeness. Instead consider cultivar-specific skin color, aroma, flavor and how easily the fruit separates from the branch. Very unripe fruits may be exceptionally hard and tasteless.

WHAT IS EATEN WITHOUT FIRE

Ripe flesh. A completely ripe Asian pear is eaten fresh with its thin skin or peeled. The flesh is crisp, extremely juicy and sweet, with a characteristic granular texture. Cut the fruit open and remove the core and seeds. Seeds should not be chewed: the rose family contains plants with cyanogenic compounds in their seeds. Harvested ripe pears can be stored in a cool place for a limited time, but any with rot or extensive damage are unsuitable. Leaves and bark are not included as raw foods.

HOW NOT TO CONFUSE IT

European pear, Pyrus communis, more often has the elongated pear shape, though some cultivars are also round. Apples may have the same skin color, but their flesh generally lacks such conspicuous gritty cells, and leaf and bud features differ. Ornamental Callery pear, Pyrus calleryana, bears much smaller fruit and may spread in the wild. Do not identify Pyrus pyrifolia from a single round fruit bought in a store: when examining a tree, use leaves, flowers, fruit shape and internal structure together.

SOURCES

- https://ucanr.edu/program/uc-small-farms-network/asian-pears
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- https://pfaf.org/user/Plant.aspx?LatinName=Pyrus+pyrifolia

Wild radish — spring greens and crisp young seed pods · Raphanus raphanistrum

Raphanus raphanistrum

Following winter rain, California clearings and open slopes can become covered with dense green growth, above which rise tall, branching plants with white, yellowish or pale-lilac flowers. Wild radish provides more than a young rosette of edible leaves. When its flowers and fruits appear, another short food season begins: the time of juicy young seed pods.



Wild radish (Raphanus raphanistrum) — four-petaled flowers and constricted green pods

Carsten Niehaus · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Wild radish is an annual, sometimes biennial herb of the cabbage family. The young plant forms a basal rosette of dark-green, rather rough leaves, often six to twenty centimeters long. They have a pronounced midvein, rounded or pointed teeth and margins that may be deeply divided into lobes. Coarse, sparse hairs are often visible on leaves and the lower stem.

Later, a sturdy upright flowering stem develops, branching toward the top; on suitable soil it may reach approximately one meter. Upper leaves are smaller than lower ones, often almost stalkless. Each flower bears four petals arranged in a cross. Their colors vary: white, pale yellow, pinkish lilac, and sometimes with purple veins.

After flowering, slender, elongated fruits form. The walls of a young pod are green and fleshy. As the pod matures, its covering hardens and becomes strongly constricted between individual seeds, looking like a succession of bulging segments. This is among the most important features of a mature plant.



Wild radish (Raphanus raphanistrum) — four-petaled flowers and constricted green pods

Harry Rose (Macleay Grass Man) · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Wild radish was introduced to North America and has spread widely in California. UC Integrated Pest Management records it through most of the state except the desert regions, chiefly below approximately 800 meters. It grows in fields, vineyards, at the edges of farmland, on vacant lots, along roads and in pasture meadows. With adequate winter rains, some places become densely covered in flowering plants.

Open, sunny sites are much more characteristic of the species than closed coniferous forest. In the Sacramento Valley and other lowlands it is easier to notice after the wet season; on the coast and in cool uplands, flowering may continue longer.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves. Young rosettes develop with winter moisture, usually from late autumn through spring in lowlands, and later at colder sites.

Flowers. Botanical descriptions for California give the main flowering season as approximately April through July, although blossoms may appear earlier after a warm winter.

Green pods. These grow following pollination, from spring into summer. Only very young, soft fruits are suitable for food; mature pods quickly become tough and fibrous.

Seeds. They ripen after the pods dry, mainly in late spring and summer, depending on the climate.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Fresh rosettes have a mustard-and-radish flavor, slightly sharp. Young leaves have been eaten raw, chopped into a mixture of fresh greens. Older leaves become tougher and more bitter.

Flowers. The petals and entire clean flowers can be eaten fresh. They are a small seasonal addition with a mild peppery taste.

Young fruits. While a pod is green, flexible and juicy, it may be eaten without heating. It is crisp and tastes of radish. Fibrous fruits beginning to turn woody are not this food.

Seeds. Sources describe raw seeds, ground and used in small amounts as a sharp seasoning. Mature seeds are quite different in firmness and taste from soft green pods.

In European food accounts, wild radish is known primarily as a spring mustard green and a source of spicy young pods. No heating is necessary for these uses, but a small portion is enough, as the flavor of this raw brassica green can be strong.

HOW NOT TO CONFUSE IT

Its closest relative is cultivated radish, Raphanus sativus, which also occurs outside plantings. Its fruits are less distinctly constricted between the seeds. However, the two species hybridize readily, and hybrids show intermediate features, so a single flower may not permit confident species identification.

Mustards of the genus Brassica also have cross-shaped flowers and lobed young leaves, but generally produce other types of pods that split open at maturity. True wild radish is identified by a combination of its rough rosette, flowers and mature, segmented fruit. A rosette alone, before flowering, is insufficient for a confident species identification.

SOURCES

- UC Statewide IPM — Wild Radish: https://ipm.ucanr.edu/weeds-identification-gallery/wild-radish/
- Plants For A Future — Raphanus raphanistrum: https://pfaf.org/user/Plant.aspx?LatinName=Raphanus+raphanistrum
- Cornell Weed Science — Wild Radish: https://cals.cornell.edu/weed-science/weed-profiles/wild-radish

Feral radish — pink-white flowers and crisp green pods · Raphanus sativus

Raphanus sativus

In California's damp winter fields and springtime coastal meadows, rough green rosettes grow into branching flowering stems bearing white, pink or pale-purple blossoms. Some of these plants are escaped radish, Raphanus sativus. They belong to the same group as cultivated garden radishes, but a feral plant usually does not produce the neat round red root familiar from markets. Several parts can be eaten without fire, especially young leaves and tender green pods.



Feral radish (Raphanus sativus) — four-petaled pink-white flowers and green beaked pods

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HOW TO IDENTIFY IT

This is usually an annual or biennial plant. At the base is a rosette of large, rough-textured leaves, divided into lobes of differing sizes; the terminal lobe is generally larger than those to either side. A flowering stem emerges from the middle in season, branching higher up and sometimes reaching a meter or more. Young stems and leaves often bear short, stiff hairs.

As in other members of the cabbage family, the flowers have four petals, but their color varies: white, cream, pink or violet, sometimes with dark veins. After flowering, elongated fleshy fruits develop, each a pod with a beak at its tip. Unlike the pods of certain mustards, they do not open by two ordinary valves. As they dry, they become corky and often constricted between the seeds. The shape of a dry pod is important for distinguishing closely related taxa.

WHERE IT GROWS AND HOW COMMON IT IS

UC Integrated Pest Management reports escaped Raphanus sativus in fields, abandoned gardens, vineyards, parks and disturbed ground across many parts of California, except deserts and some mountain areas. On the cool coast, flowering radishes may grow alongside other members of the cabbage family; in the Central Valley, growth depends on winter rainfall and cultivation of the soil. Large fields of white and pink flowers do not necessarily belong to just one species.



Feral radish (Raphanus sativus) — four-petaled pink-white flowers and green beaked pods

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Confusion with wild radish, Raphanus raphanistrum, is particularly important in this group. Both species occur together in California and hybridize freely. UC IPM explicitly cautions that their offspring can be difficult to identify to species even from several characters. An uncertain specimen should therefore not be presented as a confidently identified Raphanus sativus.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New rosettes appear after rains from November through March. In cool weather, young leaves are juicier and less tough. Flowering may begin during winter on the southern coast.

Flower clusters often develop from February through June. Green pods form immediately after flowering; the tenderest are available in early spring and early summer. The cycle may continue longer in cooler locations, while plants in the hot Central Valley can dry out earlier.

During summer, older pods harden and stems become coarse. Green seedlings may emerge again after autumn rain; that is a new generation, not a revival of the dry flowering stem.

WHAT IS EATEN WITHOUT FIRE

Tender young leaves. Plants For A Future lists these as raw food for Raphanus sativus. Their flavor is pungent and their texture coarser than lettuce. In small amounts they may be chopped finely or torn and combined with other greens. Large, older leaves are often unpleasantly tough.

Young flowering clusters and flowers. The species food reference also describes these eaten raw; their flavor resembles mild radish. This is a brief period when flowers have appeared but the plants have not yet dried.

Young green pods. While they remain crisp, juicy and not fibrous, they can be eaten raw. These are particularly useful on feral plants with thin or woody roots. Raw roots are also documented as edible in

cultivated varieties, but a large succulent root is not guaranteed on a random escaped plant. Do not recommend gathering roots without precise identification.

HOW NOT TO CONFUSE IT

Raphanus raphanistrum is extremely close to feral radish and frequently intermingles with it. Long pods and their constrictions between seeds are more informative than flower color alone, but hybridization makes identification difficult. Mustard, Brassica rapa, usually has yellow flowers and different pods that split open by valves. The young rosettes of other brassicas can be almost indistinguishable; do not gather food based on a rosette alone.

Plants near treated farmland and roadsides are unsuitable for gathering. Raw brassicas are rich in mustard compounds, so large monotonous servings are not recommended. Neither flower color nor taste should be used to identify an unknown species.

SOURCES

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Lemonade berry — red clusters and a tart drink made without fire · Rhus integrifolia

Rhus integrifolia

In Southern California chaparral, an evergreen shrub bears dense, rounded leaves and clusters of small red fruits. When the ripe fruits are moistened, their outer coating gives water a pronounced lemon-like tartness. This is Rhus integrifolia, commonly called lemonade berry. Its mature fruits are not like juicy garden berries, but they have long been used to make a refreshing cold drink. It is this food use, rather than the shrub's nonfood properties, that makes it important to this nature atlas.



Lemonade berry (Rhus integrifolia) — glossy rounded leaves and clustered ripe reddish drupes

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The plant typically grows as a dense, many-branched shrub or small tree. Its branches are woody and thickly leafy; large old shrubs may form almost impenetrable thickets. The alternate, leathery leaves are rounded or oval, several centimeters long, with an entire to slightly wavy or toothed margin and often a conspicuously notched tip. They are dark green and glossy above, paler beneath. In spring, clusters of tiny pale flowers, whitish to pinkish, appear at the tips of the shoots. After pollination, dense bunches of small reddish drupes form. Their surface can be sticky, coated in an aromatic tart substance. There is a hard stone inside and relatively little flesh. Rhus ovata also grows on nearby slopes; it often has larger, more elongated leaves without pronounced teeth. Examine the entire shrub and flower clusters, not just a single fruit.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Rhus integrifolia primarily in southern coastal counties: San Diego, Orange, Los Angeles, Ventura and Santa Barbara. It is native to coastal sage scrub and chaparral, especially on ocean-facing slopes and in somewhat dry canyons. Scattered botanical records in Sacramento County do not make this a common wild shrub of the valley. On suitable southern slopes, shrubs may be numerous and form dense green growth. Their fruiting can therefore be conspicuous locally, but an equally abundant harvest cannot be promised throughout California.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The foliage stays green all year. Flowering is generally associated with late winter and spring, when moisture remains available. Greenish young fruits gradually turn red after flowering, with the ripest clusters appearing in late summer and autumn. The timing varies from year to year with rainfall and distance from the ocean. Green or barely pink fruit has not developed sufficiently for food use: choose fully ripe red clusters. A shrub can look completely green in summer while bearing no ready fruit, so distinguish the leaf season from the season for making a drink.



Lemonade berry (Rhus integrifolia) — glossy rounded leaves and clustered ripe reddish drupes

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WHAT IS EATEN WITHOUT FIRE

Ripe reddish fruits may be eaten raw. Plants For A Future explicitly describes the tart outer coating, which can be sucked off while leaving the hard stone intact. There is little flesh, and the entire fruit should not be bitten through. Its strongly sour, somewhat resinous taste varies between shrubs.

Cold “lemonade” is a more convenient use. Place clean, ripe fruit clusters in drinking water, bruise them gently and steep for about 10–30 minutes without heating. Strain the drink to remove skin, hairs, flesh and hard stones. The species account notes that boiling can make the drink excessively astringent; this project does not use fire in any case. A cold infusion still requires clean drinking water and fresh preparation. Do not leave it sitting through a hot day.

Stones, bark, leaves and young shoots are not recommended as edible parts. Plants of the cashew family can provoke contact reactions in sensitive people; anyone unsure of their tolerance should avoid consuming the fruits.

HOW NOT TO CONFUSE IT

The closely related Rhus ovata, described separately, has more elongated, egg-shaped leaves and often grows farther inland, although their ranges overlap. More important is ruling out western poison oak, Toxicodendron diversilobum. Its leaves usually occur in threes, often change color in autumn, and its mature fruits are whitish rather than dense red clusters. Its sap can harm skin even without being eaten. Do not gather an unknown red-fruited shrub merely because it resembles lemonade berry. Collection may also be restricted in protected chaparral and on private land.

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Sugar bush — red fruit and a sweet-tart cold drink · Rhus ovata

Rhus ovata

A dense evergreen shrub with thick, shiny leaves grows in the dry chaparral of Southern California. In spring, small white-pink flowers open at the ends of its branches, followed later by clusters of reddish, sticky fruits as though coated with a fine sweet film. This is Rhus ovata, sugar bush. Indigenous peoples of Southern California ate its fruits and made a tart drink from them without fire. For raw food, only confirmed ripe fruits are used; the leaves and shoots remain on the shrub.



Sugar bush (Rhus ovata) — shiny evergreen leaves and sticky red drupes

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This is an evergreen shrub or small tree, generally with a rounded, dense crown. Its branches are fairly rigid and its young shoots are greenish brown. Leaves are single, alternate, thick and leathery, three to eight centimeters long, usually egg-shaped, with entire or gently wavy edges. Their upper surface is shiny and dark green. A leaf may be slightly folded along the midvein, like a little boat. The small whitish or pink flowers gather in dense clusters at the branch tips. After flowering, rounded red drupes develop, about six to eight millimeters across. Ripe fruit has a sticky surface, a sweet-tart secretion and fine hairs; there is very little flesh, with a hard stone inside. Some shrubs fruit abundantly and others hardly at all, owing both to their reproductive biology and the weather.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora shows Rhus ovata chiefly in Southern California—Los Angeles, Riverside, San Diego, Orange, Ventura and neighboring counties. It is characteristic of dry rocky slopes and chaparral canyons, often somewhat farther from the seashore. Unlike the coastal Rhus integrifolia, sugar bush commonly grows farther inland in foothill areas. It is not an ordinary wild shrub of the Sacramento Valley; a garden planting does not establish a natural population. In the south, shrubs can form dense green groups even in the dry season.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The leathery foliage remains green year-round. Flowers appear most often in late winter and spring, roughly March through May, although the climate can shift the timing. Small green fruits follow, becoming red and stickier by late summer and autumn. Ethnobotanical descriptions of the Kumeyaay particularly mention harvesting ripe red fruit in autumn. The sticky coating can persist when some fruits dry. The best time for a cold drink is when red clusters are ripe, not when spring flowers are opening.



Sugar bush (Rhus ovata) — shiny evergreen leaves and sticky red drupes

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WHAT IS EATEN WITHOUT FIRE

Ripe red fruits. Plants For A Future confirms their raw use, while accounts of the Kumeyaay and Cahuilla describe eating ripe fruits and using their sweet-tart juice. The aromatic, sour coating can be sucked off carefully without biting the hard stone. Because the fruit is small, it is more of a tart addition than a substantial berry.

Cold berry drink. Lightly crush clean ripe clusters in cold drinking water, steep for approximately ten to thirty minutes and strain off the hard parts and fine hairs. The result is tart water resembling unsweetened lemonade. This method is given explicitly in the species food reference and does not require boiling. Use only clean fruit and potable water.

Leaves, bark, young branches and stones are not food without fire. Cases of skin irritation from sumac sap are known; people with marked sensitivity to plants of the cashew family should avoid contact.

HOW NOT TO CONFUSE IT

The related Rhus integrifolia grows closer to the coast and often has rounder, slightly toothed leaves. The most important hazard is Toxicodendron, especially poison oak. Toxicodendron diversilobum more often bears leaves in threes and small whitish fruits, not the red terminal fruit clusters of sugar bush; contact with its oil can produce severe skin inflammation. Recognize Rhus ovata by its single leathery leaves, terminal flower clusters and red hairy drupes. Red fruits of an unknown shrub must never be considered edible just because of their color.

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Skunkbush sumac — three-part leaves and tart fruit for a cold drink · Rhus trilobata

Rhus trilobata

On dry rocky slopes and in Southern California canyons grows a broad, low shrub with leaves divided into three leaflets. In late summer, dense clusters of small reddish fruits may be visible among the foliage. This is Rhus trilobata, skunkbush sumac. Its ripe tart fruits can be eaten fresh or steeped in cold drinking water to make a lemonade-like drink. However, its three-part leaves demand particular care: poison oak grows nearby, and touching it can cause severe dermatitis.



Skunkbush sumac (Rhus trilobata) — three-part leaves and clustered red fruits

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The plant is deciduous, normally forming wide, spreading shrubs from half a meter to one and a half or two meters tall. Older branches are brown and branched, sometimes creeping over rocky ground. Alternate leaves consist of three leaflets. The middle leaflet is generally larger than the lateral ones. The blades may be ovate or slightly lobed, with several broad teeth or shallow notches. Crushing a leaf can release a strong, unpleasant smell—reflected in the name skunkbush—but odor is not a suitable way to test an unidentified plant in the field. In spring, before the foliage is fully unfolded, small clusters of yellowish or greenish flowers appear. Dense groups of tiny, round red fruits with a thin, sour outer layer develop afterward. Each fruit contains a relatively large stone for its size. In autumn, the foliage can turn red or yellow before falling, leaving woody shoots.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Rhus trilobata among California's native sumacs, mainly in dry chaparral and pinyon-juniper woodland. Modern taxonomic treatments frequently include it within Rhus aromatica, while the older name Rhus trilobata remains common in species food references and photo archives. It occurs in southern and eastern canyons, especially on dry rocky slopes and limestone outcrops. The shrub is not a common fruiting species on the urban floor of the Sacramento Valley. In suitable Southern California habitats, it may grow in groups but is not found everywhere. Some geographical forms, including the rare var. simplicifolia, call for particular care; small populations should not be harvested.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves emerge after winter rainfall and spring warming. Inconspicuous yellowish flowers generally open in spring, around March and April in warm locations and later in the mountains. Green fruit slowly reddens through summer. The tart outer covering becomes most pronounced at full maturity, often from late summer into autumn. Clusters can persist on the branches as the leaves change color, but some fruits dry out and lose their quality. For a cold drink, use fresh, fully ripe red fruits rather than unidentified green ovaries.



Skunkbush sumac (Rhus trilobata) — three-part leaves and clustered red fruits

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WHAT IS EATEN WITHOUT FIRE

The ripe, tart outer part of the fruit. Plants For A Future explicitly confirms raw use. The flesh is extremely thin and sharply sour; do not bite the relatively large stone. A small quantity of clean, ripe fruits can be used as a tart addition, although preparing flavored water is more convenient because there is so little flesh.

Cold “lemonade.” The species reference describes steeping fruit in cold or hot water for ten to thirty minutes and specifically warns that boiling makes the drink more astringent. The method without fire uses potable water, a clean container, gentle bruising and straining to remove stones and skins. Do not store the drink for long in hot weather. Woody leaves and bark are excluded from food.

Food history. Different Indigenous peoples of the North American Southwest used the small red fruits, including for a tart, refreshing drink. Some also reported drying fruit for later use. Only methods requiring no fire are described here.

HOW NOT TO CONFUSE IT

The most dangerous look-alike is western poison oak, Toxicodendron diversilobum, which also has leaves arranged in threes. Poison oak, however, generally has different branching, often shinier leaves and pale whitish-green ripe fruits rather than the dense red clusters of this sumac. Its sap is harmful to skin regardless of any intended food use. Rhus ovata has single, entire leaves; Rhus integrifolia also bears single, leathery leaves. Gathering requires both mature three-part foliage and ripe red fruit clusters. Do not touch an unknown plant just to test its smell.

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California bitter gooseberry — large purple berries with glandular bristles · Ribes amarum

Ribes amarum

On a shaded oak-woodland slope in Southern California, a prickly shrub with rounded, lobed leaves and unusual purple-red flowers may appear in spring. In summer, it bears round, dark berries covered with long glandular bristles. This is bitter gooseberry, a species native to California. Despite the name, Flora of North America describes ripe berries as edible. For raw food, however, the irritating bristles must be removed completely.

HOW TO IDENTIFY IT

A deciduous shrub about one to two meters tall, with upright or slightly spreading stems. Two or three sharp spines often occur at the nodes, while the sections between nodes generally have few large prickles. Young branches are hairy and sometimes glandular-sticky. Leaves are rounded, heart-shaped at the base, with three to five shallow lobes and rounded teeth. The flowers hang singly or in pairs, with a reddish tube and long, dark-purple, reflexed sepals surrounding small, pale petals. Ripe berries are round, about 1.5–2 centimeters across, purple, and densely covered in firm glandular bristles.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Ribes amarum endemic to California, with several hundred observations. It grows in cool, shaded canyons, oak woodland, chaparral and pine forests of Central and Southern California, from San Diego toward Monterey and parts of the central Sierra Nevada. It is not a common gooseberry of Sacramento's urban valley. Certain very localized forms, such as the historically recognized var. hoffmannii, receive particular botanical attention, so berries should not be stripped in large quantities from rare shrubs.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves develop after winter rain, often as early as January or February on lower slopes. Flowering extends from late winter into spring, usually February through April. Berries then enlarge during spring and ripen in summer, sometimes nearer July at cooler elevations. Unripe green berries remain firm, while mature fruits turn dark and soften. After the dry summer, foliage may partly fall.

WHAT IS EATEN WITHOUT FIRE

Only the flesh of completely ripe berries. Flora of North America specifically identifies ripe Ribes amarum berries as edible, although the name reflects the bitter taste of some fruits. The inner flesh may be sour and astringent and contains several small seeds. Outer glandular bristles irritate the tongue and throat. It is safer to cut the berry open and extract the clean, soft pulp without the hairy skin, or carefully press it through a fine sieve. If the bristles cannot be removed, do not taste the fruit. Flowers, spiny branches, leaves and roots are not included in the raw-food list.

HOW NOT TO CONFUSE IT

Ribes roezlii is another native, spiny gooseberry of California's forests, but differs in leaf, flower and fruit form. Ribes speciosum has long red tubular flowers resembling fuchsia. Ribes indecorum, by contrast, lacks spines at its nodes and bears white flowers. Identifying bitter gooseberry requires the purple sepals, large glandular-bristly berry and spines at the nodes. Never transfer the raw edibility of a known gooseberry to an unidentified fruit.

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Golden currant — yellow spring flowers and summer berries · Ribes aureum

Ribes aureum

In foothills and along certain California streams, a deciduous shrub becomes particularly conspicuous in spring, when small clusters of golden-yellow flowers hang from its branches. Round berries later take their place. They are not necessarily yellow: fully ripe fruits may be orange, red, brown or nearly black. This is golden currant, Ribes aureum, a native species of western North America. Its ripe berries are eaten fresh, without heating.



Golden currant (Ribes aureum) — hanging golden-yellow flowers and rounded summer berries

Denis.prévôt · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an upright perennial shrub, most often one and a half to three meters tall. Unlike many wild gooseberries, its branches usually have no conspicuous spines. The shoots are gray-brown and the bark is rougher on older branches. New stems can grow from the base, allowing the plant to form groups.

Leaves are attached individually on stalks, not in opposite pairs. Their overall outline is rounded and the blade is divided into three, sometimes five, shallow lobes. Prominent veins spread from the base and the margin is toothed to varying degrees. Young leaves are light green in spring; toward the end of the season they turn yellow and fall.

Several flowers grow together in small, hanging racemes. They have an elongated tubular calyx, yellow sepals and tiny petals. They often release a pleasant spicy fragrance. Their color can gradually shift from yellow to orange or reddish. Round, smooth berries, generally about half a centimeter to one centimeter across, develop in their place, with a remnant of the flower visible at the tip. Berries on one shrub may vary in color.



Golden currant (Ribes aureum) — hanging golden-yellow flowers and rounded summer berries

Sten (Sten Porse) · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Ribes aureum is native to California, particularly along stream banks, in foothill oak woodland and in other communities with enough spring moisture. It is not equally common in every county: it may grow in noticeable groups in moist floodplains but be far rarer on dry, open plains.

For the Sacramento region, the Sierra foothills, oak woodland and floodplain sites with small watercourses are of particular interest. University of California Master Gardeners of Placer County also describes golden currant as a plant suited to the local climate, but a shrub grown in a garden does not prove the presence of a wild plant at that particular location. One should not automatically regard every currant shrub in a park as a native, naturally occurring population.

California also has Ribes aureum var. gracillimum, a variety seen in the south of the state. Its berries may be orange or reddish rather than black. Berry color is therefore not the principal character for identifying this species.

WHEN THE EDIBLE PARTS ARE AVAILABLE

As the moist spring begins, the shrub develops light-green leaves. In warm parts of California, flowering may start in winter or early spring; in cooler foothills, conspicuous yellow flowers usually appear from March through May. Exact timing depends strongly on elevation and moisture.

After pollination, small green berries form. Soft fruits mature during summer, approximately June through August, although the season shifts in some cooler areas. In late summer and autumn, leaves gradually fall, while berries preserved through natural drying may be used beyond the brief summer fruiting period.

Leaves remain on the shrub for many months, flowers last a few spring weeks, and ripe berries suitable for eating raw are available only after they have fully matured. These three seasons should not be confused.

WHAT IS EATEN WITHOUT FIRE

Ripe fruits. Golden currant is known specifically for its berries. The USDA Natural Resources Conservation Service states explicitly that fully ripe Ribes aureum berries may be eaten directly from the shrub. This independently confirms raw consumption of the species. Flavor varies: on some shrubs the berries are sweet and pleasant, while on others they are noticeably tart. Full ripeness is determined not only by color but also by the fruit's softness.

Fresh mashed berries. They may be eaten whole, crushed gently between the fingers or added to a cold mixture of fruit without heating. The small seeds remain inside the berries. The quantity of fruit depends on the shrub and the season: one may bear well, while another produces almost no crop.

Naturally dried berries. The most directly documented method is eating fresh, ripe fruit. Drying without fire is possible as a means of preserving berries, but this article does not present it as a specific tradition of a Californian Indigenous people without evidence explicitly concerning Ribes aureum.

Young leaves, flowers, roots and stems are not on the raw-food list. Their features help identify the plant, but the known edibility of ripe fruit does not establish that all other parts are suitable.

HOW NOT TO CONFUSE IT

Other members of Ribes also grow in California. Some gooseberries bear spines, while their berries have hairs or bristles; shoots of Ribes aureum usually have no spines and its berries are smooth. Chaparral currant, Ribes malvaceum, has pink flowers, a different flowering season and leaves that differ in shape and hairiness. A red or dark berry alone cannot identify a shrub as golden currant: look for its yellow spring flowers, characteristic three-lobed leaves and arrangement of fruits.

Ornamental Ribes cultivars with yellow flowers may grow near gardens. Identify the exact species before gathering, not by tasting a berry. Shrubs from treated land, beside busy roads or where soil contamination is unknown are unsuitable for raw food.

SOURCES

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Stink currant — bluish, mealy berries of the moist northern forest · Ribes bracteosum

Ribes bracteosum

In shaded forests on California's northern coast, one may encounter a powerful shrub with exceptionally large currant leaves. In spring, dozens of small, softly orange-colored flowers open on long upright racemes. By the end of summer they are replaced with small bluish-black berries bearing a pale bloom. This is Ribes bracteosum, known in English as stink currant. Its ripe berries are eaten raw, but their texture and flavor are more mealy and unusual than familiar garden blackcurrants, and large portions can cause digestive upset.



Stink currant (Ribes bracteosum) — large lobed leaves and bluish-black ripe berries

Walter Siegmund (talk) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a deciduous shrub that can reach two to three meters in both height and width in a favorable moist location. Its branches are mostly free of large spines, upright and broadly spreading. Leaves are alternate, very large and rounded, usually with several broad lobes and toothed margins. Some exceed fifteen centimeters in diameter. When rubbed, the leaves may emit a strong, unusual odor, but this is not an edible-use characteristic. In spring, long, often upright racemes rise among fresh leaves, bearing many small orange or greenish-orange flowers with broad calyces. Following pollination, small green ovaries form along these racemes and gradually turn blue. A ripe berry is rounded, approximately five millimeters across, bluish black, often with a conspicuous waxy bloom. Several small seeds lie inside, surrounded by fairly dense and sometimes mealy flesh. Large leaves turn yellow and fall in autumn.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Ribes bracteosum as native to California, although its documented observations are far fewer than those of common foothill currants. A California native-plant nursery places its natural range from Mendocino County northward, particularly in cool, damp redwood forests. The species is associated with North Coastal Coniferous Forest, Redwood Forest and Mixed Evergreen Forest communities. It favors shaded, moist canyons, forest streams and a thick layer of leaf litter. It is not a common shrub of vacant lots in the Sacramento Valley; it is more likely to be encountered while traveling to the northern coast. In a suitable location the shrub may be large without necessarily yielding many edible berries.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After winter moisture, huge soft leaves and long racemes of orange flowers develop in spring. On the northern coast, flowering may continue from April through June, later in a cool canyon than on a sunny slope. At first the berries are small and green. By the end of summer, they become blue or nearly black. The species account in Plants For A Future gives September as a characteristic time of maturity in a temperate climate; in warmer parts of Northern California it may be August. Leaves fall in autumn, while some late berries remain attached to racemes, soon softening and spoiling. Only completely mature dark fruit is used as raw food.



Stink currant (Ribes bracteosum) — large lobed leaves and bluish-black ripe berries

Walter Siegmund · CC BY 2.5 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe blue-black berries. Plants For A Future explicitly confirms raw consumption of Ribes bracteosum. Their flavor has a faint blackcurrant note, but their flesh is more mealy, sometimes with bitterness. A long raceme may carry many little fruits. However, large quantities should not be eaten: the species reference warns of possible stomach upset from excessive consumption. It is better to limit food use to a small portion of fully ripe, undamaged berries.

Natural drying. The source confirms that dried mature fruits were used as stored food, without requiring cooking over fire. The moist coastal climate, however, is poorly suited to spontaneous drying, because berries readily develop mold. Without a dry, ventilated place, it is preferable to eat fresh fruit on the day of collection. Do not use overripe, decaying clusters.

History of consumption. In northwestern North America, these berries were gathered as a seasonal addition to other forest fruits. For the reader, the relevant history is the food use itself. Leaves, branches and flowers must not be presented as raw foods without separate species-specific evidence.

HOW NOT TO CONFUSE IT

Ribes nevadense has pink-red flower racemes and generally smaller mountain-forest leaves. The racemes of Ribes bracteosum are much longer and frequently orange, while a leaf may be enormous. Ribes sanguineum flowers in bright-pink racemes and more often inhabits open places. True gooseberries bear spines on their shoots, which are absent or much less noticeable on this species. Identification should combine leaf size, the form of the flower raceme, habitat and ripe dark berries. Never eat a dark fruit from an unknown shrub merely because it grows in a long cluster.

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California gooseberry — spiny shrub with red fruit on coastal slopes · Ribes californicum

Ribes californicum

Among shrubs in California's coastal mountains grows a low gooseberry with lobed leaves, prickles on its branches and small red fruits. The berries often carry stiff spines, so they cannot simply be scooped up by the handful like currants. This is Ribes californicum, California or hillside gooseberry, a species native exclusively to the state. The inner flesh of completely ripe fruit can be eaten raw, but the prickly outer surface must be separated from it.



California gooseberry (Ribes californicum) — red prickly berry and lobed leaves

Tom Hilton · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub often half a meter to one and a half meters tall, with slender woody stems that arch and spread outward. Spines occur on the stems near the bases of leaf stalks, sometimes several together. Leaves are alternate, rounded, with three to five lobes and clear teeth at the margins. Young shoots and leaf undersides often have soft hairs. Flowers develop in spring, singly or in small groups, often greenish, creamy or pinkish, without a large, showy corolla. After pollination, rounded fruits about one centimeter wide appear. They start green and gradually turn red. The skin carries a few or many long, bristly prickles, clearly visible in profile. Inside is soft pulp with several small seeds. Identifying the shrub requires all its characters: leaf shape, position of stem spines, flowers and fully colored fruits.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Ribes californicum as endemic to California and shows it in the coastal ranges, chaparral and oak woodland. Observations are common in San Mateo, San Benito, Santa Clara, Alameda and Marin counties, and in some more southerly counties. The species includes varieties such as var. californicum and var. hesperium, found in different parts of its range. It is not a principal, abundant fruiting plant of the dry Sacramento plain. Suitable habitats are more likely on a westward trip to the Bay Area hills or coastal mountains. On some slopes, individual shrubs are scattered rather than forming large berry thickets.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In mild coastal regions, leaves unfold in winter or early spring following rain. Small flowers appear in spring, often from March through May and later on cooler slopes. Green, prickly berries begin developing after pollination and gradually redden. Completely ripe fruit is generally available in late spring and summer, depending on elevation, shade and available moisture. Some berries on a shrub may already be red while others remain green. Hard green fruits should not be treated as the equivalent of ripe ones. As the dry season advances, some leaves yellow and fall, and the fresh fruit crop quickly ends.

WHAT IS EATEN WITHOUT FIRE

Only the flesh of ripe red fruit. Plants For A Future directly confirms that Ribes californicum is eaten raw. Its fruit can have a tart, slightly sweet flavor and offers relatively little flesh. First confirm full ripeness, then carefully separate the soft interior from the skin bearing sharp bristles. Never put an entire prickly berry into the mouth: the bristles can injure lips and mucous membranes.

Fresh mashed pulp. Several peeled fruits can be crushed cold and eaten immediately. Because harvests are small, this is more of an occasional local flavor than a substantial source of food. The species reference also describes drying fruit, but dried food must not retain prickles that could cause injury when eaten later.

Leaves, flowers, shoots and roots are excluded from the raw-food list. If the prickly skin cannot be removed cleanly, leave the individual fruit uneaten.

HOW NOT TO CONFUSE IT

Ribes roezlii, described earlier in the atlas, often has larger, particularly densely prickly berries in the Sierra mountains. The mature fruits of Ribes divaricatum generally become nearly black and are smoother. Fuchsia-flowered gooseberry, Ribes speciosum, has long scarlet tubular flowers and orange-red bristly fruits. Flowers of Ribes californicum are less showy, and its leaf shape differs. A red spiny berry alone cannot identify the species without the flower, shoot and geographic range. Poison oak may grow beside gooseberry shrubs; its leaves must not accidentally be included when gathering.

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Wax currant — pale flowers and red berries in mountain forests · Ribes cereum

Ribes cereum

On dry, rocky slopes of the Sierra Nevada, a low, branching shrub with light-green, lobed leaves may be seen. In summer, round berries hang from it, changing from green to pink-red, sometimes with a slight waxy bloom. This is Ribes cereum, wax currant. Its fruits are known as raw food, but have an unusual consistency, and large quantities may cause nausea. This species is therefore a small seasonal addition rather than a source of berries for a substantial diet.



Wax currant (Ribes cereum) — small lobed leaves, pale flowers and reddish berries

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub usually half a meter to two meters tall, often strongly branched. The branches are relatively slender and lack the long, rigid spines of gooseberries. Leaves are alternate, small and rounded, with three to five short lobes and gently toothed margins. The upper surface is sometimes slightly waxy; fine glandular hairs may occur beneath. Small groups of flowers, often in short racemes, have a whitish, cream or faintly pink tubular calyx and inconspicuous petals. They are far less showy than the long pink flower clusters of Ribes nevadense. Small spherical berries form afterward, often retaining dry remains of the flower at the tip. Their color changes from greenish to pink or red, becoming almost purple in some populations. Inside is a soft, sometimes jelly-like mass containing numerous small seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Ribes cereum as native to California, with observations across the Sierra Nevada and the mountain counties of Inyo, Mono, Placer, Plumas, Shasta and the south. It is characteristic of yellow pine, fir and subalpine forests, open rocky slopes and juniper communities. At high elevations, it even occurs near the tree line. The urban Sacramento Valley is not its usual habitat. California mountain populations include var. cereum, while other varieties may differ somewhat in leaves and fruit. In suitable forests, shrubs may grow in small groups, but they do not create a carpet of berries.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the mountains, leaves unfold after snowmelt in spring or early summer. Flowers follow, often appearing from May through July and even later at high elevations. Green ovaries develop after pollination and gradually change color. Ripe fruit is most often available in August and September, sometimes earlier on warm, sunny slopes. On some shrubs, red berries may still be hard; softness and full coloration matter more than a date alone. Leaves turn yellow and fall in autumn. On cold, high mountain slopes the berry season may end very quickly.



Wax currant (Ribes cereum) — small lobed leaves, pale flowers and reddish berries

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries. Plants For A Future explicitly records raw consumption of Ribes cereum but warns that flavor varies widely, from bland to highly appreciated, and large quantities can cause nausea. It therefore makes sense to limit intake to a small food portion for anyone without individual contraindications, rather than a bucket of berries. The flesh may be tart, mealy-jelly-like and mildly astringent. Eat only ripe fruit fresh, without mixing it with green, unripe berries.

Flowers. The species account also confirms eating the flowers raw, with a mild, sweetish flavor. They are tiny, appear in spring and offer no substantial harvest. Leaves are mentioned in food references without clear directions for raw use, so leaves, roots and shoots are not included as edible parts here.

Completely ripe berries can be dried naturally, but if any discomfort develops, consumption should stop. Collection may be prohibited in protected high-mountain areas.

HOW NOT TO CONFUSE IT

Ribes nevadense differs in its longer, hanging, pink-red flower racemes and usually dark ripe berries. Ribes montigenum, another mountain gooseberry, has spines and some bristly fruits. Recognize wax currant by its small lobed leaves, absence of large spines, modest pale flowers and reddish berries retaining remnants of the calyx. Small red fruits alone do not identify an unknown shrub. Reliable photos of each species are especially important for the atlas when several Ribes grow along the same trail.

SOURCES

- https://www.calflora.org/app/taxon?crn=7111
- https://www.calflora.org/app/countytaxon?crn=7112

- https://pfaf.org/user/Plant.aspx?LatinName=Ribes+cereum

Spreading gooseberry — dark fruit among the spines of a coastal shrub · Ribes divaricatum

Ribes divaricatum

At the edges of California's coastal forests, a spreading prickly shrub with small rounded leaves may be found. In spring, modest drooping flowers open, and during summer greenish fruit gradually turns red and then nearly black. This is Ribes divaricatum, spreading gooseberry. Its ripe berries are edible raw; green, unripe fruit, sometimes mentioned in culinary sources, was generally eaten after preparation involving heat.



Spreading gooseberry (Ribes divaricatum) — arched spiny stems with nearly black ripe berries

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HOW TO IDENTIFY IT

A deciduous shrub with thin, arching branches, often one to two meters tall. Sturdy spines are noticeable near the nodes, sometimes with additional prickles between them. Alternate, stalked leaves have three to five rounded lobes and toothed margins, resembling little maple leaves in shape. Flowers grow singly or in small groups and are greenish, pinkish or slightly reddish, much less showy than those of red-flowering currant. Each fruit is a rounded berry about a centimeter across, containing several tiny seeds. Initially green and firm, it slowly ripens to dark purple, almost black, and softens. Some shrubs bear slightly bluish berries. It is useful to observe the same shrub in spring and summer: the combination of spines, flowers and fruit is more reliable than any one leaf.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Ribes divaricatum as native to California, particularly characteristic of coastal counties such as San Mateo, Marin, Santa Cruz, Monterey and San Luis Obispo and neighboring districts. It grows at forest edges, beside streams, in moist canyons and among low coastal shrubs. The hot, dry Sacramento Valley is not its main natural range. In suitable places, individual shrubs can bear abundant fruit, but they generally do not form uninterrupted thickets extending for miles as Himalayan blackberry does. It is a native species, not a planted fruit crop, although its relatives are cultivated in gardens.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves and flowers emerge in spring, often in April and May. Little green berries appear after flowering and enlarge over several weeks. Plants For A Future gives approximately July and August as the fruit-ripening season. In cooler places, some dark fruits may remain on the branches into autumn if birds have not eaten them. Leaves turn yellow and fall toward the end of the season. For eating without heat, wait for softness and a fully dark color: green fruit and ripe berries are different food stages.



Spreading gooseberry (Ribes divaricatum) — arched spiny stems with nearly black ripe berries

Nadiatalent · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Completely ripe dark berries. Plants For A Future explicitly confirms the raw edibility of Ribes divaricatum. The flesh is juicy and combines sweetness with tartness; the skin can be more acidic than the inside. Berries may be eaten fresh or mashed without heating. The small seeds within ripe, soft flesh generally do not interfere with eating.

Cold berry mash. Fully ripe fruits can be crushed and consumed soon after gathering. In hot weather, damaged berries spoil particularly quickly. Do not use fruit with mold or a smell of fermentation.

Unripe green berries of this species were sometimes gathered for later cooking, but this does not mean they are equally suitable raw. Leaves, flowers and roots are not included as food parts. Spines require careful gathering to avoid skin injury.

HOW NOT TO CONFUSE IT

Ribes speciosum bears long, bright-red flowers resembling tiny fuchsias, and red-orange fruits covered in bristles. Ribes divaricatum has less conspicuous flowers, while its fruit darkens and is generally smoother. Golden currant, Ribes aureum, has yellow flowers and fewer spines. Several Ribes species can be identified reliably only by combining stems, leaves, flowers and mature fruit. Western poison oak, Toxicodendron diversilobum, may grow nearby in coastal chaparral; do not accidentally include its leaves when gathering berries. Do not collect fruit from treated ornamental shrubs or restricted property.

SOURCES

- https://www.calflora.org/app/countytaxon?crn=7114
- https://pfaf.org/user/plant.aspx?latinname=Ribes+divaricatum

White-flowered currant — fragrant white racemes and small purple berries · Ribes indecorum

Ribes indecorum

In the dry oak woodlands of Southern California, short clusters of tiny white flowers with a faint spicy scent can appear on almost bare branches in winter or early spring. Later, the shrub puts out rounded, lobed leaves and produces dark berries in summer. This is white-flowered currant, a native species of the southern coastal chaparral. Its berries are described as edible, although Flora of North America notes that the flavor of this species has not been adequately studied.



White-flowered currant (Ribes indecorum) — clusters of small white flowers and purple ripe berries

Stickpen · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub, usually 1.5–3 meters tall. Its branches are fairly straight and densely covered with short hairs and tiny glands, but unlike many gooseberries, they have no true spines at the nodes. The alternate leaves are rounded, with three to five shallow lobes, scalloped-toothed margins and a heart-shaped base. Their undersides are whitish and felted. The short flower racemes generally bear 10–25 white flowers, each with a small tubular calyx and short white petals. The berries are round, about 6–7 millimeters in diameter and purple at full maturity, sometimes with soft glandular hairs and small seeds inside.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists approximately 900 observations of Ribes indecorum in California, primarily in San Diego, Los Angeles, Orange, Riverside, Ventura and Santa Barbara counties. The species grows in coastal chaparral, among sage scrub, near oak groves, on north-facing slopes and along seasonal streams. It is not a widespread native shrub of the Sacramento Valley. Its white racemes make it noticeable in winter; after the dry summer begins, it may lose some of its leaves. Rules governing protected natural areas determine whether fruit may be gathered.

WHEN THE EDIBLE PARTS ARE AVAILABLE

On the Southern California coast, buds may open in late autumn. The main flowering season is winter and early spring, often from December through March. Small green berries develop after pollination and darken in late spring and early summer. Drought years may produce little fruit. A fully ripe berry is evenly dark purple, with a soft skin. There is no reason to gather unripe green berries.

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries. California native-plant nurseries Las Pilitas and Plant Material independently describe the fruits of Ribes indecorum as edible, although the academic Flora of North America does not characterize their taste. They should not therefore be presented as reliably sweet “wild currants”: the small berries may be tart or astringent, with little flesh. Once the species is positively identified, a small amount of completely ripe, soft fruit can be eaten raw after removing visible glandular hairs and dirt. Leaves, roots and flowers have no confirmed raw food method in the sources used here. Even a small serving should be avoided in case of individual intolerance.

HOW NOT TO CONFUSE IT

Ribes sanguineum usually bears longer, pink or reddish flower racemes, whereas the flowers of Ribes indecorum are small and white. Ribes amarum has spines at the nodes and large, bristly berries, unlike white-flowered currant. Ribes malvaceum may have similarly rounded leaves, but flower color and raceme shape help separate the species. A flowering shrub is needed for reliable identification: one dark berry alone is not enough.

SOURCES

- https://www.calflora.org/app/taxon?crn=7119
- https://www.laspilitas.com/nature-of-california/plants/579--ribes-indecorum
- https://plant-material.com/collections/plants/products/ribes-indecorum
- https://www.worldfloraonline.org/taxon/wfo-0001135601

White-stemmed gooseberry — pale branches by mountain streams and small ripe berries · Ribes inerme

Ribes inerme

In cool forest hollows in Northern California, a shrub with slender, relatively pale branches and rounded, lobed leaves sometimes grows. Small greenish flowers appear on its branches in early spring, followed by round berries. This is Ribes inerme, white-stemmed gooseberry, a native species of moist mountain plant communities. Its fully ripe fruit can be eaten raw, although the berries are small. The name inerme means “unarmed,” but some specimens do bear spines, so a smooth-looking shrub is not automatically this species.



White-stemmed gooseberry (Ribes inerme) — pale branching shoots and lobed leaves

DouglasGoldman · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrub sometimes reaches two meters tall and has several branching shoots. Young stems are generally light gray, pale brown or slightly greenish. Spines may be sparse, but on some plants they occur at the nodes. Alternate leaves are rounded and normally divided into three to five lobes, with small teeth along the edges and conspicuous veins radiating from the base. Flowers occur singly or in small groups in spring, colored greenish, whitish or faint pink. They are bell-shaped, with a noticeable calyx but nothing resembling the large open corolla of a garden rose. After pollination, small round fruits develop on short stalks. Depending on the local variety, they become darker or take on a reddish-purple color as they ripen. A mature berry is about eight millimeters across and contains several small seeds. In autumn the leaves turn yellow and fall, leaving the slender pale branches.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Ribes inerme is native to California and distinguishes var. inerme and var. klamathense. There are relatively few observations, only several hundred, chiefly from northern and mountain counties, on damp streamside sites and forest edges. The species is associated with wetland–riparian communities, cool streams and places where soil remains moist for long periods. It is not an abundant shrub of every park on the dry Sacramento Valley floor. Different Ribes with similar leaves may grow in the same canyon, so the flower and fruit should be observed on the same plant being identified. Small local groups should not be stripped of their entire crop for one serving.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After winter dormancy, buds open in spring, usually following the start of snowmelt in mountain valleys. Small flowers appear in early spring or closer to May in cooler places. Green, firm berries develop after pollination, gradually taking on their mature color during summer. In lower mountain zones, soft fruit may appear as early as July; higher up, it may ripen in August or September. Exact dates change from year to year with water availability. Green and ripe berries may occur together on one shrub. Leaves fall in autumn, while remaining berries can dry out and spoil quickly. The season for eating raw fruit comprises only healthy, soft, completely ripe berries.



White-stemmed gooseberry (Ribes inerme) — pale branching shoots and lobed leaves

DouglasGoldman · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe berries. Plants For A Future explicitly confirms the raw use of Ribes inerme fruit. This is a small gooseberry, about eight millimeters wide, with a flavor that may be sour and mildly sweet. Fresh berries can be eaten individually after carefully removing fruit stalks and dry flower remains. They are better regarded as a small addition to other forest fruits. Hard green berries are not equivalent to soft, ripe fruit.

Without fire. Sound ripe pulp can be crushed into a cold fruit mash. But it is practical only in a small, fresh portion: picking dozens of tiny berries from dense brush is labor-intensive. Discard fruit showing mold, insect damage, an unpleasant odor or rot. Raw leaves, flowers, bark and roots are not separately confirmed as food for this species and are excluded.

Caution about differing forms. Older references sometimes grouped Ribes inerme with Ribes divaricatum. Calflora currently recognizes it as a separate species with varieties. Do not identify every supposedly spineless coastal gooseberry as this plant without precise botanical examination.

HOW NOT TO CONFUSE IT

Ribes divaricatum grows mainly nearer the coast and usually differs in the color and size of ripe berries, sometimes with more obvious spines. Ribes lacustre is much more heavily armed with thorns and often has small, nearly black fruits. Ribes roezlii occurs more commonly in the Sierra and bears prickly berries, frequently with long, hard bristles on their skin. White-stemmed gooseberry cannot be identified merely by the absence of spines: Ribes inerme sometimes has them, and other Ribes can have poorly developed spines. The combination of flowers, leaves, shoots, ripe berries and the exact habitat is essential.

SOURCES

- https://www.calflora.org/app/taxon?crn=7120
- https://pfaf.org/User/Plant.aspx?LatinName=Ribes+inerme
- https://commons.wikimedia.org/wiki/Category:Ribes_inerme

Swamp currant — thorny shrub with small black fruit by cool streams · Ribes lacustre

Ribes lacustre

In California's cool conifer forests, a prickly shrub with glossy, lobed leaves may grow beside a woodland trail. When summer arrives, tiny, almost black berries can be seen beneath the leaves in slender clusters. This is Ribes lacustre, known as swamp currant or swamp gooseberry. Despite the word “currant,” it bears many strong spines on its branches and sometimes on the fruit stalks. Its completely ripe berries can be eaten raw, but reaching them requires care, and the flavor can be quite sour.



Swamp currant (Ribes lacustre) — spiny stems, lobed leaves and small dark berries

Walter Siegmund (talk) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub is usually one to two meters tall, with thin woody branches and numerous straight, sharp spines at the nodes and sometimes between them. Young shoots are greenish and later turn brown. The alternate leaves are rounded or almost heart-shaped, divided into three to five lobes with irregular teeth, and sometimes hairy and glandular beneath. In spring, short hanging racemes of reddish-green or purple flowers appear. Each flower has a noticeable calyx, but not the large, open petals of a rose. After pollination, small round berries develop. They are green at first, then turn dark purple, becoming almost black when fully ripe. Tiny seeds are enclosed in the fruit. Spines remain on branches even in the leafless season, which helps identify the shrub, though similar Ribes species are difficult to distinguish without flowers and berries.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora includes Ribes lacustre among California's native shrubs. In the state, it occurs in cool conifer forests, along damp woodland edges, in shaded ravines and beside streams, particularly in northern mountains and the Sierra Nevada. It should not be treated as a common roadside shrub of the hot, open Sacramento Valley floor; conditions are more suitable in higher forests. The shrubs may form small thickets beside trails or along the edges of moist clearings, but the abundant spines make them an inconvenient source of a large harvest. Collection can be forbidden in a forest reserve even when the species itself is not rare.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves unfold after spring snowmelt, followed by small flowers from April through June, depending on elevation. Green berries then form along the racemes. By mid- to late summer, they darken and soften; on cooler slopes ripe fruit may be found in August or September. Fruit colors can vary on one shrub, with green and nearly black berries hanging together. Only complete ripeness produces the flavor described in food sources. Leaves yellow and fall in autumn, ending the raw-fruit season. Thorny winter branches remain, but fresh berries generally do not.



Swamp currant (Ribes lacustre) — spiny stems, lobed leaves and small dark berries

Walter Siegmund · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe dark berries. Plants For A Future confirms the raw use of Ribes lacustre. Mature pulp is juicy and sour; some references describe a fairly pleasant flavor once it is fully ripe. Small berries can be removed individually, avoiding spines on the shoots. They need not become entirely sweet: even ripe berries of this species can remain tart. A small portion is enough.

Cold mashing and drying. Ripe berries may be crushed without heat or dried for later use, methods mentioned in the species account. Dry only clean ripe fruit under suitable dry conditions and never eat moldy berries. Spines and rigid fruit stalks are excluded from food.

Parts not recommended. Leaves, flowers, bark and roots are not confirmed as raw foods in the cited species reference. Although leaves of other Ribes are used in various ways, their uses must not be transferred to this species without evidence.

HOW NOT TO CONFUSE IT

Ribes roezlii bears larger fruits with long, conspicuous spines and is especially characteristic of parts of the mountainous Sierra. Ribes menziesii can be extremely prickly and bears dark fruit, but differs in flower structure and leaf details. Ribes montigenum grows higher in the mountains and may have reddish fruits; some older sources confused it with Ribes lacustre at the varietal level. For identification, compare the short hanging flower racemes, fruit size and color, type of spines and location. Black berries on a thorny shrub alone do not identify the species.

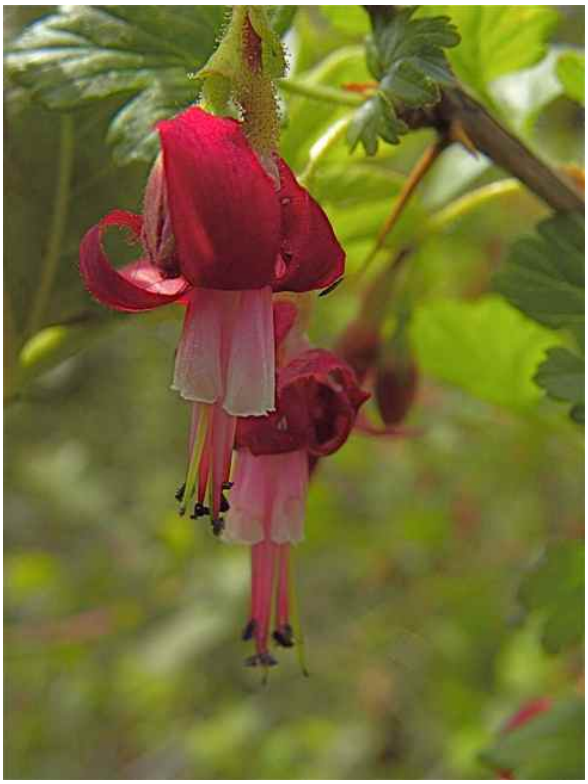
SOURCES

- https://www.calflora.org/
- https://pfaf.org/user/Plant.aspx?LatinName=Ribes+lacustre
- https://commons.wikimedia.org/wiki/Category:Ribes_lacustre

Lobb's gooseberry — hanging red-and-white flowers and tart berries · Ribes lobbii

Ribes lobbii

In Northern California's forests, unusual blossoms sometimes hang beneath the branches of a shrub, resembling tiny red-and-white lanterns. Round berries later form in their place, sometimes covered with sticky or bristly hairs. This is Lobb's gooseberry, also called sticky gooseberry. Its fruit can be eaten raw, although sources warn that the flavor is usually unappealing.



Lobb's gooseberry (Ribes lobbii) — drooping red-and-white tubular flowers

Peter Stevens · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous, thorny shrub, usually about one to one and a half meters tall, though sometimes shorter on exposed slopes. Spines are noticeable on the branches, especially near the nodes, while younger shoots can bear fine hairs. The rounded leaves have several lobes and toothed margins, resembling small gooseberry leaves. The principal flowering-season feature is a solitary or small group of drooping blossoms with a long floral tube. The reddish outer parts contrast with lighter, sometimes nearly white inner petals. The small fruits are spherical and darken at maturity. Some plants have fruit surfaces that are sticky or hairy. Seeds lie inside the juicy pulp.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Ribes lobbii as a shrub native to California, found on slopes in northern coastal and mountain conifer forests. Recorded plant communities include North Coastal Coniferous Forest and mountain fir forest. The plant is not characteristic of Sacramento's open, dry streets or the hot valley. It is more likely in cool forest habitats with appropriate moisture and soil. Even there, shrubs may stand individually rather than forming extensive berry thickets.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The red-and-white flowers appear in spring. Berries develop in summer, with timing shifting according to elevation.

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruit. Plants For A Future expressly confirms that Ribes lobbii berries can be eaten raw. However, it also describes them as generally unpalatable and sometimes very astringent. They are therefore an occasional possibility for trying a confidently identified ripe fruit, not a good regular source of calories. A berry may have a bristly skin and little pulp; damaged, moldy or unripe fruits must not be eaten. Leaves, flowers and roots are not included in the documented raw diet of this species.

HOW NOT TO CONFUSE IT

Related native gooseberries Ribes divaricatum, R. roezlii and R. montigenum have thorny branches, rounded leaves and berries, but differ in their flowers, spines, fruit coloration and hairiness. Lobb's gooseberry is especially recognizable by its large, unusual, drooping red-and-white flowers. Identification after flowering is harder: a single sticky berry cannot establish the species. Thorns can injure fingers, so do not shake the shrub or tear off entire branches.

SOURCES

- https://www.calflora.org/app/taxon?crn=7126
- https://pfaf.org/user/Plant.aspx?LatinName=Ribes+lobbii
- https://commons.wikimedia.org/wiki/File:Ribes_lobbii.jpg

Chaparral currant — early pink flowers and small purple berries · Ribes malvaceum

Ribes malvaceum

On California chaparral slopes, some shrubs flower before spring grasses begin their growth. Drooping clusters of delicate pink flowers appear among winter greenery, followed in summer by small, dark-purple berries. This is Ribes malvaceum, chaparral currant, a native shrub adapted to the dry season. Its completely ripe fruit can be eaten raw. Flowers and leaves help identify the species, but they are not themselves food in this account.



Chaparral currant (Ribes malvaceum) — drooping pink flower racemes and purple berries

Daderot · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub, occasionally retaining some leaves in a mild winter, approximately one to two meters tall. Branches are upright or slightly arching and generally lack the sturdy spines of certain gooseberries. Fine glandular hairs may occur on the shoots. Alternate leaves are rounded or heart-shaped at the base, with three to five shallow lobes and toothed margins. Their surfaces are somewhat wrinkled and the undersides often hairy. Flower racemes hang from the leaf axils on side shoots, sometimes with a dozen to several dozen pink or purple flowers. Each has a distinct tubular calyx, narrow petals and short flower stalks. Following flowering, small round berries about six to seven millimeters wide appear. They are greenish at first, later turning purple. Glandular hairs may occur on their surfaces, but they do not have the long, hard bristles found on the fruit of fuchsia-flowered gooseberry.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies Ribes malvaceum as native to California, occurring in chaparral, oak woodland and on dry slopes. Observations are numerous along the central and southern coast and in inland foothills, although the shrub is not equally common in every county. It grows on sunny or partly shaded slopes, among oaks and at the edges of canyons. California Flora Nursery describes it as a summer-drought-tolerant shrub that can begin flowering early in midwinter. It is not as abundant on the dry Sacramento plain as native blackberries near rivers, but suitable sites occur more often in the foothills. Ornamental plantings may also occur near cultivated gardens.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Unlike most northern berry shrubs, chaparral currant often begins flowering in winter after the first rains. Pink racemes can appear from December through March, and later in cooler areas. Small greenish berries form afterward. Full ripening occurs during spring and summer, depending on elevation, rainfall and temperature. The species food reference lists berries as available in mid- and late summer, although some fruit may mature earlier on warm southern slopes. Foliage often partly falls during the dry season. Winter flowers do not mean that edible berries are available in winter.



Chaparral currant (Ribes malvaceum) — drooping pink flower racemes and purple berries

Curtis Clark · CC BY-SA 2.5 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Completely ripe purple berries. Plants For A Future separately states that Ribes malvaceum fruit can be eaten raw. The berries are small, pleasantly tart and contain several seeds. A ripe berry is softer and darker than an unripe one. Fruit is conveniently eaten soon after gathering without heating or crushed into a small cold berry mash. Do not expect a substantial energy harvest from one shrub: even when there are many berries, they are very small.

Fresh pulp. The skin of completely ripe berries need not be treated separately if it is clean. However, if noticeable glandular hairs irritate the skin or mouth, avoid those fruits. Unripe green berries are not equivalent in flavor to mature ones and are excluded from raw food.

Flowers, leaves, stems and roots remain part of the botanical description. Uses recorded for other Ribes do not establish that every part of this species is edible.

HOW NOT TO CONFUSE IT

Ribes sanguineum generally has much larger, showier red-pink spring racemes and dark berries with a bluish bloom, but differs in overall leaf shape and distribution. Ribes speciosum has long, bright-red flowers resembling fuchsia, thorny shoots and berries covered with dense bristles. Golden currant, Ribes aureum, has yellow flowers. Ribes species are difficult to distinguish by one lobed leaf before flowering. It is best to observe the same shrub during both flower and fruit seasons. An ornamental plant may have been treated with insecticides; do not eat raw berries from such a site.

SOURCES

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- https://pfaf.org/User/Plant.aspx?LatinName=Ribes+malvaceum
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Menzies' gooseberry — dark berries among dense thorns of coastal forests · Ribes menziesii

Ribes menziesii

In California's coastal forests, among oaks and redwoods, a thorny shrub may grow whose branches are even more heavily armed than those of a familiar currant. It bears small flowers in spring; later, round, dark-purple berries hang amid the spines. This is Ribes menziesii, Menzies' gooseberry, also called canyon gooseberry. Its fruits are botanically edible raw, but many populations produce so little flesh that they are a poor substitute for an ordinary berry harvest. The spines make gathering difficult.



Menzies' gooseberry (Ribes menziesii) — dense stem spines and small dark-purple berries

jkirkhart35 · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a deciduous shrub, approximately one to two meters tall, with branching woody stems. Large spines occur at the nodes, often several together, while additional tiny prickles can be present between nodes. Young leaves emerge on short stalks. They are generally rounded, with three to five lobes and toothed margins. Their surface may be hairy or bear fine glandular hairs, differing among varieties. Small, drooping, greenish, pinkish or cream-colored flowers appear singly or in short racemes. A round berry develops after flowering, gradually changing from green to reddish and then dark purple. It is small, about one centimeter across, with numerous seeds and relatively little soft tissue. Spines on the shoots are especially evident at the end of winter, when few leaves remain. The arrangement of spines alone, however, is not sufficient for precise identification.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Ribes menziesii as native to California, with hundreds of observations from Redwood Forest, Mixed Evergreen Forest and Chaparral communities. The species is more characteristic of damp canyons and coastal forest edges of Northern and Central California than of the dry Sacramento plain. It has multiple varieties. One, R. menziesii var. ixoderme, has the rare conservation status California Rare Plant Rank 1B.2 and must not be collected for food. It would therefore be wrong to say that every similar canyon gooseberry can be freely harvested. Within suitable forests, shrubs occur singly or in groups, but they do not form a large, easily gathered berry crop.

WHEN THE EDIBLE PARTS ARE AVAILABLE

On the mild coast, young leaves sometimes emerge in late winter, later in colder areas. Small, drooping flowers appear in spring, approximately March through May, followed by green berries. Fruits usually become fully ripe in summer, around July through September, shifting with altitude and shade. After fruiting, foliage turns yellow and falls. Old spines remain visible in winter, but the berry season is over. Green fruits should not be treated as mature merely because they have reached normal size.



Menzies' gooseberry (Ribes menziesii) — dense stem spines and small dark-purple berries

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Plants For A Future expressly states that Ribes menziesii fruits can be eaten raw. The same source, however, observes that they are frequently scalded before consumption, while Calflora notes the abundance of seeds and meager pulp. This atlas of food without fire therefore limits consumption to the completely ripe, soft inner fruit tissue, separated from any irritating hairs on the skin and from the thorns of the branches. A fruit can look promising, yet yield very little edible material once skin and seeds are removed.

Ripe flesh may be astringent, sour or even unpleasant; it should not be described as having the sweetness of cultivated gooseberries. If the edible part cannot be separated carefully from the prickly surface, it is better to leave the fruit. Known methods involving heat are not included. Flowers, young leaves, roots and stems are not recommended as raw foods because the species-specific evidence concerns the fruit.

HOW NOT TO CONFUSE IT

Ribes divaricatum, already described in this catalog, often has smoother darkening berries and a different spine arrangement. Ribes roezlii is recognizable by especially long prickles on the fruits themselves, whereas the densely thorny shrub and small dark berries are more conspicuous on Ribes menziesii. Other varieties of Ribes can be so similar that flowers, surface glands, leaf shape and geographic location are essential. If identification is uncertain or the local shrub is a rare form, do not gather it. Poison oak, Toxicodendron diversilobum, may grow in the thickets; avoid grasping its leaves together with gooseberry branches.

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Mountain gooseberry — tiny bristly red berries near the tree line · Ribes montigenum

Ribes montigenum

On high, dry, rocky mountain slopes grows a low shrub with small, deeply cut leaves. Toward the end of the brief summer, tiny, bright-red berries covered with fine bristles appear. This is mountain gooseberry, Ribes montigenum, whose ripe fruit has been eaten raw after the prickly hairs were removed.



Mountain gooseberry (Ribes montigenum) — tiny bright-red berries with fine bristles

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub is low and spreading, often only 30–60 centimeters tall. It has many slender branches bearing differing amounts of bristles and spines. Larger spines may occur at the nodes, with smaller bristly hairs along the shoots. The small leaves, usually one to four centimeters long, have a generally rounded outline divided into five deep lobes. Their margins are cut and toothed; leaf blades and stalks may be glandular.

Tiny flowers appear in short groups in summer. They are pale greenish white or may have a reddish-purple hue. The round fruit is approximately six millimeters across, red, and covered in fine bristles. Its small size and bristly surface are particularly evident in a close-up view.

WHERE IT GROWS AND HOW COMMON IT IS

Ribes montigenum is associated with high rocky slopes, subalpine forests and sites near the upper tree line. In California, it is recorded in the San Gabriel, San Bernardino and San Jacinto mountains, the Sierra Nevada and northern mountains. A USDA report gives an elevational range of approximately 2,100–3,800 meters. It is not a shrub of Sacramento's dry lowlands.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering at high elevations frequently occurs in July and August. Berries redden later in summer and into early autumn. The precise timing depends on snowmelt, slope exposure and elevation. A berry that is still hard or green must not be regarded as ripe.

WHAT IS EATEN WITHOUT FIRE

Ripe berries. A USDA botanical and ethnographic reference specifically documents eating the fruit of this species raw. To avoid swallowing the bristles, berries were mashed and strained through a sieve. Without heat, the same principle involves mechanically separating the bristles rather than swallowing the prickly skin with the pulp.

The berries are tiny, making a substantial harvest difficult. Their food significance during the short mountain season lies in fresh fruit, not leaves or woody shoots. No raw use of other parts is recommended here.

HOW NOT TO CONFUSE IT

Other gooseberries grow in California's mountains: Ribes roezlii has larger, often purple and conspicuously prickly fruit; Ribes inerme may occur near streams; and some currants have smooth berries. Red color alone is not enough. Check shrub height, leaf size, spine structure, flowers and habitat elevation.

Mechanical bristles on ripe Ribes montigenum berries are the most immediate hazard. If they cannot be removed or the species cannot be reliably identified, observation is preferable to gathering.

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Sierra currant — pink spring racemes and dark mountain berries · Ribes nevadense

Ribes nevadense

In spring on the slopes of the Sierra Nevada, shrubs with lobed leaves and long racemes of pink flowers can be seen. Later, small blue-black berries with a bluish bloom develop where the flowers were. This is Ribes nevadense, known in California as Sierra currant. Its berries can be eaten fresh without fire, a use separately recorded in material about the plants of the Washoe people. It would be a mistake, though, to expect it on every Sacramento lawn: its natural habitats are primarily in cooler foothills and mountains.



Sierra currant (Ribes nevadense) — long hanging pink flowers and dark ripe berries

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrub has several relatively slender, upright branches, usually one to two meters tall. Shoots do not carry the large, sturdy spines typical of true gooseberries. Alternate leaves are three-lobed or have additional small lobes, light green, with gently toothed margins and clearly visible veins radiating from the base. Fine hairs may occur beneath. The flowers are arranged in hanging racemes that can contain numerous small pink-red bells. These clusters are longer than those of many other mountain currants. In full bloom, the shrub appears decorated with pink strands. Small round berries form after pollination: green at first, then red and finally dark blue-black. The skin is often covered in glandular hairs. Numerous tiny seeds lie within soft flesh. In autumn the leaves yellow and fall, but the slender branches retain their distinctive form.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Ribes nevadense is native to California, with numerous observations in mountain forests. Especially suitable habitats include the partial shade of pine and fir forest, stream banks, open forest clearings and moist slopes. University of California Master Gardeners also describes the plant in the Lake Tahoe Basin, noting its adaptation to local conditions. Natural thickets are uncommon at the level of Sacramento's urban plain. On a trip to Tahoe or cooler parts of the Sierra, this shrub is far more likely to be encountered. Some groups may bear a reasonable crop, but on dry slopes yields depend on winter moisture and summer temperatures.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the high Sierra, new light-green leaves develop after snowmelt, often in April or May. The university overview for Tahoe gives an approximate flowering period from April through July; pink racemes appear in different weeks at different elevations. Little green fruits form after flowering. As summer warms, the berries darken and soften, generally reaching ripeness in mountain locations from July through September. Do not gather them simply because they have begun to turn reddish; at that stage they may still be hard. Fresh berries typically disappear after autumn leaf fall, although fruit previously dried without heat may keep longer.



Sierra currant (Ribes nevadense) — long hanging pink flowers and dark ripe berries

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Completely ripe blue-black berries. A publication giving traditional Washoe plant names explicitly states that Ribes nevadense berries were eaten raw, dried or used in other ways. Soft ripe berries can be eaten fresh with their tiny seeds. Their flavor is sweet-tart, sometimes fairly mild; glandular hairs may cover the skin. A small mature fruit differs from a hard, green ovary in both appearance and texture.

Fresh mashed berries. A small quantity of ripe fruit can be crushed into a cold fruit mash without heating. Berries spoil quickly in hot weather, so gather only clean, undamaged fruit and eat it shortly afterward. A shrub beside a road or in an ornamental planting of unknown chemical treatment is unsuitable for raw food.

Flowers, leaves, stems and roots are needed to identify the species, but are not included in these recommendations as raw food.

HOW NOT TO CONFUSE IT

Red-flowering currant, Ribes sanguineum, already described in the atlas, usually has brighter spring flower clusters and a different range. Ribes cereum has more modest pale flowers and more often grows on somewhat dry, rocky mountain slopes. Certain gooseberries have similarly lobed leaves but conspicuous strong spines on the branches. A helpful combination for recognizing Ribes nevadense is the lack of large spines, long hanging pink racemes and later dark berries with a bloom. One fruit from another unknown shrub cannot establish that it, too, is a currant. Gathering in protected forests is permitted only where the rules allow it.

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Oak gooseberry — small smooth black berries of the foothills · Ribes quercetorum

Ribes quercetorum

On somewhat dry oak-covered slopes in Central and Southern California, a small shrub sometimes grows that opens yellowish flowers in spring and then develops tiny, round berries. Unlike some mountain gooseberries, these fruits are almost smooth, without long, sharp spines on the skin. This is Ribes quercetorum, oak gooseberry. Its completely ripe black berries are described as edible raw and generally pleasant in flavor. Distinguish fruit from branch: smooth berries do not mean the shrub has no spines.



Oak gooseberry (Ribes quercetorum) — small rounded lobed leaves and smooth dark berries

Daderot · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

A small deciduous shrub, usually half a meter to one and a half meters tall, with thin arching branches. Single or paired spines up to one and a half centimeters long may occur at branch nodes. The alternate leaves are small, generally round in outline and divided into several lobes, sometimes deeply cut and toothed at their tips. Young leaves may be slightly hairy or glandular. Flowers appear singly or in pairs in spring, with conspicuous yellowish reflexed sepals and shorter pale petals. They are modest flowers without a large, bright corolla. A round berry develops after pollination, green at first and then dark red to almost black, about seven to eight millimeters in diameter. Ripe berries are smooth or nearly so and contain several tiny seeds. On one shrub, small leaves, spines at the nodes and short drooping flower groups may all be seen.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Ribes quercetorum is native to California, with several hundred observations, chiefly from Southern Oak Woodland and Foothill Woodland. A historical botanical description from the California Academy of Sciences refers to oak woods near Paso Robles in Monterey and San Luis Obispo counties and small foothill shrubs. It is also known from southern mountain slopes and chaparral. The species is not evenly spread across the entire Central Valley. For the Sacramento region, it is more a shrub encountered on trips to oak-covered slopes and southern foothills than a common urban berry. Groups may occur in some suitable oak woodland, but a harvest is unreliable on completely dry grassland.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves and flowers appear after winter rains, generally from late winter into spring at low, warm elevations. Flowering can begin in February or March, later in cooler ravines. Green berries follow and slowly darken. Full maturity is expected in late spring and summer, depending on elevation and available moisture. Fruits on the same shrub do not ripen evenly. When severe summer drought begins, some leaves may yellow and fall, while birds quickly consume remaining ripe berries.

WHAT IS EATEN WITHOUT FIRE

Plants For A Future expressly confirms raw edibility of Ribes quercetorum fruit and notes its pleasant flavor. Smooth, fully ripe black berries can be eaten fresh without heating once they have softened and separate readily from their stalks. Flavor varies among shrubs, but the fruits are often sweet with a touch of acidity. They are small, so a large quantity is needed for a substantial portion. Freshly mashed berries may be eaten immediately as a cold fruit mixture.

Do not automatically collect green fruit, even when it has almost reached the size of ripe berries. Its taste and condition are different; the documented raw method is best restricted to full maturity. Leaves, flowers, roots and stems are excluded from food; their form is useful for identification. Branch spines require care when gathering. Do not break the shrub for a small crop.

HOW NOT TO CONFUSE IT

Ribes roezlii has fruit covered with long, sharp spines and is often larger. Ribes californicum generally bears red ripe berries that can be heavily bristled, whereas those of Ribes quercetorum are small, smooth and black. Golden currant, Ribes aureum, has more conspicuous yellow flowers in longer racemes and lacks such strong stem spines. A single nearly black berry without leaves cannot establish identification. Western poison oak, Toxicodendron diversilobum, may grow on wild oak-covered slopes. If its three-part leaves are tangled among gooseberry branches, do not gather them along with the berries or taste other unknown fruits nearby.

SOURCES

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Sierra gooseberry — large, sharply spined berries · Ribes roezlii

Ribes roezlii

On the wooded slopes of the Sierra Nevada, a low shrub can be encountered whose unusual fruits are immediately memorable. Its round berries are covered in numerous long prickles, resembling tiny hedgehogs. This is Ribes roezlii, Sierra gooseberry, sometimes called Roëzl's gooseberry. Ripe fruits were historically eaten raw, but their appearance reveals an important limitation: the prickly outer surface must never be chewed together with the soft pulp.



Sierra gooseberry (Ribes roezlii) — rounded ripe berries densely covered in long spines

Don Lepley / USFS Region 5 · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub usually half a meter to one and a half meters tall, with slender woody branches. Large spines occur at the nodes, often several together, with smaller prickles in some areas. Alternate leaves have three or five rounded lobes, finely toothed margins and conspicuous veins spreading from the base. The small flowers are greenish-yellow or pinkish, with a prominent calyx. They occur singly or in small groups on short side shoots. Rounded berries, up to about one and a half centimeters across, develop after flowering. Even the green unripe berries have projecting prickles; as they ripen, the fruit may become pink or reddish. Long spines on the berry are a particularly recognizable feature. Beneath the skin is soft fruit tissue and several small seeds, but the spines hinder eating without careful preparation.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Ribes roezlii as native to California and reports thousands of records from northern mountains to southern ranges. Observations are especially frequent in Placer, El Dorado, Butte, Plumas, Shasta, Siskiyou, Tulare and other mountain counties. It grows on wooded slopes, rocky outcrops, in yellow pine forests and mixed evergreen forests. On a journey from Sacramento, it is more likely on the climb into the Sierra than on the urban valley floor. The species includes several varieties, some with restricted distributions. Rare local populations should not be gathered for a handful of berries.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves and small flowers emerge after spring snowmelt, perhaps in March or April in lower foothills and later at high elevations. Green fruits grow for several weeks. They begin to ripen in mid- to late summer; fully colored berries may still occur in cool, elevated places in August or September. Green and ripe prickly fruit may hang on the same shrub. In autumn, leaves begin to yellow and fall. Old branches remain in winter, but there is no fresh crop.



Sierra gooseberry (Ribes roezlii) — rounded ripe berries densely covered in long spines

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Plants For A Future separately confirms eating Ribes roezlii fruit raw and after drying. This is not like a smooth garden currant: the reddish or pink skin bears many sharp spines. Only the soft inner pulp of completely ripe berries should be eaten after carefully separating it from the prickly skin. If it cannot be removed safely, leave the fruit alone. Never put a whole berry into the mouth expecting the prickles to soften when chewed.

Once cleaned carefully, ripe pulp can be eaten at once, mashed without fire or dried. The species reference permits drying for storage, but no rigid spines should remain in the resulting food. Damaged, moldy and still-hard green berries are not recommended. Leaves, flowers and roots are used for identification, not as raw food.

HOW NOT TO CONFUSE IT

Other California gooseberries have spines on the branches, but their fruits may be smooth or only lightly bristled. Ribes menziesii generally bears dark-purple fruit, with particularly numerous spines on its branches. Ribes californicum has ripe red prickly berries too, so flowers, leaves and range must also be compared. Even when two species have raw edible pulp, that does not justify automatically applying the preparation method to any spiny berry. Check mountain forest surroundings for poison oak; gathering may be restricted on specially protected land.

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Red-flowering currant — spring blossoms and dark summer berries · Ribes sanguineum

Ribes sanguineum

On a forest edge along California's northern coast in spring, a shrub may stand covered with graceful, hanging racemes of reddish-pink flowers. Later, small, round berries replace the flowers, turning bluish black as they ripen. This is Ribes sanguineum, red-flowering currant. Its name refers to the flowers, not the berries. The fully ripe fruits can be eaten without fire, although their flavor is usually less impressive than that of cultivated currants.



Red-flowering currant (Ribes sanguineum) — drooping pink-red flowers and dark ripe berries

Nomadcrows · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a deciduous shrub, often one to three meters tall, with several upright and slightly arching branches. Leaves grow singly along the stems, with three or five shallow lobes, toothed margins and noticeable fine hairs, especially beneath. They resemble small maple leaves. In spring, hanging racemes of many small, tubular flowers develop along the branches. The calyces range from pink to rich red, sometimes nearly purple; individual petals are smaller than the sepals. A raceme may resemble a dense cluster of pink blossoms. By summer, round berries have formed. Often bearing a slight bluish bloom, they ripen to dark blue or black. The remains of the calyx persist at the tip of each berry. The branches generally lack the large, rigid spines characteristic of gooseberries.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Ribes sanguineum is native to California, with more than one thousand observations. Most records are from the northern and central coasts, including Humboldt, Marin, Sonoma, Santa Cruz and Del Norte counties. The shrub grows in mixed woodland, at forest edges, in coastal scrub and foothill forest communities. It is not an everyday wild food plant on the dry Sacramento plain, although ornamental selections are grown in gardens. The species includes two recognized varieties, among them var. glutinosum. Differences in flowering times and colors should not be reduced to a claim that every plant looks identical.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The shrub puts out young leaves in early spring; on the mild coast, a few flowers may already appear toward the end of winter. Its showy pink-red flower racemes are usually most evident from March through May. Green berries form as the flowers fade, enlarging and darkening through summer. Ripe berries are generally available in July and August, sometimes later in cooler locations. In autumn the leaves yellow and fall. The attractive spring display must not be confused with the actual season for eating raw berries.



Red-flowering currant (Ribes sanguineum) — drooping pink-red flowers and dark ripe berries

DaveGrainger · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Completely ripe, dark berries. Plants For A Future specifically states that Ribes sanguineum fruit can be eaten raw. The berries are small, usually about one centimeter across or less, with a somewhat astringent and sometimes fairly mild flavor. They are often more pleasant once they have fully softened on the shrub; red or green berries have not yet ripened. Ripe fruits may be eaten fresh, mashed into a small cold berry mixture or combined with sweeter berries, without heating.

Food uses described for other Ribes do not establish that the leaves and flowers of red-flowering currant are also suitable raw foods. In this article they are identification features, not recommended edible parts. Do not eat berries damaged by mold or insects, or fruit from chemically treated ornamental shrubs.

HOW NOT TO CONFUSE IT

Golden currant, Ribes aureum, has yellow flower clusters and a somewhat different overall leaf shape, though its ripe berries can also be dark. Ribes malvaceum generally has pink flowers opening in a different season, with differences in fruit size and hairiness. Some cultivated ornamental currants have large, brightly colored racemes and may descend from Ribes sanguineum; they are not necessarily wild native varieties. Identify the shrub using flower racemes, leaf shape and ripe berries together. Gathering may be restricted even for common berries in protected natural areas.

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Fuchsia-flowered gooseberry — scarlet winter flowers and bristly berries · Ribes speciosum

Ribes speciosum

A thorny shrub grows among the coastal chaparral of Southern California, bearing flowers that resemble tiny red fuchsias. Their long tubes and projecting stamens are visible from some distance. In spring and summer, small red-orange berries covered in numerous glandular bristles appear where the flowers were. This is Ribes speciosum, a native fuchsia-flowered gooseberry. Santa Clara University preserves direct evidence that its berries were eaten raw or after cooking. The bristly surface, however, makes harvesting and eating them considerably harder than gathering smooth currants.



Fuchsia-flowered gooseberry (Ribes speciosum) — bright-red tubular flowers and bristly orange berries

Daderot · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub usually grows from about half a meter to two meters high, with spreading shoots bearing many spines at the nodes and finer prickles along the internodes. Leaves are small, alternate, rounded or very shallowly lobed, with toothed margins. They may persist through a wet winter but partly fall during a dry summer. The long, drooping, bright-red flowers have a tube formed by red sepals, with reddish stamens projecting beyond it. Flowers appear singly or in small groups along the branches. After pollination, red-orange berries about one centimeter long develop. They are oval and densely covered with glandular bristles, rather than smooth like many other currants. Flowers, small green fruit and later ripening berries may all be present on the same shrub.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora and Flora of North America place Ribes speciosum in coastal chaparral and sage scrub of Central and Southern California. Its range extends approximately from Monterey through Santa Barbara, Los Angeles and Orange counties to San Diego and northern Baja California. It is not a common native shrub throughout the Sacramento Valley; suitable coastal slopes and native plant communities are the places to look for it. Fuchsia-flowered gooseberry is also planted in gardens for its striking winter flowers, but an ornamental planting is not automatically a permitted source of food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flora of North America describes a long flowering season, from November through June, although the scarlet blossoms are often most conspicuous in late winter and early spring. Green, bristly fruits develop after flowering. Depending on winter rain and temperature, they ripen in spring or early summer, turning orange-red and becoming softer. Severe summer drought may thin the leaves. A red tubular structure seen in winter is a flower, not an already edible fruit; fruiting follows flowering by weeks or months.



Fuchsia-flowered gooseberry (Ribes speciosum) — bright-red tubular flowers and bristly orange berries

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe pulp of red-orange berries. In its account of local Ohlone culture, Santa Clara University specifically records that Ribes speciosum berries were eaten raw or cooked. Fruits are tart and sour, with generally little flesh. Dense glandular bristles on their surface can scratch the mouth. Before eating, separate the soft pulp from the bristly skin. If this cannot be done safely, leave the fruit for the birds.

Fresh mashed pulp. The completely ripe inner flesh may be eaten immediately without heating. Edibility of the pulp does not make the sharp spines on branches, hard bristles or unripe berries edible. This is an occasional seasonal taste, not a reliable plant for daily nourishment.

Flowers, leaves, roots and shoots are included only for identification. Do not gather food from garden shrubs treated with chemicals.

HOW NOT TO CONFUSE IT

The related Ribes divaricatum produces dark-purple berries and more modest flowers; it lacks these long, bright-red, hanging tubes. Ribes malvaceum flowers in pink racemes and generally has no large spines on the branches. A single prickly leaf is not enough to identify the species: both flowers and fruit should be seen. In coastal scrub, be particularly careful not to confuse neighboring poison oak branches with the gooseberry. Thorny, leafless shoots after drought are best left alone when no flowering evidence is available.

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Desert gooseberry — soft, velvety berries on dry mountain slopes · Ribes velutinum

Ribes velutinum

On the dry slopes of eastern California, among junipers and sagebrush, a thorny deciduous shrub grows with small lobed leaves. Modest yellowish flowers appear in spring, followed by tiny velvety berries ranging from purple to dark reddish hues by autumn. This is Ribes velutinum, desert gooseberry. Unlike gooseberries whose fruit skins carry long, hard spines, its berries are covered in short, soft hairs. Completely ripe fruit can be eaten raw, though there is little pulp and the seeds occupy a substantial part of each berry.



Desert gooseberry (Ribes velutinum) — small, softly hairy dark berries on a thorny shrub

Jim Morefield (James D. Morefield) · CC BY-SA 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub is normally between half a meter and one and a half meters tall, occasionally reaching two meters on a wetter slope. It is heavily branched, with many slender shoots ending in short, sharp twigs. Sturdy spines occur at the nodes, distinguishing it from most currants with smooth stems. Alternate leaves are rounded, divided into three to five lobes, with toothed margins and often fine hairs. Small, greenish-yellow, cream or occasionally pink-tinged flowers appear on short stalks in spring. Fruits develop singly or in small groups, green or yellowish at first, later turning reddish-purple or nearly dark. A mature berry is only a few millimeters across, often four to nine. The skin has short, velvety hairs rather than large hard prickles. Numerous tiny seeds lie inside. In summer, leaves may dry out while fruit continues ripening on a shrub with little greenery left.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Ribes velutinum as native to California, with nearly one thousand observations. It is particularly characteristic of Sagebrush Scrub, Pinyon–Juniper Woodland and Yellow Pine Forest on the eastern slopes of the Sierra and in desert mountain areas. It grows from elevations of several hundred to more than two thousand meters. Dense native thickets are not expected on the urban floor of the Sacramento Valley. Suitable sites lie in the drier interior mountains where sagebrush and juniper grow nearby. The shrub may be fairly common on one slope, but yields little fruit because the berries are so small. Other Ribes grow nearby, so geographic range cannot replace identification.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Fresh leaves and small pale flowers appear after snowmelt or spring rains. In foothills this often happens from March through May, later on higher slopes. Plants For A Future gives an approximate flowering season from March to June. Green ovaries form in early summer, remaining green at first. Gradually the berries darken and soften. Mature velvety fruit is generally available toward late summer and autumn, approximately August through October, depending on local elevation. In extremely dry places the fruit can shrivel and dry before developing much juicy pulp. Only sound, fully ripe, unmolded berries are suitable for eating raw.

WHAT IS EATEN WITHOUT FIRE

Ripe velvety berries. Plants For A Future explicitly confirms eating Ribes velutinum fruit raw. The flavor is often mildly sweet and tart, though less pronounced than that of the best garden gooseberries. Soft hairs on the skin are not rigid needles, but damaged fruit and berries bearing prickly, dirty stalks should still be avoided. There are many seeds, but they are small. A berry provides a modest fresh addition to food.

Fresh and naturally dried fruit. The species reference allows both fresh and dried mature berries. Preserving them without fire requires a dry, ventilated location: partial drying in a warm car can lead to mold. Green, immature berries are not equivalent to soft, dark ones.

Parts not eaten. Thorny stems, leaves, bark, flowers and roots have no separate confirmation as raw foods here. Even with an accurately identified plant, do not strip its entire small crop in a natural habitat.

HOW NOT TO CONFUSE IT

Ribes roezlii often bears larger fruit with obvious, rigid spines. Ribes californicum grows chiefly in coastal mountains and can also have prickly berries, but differs in its flowers and leaves. Ribes cereum generally lacks large stem spines and has reddish mature berries. Desert gooseberry is recognized by the combination of a spiny, dry-mountain shrub, small pale flowers and softly hairy dark berries. One photograph of fruit without leaves and branches cannot establish the species. In intense heat, fruit may become dry and unpleasant: that does not indicate a separate subspecies.

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Sticky currant — pale-gold flowers and dark mountain berries · Ribes viscosissimum

Ribes viscosissimum

In a cool part of a Northern California pine forest, a low shrub may be noticed with rounded leaves that feel slightly sticky. Small, greenish-yellow flowers open in spring, and dark berries develop by summer. This is Ribes viscosissimum, sticky currant. Its ripe fruits can be eaten raw, and some food references rate their flavor highly. The shrub is not large, however, and it is far less common on Sacramento's dry plain than along moist mountain forest edges.



Sticky currant (Ribes viscosissimum) — lobed glandular leaves and dark ripe berries

Walter Siegmund · CC BY 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

Sticky currant is a deciduous shrub roughly half a meter to one and a half meters tall, with several slender woody branches. Young shoots, leaf stalks and sometimes leaves bear sticky glandular hairs. Alternate leaves are rounded, three- to five-lobed, with toothed margins; they are fairly small compared with the enormous leaves of Ribes bracteosum. Fine hairs and a distinct network of veins can be seen on the upper surface. Flowers appear singly or in small groups, usually unobtrusive, greenish or cream-colored, sometimes slightly pink. The calyx is more noticeable than the tiny petals. Round berries about a centimeter across develop after pollination. They begin green and gradually turn reddish-purple, then almost black. Ripe fruit contains soft pulp and many small seeds. The stickiness of shoots is particularly evident during early fresh growth; later, some glandular hairs dry out.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Ribes viscosissimum is a native Californian shrub, with hundreds of observations in Sagebrush Scrub, Yellow Pine Forest, Red Fir Forest and northern juniper communities. It favors cool, open woodland, forest edges, glades and moist mountain slopes. In California its records are concentrated more in the Sierra Nevada and northern and eastern mountain counties. Do not promise it to a traveler as a common shrub in every park on Sacramento's hot urban plain. It may grow in groups on certain mountain edges, but berry yield depends on summer moisture, sunlight and conditions in a particular year.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Fresh lobed leaves and short clusters of flowers emerge after snowmelt. This may take place in April or May at lower mountain elevations, and in June higher up. Green berries form after pollination and continue enlarging for several weeks. The dark fruit usually becomes fully ripe in summer, around July through September, depending on elevation. A flowering shrub does not yet provide ripe food, and a reddish berry is not always mature. In early autumn leaves yellow and fall; some berries remain, but soon dry out or are eaten by birds.

WHAT IS EATEN WITHOUT FIRE

Only fully ripe berries. Plants For A Future explicitly confirms the raw use of Ribes viscosissimum. The small fruits, about a centimeter across, are soft when ripe. Their flavor may be sweet-tart, with a characteristic currant note. Because fruit stalks and shoots bear glandular hairs, pick berries carefully rather than taking entire leafy clusters. Ripe berries may be eaten individually or mashed into a cold fruit mixture without heating.

Storage precautions. Tender berries are easily crushed in warm conditions. For food gathered on a journey, it is better to eat them promptly and avoid rotten or insect-damaged fruit. The reference documents edibility of the fruit itself, so leaves, shoots, flowers, roots and bark are not included as confirmed raw foods.

Food characteristics compared. Some Ribes fruits contain substantial acids, but their size and composition must not automatically be assumed equal to garden currants. Even a positively identified species is best tried as a small portion; personal tolerance differs.

HOW NOT TO CONFUSE IT

Ribes nevadense bears conspicuous long, pink-red flower racemes and does not have such pronounced stickiness on the shoots. Ribes bracteosum has enormous leaves and long orange flower racemes in the moist forests of the northern coast. Ribes cereum favors drier, rocky mountain slopes and usually bears reddish ripe fruit. True gooseberries such as Ribes roezlii and Ribes lacustre can have strong spines on the branches. Stickiness by itself does not establish identification: look at the leaves, flowers, ripe fruit and geographical area together. Do not taste plants with unknown dark berries.

SOURCES

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Marsh yellowcress — tender greens beside wet soil · Rorippa palustris

Rorippa palustris

On a damp pond bank or in a floodplain depression, a small mustard-family herb often grows with deeply divided leaves and tiny yellow flowers. It tolerates wet soil and can colonize newly exposed mud rapidly. This is Rorippa palustris, marsh yellowcress, a native species whose young leaves and stems are explicitly described as food eaten raw. Yet the safety of the water and soil matters more than the apparent appeal of these greens.



Marsh yellowcress (Rorippa palustris) — yellow four-petaled flowers and divided green leaves

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or short-lived perennial herb, usually 20–70 centimeters tall, with upright or ascending, branched stems. Lower leaves are commonly pinnately divided, with rounded or toothed side lobes and a larger terminal portion. Leaves become smaller higher up the stem and are sometimes less deeply divided. Tiny yellow flowers have four petals arranged in a cross and occur in racemes that elongate as they develop. The fruits are short, slightly swollen, cylindrical seedpods on slender stalks. The plant resembles other Rorippa species, so yellow flowers alone are insufficient for identification.

WHERE IT GROWS AND HOW COMMON IT IS

Rorippa palustris occurs in California on wet ground along ponds, rivers, ditches and periodically flooded sites. Its presence does not establish that the water is safe for drinking, much less that the plant is suitable for eating raw. Shoots often grow exactly where silt, fecal contamination, agricultural runoff and microorganisms accumulate. Along natural waterways, especially those accessible to livestock or wild animals, safe gathering of raw plants is almost impossible to guarantee from their appearance.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Once moisture is sustained, seeds germinate and the plant rapidly produces young, soft leaves. In Central and Northern California, this most often happens in spring and early summer, although growth may continue longer on the cool coast. Yellow flowers and numerous short seedpods follow. When the bank dries out, foliage becomes coarse and the plant may complete its life cycle. The season depends primarily on site moisture, not simply on the month.



Marsh yellowcress (Rorippa palustris) — yellow four-petaled flowers and divided green leaves

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves, tender stems and seedlings. Plants For A Future explicitly lists these parts of Rorippa palustris as eaten raw. Young shoots have a mustard-like, mildly pungent flavor. However, a species being edible does not mean that any particular plant is safe: raw leaves from natural water of unknown quality can be contaminated with harmful microorganisms and parasites. Ordinary rinsing cannot guarantee disinfection. Consequently, raw use is reasonable to consider only for a reliably identified plant grown in a controlled, clean site with safe water—not as a recommendation to gather marsh yellowcress from any roadside ditch. Roots and mature seeds are excluded from food prepared without fire.

HOW NOT TO CONFUSE IT

Other yellowcresses, such as Rorippa nasturtium-aquaticum, differ in petal size and color, pod shape and leaf structure. Some small Cardamine species have similarly divided foliage but white flowers and narrower fruits. Identifying yellow-flowered brassicas in wet places often requires mature seedpods. Do not assume every green shoot beside a stream is an edible yellowcress. Even when all botanical characters match, polluted water is an independent reason to avoid raw gathering.

SOURCES

- https://www.calflora.org/app/taxon?crn=7171
- https://pfaf.org/user/Plant.aspx?LatinName=Rorippa+palustris
- https://commons.wikimedia.org/wiki/File:Rorippa_palustris_sl62.jpg

California wild rose — pink flowers and red rose hips · Rosa californica

Rosa californica

In moist woodland edges, along riverbanks and in forest clearings across California, a native wild rose blooms in summer. Its five-petaled pink flowers are visible from a distance. By autumn, red, elongated hips have formed in their place. These rose hips have a thin edible layer of outer flesh. Inside are hard achenes and irritating hairs, so this is not a fruit that can safely be eaten whole.



California wild rose (Rosa californica) — five pink petals and elongated red rose hips

Paula Kate Marmor (PKM) · CC BY 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

Rosa californica is a perennial, deciduous, prickly shrub, usually one to two or three meters tall. Its branches are long and arching and may intertwine with neighboring shrubs. Straight or curved prickles occur along them, especially on young shoots.

The leaves are compound and pinnate, with several small oval leaflets arranged along a central axis, each leaflet edged with teeth. There are usually five to seven, sometimes more. Their surfaces are green and rather matte; individual leaflets are much smaller than the broad leaf blades of oak or salal.

The flowers are usually pale pink and open, with five petals and numerous yellow stamens at the center. They may grow singly or in small groups. After flowering, oval and sometimes slightly elongated rose hips develop, changing from green through orange to red. Remains of the sepals persist at the end of each hip. Inside are hard achenes surrounded by stiff hairs.



California wild rose (Rosa californica) — five pink petals and elongated red rose hips

Cliff Hutson · CC BY 2.5 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

California wild rose occurs in various parts of the state: moist sites in the Sacramento Valley, coastal and foothill scrub, stream banks, meadow edges and ravines. It is native, particularly conspicuous along waterways and in places where roots can obtain enough moisture during the dry summer.

Sometimes the shrubs form quite dense thickets, but the rose is not equally common on extremely dry, open slopes or in deserts. It is more likely among moist riparian shrubs than between bare rocks.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The plant produces leaves and new green shoots in spring. Flowering in California generally takes place in late spring and early summer, with pink flowers visible from about May through July in different regions.

Rose hips enlarge during summer and become red from late summer into autumn. Mature hips are most often available from August through October; in cooler places they may remain on the shrub after the first frosts and beyond. Leaves yellow and fall in autumn, while red hips sometimes remain on the bare branches.

WHAT IS EATEN WITHOUT FIRE

The fleshy outer portion of a fully ripe hip. It is eaten raw once the hip is red and soft. The botanical food reference Plants For A Future explicitly identifies Rosa californica as a species with edible raw fruit. The usable portion is a thin layer of flesh around the hard inner contents, so the hip is not like a juicy berry that can be eaten whole without preparation.

Inside the fruit are hard achenes and fine, stiff hairs. For raw use, eat only the outer flesh and avoid these inner hairs, which irritate mucous membranes. There are accounts of rose-hip consumption among the Chumash and other Californian peoples. However, evidence concerning the genus Rosa in general cannot automatically be attributed specifically to Rosa californica. In this article, species-specific confirmation of the raw outer flesh comes from Plants For A Future.

The rose has attractive flowers, but they are not included here as a confirmed raw food specifically of Rosa californica. The principal food eaten without fire is the fully mature hip.

HOW NOT TO CONFUSE IT

Wild roses have prickly, arching stems, compound leaves with toothed leaflets, and open flowers with five pink petals. They can be confused with other Rosa species, including introduced garden roses and related native species. Precise identification depends on the form of the prickles, leaves and sepals on the hips together. Do not label similar-looking red berries from other shrubs as rose hips without the distinctive characters of a true rose.

Young shrubs without flowers or hips can resemble other Californian roses. Do not taste unknown red fruit as a test: true rose hips are identified using evidence of rose flowers, pinnate toothed leaves and the characteristic prickly branch. In preparing raw flesh, all stiff internal hairs must be completely separated from the edible portion.

SOURCES

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- Plants For A Future, Rosa californica, raw outer flesh of the fruit: https://pfaf.org/USER/Plant.aspx?LatinName=Rosa+californica
- California State Parks, Wild Rose ethnobotanical references: https://www.parks.ca.gov/

Dog rose — red autumn hips and pale pink flowers · Rosa canina

Rosa canina

Beside old hedges, along forest roads and near abandoned gardens, a tall shrub sometimes stretches out long, curved shoots with pale-pink flowers. By autumn, its branches carry bright-red, elongated hips. This is dog rose, introduced from Europe and now escaped in places in California. The edible part is the fleshy outer wall of a ripe hip, not its prickly inner contents.



Dog rose (Rosa canina) — pale-pink flowers and elongated red hips

Júlio Reis (Tintazul) · CC BY-SA 2.5 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually a deciduous shrub 1.5–3 meters high, with long, arching branches. Large prickles curve backwards along the stems like hooks. Alternate pinnate leaves generally bear five to seven ovate leaflets with fine, sharp teeth. Young leaves are tender green, becoming firmer later. Flowers grow singly or in small groups, several centimeters across, with five white or pale-pink petals and yellow stamens. The hip is oval, red or sometimes orange-red, often about two centimeters long. Dry remains of sepals may be visible at its tip.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Rosa canina as a nonnative shrub in California, but the number of recorded occurrences is small. Individual plants occur at forest edges, alongside roads and near abandoned plantings, particularly in cooler northern and coastal places. It should not be treated as an ordinary wild rose throughout the Sacramento Valley: native Rosa californica and other species are much more common. Roadside plants, treated sites and those near runoff are unsuitable for food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the mild climate, leaves emerge and the shrub flowers in spring and early summer. Hips enlarge through summer and turn red toward autumn, often from August through October; in cold locations they can remain on the shrub longer. The pulp frequently becomes softer and seems sweeter after cool nights. Hard, unripe green hips taste unpleasant and should not be gathered.

WHAT IS EATEN WITHOUT FIRE

Ripe outer flesh of the hip. Plants For A Future separately confirms raw use of Rosa canina fruit. Cut open a red hip, remove all hard achenes and especially the tiny, irritating hairs, then eat only the cleaned, soft fruit wall. The cleaned flesh can be prepared as a cold purée. If it is difficult to remove the achenes and hairs completely, do not eat the hip.

Petals. Plants For A Future also records eating the petals raw after removing their bitter white bases. They are a modest seasonal addition rather than a substantial food.

HOW NOT TO CONFUSE IT

All true Rosa rose hips are associated with compound, toothed leaves, characteristic flowers and prickly stems, but accurate species identification can be difficult because of hybrids. When rubbed, Rosa rubiginosa foliage smells of apples and has aromatic glands beneath the leaves. Native Rosa californica commonly forms different thickets and differs in its combination of flower and leaf features. Not every red, berry-like structure is a rose hip: inspect branches, prickles, leaves and flower remains.

SOURCES

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- Plants For A Future — Rosa canina: https://pfaf.org/user/Plant.aspx?LatinName=Rosa+canina
- University of Alaska Extension — Wild Roses: https://www.uaf.edu/ces/publications/database/food/wild-roses.php

Wood rose — small pink flowers and autumn hips without persistent sepals · Rosa gymnocarpa

Rosa gymnocarpa

Beneath oaks and redwoods in Northern California, a low shrub with delicate compound leaves and little pink flowers sometimes grows. Later, tiny red rose hips appear along the branches, their tips looking nearly bare because the sepals fall soon after flowering. This is Rosa gymnocarpa, known as wood rose or baldhip rose. The ripe outer flesh can be eaten raw, along with tender spring shoots and petals. But the hips conceal hard achenes surrounded by irritating hairs, which must be completely removed.



Wood rose (Rosa gymnocarpa) — small pale-pink flower and red hips lacking persistent sepals

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrub is usually half a meter to one and a half meters high, sometimes taller in moist woodland. Shoots are slender and reddish brown, with small, sturdy prickles, often less numerous than those of dense coastal roses. Alternate pinnate leaves commonly bear five to seven small, oval leaflets with finely toothed margins. In spring, single or small groups of flowers appear, each with five pale-pink petals and many yellow stamens. They are often smaller than the large-flowered roses of gardens. Following pollination, a round or egg-shaped red hip forms. A distinctive feature is that the apical sepals frequently fall off as the hip ripens, leaving a smoother tip. Cut open, the hip contains several hard achenes, not one pit, surrounded by fine, stiff hairs. In autumn, the leaflets turn yellow and fall, while hips may persist a little longer.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Rosa gymnocarpa as a native Californian species, with hundreds of records in Marin, Del Norte, Humboldt, Sonoma, Santa Cruz and mountain counties of Northern California. It grows in woodland partial shade, beneath oaks and redwoods, at mixed evergreen and conifer forest edges. It is not a common, abundant rose on the hot, open floor of the Sacramento Valley; it is considerably more likely in the cooler foothills of Placer and El Dorado. California nurseries describe a shrub approximately one to one and a half meters high that can tolerate summer drought once established. For fruit gathering it is less productive than many tall roses; select only occasional hips without damaging the shrub.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaflets and tender green shoots grow in spring after winter moisture. Pink flowers generally open in May and June, sometimes later in the mountains. Green hips begin growing immediately after flowering and become red in summer. Fully ripe hips are usually available in late summer and autumn, sometimes softening after the first cold nights. A newly red but hard hip is not necessarily ripe. On the damp coast, old hips may mold even before winter while retaining their color. Leaves and shoots that were tender in spring have become coarse by autumn.



Wood rose (Rosa gymnocarpa) — small pale-pink flower and red hips lacking persistent sepals

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Outer flesh of completely ripe hips. Plants For A Future explicitly confirms eating Rosa gymnocarpa raw. The red skin and its thin layer of pulp taste sweet-tart and may be more pleasant after cool nights. Cut open the hip and completely remove all internal achenes, especially the surrounding hairs. They can irritate the mouth and digestive tract. If cleaning the tiny fruit is difficult without tools, it is safer not to eat it than to swallow the hairs.

Spring shoots. Plants For A Future also documents young, soft shoot tips eaten raw. They are used only after the prickly outer covering has been removed and the species identified accurately. Old, rigid stems are not food.

Petals. Fresh pink petals may be eaten raw as well. The species reference recommends removing the white, slightly bitter base. These are tiny, so they are only a seasonal addition. Do not strip all flowers from a small shrub; leave fruit for birds.

Seeds, roots, bark and leaves are not recommended raw foods in this article.

HOW NOT TO CONFUSE IT

Rosa woodsii ssp. ultramontana, the mountain Woods' rose described earlier, often occurs in more open mountain communities; its sepals behave differently on mature hips. Rosa nutkana generally has larger pink blossoms and larger hips. Rosa californica forms dense, prickly riverside thickets and has different flower clusters. Particularly useful for Rosa gymnocarpa are small solitary blossoms, woodland shade and the bare tip of the mature hip. It is unwise to identify a shrub from a single hip without leaves or flowers. Garden roses treated with pesticides are not suitable for raw food.

SOURCES

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- https://pfaf.org/user/Plant.aspx?LatinName=Rosa+gymnocarpa
- https://www.calfloranursery.com/plants/rosa-gymnocarpa/

Multiflora rose — white flower clusters and tiny red hips · Rosa multiflora

Rosa multiflora

Beside an old hedge or an abandoned rural property, a huge thorny shrub with arching shoots may grow. In late spring it is covered in masses of small white flowers, gathered into clusters, while in autumn hundreds of tiny red hips remain in their place. This is multiflora rose, an East Asian species that has escaped cultivation in parts of California. The outer flesh of mature hips is edible, as are tender young leaves and shoots at the beginning of their growth.



Multiflora rose (Rosa multiflora) — clusters of small white flowers and many tiny red hips

Jarka D · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous or semi-evergreen shrub with long, drooping or trailing canes several meters in length. Numerous strong, hooked prickles occur on the branches. Alternate compound leaves generally contain five to nine small, toothed leaflets. At the base of the common leaf stalk are conspicuous fringed, comb-like stipules—a characteristic feature of the species. The large, branched flower clusters contain dozens of small blossoms about two centimeters across. Each flower has five white, sometimes pink-tinged petals and many yellow stamens. By autumn, spherical, bright-red hips approximately five to eight millimeters across form. Inside are numerous hard achenes with fine, irritating hairs.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms that Rosa multiflora is nonnative, recorded in scattered parts of California. It grows near old hedges, on disturbed forest edges and sometimes in damp places where birds disperse its seeds. In the eastern United States it is a serious invasive shrub, but its distribution in California is uneven; large thorny thickets often belong to entirely different rose or blackberry species. Individual plants may occur around settlements in the Sacramento Valley, but they should not be considered a dependable wild food along all riverbanks. A shrub on private land belongs to its owner.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New thin shoots and soft leaves appear in spring. Abundant flowering generally occurs in late spring and early summer. Green hips form afterward toward the end of summer, becoming red in autumn and often persisting through winter. The small fruit's flesh is especially soft after cool weather, but reject any hips marked by rot or mold. Spring shoots and autumn hips are different foods, available at quite different times.



Multiflora rose (Rosa multiflora) — clusters of small white flowers and many tiny red hips

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WHAT IS EATEN WITHOUT FIRE

Completely ripe rose hips. Plants For A Future separately lists their raw use. There is little flesh because the fruit holds so many achenes and hairs. Cut each hip or carefully press it through a sieve, taking only the clean outer red pulp and ensuring the prickly hairs do not reach the mouth.

Young leaves and tender spring shoot tips are also described as eaten raw. They may be finely chopped after all prickles and coarse tissue are removed. Mature branches and old leaves are unsuitable. Seeds have their own food descriptions after processing, but are not part of this guide's diet without fire.

HOW NOT TO CONFUSE IT

Rosa rubiginosa and Rosa canina usually have fewer flowers in a single group, and their stipules differ. Native Rosa californica bears larger pink flowers and often grows in groups along streams. Multiflora rose is distinguished by many white flowers in one panicle, tiny hips and comb-like stipules. Some climbing garden roses overlap in appearance, making identification unreliable without observing the hips and stipules. In any rose species, the internal hairs of the hip must never be eaten.

SOURCES

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- https://www.invasivespeciesinfo.gov/terrestrial/plants/multiflora-rose

Nootka rose — large pink flowers and red hips with irritating hairs · Rosa nutkana

Rosa nutkana

At the edges of coastal forests in Northern California grows a tall rose shrub with large, bright-pink flowers. Green ovaries develop in summer, and by autumn rounded red hips appear, sometimes almost the size of small plums. This is Rosa nutkana, Nootka rose, a native shrub of the Pacific Northwest. Its ripe outer flesh has been eaten raw, while petals and peeled young shoots are also described as food eaten without fire. The critical feature is the many hard achenes and irritating hairs inside every hip: these must not be swallowed with the flesh.



Nootka rose (Rosa nutkana) — large pink flowers and rounded ripe red hips

MeadowLore · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrubby rose often reaches two or three meters tall, forming thickets from stems and root suckers. Branches are greenish or reddish, with separate large, curved prickles, often a pair close to the base of a leaf. Alternate pinnate leaves consist of five to seven ovate, toothed leaflets, the terminal leaflet often the largest. The flowers are comparatively large for a native wild rose. Five simple pink petals surround numerous yellow stamens. A flower grows singly or in a small group at the tip of a branch and is usually pleasantly scented. Following flowering, the receptacle enlarges into a rounded, fleshy red hip with remains of the sepals. Hard achenes covered in fine, stiff hairs lie within. Seeing both flower and mature hip on the same shrub is a much more reliable way to distinguish Rosa nutkana from other Californian roses.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Rosa nutkana, including its coastal variety, as native to California. The species occurs primarily in northern coastal regions, at moist forest edges, beside streams and in open woodland clearings. California Flora Nursery notes its presence in the North Bay and preference for moderate moisture. On the hot, dry floor of the Sacramento Valley, it is not as common as Rosa californica near lowland rivers. Natural Nootka rose is more likely farther north or higher in the foothills. It can form large groups, but prickly branches alone cannot confirm its identity.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves unfold and tender shoots grow in spring. In moderately cool coastal places, large pink flowers usually appear in late spring and June or July. Green hips develop after flowering, becoming red from August through October. With the first cold weather, mature fruit grows softer and often sweeter. Leaves gradually fall, while hips sometimes remain on bare branches. This is not a year-round berry: spring provides petals and peeled soft shoots; autumn provides only the completely ripe outer flesh of the hip.



Nootka rose (Rosa nutkana) — large pink flowers and rounded ripe red hips

Leslie Seaton · CC BY 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Red outer flesh of a completely ripe hip. Plants For A Future and University of Alaska Fairbanks Extension confirm its raw use. Separate the pulp from the internal cavity together with all achenes and stiff hairs. They cannot simply be chewed with the fruit, as the hairs can irritate the mouth and digestive tract. The edible layer is comparatively thin, tasting sweet-tart and sometimes astringent. If it is impossible to remove all hairs thoroughly without a suitable tool, leave the fruit uneaten.

Fresh petals. The species reference separately confirms their raw use; the pale, somewhat bitter base of a petal can be removed. There are few petals, giving a faint sweet aroma rather than a large volume of food.

Tender spring shoots. The same reference describes eating the peeled, soft inner tissue raw. Old thorny stems, leaves and roots are not included in the food list.

HOW NOT TO CONFUSE IT

Rosa californica often carries several smaller flowers in inflorescences and differs in its prickles and hip shape. Rosa woodsii can have similar pink flowers, so several features must be considered together, including the size and position of flowers and the form of sepals and prickles. Do not identify a flowering-less, fruitless shrub by “large prickles” alone. Poison oak may grow nearby; its three-part leaves must not accidentally be gathered with rose shoots. Gathering flowers and fruit may be prohibited in protected areas.

SOURCES

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- https://pfaf.org/user/Plant.aspx?LatinName=Rosa+nutkana
- https://www.uaf.edu/ces/publications/database/food/wild-roses.php

Cluster rose — red autumn hips by northern California streams · Rosa pisocarpa

Rosa pisocarpa

In the cool forest valleys of Northern California, low wild rose shrubs are covered with small red hips in autumn. Light-pink flowers open on the same branches during summer. This is cluster rose, Rosa pisocarpa. Its hips may be eaten fresh if the thin edible outer flesh is separated from the irritating hairs inside.



Cluster rose (Rosa pisocarpa) — pink five-petaled flower and small red hips on arching stems

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous plant usually forms a shrub up to two meters high, sometimes slightly taller. The shoots are slender and arching, with prickles most noticeable on younger branches and near the nodes. The leaves are compound, with several toothed oval leaflets along one axis, often five to seven. Young foliage is soft in spring, becoming firmer and darker later.

The flowers are more often solitary or in small groups, with five pink petals and a conspicuous center containing numerous stamens. After the petals fall, the floral receptacle enlarges. Botanically, the mature red “fruit” of a rose is a hypanthium enclosing numerous small, hard true fruits and fine, prickly hairs. These hairs matter for food: they must not be swallowed.

WHERE IT GROWS AND HOW COMMON IT IS

Rosa pisocarpa has been recorded in California on shaded slopes, beside streams, at moist forest edges and in foothill communities. It is a native species of western North America. Do not expect to encounter it everywhere in the hot, dry neighborhoods on Sacramento's valley floor. Cooler, moister woodland sites offer better prospects.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowering begins toward the end of spring and continues into summer, particularly higher in the mountains. Red hips usually ripen from August through October; late hips may remain on branches after colder weather arrives. For eating fresh, select only fully colored, healthy and soft hips.

WHAT IS EATEN WITHOUT FIRE

Outer flesh of a ripe rose hip. The Plants For A Future food reference explicitly identifies Rosa pisocarpa fruit as edible raw. There is comparatively little pulp, however, and many hairs and hard achenes underneath. Only the cleaned red outer wall is suitable. Cutting open the hip and removing the entire core is a practical method; do not mash the irritating hairs into the food.

Other plant parts. Various uses of wild roses appear in the literature, but they do not establish that this species' leaves, roots or unripe fruit can be eaten without further verification. In this article, the principal confirmed raw food is the flesh of a mature hip.

HOW NOT TO CONFUSE IT

Rosa californica, Rosa gymnocarpa and other native roses grow in California. Their red hips can look alike, while the number and shape of leaflets, the prickles, fruit stalks, sepals and habitats differ. A five-petaled flower and compound toothed leaves may establish the genus, but not always the species.

The hairs within a rose hip irritate the mucous membranes and intestines. If they cannot be completely removed together with all hard achenes, the hip should not be eaten raw.

SOURCES

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- Plants For A Future, Rosa pisocarpa: https://pfaf.org/user/Plant.aspx?LatinName=Rosa+pisocarpa
- Flora of North America, Rosa (botanical identification): https://floranorthamerica.org/Rosa

Sweetbriar rose — apple-scented leaves and bright autumn hips · Rosa rubiginosa

Rosa rubiginosa

Among wild roses on cool slopes and near old pastures, one shrub stands out for an unexpected scent: gently rubbing a leaf releases the fragrance of a green apple. This is sweetbriar, or sweetbriar rose. Its small pink flowers appear in the warm season, leaving red hips by autumn. For raw food, the petals and the very youngest shoots are confirmed for this species; the fruits are mainly documented as food after cooking.



Sweetbriar rose (Rosa rubiginosa) — pink flowers and glandular toothed leaflets

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HOW TO IDENTIFY IT

This is a fairly tall, dense, deciduous shrub, often 1–2.5 meters high, with long, prickly shoots. Its prickles are commonly curved and may occur in pairs near leaves. A compound leaf usually consists of five to seven rounded, toothed leaflets. The undersides carry tiny glands that produce the characteristic apple scent. On the upper surface the leaflets are green and slightly glossy. Pink flowers are approximately three to five centimeters across, with five petals and golden stamens; the base of each petal is noticeably paler. Round or oval red hips develop after flowering.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies this as an introduced species, but records hundreds of observations across California. It may occur on disturbed slopes, at woodland edges, beside roads and old hedgerows, often in the cooler coastal belt and foothills. It is neither a characteristic food of desert landscapes nor a dominant shrub of Sacramento's urban plain. Plants near pastures or highways may be contaminated.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves and tender growth emerge in spring after winter rains. Flowering generally occurs in late spring and summer; red hips form during the second half of summer and remain into autumn. Some hips soften after cool weather. The stage when young shoots are edible is very brief: once a shoot becomes woody and develops firm prickles, it is no longer suitable for raw food.

WHAT IS EATEN WITHOUT FIRE

Flower petals. Plants For A Future expressly states that Rosa rubiginosa petals can be eaten raw. Remove the bitter white part at their base. Their flavor is mild, with a floral aroma, and they can make a small addition to cold food.

Very young shoots. The same reference records shoots eaten raw just after they emerge from the ground in spring. These must be extremely young, soft parts, not yet woody or prickly.

The fruit of this species is described by Plants For A Future specifically as food after cooking. The hips are therefore not presented in this guide as a confirmed raw food. When handling hips, the internal hairs and achenes must not be eaten in any case.

HOW NOT TO CONFUSE IT

Rosa canina is very similar in flower and hip shape but lacks such a strong apple fragrance from its leaves. Native Californian roses can likewise have pink flowers and hooked prickles. The glands on the underside of the leaf, aroma, prickle shape and sepals are important together when identifying sweetbriar. Do not taste a shoot of an unknown prickly plant: first check the full combination of characters.

SOURCES

- Calflora — Rosa rubiginosa: https://www.calflora.org/app/taxon?crn=11057
- Plants For A Future — Rosa rubiginosa: https://pfaf.org/user/plant.aspx?LatinName=Rosa+rubiginosa

Rugosa rose — fleshy red hips on a coastal garden shrub · Rosa rugosa

Rosa rugosa

In a coastal garden, a dense prickly shrub may be seen with large, raspberry-pink flowers and leaves covered in fine-looking folds. By autumn, large, rounded red hips resembling little tomatoes ripen where its flowers were. This is rugosa rose, an Asian species occasionally recorded outside plantings in California. Each hip contains comparatively abundant pulp, making it convenient to eat raw once the achenes and irritating hairs have been removed.



Rugosa rose (Rosa rugosa) — deeply wrinkled leaves and large red flattened hips

TomiUSM · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrub usually grows one to two meters high and spreads through underground shoots. Strong stems are densely covered in straight prickles of different sizes; many very fine needles can be seen between the larger ones. Compound leaves commonly have five to nine oval leaflets, each with a toothed margin and deeply impressed veins. The leaf surface is bumpy and wrinkled, a key identifying characteristic. Large flowers occur singly or in small groups and may be pink, purple or white, with five broad petals and yellow stamens. The hips are rounded and somewhat flattened, bright red or orange, and usually larger than the hips of native Californian roses.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Rosa rugosa as a nonnative shrub and reports only isolated natural occurrences in California, in Sonoma and Yolo counties. Most plants encountered in the state are cultivated in gardens or landscapes. The species tolerates wind and salt better than many garden roses, which is why it is planted near the sea; it also grows in sunny places with well-drained soil. It should not be presented as a widespread wild food of the Sacramento Valley. Fruit from privately planted shrubs belongs to the landowner, and chemically treated shrubs are unsuitable for food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In a mild climate, flowering starts in late spring and often continues into summer. Bright hips appear by August, with the main ripening period generally from August through October. Flowers, green developing hips and red fruit may sometimes appear on the same shrub. A ripe hip turns rich red and its thick outer wall is softer than that of a green one. Cold nights may make the flesh softer and sweeter, but moldy or rotten hips must not be gathered.

WHAT IS EATEN WITHOUT FIRE

Ripe hip flesh. Plants For A Future explicitly records raw consumption of Rosa rugosa hips and notes their thick, fleshy wall. Cut the hip open and carefully remove all hard achenes and every layer of fine internal hairs. Then eat only the clean red pulp, either on its own or in a cold fruit purée. Many small hairs can irritate the mouth and digestive tract.

Flower petals. They, too, are documented as edible raw; remove the bitter, whitish part at their base. Young shoots are different: the species account found describes them as cooked, so they are not included here as raw food.

HOW NOT TO CONFUSE IT

Rosa canina and Rosa rubiginosa have thinner leaves without this conspicuous wrinkling, and generally more elongated hips. Native Californian wild roses often bear smaller flowers and much thinner fruit walls. The main identifying combination for rugosa rose is dense fine and stout prickles together, large wrinkled leaves, large blossoms and flattened fleshy hips. Do not eat hips from ornamental shrubs if it is unclear whether systemic insecticides were applied. Edibility of the outer wall does not mean it is safe to chew the achenes or internal hairs.

SOURCES

- Calflora — Rosa rugosa: https://www.calflora.org/app/taxon?crn=9406
- Calflora — county observations: https://www.calflora.org/app/countytaxon?crn=9406
- Plants For A Future — Rosa rugosa: https://pfaf.org/USER/Plant.aspx?LatinName=Rosa+rugosa
- University of Alaska Cooperative Extension — Wild Roses: https://www.uaf.edu/ces/publications/database/food/wild-roses.php

Sonoma rose — low pink-flowered shrub with small orange hips · Rosa spithamea

Rosa spithamea

On open coastal slopes and in California's scrub communities grows a low wild rose that barely rises above the grass. Simple pink flowers open in summer, followed by little orange or red rose hips. This is Sonoma rose, Rosa spithamea, a native species. As with other wild rose hips, the edible portion is the soft outer pulp of a completely mature fruit, not the hard achenes and irritating hairs inside.

HOW TO IDENTIFY IT

This is a low deciduous shrub, usually 15–60 centimeters tall, occasionally with longer arching shoots. Slender stems have numerous straight or slightly curved needle-like prickles. Alternate, odd-pinnate leaves generally contain five to seven small oval leaflets with toothed edges. The flowers appear singly or in small numbers, with five pink petals and yellow central stamens; an individual flower is a few centimeters wide. After pollination, a round or egg-shaped orange-red hypanthium develops, often retaining its sepals at the tip. The surface may have small glandular hairs, while hard achenes surrounded by stiff, irritating hairs lie inside.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Rosa spithamea endemic to California. Observations are distributed across coastal and northern areas, including Marin, Sonoma, Santa Cruz, San Luis Obispo and certain foothill counties. It grows in coastal scrub, at sunny forest edges, among grasses and on disturbed ground, but it does not form widespread thickets across the hot Sacramento Valley lowland. Its low clumps are easily damaged by careless gathering, especially on protected coastal land.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Toothed leaves emerge in spring, and pink flowers usually appear from late spring into summer, although timing depends on proximity to the ocean. Small hips begin changing color toward the end of summer and mature fully in autumn; some may remain attached after colder weather. For raw use, they must be evenly colored and sufficiently soft. Do not use a hip if it is dry, blackened, moldy or cannot be detached without damaging the branch.

WHAT IS EATEN WITHOUT FIRE

Only the fleshy outer wall of a ripe rose hip. Regional natural-history sources document the edibility of the external flesh of Californian wild rose hips. For Rosa spithamea, it is especially important not to extend this food use to the internal hairs or seeds. Cut the small fruit open and remove all achenes and their bristly hairs, then eat the clean, soft wall. Its flavor is generally tart or slightly sweet-tart, with little usable flesh. If the hairs cannot be removed carefully, do not eat the hip. Branches, leaves and roots are not considered food in this article.

HOW NOT TO CONFUSE IT

Rosa californica is usually much taller, with more substantial shoots and frequent growth near water. In Rosa gymnocarpa the sepals often fall from the developing hip, whereas they commonly persist in Rosa spithamea. The California Native Plant Society also illustrates differences: Sonoma rose has thin, straight prickles and sometimes a glandular hypanthium, while those of California wild rose are thicker and more curved. A single red hip cannot establish a species identification. Fine internal hairs are hazardous to mucous membranes regardless of species.

SOURCES

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- https://cnpsslo.org/wp-content/uploads/2022/10/1122-obispoensis-newsletter-california-native-plant-society-slo.pdf
- https://data.sacriver.org/assets/f1cb2bcf8cda9dd924d396b652b39c3/application/pdf/WhiskeytownEnvirSchool_Naturalist_Guide.pdf

Mountain Woods' rose — summer pink blossoms and red autumn hips · Rosa woodsii ssp. ultramontana

Rosa woodsii ssp. ultramontana

In a mountain meadow or beside a stream on the eastern Sierra, thorny shrubs sometimes grow with fine leaves and five-petaled pink flowers. By late summer, small red hips appear along the branches. This is Rosa woodsii ssp. ultramontana, a native Californian form of Woods' rose. Completely ripe outer hip flesh, fresh petals and peeled tender spring shoots are recorded as raw foods at the species level for Rosa woodsii. Inside every hip, however, are achenes surrounded by numerous irritating hairs, which must not be swallowed with the pulp.



Mountain Woods' rose (Rosa woodsii ssp. ultramontana) — pink flowers and small red hips

Stickpen · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

This deciduous shrub often grows from half a meter to two meters high, with numerous upright or arching branches. Young reddish shoots bear stout prickles, sometimes in pairs at the leaf bases; some stems also have finer prickles. Leaves are alternate and pinnate, commonly consisting of five to seven small, toothed leaflets, green above and lighter beneath. Solitary pink flowers or small groups appear at the shoot tips in late spring and summer. Each flower has five petals, many yellow stamens and green sepals. After flowering, the fleshy receptacle enlarges into a round or oval red hip with sepal remains at the tip. Rather than one stone, it contains many hard achenes surrounded by fine, stiff hairs. Leaves yellow and fall in autumn; the red hips may remain after the first cold weather.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Rosa woodsii ssp. ultramontana as a native shrub of California, with observations in Mono, Inyo, Modoc, Plumas, Lassen, El Dorado, Alpine and other mountain counties. It occurs in mixed conifer woodland, beside damp depressions, in mountain meadows and open foothill sites. It is not as common in the central Sacramento Valley as native Rosa californica along riverbanks. Different Rosa woodsii subspecies have ranges that only partly overlap; a botanical record from elsewhere in the United States cannot automatically be assigned to California's ssp. ultramontana. The shrub may form thickets on suitable sites, but birds and other animals quickly take its small hips.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Tender new shoots emerge with spring warming and snowmelt. Mountain flowering is usually noticeable from May through July, later at higher elevations. Green hips develop through summer and gradually turn red. Plants For A Future places maturation of Rosa woodsii fruit from August to October; the flesh can soften after the first cold nights. The raw edible layer remains thin regardless of fruit size. Old winter hips can become moldy or develop a dried rind, so red color alone does not guarantee that they are suitable.



Mountain Woods' rose (Rosa woodsii ssp. ultramontana) — pink flowers and small red hips

Matt Lavin · CC BY-SA 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only the outer flesh of a mature hip. Plants For A Future confirms the raw use of Rosa woodsii fruit. Carefully separate the red pulp from the internal cavity. Remove all achenes, especially the irritating hairs around them. These can injure the mouth lining and irritate the digestive tract. If clean pulp cannot be reliably separated without tools, leave the fruit alone. It is sweet-tart, sometimes tasting more pleasant after the first cool nights.

Fresh pink petals. The species account records their raw use. The bitter white base can be removed, leaving the tender colored portion. Eat small amounts rather than taking every flower from a small shrub.

Peeled tender spring shoots. The same raw food use is confirmed at species level for Rosa woodsii. Only the soft young inner tissue is eaten after removing the prickly outer skin. Old branches, leaves, roots and seed hairs are not foods.

HOW NOT TO CONFUSE IT

Rosa nutkana, described separately, usually has larger solitary flowers and a different pattern of prickles and sepals. Rosa californica more commonly forms dense riverside thickets and bears groups of pink flowers at lower, warmer elevations. Californian forms of Rosa woodsii differ in flower size, leaflets and hairiness; reliable subspecies identification may require a botanical key. Do not apply the name automatically to any pink-flowered shrub with red hips. Even on a correctly identified plant, the internal hairs remain hazardous. Pesticide-treated garden shrubs and thickets tangled with poison oak are not suitable gathering sites.

SOURCES

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- https://www.calflora.org/app/countytaxon?crn=7188
- https://pfaf.org/user/Plant.aspx?LatinName=Rosa+woodsii

Rosemary — resinous, needle-like leaves of an evergreen shrub · Rosmarinus officinalis

Rosmarinus officinalis

On a sunny, dry embankment or beside an old fence, a dense evergreen shrub with very narrow leaves may persist. Rub them lightly between your fingers and a strong, pine-like, spicy aroma is immediately released. This is rosemary, now often known by its accepted name Salvia rosmarinus. Delicate pale-blue flowers may appear among its green leaves even during the cool season. Young leaves are suitable raw as a seasoning, but not as a principal source of leafy food.



Rosemary (Rosmarinus officinalis) — narrow evergreen leaves and pale blue flowers

Daniel VILLAFRUELA · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An evergreen, woody shrub from 30 centimeters to one and a half or two meters high; creeping forms are much lower. The shoots branch strongly and are covered with short hairs when young. Old branches have gray-brown bark that cracks with age. Leaves are opposite, narrow and linear, generally one to four centimeters long, with their margins curled downward. The upper surface is dark green and glossy, the underside whitish with dense hairs. Flowers occur in small groups in the leaf axils of upper shoots. Their two-lipped corollas are pale blue, lilac or occasionally white, with projecting stamens. Small, dry nutlets develop after flowering.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Rosmarinus officinalis—an older scientific name for Salvia rosmarinus—as a nonnative shrub with more than one hundred observations outside cultivation. Escaped plants are especially recorded in coastal counties of Southern California and the Bay Area, where they tolerate dry summers. Rosemary is widely cultivated in Sacramento Valley gardens, but independent naturalized stands do not occur everywhere. An individual plant may survive without irrigation on an old, dry embankment. Many ornamental plantings in cities are treated with plant-protection chemicals, making their foliage unsuitable for food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Because rosemary is evergreen, its leaves are physically present for most of the year. However, the softest, most aromatic new tips grow after winter rain and spring warming. Flowering may begin in winter in a mild climate and continue through spring, occasionally recurring in autumn. In the heat of summer, young shoots become tougher and the leaves smell more strongly of resinous compounds. For raw use, choose a few tender, clean leaflets from a confidently identified shrub.



Rosemary (Rosmarinus officinalis) — narrow evergreen leaves and pale blue flowers

IndigoTardigrade · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future and botanical food references confirm their use fresh as a seasoning. Because their texture is leathery and dense, finely chop the leaves or crush them with a little cold water as an aromatic addition to other prepared food. A few leaves are sufficient: large amounts are too resinous and can irritate the stomach. Whole sprigs may be dried in shade without heating, after which the dry leaves are removed and used sparingly. Rosemary essential oil is not equivalent to culinary foliage and must not be swallowed for this purpose. Woody branches and roots are not used.

HOW NOT TO CONFUSE IT

Lavender, Lavandula angustifolia, also has narrow leaves and a strong scent, but its leaves are generally more silvery and its flowers grow in long terminal spikes. Native Trichostema lanceolatum also has fragrant leaves, but is an annual with different purple flowers. Pine needles grow in bundles on conifer branches, whereas rosemary is a flowering shrub with opposite leaves and two-lipped flowers. Do not identify an edible seasoning solely because its odor seems familiar.

SOURCES

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- https://pfaf.org/User/Plant.aspx?LatinName=Rosmarinus+officinalis
- https://powo.science.kew.org/

Himalayan blackberry — dense thorny thickets and ripe black summer berries · Rubus armeniacus

Rubus armeniacus

Powerful arches of blackberry canes stretch along rivers and irrigation canals in California. In summer, among white or pinkish blossoms, fruit appears first green, then red, and finally shiny black. This is Himalayan blackberry, the introduced shrub Rubus armeniacus. It can be extraordinarily abundant, especially near water, forming almost impassable thickets. Its principal food value is the fully ripe, juicy fruit, which requires no heating.



Himalayan blackberry (Rubus armeniacus) — dark aggregate fruit among thorny canes

Sarah Stierch (Missvain) · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An adult plant consists of long, biennial canes. During their first year, new stems grow rapidly for several meters, bend over, and may root from their tips where they touch the ground. In the second year, flowering lateral branches develop. Unlike the thin, trailing canes of native California blackberry, Rubus armeniacus has powerful main stems, often angular in cross-section, with large, hard, hooked prickles.

Leaves on young, long canes generally comprise five separate, toothed leaflets spreading from a shared stalk. On shorter fruiting branches there are often three leaflets. The upper surface is green, while the underside is noticeably paler, sometimes nearly grayish. Flowers occur in loose clusters, each with five white or slightly pink petals and numerous stamens.

The fruit is not one botanical berry, but a cluster of tiny juicy drupelets forming an elongated or rounded aggregate fruit. As it ripens, it changes from green through red to nearly black. A completely ripe blackberry is generally soft and detaches easily from its stalk. Each drupelet contains a seed.



Himalayan blackberry (Rubus armeniacus) — dark aggregate fruit among thorny canes

Forest and Kim Starr · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

UC Integrated Pest Management ranks Himalayan blackberry among California's most aggressive introduced blackberries. It occurs in valleys, coastal and floodplain forests, beside streams, at the edges of fields and roads, and on disturbed ground. Growth is especially strong where water persists through the summer drought: near canals and along rivers, including those in the Central Valley. In a favorable site, canes can blanket other shrubs, fences and young trees.

An abundant stand does not make it a native Californian blackberry. Rubus armeniacus arrived in western North America from elsewhere, while Rubus ursinus is native to California. Both produce edible ripe berries, but it is useful to recognize the differences between them. A large fruit crop is less likely on completely dry, open land without additional water than beside a stream.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Perennial crowns and last year's canes remain through winter, but there are no fresh berries then. New green shoots and leaves begin growing in spring, approximately March through May. Flowers appear in spring in different parts of California and can continue into summer; the USDA Forest Service records a broad flowering period for the state.

Following flowering, green fruit gradually turns red. The main crop of ripe black berries usually occurs from July through September, with ripening potentially continuing into autumn on the cool coast and moist sites. In August a single shrub may carry red fruit and fully ripe black fruit simultaneously. Fruit dried without heat may remain available after the season, but that is stored food, not a new crop.

WHAT IS EATEN WITHOUT FIRE

Fully ripe black berries. This is the most securely documented food part. UC IPM explicitly notes the edible fruit of wild blackberries, including Rubus armeniacus. Completely black, soft fruit can be eaten fresh. It may taste sweet and tart; the flavor of berries ripened after rain or in shade differs from those exposed to sunshine. Red fruit is not fully ripe and is noticeably more sour.

Mashed berries. Ripe fruit can be crushed without heating and eaten as a fresh berry mash. Adding water makes it more fluid without changing the fact that the fruit is raw. Tender berries do not tolerate extended transport and spoil quickly. Some fully mature fruit can be dried naturally in a clean place protected against insects; discard stored fruit if mold develops.

Spring shoots and leaves are described here for identification. Evidence that the ripe berries are edible must not be automatically extended to raw use of every green part. Large prickles and delicate fruit call for care during gathering.

HOW NOT TO CONFUSE IT

Native Rubus ursinus generally has thinner canes that lie closer to the ground, and often has leaves of three leaflets. Himalayan blackberry's first-year canes are strong, angular and usually have five leaflets. Another introduced species in California is Rubus laciniatus, cutleaf blackberry: its deeply cut leaflets are difficult to mistake for the broad, toothed leaflets of Rubus armeniacus. The best identification uses the mature cane, prickles, leaves, flowers and ripe fruit together.

Western poison oak, Toxicodendron diversilobum, may grow nearby. Its three-part leaves can become tangled among blackberry canes, but poison oak has neither typical thorny blackberry stems nor aggregate black fruits. Avoid grasping unidentified branches or gathering fruit entwined with poison oak. Shrubs beside roads, sites treated with herbicides and polluted canals are likewise unsuitable sources of raw food.

SOURCES

University of California IPM — Wild Blackberries, species and edible mature fruit: https://ipm.ucanr.edu/home-and-landscape/wild-blackberries/ USDA Forest Service — Rubus armeniacus, morphology, ecology and seasonality: https://research.fs.usda.gov/feis/species-reviews/rubspp Calflora — Rubus armeniacus in California: https://www.calflora.org/app/taxon?crn=10319 Oregon State University — Rubus armeniacus, leaves, shoots and fruit: https://landscapeplants.oregonstate.edu/plants/rubus-armeniacus

American red raspberry — scarlet summer berries on mountain canes · Rubus idaeus subsp. strigosus

Rubus idaeus subsp. strigosus

In a cool northern or mountain forest, thin prickly raspberry canes may appear where a small opening has developed among the trees. In spring they bear inconspicuous whitish flowers; in summer red fruit glows among their compound leaves. On the native American red raspberry, ripe juicy fruit separates readily from the receptacle, leaving a hollow cup inside.



American red raspberry (Rubus idaeus subsp. strigosus) — bright red aggregate fruit on thorny canes

Douglas Goldman · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial shrub with underground shoots and aboveground canes that usually live for two seasons. New canes grow long and straight or slightly arching, covered with fine bristles and slender prickles. A compound leaf usually has three or five toothed leaflets. Its underside is distinctly paler and often densely covered with whitish hairs, a characteristic reflected in the English name grayleaf raspberry. White flowers have five petals. Each developing aggregate fruit consists of many tiny juicy drupelets, changing from green to pink and finally bright red. A ripe raspberry separates from the pale central receptacle, which does not remain inside the picked fruit.

WHERE IT GROWS AND HOW COMMON IT IS

Kew and Calflora confirm that Rubus idaeus subsp. strigosus is native to California. However, natural records in the state are rare, so it must not be treated as a common shrub of the Sacramento Valley. It is associated with cool northern and mountainous areas, woodland edges, moist openings and places where the forest canopy has been disturbed. Most extensive raspberry patches near settlements may have cultivated or mixed origins.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New shoots emerge in spring after the ground thaws and becomes moist. Flowering takes place in late spring or early summer, later at higher elevations. Berries usually ripen from July through August, or into September in cooler areas. A single shrub does not ripen its berries simultaneously: hard pink fruit may hang beside fully ripe, soft fruit.



American red raspberry (Rubus idaeus subsp. strigosus) — bright red aggregate fruit on thorny canes

Bartosz Cuber · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe fruit. The USDA Forest Service confirms the traditional use of American red raspberries fresh. A soft, scarlet berry is sweet with some tartness and can be eaten immediately after gathering, provided the site is clean and the species is identified. Ripe berries can be crushed into a cold mash or dried naturally without heating. Hard, unripe berries are much more sour. Young leaves and shoots of this subspecies must not automatically be treated as raw food merely because such uses are described for other Rubus.

HOW NOT TO CONFUSE IT

Western black raspberry, Rubus leucodermis, produces ripe fruit that is dark purple and often has waxy, pale stems. When blackberries such as Rubus ursinus or R. armeniacus are picked, a pale central receptacle usually remains inside the fruit. Wild red raspberries can resemble garden varieties; the origin of a plant may therefore be impossible to establish from one berry. Western poison oak, Toxicodendron diversilobum, sometimes bears leaves of three leaflets, but lacks raspberry's characteristic prickly canes and aggregate red drupelets.

SOURCES

- Kew POWO — Rubus idaeus subsp. strigosus: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:223189-2
- USDA Forest Service FEIS — Rubus idaeus: https://research.fs.usda.gov/feis/species-reviews/rubida
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Cutleaf blackberry — black berries among deeply divided leaves · Rubus laciniatus

Rubus laciniatus

In moist California valleys and at woodland edges, a thorny blackberry sometimes appears whose leaves look as though they have been cut into narrow, decorative sections with sharp teeth. Dense aggregate fruit ripens among them in summer, changing from red to black. This is Rubus laciniatus, cutleaf blackberry, an introduced species. It belongs to the same food group as other blackberries, but its unusually deeply divided foliage is a useful distinguishing feature.



Cutleaf blackberry (Rubus laciniatus) — deeply divided toothed foliage and ripe black fruit

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HOW TO IDENTIFY IT

The shrub is perennial, while individual long canes usually live for two years. In the first year, strong arching stems grow from the root system, carrying leaves and prickles. They sometimes reach several meters and may lie over neighboring shrubs. In their second year, flowering side branches develop and the older cane gradually dies after fruiting.

Leaves consist of several distinct leaflets, commonly five on long, young canes and three on fruiting branches. Each leaflet is so deeply cut and toothed that it almost looks like lace. The lobes are long and their edges sharply shaped. This is the principal visible identifying character. Hooked prickles occur on the canes.

The flowers resemble those of other blackberries: white or pale pink, with five petals and numerous stamens. Each develops into an aggregate fruit of small drupelets. Young fruit is green, later red, while ripe fruit turns black and soft. Berries in sunshine are often larger and sweeter than those in deep shade.



Cutleaf blackberry (Rubus laciniatus) — deeply divided toothed foliage and ripe black fruit

Agnieszka Kwiecień (Nova) · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Rubus laciniatus as a nonnative shrub that has escaped from cultivation in California. The USDA Forest Service describes it on disturbed woodland edges, in moist thickets, by roads and alongside waterways, especially where rainfall is sufficient. It has been observed in northern and foothill counties, including Placer, Butte, El Dorado and Shasta. It is not as ubiquitous as Himalayan blackberry, Rubus armeniacus: some places have noticeable groups while elsewhere it is nearly absent.

On the hot floor of the Sacramento Valley, continued green growth requires moisture or nearby groundwater. Fruiting is less reliable on dry, exposed ground. Thickets on private property or beside treated farm fields are not suitable for unrestricted gathering.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In spring, approximately March through May, living older canes produce leaves and flowering shoots while new canes emerge from the base. Flowering generally occurs in late spring and early summer, shifting later in cooler places.

Green berries form after flowering and later turn red. Soft black fruit is chiefly available from July through September, occasionally a little earlier or later depending on region. New canes may still be green in autumn, but ripe berries become less common. Thorny canes persist through winter, when there is no fresh fruit crop.

WHAT IS EATEN WITHOUT FIRE

Completely ripe black fruit. North Carolina State University Extension explicitly confirms that Rubus laciniatus berries can be eaten raw. This is the principal edible part without fire. The flesh is juicy and sweet-tart, with small, hard seeds in individual drupelets. Gather only once the fruit has turned fully black and softened, detaching easily from its stalk.

Fresh mashed berries. Fruit can be eaten immediately or crushed into a cold berry mash. It spoils quickly, particularly in heat. Discard berries showing mold, fermentation or questionable odors. Natural drying is possible, but these delicate, juicy fruits require protection from insects and complete drying; this is no guarantee that any harvested crop will store for a long time.

Flowers, leaves and young shoots help identify the species. Some Rubus species have documented edible young peeled shoots, but that use must not automatically be transferred to Rubus laciniatus. Raw leaves are not proposed here as a separate salad green.

HOW NOT TO CONFUSE IT

Himalayan blackberry, Rubus armeniacus, has large toothed leaves without such deep cuts. Native Rubus ursinus generally has thinner, trailing canes and often leaves of three leaflets. The unusual divided leaflets of Rubus laciniatus are recognizable even before fruiting. Definitive identification should nonetheless use leaves, canes and fruit from the same shrub.

Aggregate blackberries differ from single hanging black berries of unknown shrubs. Western poison oak, Toxicodendron diversilobum, may hide in blackberry thickets with its three-part leaves: do not accidentally gather its foliage with the berries. Herbicide exposure and soil contamination are possible along roads.

SOURCES

USDA Forest Service, Rubus laciniatus — ecology and range: https://research.fs.usda.gov/feis/species-reviews/rublac Calflora, Rubus laciniatus — California records: https://www.calflora.org/app/taxon?crn=7195 North Carolina State University Extension, Rubus laciniatus — ripe raw fruit: https://plants.ces.ncsu.edu/plants/rubus-laciniatus/

Western black raspberry — dark summer fruit on pale canes · Rubus leucodermis

Rubus leucodermis

In open forests and along the edges of California canyons grows a thorny shrub with long arching canes that look as if they have been dusted with a whitish coating. Among its three-part leaves, small aggregate fruit ripens in summer, turning from red to dark purple and almost black. This is western black raspberry, Rubus leucodermis. Unlike many blackberries, a ripe raspberry comes off its pale receptacle, leaving a hollow center, as in garden raspberries. Its fruit can be eaten fresh without fire, and peeled young shoots are also known as spring food.



Western black raspberry (Rubus leucodermis) — bluish-white waxy canes and dark hollow-picked berries

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a deciduous perennial shrub with biennial aboveground canes. In the first year new shoots grow rapidly, arch outward and can root where their tips touch the ground. During the following year flowering side branches appear, while the old cane gradually dies after fruiting. The shrub often stands one to two meters high, although its long arches spread over a wider space.

Young canes bear a bluish-white waxy bloom. Green and purple areas are visible beneath it. Hooked prickles grow along the shoots, and leaf undersides are often much lighter than their upper surfaces. First-year leaves may have five leaflets, while fruiting branches more commonly have three, all with toothed margins.

Five-petaled white flowers open on short side branches. They develop red aggregate fruit that becomes almost black when fully ripe. A picked, mature raspberry detaches like a hollow cap. This is a useful distinction between raspberries and ordinary blackberries, which retain the receptacle within the aggregate fruit.



Western black raspberry (Rubus leucodermis) — bluish-white waxy canes and dark hollow-picked berries

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WHERE IT GROWS AND HOW COMMON IT IS

Rubus leucodermis is native to western North America. Calflora records it in northern and foothill counties, in conifer and mixed forests, canyons and open slopes. Observations are known from Shasta, Humboldt, Trinity, Sonoma, Placer, El Dorado and many other counties. It is less characteristic of the floor of the Sacramento Valley than of foothill forests and cool streams.

It can grow in small groups and alongside clearings, but generally does not produce the long, unbroken thickets formed by introduced Himalayan blackberry. Fruiting bushes are uncommon in dry lowlands without moisture. On north-facing slopes and in partial shade, berries sometimes ripen later than at sunny forest edges.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After winter, approximately March through May in lower foothills, new soft shoots emerge from the base. This is the brief stage when the inner tissue is still tender. The stems soon acquire a tougher outer covering and prickles.

Flowers usually open in late spring and early summer. Green ovaries become red and then darken. The main berry season in California is expected in July and August, shifting later with altitude and cool weather. Late berries may remain in some places in September, but this is not a year-round fruiting shrub.

WHAT IS EATEN WITHOUT FIRE

Completely ripe fruit. Plants For A Future confirms the raw use of Rubus leucodermis berries. They are soft, sweet, often slightly tart and crush easily. They are especially good immediately after gathering. A few berries may be crushed between the fingers and eaten without additions. Natural drying of ripe fruit is also described for this species, but they should be stored only when thoroughly dry and free of mold.

Peeled young shoots. The same species account states that tender spring shoots can be removed from the plant, peeled and eaten for their juicy raw centers. This applies only to fresh, soft new growth, not to mature thorny stems. First make certain the plant really is Rubus leucodermis and the shoot is still tender.

Leaves, roots and flowers are not included in the raw food list. Their occurrence and use in some hot drinks do not prove that they are suitable foods without heating.

HOW NOT TO CONFUSE IT

Picked Himalayan blackberry, Rubus armeniacus, retains a pale core, and its stout angular canes and large leaves differ. Native California blackberry, Rubus ursinus, has thinner trailing stems and usually also retains the core when picked. Rubus leucodermis is distinguished by a pale waxy coating on its canes and a hollow picked fruit. Fruit color alone, however, is not enough.

Gathering in tangled thickets creates a risk of accidentally touching western poison oak, Toxicodendron diversilobum. Prickles may also injure hands. Plants beside treated roads or fields are unsuitable for raw food.

SOURCES

Calflora, Rubus leucodermis — native status and Californian range: https://www.calflora.org/app/taxon?crn=7197 Calflora, county records: https://www.calflora.org/app/countytaxon?crn=7197 Plants For A Future, Rubus leucodermis — raw berries and peeled young shoots: https://pfaf.org/user/Plant.aspx?LatinName=Rubus+leucodermis California Flora Nursery, blackcap raspberry — habitats and appearance: https://www.calfloranursery.com/plants/rubus-leucodermis/

Thimbleberry — thornless forest raspberry with large leaves · Rubus parviflorus

Rubus parviflorus

In the cool, moist forests of Northern California, you may encounter a shrub that is easy to recognize even before it bears fruit: its broad leaves resemble maple leaves, and it has large white flowers. Unlike blackberry, its stems are not covered in prickles. Fruiting begins in summer, but tender spring shoots and flowers are available earlier and are also known as parts of the plant eaten without heating.



Thimbleberry (Rubus parviflorus) — broad lobed leaves, white flowers and soft red fruit

Jesse Taylor (Jrtayloriv) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Rubus parviflorus is a deciduous perennial shrub, usually one to two meters tall, sometimes reaching three meters. It forms stands of many upright, slightly spreading stems. Its branches usually have no prickles, one of its first distinguishing characteristics.

The leaves are simple and very broad, with three to seven rounded lobes, like a small maple leaf. They may be up to twenty centimeters across, soft, with toothed margins and fine hairs. The flowers are bright white, with five broad petals and yellow centers, noticeably larger than blackberry flowers—sometimes up to five centimeters in diameter.

The berries are small and bright red. They consist of many little juicy sections. Once fully ripe, the fruit resembles a very soft red raspberry that separates from its receptacle, leaving a hollow center. Ripe berries can easily be crushed between the fingers, which is why they are rarely as intact and firm as berries sold in stores.



Thimbleberry (Rubus parviflorus) — broad lobed leaves, white flowers and soft red fruit

Fernsebner · CC0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

This species is native to western North America. In California it occurs on the northern coast, in the moist forests of the Coast Ranges, in mountain and foothill parts of the Sierra Nevada, along cool forest edges and beside woodland streams. It spreads particularly readily when openings develop in forest cover, beside trails and at the margins of damp clearings.

Where conditions are suitable, the shrubs can form extensive stands. On a dry exposed slope or in the hot open parts of the Sacramento Valley, this raspberry is seldom seen. The description “forest raspberry” does not mean it grows in every California forest.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New shoots emerge in spring—as early as March or April in low, moist sites, and later at higher elevations. While they are still soft and have not become woody, there is a brief period when they can be eaten.

The large white flowers usually appear from May through July, although the season may be broader in particular places. Red fruits ripen later, most often from June through August, sometimes into September in cool mountain areas. Thus the shrub offers different parts over the year: shoots first, then flowers, then berries.

WHAT IS EATEN WITHOUT FIRE

Young peeled shoots. In their first weeks of growth, they have a tender inner portion. Plants For A Future describes young shoots eaten raw after their outer skin has been removed. The shoots become coarse later, so this short spring use does not apply to mature woody branches.

Flowers. Plants For A Future separately lists the raw flowers of Rubus parviflorus as food. The white, five-petaled flower opens before most of the berries appear and helps distinguish this shrub from other Rubus species with different flower colors and leaf structures.

Ripe red fruits. They are eaten fresh. The flesh is extremely tender, sometimes sweet and slightly tart. Ripe berries crush easily and may fall apart during picking, making them primarily a food to eat shortly after harvest. Ethnobotanical accounts from the Pacific coast describe these fruits as part of the summer berry harvest.

Leaves are not listed here as raw food. References to their use in hot beverages describe a different preparation and are not included in this section.

HOW NOT TO CONFUSE IT

The key characters are a large, simple, lobed leaf, white flowers and the absence of prickles. Salmonberry, Rubus spectabilis, more often has leaves made of three separate leaflets, vivid pink flowers and generally prickly stems. California blackberry, Rubus ursinus, also has compound leaves, while its fruits darken to almost black. The large white flowers and leaf shape are especially helpful before the red fruit appears.

SOURCES

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- Plants For A Future, Rubus parviflorus, raw peeled shoots, flowers and fruit: https://pfaf.org/user/Plant.aspx?LatinName=Rubus+parviflorus
- Seattle University, Vi Hilbert Ethnobotanical Garden Plant Guide: https://www.seattleu.edu/media/seattle-university/life-at-seattle-u/our-campus/grounds/downloads/Vi-Hilbert-Ethno-Garden-Plant-Guide-complete.pdf

Salmonberry — vivid pink flowers and early forest berries · Rubus spectabilis

Rubus spectabilis

Along wet streams on the Northern California coast, large pink flowers bloom in late winter and spring. They belong to salmonberry, a forest shrub that produces translucent orange, golden and sometimes red berries in summer. It provides food in several stages: tender shoots in spring, flowers during flowering and fruit after ripening.



Salmonberry (Rubus spectabilis) — vivid pink flowers and ripe orange berries

Forest Service Alaska Region, USDA (Flickr) · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Salmonberry is a perennial deciduous shrub with long, arching stems. It is often one to three meters tall and forms dense thickets through underground shoots. Small prickles can be seen on young and mature stems. Its branches are much more upright and taller than the trailing canes of California blackberry.

A leaf is usually compound, made up of three separate leaflets with sharply toothed edges. The middle leaflet is larger than the lateral ones. Young leaves appear early, while the surrounding forest still looks wintry.

The flowers are relatively large, with five deep-pink or purplish-pink petals and yellow stamens at the center. They grow singly or in small groups on short side branches. The fruits resemble raspberries, consisting of numerous small, rounded, juicy drupelets. At maturity, their color varies from pale yellow to orange and red depending on the plant, not solely on ripeness.



Salmonberry (Rubus spectabilis) — vivid pink flowers and ripe orange berries

Gordon Leggett · CC BY-SA 4.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Rubus spectabilis is native to the Pacific coast. In California it is especially well known in Del Norte, Humboldt and Mendocino counties. A distinct Californian variety also occurs farther south, in the coastal mountains as far as the Santa Cruz area.

It thrives with mild, wet winters and cool summers. It grows beside streams, at forest edges, in redwood-forest openings and on damp slopes. At times its thorny growth almost blocks passage along a stream bank. Comparable dense stands are uncommon on the dry, exposed land of the Central Valley.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New shoots and tender leaves begin developing in late winter or early spring. Near the southern edge of its range, flowers may appear as early as February. Flowering in California has been recorded from February through June, especially during spring.

Its fruits are among the earlier berries of moist forests. Some ripen in May and June, with harvesting continuing through summer in cooler areas, sometimes until August. Exact weeks vary with elevation, weather and proximity to the ocean.

WHAT IS EATEN WITHOUT FIRE

Young peeled shoots. While a spring shoot is juicy, has only just emerged from the ground and has not become coarse, the tough outer layer was removed and the tender inside eaten raw. This is a brief spring food, not a method of eating mature woody canes. The practice is known among Indigenous peoples of the Pacific coast, and botanical food references also describe it specifically for Rubus spectabilis.

Pink flowers. Plants For A Future lists the flowers of this species as edible raw. They are available during flowering, before the main fruit crop.

Ripe berries. Orange, yellow and red fruits can be eaten fresh. They are soft and juicy, ranging in flavor from sweet to watery or slightly astringent. Color should not be the only test of ripeness; the softness of the berry matters too.

Salmonberry is primarily known for fresh fruit. The USDA Forest Service emphasizes that these berries were mostly eaten fresh and seldom dried. Natural drying should therefore not be presented as a standard universal method of storing salmonberries. Leaves mentioned in some sources for hot tea are not included here as raw food.

HOW NOT TO CONFUSE IT

Large, vivid pink flowers, three-leaflet leaves, tall prickly shoots and soft orange-to-red fruits distinguish salmonberry from related species. Thimbleberry, Rubus parviflorus, has simple, large lobed leaves, white flowers and thornless stems. The native California blackberry, Rubus ursinus, has trailing canes and fruit that darkens to almost black when ripe. Flowers are much more reliable for telling these species apart than a single red berry.

SOURCES

- USDA Forest Service, Rubus spectabilis, botany, distribution, season and food history: https://research.fs.usda.gov/feis/species-reviews/rubspe
- Plants For A Future, Rubus spectabilis, raw young peeled shoots, flowers and fruit: https://pfaf.org/user/Plant.aspx?LatinName=Rubus+spectabilis
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Elmleaf blackberry — dark fruit on bluish arching canes · Rubus ulmifolius

Rubus ulmifolius

Near an old hedge or at the edge of a coastal forest, blackberry canes with a bluish bloom, prickles and pink flowers may occasionally be seen. By late summer, dark, glossy aggregate fruits ripen on them. This is elmleaf blackberry, a species introduced from Europe that occasionally escapes cultivation in California. Its ripe berries are edible raw, but it must be distinguished from numerous other blackberries, especially the widespread Himalayan blackberry.



Elmleaf blackberry (Rubus ulmifolius) — bluish arching thorny canes and ripe dark berries

Tranceliner · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial shrub with long, arching or nearly trailing thorny canes, sometimes several meters long. Young stems often bear a bluish waxy bloom and large, hooked prickles. Leaves are compound, usually made of three to five toothed leaflets; the terminal leaflet is broader than the others, while the underside of many plants is covered in pale, felt-like hairs. Flowers occur in branching clusters, with five light-pink or pinkish petals and numerous central stamens. Fruits are aggregates of small, juicy drupelets, at first red and almost black when fully ripe. A picked berry retains a pale central core, unlike a true raspberry.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Rubus ulmifolius outside cultivation in California, but relatively rarely, with about one hundred observations. It occurs beside old plantings and hedges, in disturbed coastal forests and some moist canyons. Most familiar extensive blackberry thickets in the Sacramento Valley belong to other species, such as Rubus armeniacus, and not necessarily to Rubus ulmifolius. A dark aggregate fruit alone is not proof of a particular species. Picking from private hedges requires the owner's consent.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowers open on overwintered branches in spring; many small green fruits develop during summer. The berries ripen unevenly, generally from July to September, and later in cool coastal districts. Full ripeness is indicated by nearly black color, softness and easy separation from the stalk. Red berries remain firm and are substantially more sour. Tender berries quickly develop mold after rain or damage.

WHAT IS EATEN WITHOUT FIRE

Ripe fruit. Plants For A Future specifically confirms the raw use of Rubus ulmifolius. The aromatic fruits are sweet or sweet-tart and consist of numerous tiny seed-bearing drupelets. They are eaten fresh or mashed into a cold fruit juice, which may be strained if desired. In warm, dry weather, clean, mold-free berries can be dried naturally without fire. Sources describe other uses of leaves, roots and young shoots, but no independently confirmed raw food practice for these parts is included here.

HOW NOT TO CONFUSE IT

Rubus armeniacus frequently has stronger, five-angled canes, larger leaflets and white or pale-pink flowers; however, the characters of the two introduced blackberries overlap. Native Rubus ursinus generally forms thinner trailing canes and has a different growth habit and flowers. Rubus leucodermis produces dark raspberries that detach without the central core. Precise identification requires leaves, flowers, prickles, stems and fruit together. When the species cannot be established, do not assign a name to a shrub based only on berry flavor.

SOURCES

- https://www.calflora.org/app/taxon?crn=9215
- https://pfaf.org/user/Plant.aspx?LatinName=Rubus+ulmifolius

California blackberry — thin trailing canes and summer fruit · Rubus ursinus

Rubus ursinus

This blackberry has long, thin shoots that trail across the ground rather than rising high, tangle among shrubs and hang over slopes. Pale flowers appear on them in spring, followed in summer by small berries that turn from green to red and finally almost black. This is a native California species, not the powerful Himalayan blackberry that often fills roadsides and vacant lots.



California blackberry (Rubus ursinus) — thin trailing stems, three leaflets and mature dark aggregate berries

Gaia Leo · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Growth form. This perennial shrub forms low thickets of long, flexible canes. A single cane can reach several meters and root at its tip if it touches damp ground. Young stems are slender and often hairy; mature ones bear many relatively thin, straight prickles.

Leaves. A leaf usually consists of three separate leaflets, less often five. They have toothed margins, are green above, and paler and often hairy beneath. Leaf stalks and axes can also be prickly.

Flowers. White or pale-pink flowers with five petals appear in spring. On Rubus ursinus, male and female flowers often occur on separate plants, so not every flowering cane will produce berries.



California blackberry (Rubus ursinus) — thin trailing stems, three leaflets and mature dark aggregate berries

CAJC: in the PNW · CC BY-SA 2.0 · Wikimedia Commons

Fruit. A berry consists of many tiny juicy drupelets joined in one aggregate fruit. It is initially green, then red, and only at maturity becomes dark purple or almost black. The fruit is usually elongated, approximately one to two centimeters long. A fully ripe berry is soft and sweet, although flavor can vary markedly.

WHERE IT GROWS AND HOW COMMON IT IS

This is a widely distributed native shrub of western North America. In California it grows along the coast, at forest edges, beside streams, in ravines, shrub communities and at the edges of moist meadows. It can occur in riparian thickets of the Sacramento Valley and in suitable foothill sites.

Where moisture is sufficient, it can form dense stands; on a dry, exposed slope there may be few berries or none of the plant at all. Moreover, large prickly roadside thickets often belong not to this species but to the introduced Himalayan blackberry.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Spring brings the very youngest tender shoots, before they become coarse and prickly.

Flowers appear from late winter through summer in different regions. In many places berries ripen from June through August, with the dates shifting on the cold coast and in particular years. Red, unripe berries and already black, ripe fruit may be seen on one cane at once. Select soft, mature berries for eating fresh.

WHAT IS EATEN WITHOUT FIRE

Ripe berries. These are eaten fresh. Historical sources on Indigenous peoples of the western coast describe eating fresh blackberries in summer and keeping dried berries after the harvest.

Young shoots. Plants For A Future separately describes raw young shoots of Rubus ursinus as edible while they are just emerging from the ground and remain soft. This does not apply to tough, mature, thorny canes.

A cold berry drink. A method is also recorded for Rubus ursinus in which berries that were not fully ripe were soaked in water to make a cold drink. No heating was needed. This is a distinct use, not a recommendation to eat handfuls of sour, unripe berries.

Dried berries. Ripe fruits could be dried for storage and used later. The relevant method here is drying without boiling, not making jam.

HOW NOT TO CONFUSE IT

Himalayan blackberry, Rubus armeniacus, also produces edible black berries, but generally forms larger, taller thickets. It often bears five leaflets per leaf, thick angular stems and large, sturdy prickles. Native Rubus ursinus has thinner, rounder, trailing stems, usually with three leaflets.

It is especially important not to confuse young three-part leaves with poison oak, Toxicodendron diversilobum. Poison oak also has three leaflets, but lacks the prickly blackberry canes, and its fruits are whitish rather than made of black drupelets. Its sap can cause severe skin irritation. Without a clear combination of blackberry traits, a plant cannot be identified from its leaves alone.

SOURCES

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- USDA Forest Service, Rubus ursinus (season, habitat, berries and cold drink): https://research.fs.usda.gov/feis/species-reviews/ruburs
- Oregon State University, Rubus ursinus (growth form, leaves and fruit): https://landscapeplants.oregonstate.edu/plants/rubus-ursinus
- Plants For A Future, Rubus ursinus (raw shoots): https://pfaf.org/user/Plant.aspx?LatinName=Rubus+ursinus

Curly dock — sour leaves at the earliest stage of growth · Rumex crispus

Rumex crispus

On damp ground after rain, a rosette of long, narrow leaves sometimes appears with edges that seem crumpled into small waves. Later, a tall stem rises above them with greenish-red panicles of seeds. This is curly dock, a common Californian herb whose edible qualities have long been known. For food without heating, however, it has a narrow window: very young leaves, while their flavor is not too bitter and their acidity does not make them overly heavy greens.



Curly dock (Rumex crispus) — narrow wavy-edged leaves and a tall reddish-brown seed panicle

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial member of the buckwheat family, with a substantial taproot. Early in the season, leaves form a basal rosette. They are oblong, sometimes several tens of centimeters long, with a prominent midrib and especially characteristic strongly wavy, curled margins. The blade is relatively narrow, and the base is generally wedge-shaped or slightly rounded.

The flowering stalk grows to approximately a meter or more, with little branching near its base but dense clusters of inconspicuous green flowers higher up. The flowers gradually turn reddish brown. After flowering, each fruit is surrounded by three enlarged perianth segments, which help identify it; one or several may bear small swellings. At the base of each leaf is a thin membranous tube, the ochrea, typical of the buckwheat family.

In an open meadow, a plant can remain conspicuous through its tall, dry panicles long after its young leaves have become coarse. The dry panicles are evidence of a mature plant, not an invitation to eat old leaves.



Curly dock (Rumex crispus) — narrow wavy-edged leaves and a tall reddish-brown seed panicle

Harry Rose (Macleay Grass Man) · CC BY 2.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

UC IPM records Rumex crispus throughout California up to approximately 2,500 meters in elevation. It occurs in low, damp areas, along streams and ditches, in open meadows, pastures and disturbed fields. It can be found in valleys and cool foothills, especially where soil retains moisture after rain.

The plant is common, but it does not necessarily occur in every forest: it generally prefers open sunny or partly shaded sites. Plants from contaminated ditches and chemically treated agricultural land are unsuitable for eating raw, even when correctly identified.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Winter and spring. In mild lowlands, new leaves may appear after autumn rain and grow actively through winter and early spring. They are softest at the young rosette stage.

Spring and summer. A tall flowering stalk develops; leaves grow larger, tougher and generally more bitter. At cool elevations, this development takes place later.

Late summer and autumn. The fruit dries and remains visible on the stalk, but the foliage is often old. After renewed moisture, a plant may produce a little new young growth again.

WHAT IS EATEN WITHOUT FIRE

Very young leaves. Plants For A Future and the ECHO reference describe thin, young Rumex crispus leaves eaten raw in small quantities as sour greens. Their sorrel-like taste is pronounced, so they are generally an addition rather than a large meal on their own.

The limitation concerns oxalates. Curly dock contains oxalic acid, and its concentration and relative abundance may vary with the age of the leaf and growing conditions. Large amounts of raw greens and a

constant daily diet based on them are inadvisable, particularly for people with kidney disease or a tendency to develop oxalate stones. Some food traditions prepare the leaves separately, but that processing is outside the scope of this no-fire catalog.

Some references also list seeds and the inner parts of stems as food. For practical raw gathering, however, they are less suitable: mature seeds have hard coverings and old stems become coarse. The food emphasis here remains on the youngest leaves in very moderate quantities.

HOW NOT TO CONFUSE IT

Broadleaf dock, Rumex obtusifolius, generally has broader, less curled leaves and a different perianth structure surrounding its fruits. Several other Rumex species bear similar tall, reddish-brown panicles, so the inflorescence alone does not establish the species. Young plants before fruiting can be especially difficult to tell apart.

For true Rumex crispus, a combination of the narrow leaf blade, strongly wavy margin, membranous ochrea and characteristic mature fruit matters more than the sour taste. Do not taste an unidentified dock as an identification test: many plants taste tart, and acidity does not prove food safety.

SOURCES

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- Plants For A Future — Rumex crispus: https://pfaf.org/user/Plant.aspx?LatinName=Rumex+crispus
- ECHO — Rumex crispus, edible wild leaves: https://www.echocommunity.org/en/resources/d64aaec7-ed7b-49b7-8fd3-75d5d12fcc5a
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Pacific pickleweed — salty succulent shoots of tidal marshes · Salicornia pacifica

Salicornia pacifica

In the salt marshes of California's Pacific coast, low mats of fleshy green stems are visible, made up of short cylindrical segments. Toward the end of the season they turn red, giving the salt flats an unusual color. This is Salicornia pacifica, Pacific pickleweed, also called Sarcocornia pacifica in some references. Its tender green tips are known as edible raw salty greens. But its habitat is affected by tides, salt and potentially accumulated pollutants; gathering it without knowing the condition of the marsh is unsafe.



Pacific pickleweed (Salicornia pacifica) — low mats of fleshy jointed green stems in a tidal salt marsh

Peter Pearsall / USFWS Pacific Region · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

This is a perennial succulent forming dense, low bushes or mats, usually from a few centimeters to half a meter high. The shoots are numerous, branching, juicy and green; they turn red under stress or toward autumn. Every shoot consists of short fleshy segments with visible constrictions at the nodes, resembling connected cylinders. True leaves are tiny, reduced to barely noticeable scales fused with the stem. The green stem segments perform most of the photosynthesis. Tiny flowers sit in depressions within fleshy sections and have no showy petals. Small seeds develop after pollination. For identification, observe a low mat of perennial, branching segments and its characteristic salt-marsh habitat rather than one detached piece of green stem.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Salicornia pacifica as native to California's coastal salt flats. There are numerous records from San Mateo, Solano, Marin, San Diego, Orange, Ventura, Santa Barbara and other coastal counties. The University of California, Santa Barbara describes it as a dominant species of coastal salt marshes. Corresponding salt-marsh communities exist around San Francisco Bay and the Delta, but it is not a typical freshwater herb of Sacramento. The plant grows on flat areas regularly flooded with brackish water and tolerates high salt concentrations. Many such places are protected and access is strictly restricted.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Because the plant is perennial, green shoots may remain for much of the year. However, tender new tips are at their juiciest during active growth in spring and summer, when daylight increases and water is available. In the second half of the year, some stems turn red, age and become tougher. Inconspicuous flowering and seed maturation occur at varying times depending on position in the tidal zone. For eating cold, the best part is the young, tender green growth, not old, tough, red portions.



Pacific pickleweed (Salicornia pacifica) — low mats of fleshy jointed green stems in a tidal salt marsh

jkirkhart35 · CC BY 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Tender green stem segments. The San Diego Natural History Museum and Watershed Nursery describe the raw use of Pacific pickleweed. They are juicy, crisp and extremely salty, and can be used in a very small amount as a seasoning for other cold foods. Do not rely on pickleweed as the main vegetable in a diet: the salt load may be too high.

Young tips. These contain less coarse, old tissue and have a softer texture. Because of the marine setting, the plant's origin is particularly important: salt marshes can accumulate heavy metals, polluted runoff and microorganisms. Without reliable information about water quality and permission to gather, leave the plant untouched. Washing does not remove heavy metals already absorbed into its tissues.

Roots, dry seeds and old red woody portions are not part of the raw food list.

HOW NOT TO CONFUSE IT

Other similar members of Salicornia and Arthrocnemum occur in California, including Arthrocnemum subterminale. The latter forms darker, elevated clumps and grows higher on the salt-marsh slope, but isolated green segments can look similar. The perennial growth form, position in the tidal zone and inflorescence structure are important for species identification. Do not identify a plant by salty flavor: many marsh plants contain salt. Access to protected salt marshes may be limited. Tides, deep mud and unsafe water pose independent hazards even when the botanical identification is correct.

SOURCES

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- https://www.watershednursery.com/nursery/plant-finder/salicornia-pacifica/

Prickly Russian thistle — tender green shoots before tumbleweed forms · Salsola tragus

Salsola tragus

In late summer, almost spherical bushes with numerous thin, interwoven branches can be seen on California's dry vacant ground. In autumn some of these plants dry, break off at the base and roll across open plains with the wind. In spring, however, the future “prickly ball” looks completely different: a tender green annual with juicy, slender shoots. Limited raw food use is described only at this early stage.



Prickly Russian thistle (Salsola tragus) — rounded branched tumbleweed with narrow leaves

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Salsola tragus is an annual herb that may grow into a dense, branching bush approximately 30 centimeters to a meter or more across. Its stems are light green, sometimes marked with reddish stripes. Young leaves are narrow, nearly cylindrical and slightly fleshy; they may feel soft, but as they age the tips of the leaves and bracts harden, becoming sharp and prickly.

The main stem branches early. An adult plant produces a dense network of arching shoots and becomes spherical or hemispherical. Tiny greenish-pink flowers sit in leaf axils rather than resembling familiar large-petaled flowers. As fruit matures, the perianth parts expand into thin, translucent wings, sometimes

pinkish. When the aboveground mass dries, branches can break away from the roots and carry seeds with the wind.

There is an important botanical difficulty with this name. Salsola tragus, S. australis and S. ryanii occur in California and look extremely similar. Their differences include the dimensions of flowers and other reproductive structures. At the young, green stage, it may be impossible to identify the exact species reliably.



Prickly Russian thistle (Salsola tragus) — rounded branched tumbleweed with narrow leaves

Forest & Kim Starr · CC BY 3.0 us · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Russian thistle is not a forest green but a plant of open, dry places. In California, members of this group are common in sandy and loose soils, on pastures, abandoned fields, disturbed roadsides and desert valleys. UC IPM describes them throughout the state, particularly in the south, up to elevations of approximately 2,700 meters.

A single large tumbleweed may produce an enormous number of seeds, allowing numerous seedlings to emerge on loose, open ground. However, the plant is especially characteristic of already disturbed soil. Such places are often unsuitable for collecting fresh greens: roadsides and agricultural land may be contaminated with herbicides or runoff.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Spring. After germination, slender juicy leaves and soft green tips appear. This stage may be short in hot lowlands.

Early summer. The plant branches actively, but some shoots remain tender. Hard tips begin to develop as it grows.

Summer and autumn. Small flowers and fruits develop, and the bush quickly becomes prickly. This stage is no longer suitable for eating green shoots.

Autumn and winter. The dry ball disperses its seeds, but the tumbleweed itself is not a food part for a no-fire diet.

WHAT IS EATEN WITHOUT FIRE

The very youngest leaves and shoot tips. The USDA NRCS species guide for Salsola tragus explicitly describes young tips eaten raw. Before prickles develop they are soft and juicy, sometimes slightly salty. Traditional food accounts describe them as a small addition to fresh greens.

Raw Russian thistle shoots cannot be considered a reliable, permanent food supply. Depending on soil and growing conditions, the plant may accumulate nitrates and soluble oxalates. Studies have found substantial variation in concentrations among samples; a tender-looking shoot reveals nothing about its nitrate or oxalate content. Another difficulty is the resemblance of several species at the early stage. Therefore, on a journey without the ability to identify the species precisely and assess the growing conditions, these shoots are unsuitable as a practical gathering recommendation.

Mature tough leaves, stems, fruits and seeds are not included as raw food: there is no reliable basis for presenting them as convenient ready-to-eat food without processing.

HOW NOT TO CONFUSE IT

Salsola australis and Salsola ryanii form similarly branching bushes; distinguishing features often become visible only at flowering and fruiting. It is therefore a mistake to label any green seedling “edible Salsola tragus.”

Other drought-tolerant plants may have narrow, fleshy leaves or a round habit. A mature tumbleweed must be assessed by branching, flowers and fruits, yet those mature features appear after the period of soft green food has ended. This mismatch between the eating season and the time of reliable identification substantially reduces the plant's practical value for raw gathering.

SOURCES

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- USDA NRCS — Prickly Russian Thistle Plant Guide: https://www.nrcs.usda.gov/plantmaterials/nvpmcpg13347.pdf
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California chia — seeds that swell in cold water · Salvia columbariae

Salvia columbariae

After winter rains, small herbs with wrinkled grayish leaves emerge on open slopes of Southern California. In spring, bright blue-violet flowers appear in dense, separate rings around their stems. Later, tiny dark seeds ripen among the dry calyces and can turn ordinary cold water into a thick, nourishing mixture. This is Salvia columbariae, California's native chia. Its seeds were eaten raw and soaked without fire. It is not the same botanical crop as commercial Salvia hispanica, although some methods of use are similar.



California chia (Salvia columbariae) — blue-violet whorled flowers and dry seed heads

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HOW TO IDENTIFY IT

Chia is a seasonal herb of the mint family. After rain, a rosette of basal leaves first develops: these are elongated, softly hairy, with rounded teeth and pronounced wrinkling between the veins. Young leaves grow on stalks and may be reddish near the base. In spring an upright, almost square-sided flower stalk emerges from the rosette, sometimes reaching half a meter. Flowers occur in dense, separate whorls surrounded by green or purple bracts. Each flower is two-lipped, blue or lilac; the upper lip resembles a small hood, while the lower forms a landing surface for insects. Following flowering, the corollas fall, leaving calyces in which four small nutlets or seeds may develop. At maturity they become dark gray or brown. By early summer, the entire aboveground plant often dries. Identify it by the combination of wrinkled basal leaves, whorled flowers and mature four-part fruits, not simply by a sage-like smell.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Salvia columbariae as native to California and reports thousands of observations. It is especially characteristic of Coastal Sage Scrub, Creosote Bush Scrub, Chaparral and dry, open parts of Foothill Woodland in Southern and Central California. In desert areas, the plant becomes conspicuous after a wet winter, while in very dry years some slopes barely turn green. For someone living in the Sacramento Valley, it is not an ordinary lawn herb: most natural records are on dry slopes farther south, including areas around Joshua Tree and the Antelope Valley. Plants can be numerous at a productive site, but seeds are easiest to gather only after consistent ripening, when the flower heads are dry. Gathering in a national park or reserve may be prohibited.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seedlings emerge after autumn and winter rain, while tender leaves develop during cool weeks. On warm, low Californian slopes, flowering often begins in March and continues into April and May, shifting later in cooler places. The green calyces then turn brown, and mature dark seeds form in late spring and early summer. Plants For A Future gives later months for a temperate garden climate, but these should not be transferred mechanically to the desert south of the state. A practical sign of readiness is a dry fruiting calyx that releases dark, hard seeds. Soft, immature seeds should not be gathered. By the middle of a hot summer, a dried plant may already have dispersed almost its entire seed crop.



California chia (Salvia columbariae) — blue-violet whorled flowers and dry seed heads

U.S. National Park Service / Joshua Tree National Park · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Mature seeds, raw. Plants For A Future explicitly confirms eating them without cooking. The seeds are tiny, with a mild nutty flavor. They can be carefully removed from fully dry calyces, sifted free of debris and eaten in a small portion with other food. Dry, sharp bracts, soil and insects must not enter the food.

Cold chia with water. The same species account separately describes a drink made from seeds soaked in cold water. After some time, they develop a mucilaginous coating and the water thickens. Use clean drinking water and a clean container. Do not swallow large spoonfuls of completely dry seeds and then follow them with only a little water: the swelling particles may pose a choking risk. It is more sensible to allow them to hydrate fully beforehand.

History of use. Chia seeds formed part of the diets of different Indigenous peoples of southwestern North America. They were combined with other plant foods and eaten soaked or ground. For a no-fire method, only cold grinding and soaking are relevant; roasting is not required. The leaves are sometimes used as an aromatic addition, but in this article the reliably documented substantial raw food remains the seeds.

HOW NOT TO CONFUSE IT

Cultivated Salvia hispanica also produces edible seeds but differs in leaf size and inflorescence, and is not a common native desert annual of California. Other native sages with lilac flowers may be perennial shrubs and do not have this life cycle. Some members of the mint family produce small dark nutlets, but that resemblance does not make their seeds equally edible. Identification requires mature flowers and the shape of the bracts; collection requires completely mature, dry seeds of the known species. Do not gather seed heads contaminated by traffic or from chemically treated land.

SOURCES

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Salad burnet — tender leaves with a fresh cucumber flavor · Sanguisorba minor

Sanguisorba minor

On a cool meadow or in an old Californian garden, a modest, low herb sometimes grows with delicate, pinnate leaves. Each leaf resembles a chain of small, rounded, toothed leaflets, while little green and reddish flower heads rise above the foliage in summer. This is Sanguisorba minor, salad burnet, a nonnative European herb rather than a species indigenous to California. Its young leaves and shoots can be eaten raw; on many plants they have an unusually fresh, cucumber-like taste.



Salad burnet (Sanguisorba minor) — pinnate leaves with rounded toothed leaflets and green-red flower heads

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This perennial herb forms a basal rosette of pinnate leaves and several relatively slender flowering stems, commonly 30–60 centimeters high. Each leaf is made up of many pairs of small oval or rounded leaflets with distinct marginal teeth and short little stalks. The long shared leaf stalk is slightly ribbed. In a mild climate, the rosette often remains green through winter. Each flower stem bears several small rounded or elongated inflorescences. The flowers have no large, colorful petals: reddish anthers and stigmas project from greenish cups to form a loose red-and-green head. Following pollination, small dry nutlets develop, surrounded by a ribbed calyx. Old flowering stems become dry and rigid, while young leaves at the base remain softer. The plant has no large prickles or the characteristic pink petals of clover.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records the related accepted European name Poterium sanguisorba; some Californian records also use Sanguisorba minor ssp. muricata. The species is not native to the state. Likely habitats are old garden sites, irrigated lawns, turf margins and grassy slopes with calcareous or moderately dry soils. Unlike abundant Sacramento Valley weeds, it cannot be promised in every untreated meadow: there are several hundred documented observations, many linked to original plantings. On suitable soil, the rosette can survive winter cold and produce new leaves in spring. Herbicide-treated lawns, roadsides and places contaminated by animal waste are unsuitable for gathering raw food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young pinnate leaves are particularly soft after winter rain and during spring. In the Sacramento Valley, the rosette may remain green during cool winter weather if the soil does not dry out. Long flowering stalks emerge in late spring, followed by little red-and-green inflorescences in summer and then dry fruit. By the middle of a hot summer, old leaves may become strongly bitter, as noted by Plants For A Future. After autumn cooling and irrigation, the rosette may develop new soft growth. For raw food, the youth of the leaf and cleanliness of the soil matter more than whether the plant is flowering.



Salad burnet (Sanguisorba minor) — pinnate leaves with rounded toothed leaflets and green-red flower heads

Didier Descouens · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms their raw use in Sanguisorba minor. Many people note a refreshing cucumber-like taste, though specimens from acidic or dried-out soil may be bitter. Small leaflets can be removed from the shared leaf axis and added to cold vegetables, greens or fresh water. The pinnate form calls for careful rinsing, because dust can lodge between the leaflets.

Young tender shoots. The species account also permits them raw. Soft tips are suitable before they toughen and before dry flower heads appear. Large quantities of this herb can taste astringent, so it is more sensible to add a little to mild greens.

Cold flavored water. A small quantity of fresh foliage may be steeped briefly in clean drinking water without heating, producing a faint cucumber aroma. Hot teas and medicinal infusions are outside this article. Mature fruit, dry seeds, roots and woody stems are not separately confirmed raw foods.

HOW NOT TO CONFUSE IT

Certain native Sanguisorba species also have pinnate leaves, but they are larger and bear different inflorescences; food recommendations must not automatically be transferred to them. Young yarrow, Achillea millefolium, has leaves divided finely into thread-like segments rather than separate rounded, toothed leaflets. Clover generally has three leaflets, not a long chain of numerous pairs. Burnet flower heads are green and red without large corollas, unlike the pinkish heads of clover. If a plant has no flower stalk yet, finding a mature nearby specimen can aid identification, but do not identify greens by tasting them.

SOURCES

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- https://pfaf.org/user/Plant.aspx?LatinName=Sanguisorba+minor
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Bladder campion — tender spring leaves and inflated flower calyces · Silene vulgaris

Silene vulgaris

Along old pasture tracks and on sunny slopes, a low herb sometimes appears with soft, bluish-green leaves. Later, white flowers open, each with what looks like a small green balloon hanging beneath it. This swollen calyx is a particularly useful feature for recognizing bladder campion, Silene vulgaris. Its young spring leaves are used fresh, but only in small portions because the plant contains saponins.



Bladder campion (Silene vulgaris) — white split-petal flowers and inflated green calyces

MurielBendel · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb with several upright or slightly ascending stems about 20–60 centimeters high. Opposite leaves are oval or narrowly lance-shaped, with entire margins, bluish-green and often slightly fleshy. Lower leaves taper toward their bases, while upper leaves have almost no stalks. Small loose clusters of flowers develop at the ends of branches. Each flower has five white petals split into two narrow lobes, so it looks from a distance like a star with ten rays. The five fused sepals form a large, rounded sac with a visible network of veins, which remains as the fruit capsule develops.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies Silene vulgaris as nonnative, but rare in California, with only a few dozen observations. It is found on meadows, in disturbed grassland, on somewhat dry slopes and occasionally in northern counties and foothills. It is not an abundant spring herb in Sacramento; cultivated or accidentally introduced plants are more likely. Gathering along roads, on herbicide-treated sites or near old industrial buildings is unsuitable.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After winter rains, the plant produces soft growth near the base. Young leaves are usually available in spring and early summer, before the stems stretch upward. Flowering starts in late spring on lowland sites and later in cool mountains. By the time inflated calyces and ripening capsules appear, most leaves have become tougher. A plant may retain green shoots after summer rain, but the earliest growth remains the best raw part.

WHAT IS EATEN WITHOUT FIRE

Young leaves and tips. Plants For A Future explicitly describes them eaten raw or cooked, separately noting the pleasant, mild flavor of the very youngest foliage. Fresh leaves can be finely chopped and mixed with other greens. Bladder campion, however, contains saponins, compounds that can cause irritation and stomach upset in large amounts. Raw use is therefore appropriate only as a small addition, not a large bowl of salad. Older leaves and coarse stems more often require cooking according to food descriptions, so they are not used here without fire. Seeds, roots and the inflated calyces are not considered separate foods.

HOW NOT TO CONFUSE IT

Silene latifolia generally has broader, hairier leaves and larger flowers, and its floral calyx is structured somewhat differently. Some other Silene also have inflated calyces, so a single “balloon” is not sufficient: compare leaf shape, the number of petals and the vein pattern on the calyx. Before flowering in early spring, the plant can resemble other herbs with opposite leaves. If the species cannot be identified confidently, do not taste the leaves.

SOURCES

- https://www.calflora.org/app/taxon?crn=7621
- https://pfaf.org/user/Plant.aspx?LatinName=Silene+vulgaris

Milk thistle — marbled leaves and sharp prickles · Silybum marianum

Silybum marianum

In spring, large rosettes of glossy leaves marked as if with white, milky streaks can be found in California fields. Their margins are armed with strong prickles, and later large purple flower heads appear above the plant, surrounded by sharp, spiny bracts. This is Silybum marianum, milk thistle, a well-known introduced thistle. Young leaves of this species are described as raw food, but only after every prickle has been carefully removed. It is worth knowing as part of California's flora, although in practical convenience it falls far behind soft, nonprickly plants.



Milk thistle (Silybum marianum) — glossy white-marbled rosette leaves with sharp yellow prickles

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HOW TO IDENTIFY IT

Milk thistle usually lives for one or two growing seasons. During the first wet period, it develops a large basal rosette. The leaves are broad and bright green, with irregular white patches along their veins, as though a marbled pattern were painted over the surface. Their margins are deeply cut and armed with long, sharp, yellow prickles. As the plant matures, a strong ribbed stem grows from its center. Large, rounded, purple flower heads develop at its tips, with long prickles surrounding the buds. After flowering, smooth dark achenes with tufts of hairs form. In moist, rich soil the plant can grow taller than a person. Its main distinguishing feature among many native thistles is the striking white marbling of the leaves, visible long before flowering.

WHERE IT GROWS AND HOW COMMON IT IS

UC IPM reports milk thistle on the northern coast, in the Central Valley, around San Francisco Bay, in certain southern coastal regions and on the islands. It occurs in pastures, at field margins, in gardens, by roads and on disturbed slopes. Following a wet winter, it can form dense, prickly thickets. Around Sacramento it may be encountered on open land and near old agricultural sites. This is an introduced competitor of native vegetation, not a rare forest species. Prickles remain even after plants die on a dry site, making a walk through an old stand unpleasant and hazardous without protection.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Germination begins after the first rains, and young rosette leaves can be seen in winter. They are especially characteristic of low, warm sites from January to March. During spring the plant elongates and produces a flowering stalk, usually from March through June depending on temperature. By the time the large spiny inflorescence appears, the lower leaves have become much tougher. Dark achenes mature by summer, and the whole plant dries. The brief early stage, rather than the giant summer thistle, is most appropriate for raw leaf use.



Milk thistle (Silybum marianum) — glossy white-marbled rosette leaves with sharp yellow prickles

Meneerke bloem · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves with all prickles removed. Plants For A Future confirms that Silybum marianum leaves can be eaten raw. The margin and every prickly projection must be completely removed: even one small remaining spine can injure the mouth. The soft inner portion of a young leaf may be tender enough, although the flavor becomes noticeably more bitter after hot weather. It is therefore an occasional addition, not a convenient food for a large serving.

Root. The species reference also reports that it can be eaten raw, but this is not recommended for the practical catalog: a raw root is difficult to clean of soil, while UC IPM notes the potential for milk thistle leaves to accumulate nitrates during drought, mowing and chemical stress. The chemical history of a specific growing site cannot be established from its appearance.

Flower buds are mainly described as food after cooking and are not recommended raw. Seeds and products made from them are excluded from the present no-fire section.

HOW NOT TO CONFUSE IT

Other thistles of the genus Cirsium have spiny leaves and purple flower heads but generally lack such distinctive white marbling. The markings are weaker on some young leaves, so no single feature should be relied upon. The combination of a large rosette, marbled markings, spines and flower head is important. Never taste an unidentified prickly leaf to identify it. Milk thistle often grows in pastures and agricultural areas: even where the leaves are technically edible, accumulated nitrates and herbicides can make them poor raw food. When in doubt, choose another species.

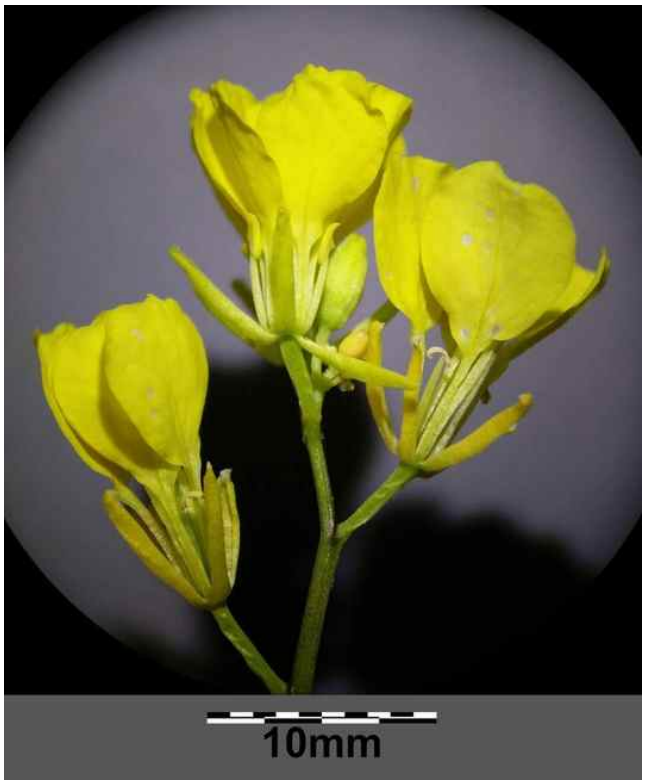
SOURCES

- https://ipm.ucanr.edu/weeds-identification-gallery/blessed-milkthistle/
- https://pfaf.org/user/Plant.aspx?LatinName=silybum+marianum

Field mustard — broad yellow flowers and pungent young greens · Sinapis arvensis

Sinapis arvensis

In spring, individual tall plants with bright-yellow, four-petaled flowers can be seen in California fields. Their lower leaves are broad and somewhat rough, and long pods with pointed tips develop after flowering. This is Sinapis arvensis, field mustard or charlock. It differs from the previously described black mustard, Brassica nigra, and London rocket, Sisymbrium irio. For no-fire food, tender young leaves are particularly important, providing a fairly strong mustard flavor.



Field mustard (Sinapis arvensis) — broad lobed green leaves and bright four-petaled yellow blossoms

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

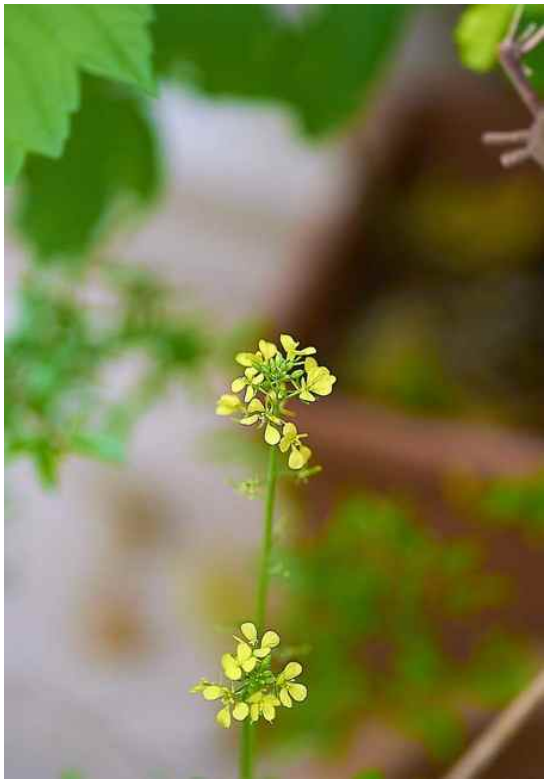
This annual herb generally grows from thirty centimeters to a meter tall, or higher in fertile soil. The stem is upright and branching, sometimes with coarse bristly hairs near its base. Basal and lower leaves are larger, oval, toothed and marked by several deep lobes along the margins; the terminal lobe is usually the broadest. Upper leaves are smaller and narrower, often almost stalkless. The bright-yellow flowers each have four rounded petals arranged in a cross and six stamens. Following flowering, straight or slightly curved green pods develop, bearing long, conical beaks at their tips. The pods grow on spreading fruit stalks rather than closely against the stem, as in hedge mustard. Mature pods turn brown and open to release their seeds. For identification, examine an entire lower leaf, the stem, flowers and fruits together; one yellow flower does not distinguish the many mustards growing in California.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Sinapis arvensis as an introduced species of disturbed California land, with several hundred observations. It occurs at field margins, in gardens, near country roads and on fallow land, especially on sunny ground with sufficient winter moisture. Black mustard, Brassica nigra, forms enormous yellow stands much more often, however, so not every large yellow field should be called Sinapis arvensis. In the Sacramento Valley, field mustard occurs in patches, not necessarily in the same place each year. Agricultural fields may receive herbicides and pesticides, so their greens are unsuitable raw food unless treatment history is known.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Rosettes with soft lower leaves develop after autumn or winter rain. In California lowlands, they are most often found during winter and early spring. As temperatures rise, stems elongate rapidly, and yellow flowers open in late spring and early summer. Long green pods follow, later becoming dry fruits containing mature seeds. The season shifts somewhat in cool coastal areas, while development is shorter in the hot Central Valley. Leaves on a mature, dry plant are no longer convenient raw food: they become tough and bitter.



Field mustard (Sinapis arvensis) — broad lobed green leaves and bright four-petaled yellow blossoms

George E. Koronaios · CC BY-SA 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future specifically confirms their raw use in Sinapis arvensis and notes their strong flavor. Young leaves can be chopped finely in small amounts and added to other cold greens, giving a pungency reminiscent of mustard and radish. Older leaves are more often described as food after cooking; that is outside this no-fire catalog.

Sprouted seeds. The same source allows eating seed sprouts raw. However, safe sprouting requires correctly identified seeds and hygienic conditions, because bacteria can multiply during warm, moist germination. In the field, it is more sensible to regard young leaves as the main raw part rather than recommend sprouting large amounts of randomly gathered seed.

Ground dry seeds provide a sharp mustard flavor, but their composition and concentration call for caution. The species account chiefly describes flowering stems as food after cooking, so they are not recommended here raw.

HOW NOT TO CONFUSE IT

Brassica nigra has smaller flowers and thinner, narrower pods that usually lie close to the stem. Sinapis arvensis has relatively large flowers and conspicuously beaked pods borne on spreading stalks. Raphanus raphanistrum may have whitish petals or dark veins, and its pods are constricted between seeds; in addition, Calflora warns against eating that species, so confusion is especially undesirable. Sisymbrium irio bears small, pale flowers and long, thin pods. If a plant is still only a rosette, wait for flowers and fruits on plants of the same species before gathering it for food.

SOURCES

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Tall tumblemustard — slender upper leaves and spicy young greens · Sisymbrium altissimum

Sisymbrium altissimum

A tall mustard-family herb appears in spring on California's dry vacant lots. Near the ground, its leaves are still fairly broad, but near the top they are deeply divided into narrow sections. By summer, long branching stems carry numerous yellow flowers and slender fruits. When dry, the plant may break away and roll in the wind, spreading its seeds. The young leaves and tips of this tumblemustard are eaten raw as spicy greens.



Tall tumblemustard (Sisymbrium altissimum) — deeply divided narrow upper leaves and long slender pods

Dcrjsr (Jane S. Richardson) · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an annual herb about 30–120 centimeters high, occasionally taller. Its lower leaves are distinctly pinnately divided, with a large terminal lobe and smaller lateral ones; upper leaves are divided into long, slender sections and can look almost threadlike. The stem is upright and branches profusely during the second half of the season. The flowers are typical of the cabbage family, each with four pale-yellow petals in a cross. They develop into very long, narrow pods that project in different directions, rather than short pods pressed against the stem. The dry, branching shoots become brittle.

WHERE IT GROWS AND HOW COMMON IT IS

Sisymbrium altissimum was introduced to North America from Eurasia and has become well established in California. Calflora has recorded thousands of observations across different counties, including dry disturbed sites and vacant slopes. It occurs by roads, near agricultural fields, on dry shoulders and among stones. It is quite possible to encounter in the Sacramento Valley, but plants from traffic lanes, chemically treated fields or rubbish-filled sites should not be collected for food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seeds germinate with cool rain, and young rosettes may appear in winter. Short, soft leaves and shoot tips are suitable raw before the stem elongates actively, generally from late winter through spring in the lowlands. Flowering continues during spring and summer, while the plant quickly grows coarse after the dry period. At higher elevations, growth may occur later in the year.



Tall tumblemustard (Sisymbrium altissimum) — deeply divided narrow upper leaves and long slender pods

Krzysztof Ziarnek, Kenraiz · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves and tender shoot tips. Plants For A Future expressly lists these parts of Sisymbrium altissimum eaten raw or cooked; only the raw form is relevant here. The flavor resembles sharp mustard, sometimes with considerable bitterness. A small quantity of young leaves may be chopped finely into a cold salad. Seeds of the species are known as a seasoning after grinding, but without separate verification of their safe raw use, they are not included. Stems carrying tough pods are not salad food.

HOW NOT TO CONFUSE IT

Sisymbrium irio, London rocket, is usually shorter, with shorter, denser flower clusters and differently shaped leaves and pods. Sisymbrium officinale has pods pressed closely against its stem, while tall tumblemustard has long, narrow pods extending sideways. Hirschfeldia incana forms short, thick pods. Yellow, four-petaled flowers occur in dozens of cabbage-family species, so precise identification requires mature pod structures and lower leaves. Do not taste an unidentified rosette.

SOURCES

- https://www.calflora.org/app/taxon?crn=7626
- https://pfaf.org/user/Plant.aspx?LatinName=Sisymbrium+altissimum
- https://commons.wikimedia.org/wiki/Category:Sisymbrium_altissimum

London rocket — slender pods and winter mustard greens · Sisymbrium irio

Sisymbrium irio

After winter rain, a low herb with deeply divided leaves appears in fields of Southern and Central California. From late winter, thin branching stems rise above it with small, pale-yellow flowers and numerous long, narrow pods. This is Sisymbrium irio, London rocket, a widespread introduced annual. Its young leaves have been eaten as greens, and species food references also list its flowers and seeds as food requiring no heat. Its sharp flavor does not make it a universally suitable salad plant.



London rocket (Sisymbrium irio) — thin branching shoots with long slender seedpods

Eitan f (צילום ותיאור) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The plant first develops a small rosette in autumn, then quickly produces several branches. Lower leaves are elongated and deeply divided into narrow lobes, sometimes resembling compound leaves; their surfaces are generally almost smooth. Upper leaves are much smaller, with two lateral projections at the base that do not completely clasp the stem. Flowers are tiny, only a few millimeters across, with four narrow, pale-yellow petals. They grow at the ends of branches. After pollination, each flower cluster develops slender, straight or slightly curved pods several centimeters long. On a mature plant, the pods stick out in all directions like fine needles, although they are not true spines. The seeds inside are very small. The combination of small flowers, long pods and deeply divided lower leaves is especially useful for identification.

WHERE IT GROWS AND HOW COMMON IT IS

UC IPM describes Sisymbrium irio chiefly across the lower two-thirds of California and separately notes its presence up to the upper Central Valley. It grows in gardens, fields, vineyards, by roads and on abandoned land. On open sunny soil after a wet winter, it may cover large areas. It can occur around Sacramento, but not every mustard-family weed seen there is London rocket. It is much less common on high, cool mountain slopes and in northern forests. Its local abundance depends more on rainfall and disturbed soil than on proximity to a natural river.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seedlings and small rosettes emerge after autumn moisture returns. Tender leaves are easiest to find in winter, before stems have elongated. According to UC IPM, flowering usually takes place from January through May; the most conspicuous pods around Sacramento appear in spring. The plant then yellows and dries, and narrow dry fruits remain for a while. Old summer stems no longer provide tender greens. Where soil becomes moist again in autumn, a new generation grows from seed.



London rocket (Sisymbrium irio) — thin branching shoots with long slender seedpods

Stefan.lefnaer · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Immature young leaves. Plants For A Future explicitly includes them among the edible raw parts of Sisymbrium irio. Their flavor is sharp and may be somewhat bitter. They are better as a small addition to other greens than the basis of a large meal. Use only young leaves from a confidently identified plant.

Flowers. The species reference also describes them eaten raw. They are small and do not provide a substantial harvest. Their possible use is no reason to mistake London rocket for any other yellow mustard.

Seeds. The reference records their raw use and the possibility of grinding dried seeds into a powder. Other methods, such as cooked pinole, involve processing and are not included here. Tiny seeds should not be treated as a convenient large-scale replacement for grain. Because this is a member of the cabbage family, concentrated large portions of pungent raw greens and seeds are not recommended.

HOW NOT TO CONFUSE IT

The deeply divided leaves can resemble those of flixweed, Descurainia sophia, but the latter has much more finely and repeatedly divided leaves. The closely related Sisymbrium altissimum may grow taller and differs in its leaves and pods. At a young age, nearly all of these plants have only a rosette, so exact identification is not always possible. Do not taste an unfamiliar mustard to name it. Small flowers, long narrow pods and the structure of the upper leaves are important. Fields and gardens may be chemically treated, while raw greens beside roads easily become contaminated.

SOURCES

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- https://www.cal-ipc.org/plants/profile/sisymbrium-irio-profile/

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Hedge mustard — small yellow flowers and tender pungent shoots · Sisymbrium officinale

Sisymbrium officinale

After winter rain, inconspicuous rosettes with divided leaves appear along the edges of California fields. In spring, branching stems grow from them, carrying tiny yellowish flowers and short pods closely pressed against the stem. This is Sisymbrium officinale, known in English as hedge mustard. Its soft young shoots have a sharp, cabbage-like flavor and can be eaten raw, but older plants are excessively bitter, and the name “officinale” does not make it safe to eat in large quantities.



Hedge mustard (Sisymbrium officinale) — small yellow flowers and short seedpods pressed to the stalk

Zidat (Saïd Zidat) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is an annual herb, usually twenty to eighty centimeters high. Early growth forms a rosette of elongated leaves deeply divided into rounded side lobes and a larger terminal lobe. Later an upright branching stem develops, with leaves becoming progressively smaller higher up. The lower stem is often slightly hairy. The flowers are extremely small, with four pale-yellow petals, forming loose clusters at the tips of branches. Following pollination, tiny, narrow pods appear characteristically pressed against the stem rather than projecting far outward. On adult shoots they make the surface look covered with little prickles, although these are fruits, not true spines. The pods turn brown at maturity and contain very small seeds. Their close-fitting arrangement matters because several similar yellow-flowered members of the cabbage family may grow in the same field.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Sisymbrium officinale as a nonnative annual growing across California on disturbed soils. Dozens of observations are recorded in Sacramento County, with many also in Sonoma, Los Angeles, San Diego, Monterey and other counties. It grows along agricultural field margins, beside trails, in old gardens and in loose soil near walls. It can occur fairly often at one site but does not form the striking, dense yellow displays of some larger mustards. On hot open ground in the Central Valley, old shoots dry quickly. For raw food, the growing site must be clean and free of herbicide treatment.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young rosettes appear after autumn moisture returns. In the Sacramento Valley, soft growth is most often available in winter and early spring. The plant then elongates and forms tiny yellow flowers and short pods. In temperate climates, flowering often occurs in spring and early summer, while it begins earlier in the warm valley. As most fruits turn brown, lower leaves grow coarse and bitter. Late young seedlings are possible on irrigated ground, but they are not equivalent to old, tall stems. The season of raw greens is generally shorter than the period during which dry hedge mustard remains visible on vacant land.



Hedge mustard (Sisymbrium officinale) — small yellow flowers and short seedpods pressed to the stalk

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WHAT IS EATEN WITHOUT FIRE

Very young shoots. Plants For A Future expressly reports their raw use in Sisymbrium officinale. They have a pungent, slightly bitter cabbage flavor, so small quantities are chopped and combined with milder greens. Do not eat whole bunches of coarse flowering plants: a tender shoot tip and an aging, woody stem are different food stages.

Seeds. The species reference allows the seeds raw and ground into powder as a mustard seasoning. Their tiny size makes gathering labor-intensive, while their very pungent flavor is a reason to use only small

quantities. For practical field food, young shoots are the more sensible choice, with seeds as a supplemental seasoning rather than a bulk food. Do not taste seeds until the species has been confirmed from a mature plant.

Roots, mature stems and flowers are not included as separately confirmed raw foods.

HOW NOT TO CONFUSE IT

Sisymbrium irio, described earlier, has long pods that project conspicuously away from its stem. In Sisymbrium officinale, pods are distinctly shorter and close to the shoot axis. Descurainia sophia has especially finely divided leaves, while some Erysimum species have different pod and leaf structures. Without mature fruit, some species can be nearly impossible to distinguish from rosettes alone; do not gather unidentified cabbage greens. Beside roads or treated fields, the plant may accumulate contaminants. Bitterness is not a test of species edibility.

SOURCES

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Tomato — fully ripe summer fruit from self-seeded garden plants · Solanum lycopersicum

Solanum lycopersicum

Beside an old compost heap, an abandoned vegetable garden or an irrigation ditch, a familiar branching plant with deeply cut, aromatic leaves sometimes grows. Small yellow, star-shaped flowers appear on it in summer, followed by green fruits that gradually turn red, yellow or another color characteristic of the cultivar. This is the common tomato. Only fully ripe fruits of an appropriate edible variety are eaten raw; leaves, stems and unripe green fruits are unsuitable.



Tomato (Solanum lycopersicum) — yellow star-shaped flowers and ripe red and yellow fruits

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HOW TO IDENTIFY IT

A short-lived herbaceous or semi-shrubby plant with soft, hairy, branching stems, usually half a meter to two meters tall when supported. The leaves are alternate and compound, odd-pinnate, composed of several large, irregularly toothed or lobed leaflets and smaller intermediate segments. The leaves and stems are covered with glandular hairs that release a strong, characteristic odor. Yellow flowers have five fused, backward-curving petals and a projecting cone of yellow anthers, and grow in small clusters. Depending on the cultivar, the botanical berries may be cherry-sized or very large, red, yellow, orange or purple, sometimes with lengthwise ribs. Inside are juicy flesh and many flat seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Solanum lycopersicum as nonnative, with hundreds of observations outside ordinary cultivation. In California, tomatoes frequently self-seed from discarded or fallen fruit, particularly near vegetable gardens, compost, irrigated sites and former farms. In the Sacramento Valley, plants may fruit well in warm weather when water is available, but they are not perennial wild food shrubs of chaparral. Fruits beside drainage ditches, dumps and agricultural fields may be contaminated, while cultivated plantings are private property.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Seeds germinate after the soil warms in spring, and shoots grow quickly. Yellow flowers appear in late spring and summer; the fruits need several weeks to enlarge and change color. In lowland California, the season for ripe tomatoes generally begins in June and lasts into autumn while weather remains warm. Some modern cultivars remain green even when fully ripe, but it is practically impossible to identify such a cultivar on an unknown self-seeded plant. Therefore, on a journey, do not taste unknown green fruits: select only clearly ripe, aromatic ones.



Tomato (Solanum lycopersicum) — yellow star-shaped flowers and ripe red and yellow fruits

Jayachandranjay · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruits. In ordinary red-fruited and yellow-fruited forms, an edible ripe tomato is softer, evenly colored and has the characteristic smell of ripe flesh. It may be eaten raw with its thin skin and small seeds, or cut into a cold vegetable mixture. A clean ripe fruit can be mashed cold into juice, and the skin strained off if desired. Leaves, stems, roots and green parts contain glycoalkaloids; Calflora specifically warns against eating green foliage and stems. Unripe green fruits are excluded because their raw use is unreliable without determining the cultivar and stage of ripeness.

HOW NOT TO CONFUSE IT

Potato, Solanum tuberosum, has similar foliage but bears white, lilac or purple flowers and small green berries that are poisonous. Solanum americanum and the native Solanum douglasii have simple leaves and small white flowers, with quite different fruits. Groundcherries and other Physalis species enclose their berries in an enlarged papery calyx, whereas tomatoes have no such lantern. When encountering a self-seeded plant, examine its yellow flowers, characteristic compound leaves and mature fruit. The edibility of tomato does not extend to other nightshades.

SOURCES

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- https://www.gardenersworld.com/how-to/grow-plants/how-to-grow-tomatoes/

Perennial sowthistle — tender leaves among tall yellow flower heads · Sonchus arvensis

Sonchus arvensis

On somewhat damp vacant lots and around old fields, a tall herb can be seen with broad, toothed leaves and many large yellow flower heads. It resembles the familiar annual sowthistle, but returns from underground rhizomes and forms whole groups of stems. This is perennial sowthistle. Its young leaves are eaten raw while they are soft and before they become strongly bitter.



Perennial sowthistle (Sonchus arvensis) — tall stems, lobed leaves and yellow composite flower heads

Chlystek · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

A perennial herb usually 60–150 centimeters tall, capable of forming extensive colonies through creeping rhizomes. The stem is upright, branching near the top, and releases white milky sap when broken. Alternate leaves are soft to moderately firm, elongated, with large side lobes and teeth, often slightly prickly along their edges. The bases of upper leaves clasp the stem. The conspicuous bright-yellow flower heads are several centimeters across and borne on long stalks. Numerous green involucral bracts are visible around the bases of the heads. After flowering, achenes develop with white, windborne tufts of hairs.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Sonchus arvensis among California's nonnative perennial herbs and records relatively few observations in the state. It is associated with disturbed, somewhat damp sites, fields, ditches and woodland margins, but is much less common in California than Sonchus oleraceus. It can occur in patches, especially where soil holds moisture during warm weather. The absence of this species from a site should not be compensated for by collecting a similar plant without precise identification.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In spring, new soft leaves and short shoots emerge from underground roots; this is the best time for raw food. As summer growth continues, the stems elongate and the leaves become tougher and often bitter. In western regions, flowering commonly occurs in summer and early autumn. Some young growth may reappear after autumn rain, but prolonged cold or drought halts growth.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future separately states that Sonchus arvensis leaves may be eaten raw or cooked. For this guide, the raw option applies: gather tender leaves from young rosettes before flowering, removing any excessively tough, prickly margins. The flavor is herbaceous with slight bitterness; leaves can be chopped finely and added to a cold mixture of greens. Old rhizomes and tall stems are not treated here as raw food, because the species reference describes those parts after cooking.

HOW NOT TO CONFUSE IT

Perennial sowthistle differs from Sonchus oleraceus in its life cycle and creeping rhizomes: the annual generally does not form perennial groups from a shared underground base. Sonchus asper has shinier, more prickly leaves, while Sonchus tenerrimus has narrower, more deeply divided leaf segments. Yellow flower heads and white latex occur in many members of the daisy family and do not independently prove edibility. Reliable identification depends on the combination of leaves, flower heads, rhizomatous growth and habitat.

SOURCES

- https://www.calflora.org/app/taxon?crn=7680
- https://pfaf.org/USER/Plant.aspx?LatinName=Sonchus+arvensis
- https://commons.wikimedia.org/wiki/Sonchus_arvensis

Prickly sowthistle — glossy spiny leaves and tender tips · Sonchus asper

Sonchus asper

Among California's garden weeds grows a sowthistle with glossy, toothed leaves whose edges carry small but unpleasantly sharp prickles. Later it produces yellow flower heads resembling tiny dandelions. This is Sonchus asper, prickly sowthistle, a close relative of the already described common sowthistle. The most tender young leaves and some peeled tips are known as raw food. Mature prickly foliage is another matter: it is not suitable for an ordinary salad.



Prickly sowthistle (Sonchus asper) — glossy toothed leaves with prickly edges and yellow flower heads

HoosierMan1816 · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually an annual herb with a basal rosette and an upright, hollow stem. White milky sap emerges if the stem is broken. The lower leaves are large and often deeply lobed, with glossy surfaces and stiff little teeth around the margins. Upper leaves sit directly on the stem without long stalks, clasping it with rounded, ear-like lobes. The glossy, firm leaf blades and rounded auricles at the base of stem leaves are particularly characteristic of the species. In warm, fertile places the plant may grow taller than a meter. Yellow heads of narrow ray florets open at the stem tips. After flowering, achenes with pale windborne hairs form; mature heads look like small fluffy balls. Young leaves can be far softer than mature ones. Identification is therefore best confirmed from neighboring flowering plants of the same species, without mixing different plants in one handful.

WHERE IT GROWS AND HOW COMMON IT IS

UC IPM describes sowthistles as among the most common weeds of California's spring farms and gardens. Sonchus asper is an invasive member of this group. It grows in vegetable beds, along fields, in gardens, on disturbed roadsides and among irrigated plantings. In mild climates, seeds can germinate at unusual times, but most young plants appear after rain. Around agricultural land in the Central Valley, it is especially important to establish whether herbicides have been applied. Dry, hardened foliage on tall summer plants does not have the same food value as damp, young growth.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In lowlands, seeds often germinate from late autumn through early spring. Rosettes bear their most tender leaves from December through March. Flowering stems may develop in early spring in warm locations, while flowering and ripening of the white windborne seed tufts often peak in spring and early summer. Later plants may occur in irrigated places. For raw food, the age of each leaf matters more than the month alone: prickles become increasingly uncomfortable as leaves mature.



Prickly sowthistle (Sonchus asper) — glossy toothed leaves with prickly edges and yellow flower heads

Bjoertvedt · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Very young leaves. Plants For A Future explicitly identifies tender Sonchus asper leaves eaten raw. Their flavor is less harsh while a leaf is still soft and its marginal prickles are undeveloped. Mature spiny leaves cannot be considered equivalent. If a leaf scratches the fingers, it should not go into a raw salad.

Young tender shoot tips. The same species reference describes them eaten raw after coarse portions have been removed. Milky sap in older stems can be bitter, a further reason not to recommend tough flowering stalks as fresh food. Gather this part only after full identification and when every prickly section can be separated.

Roots, mature seeds and the entire adult stem are excluded. Washing and removing dirt are necessary, but simple rinsing does not make chemically treated field plants safe.

HOW NOT TO CONFUSE IT

Common sowthistle, Sonchus oleraceus, generally has duller, softer leaves with more pointed auricles at the base of stem leaves. Sonchus asper leaves are shinier, firmer and more prickly, with rounded auricles. Other yellow-flowered composites also exude white latex. Check leaf shape, leaf base, hollow stem and flower heads together. Do not identify a plant merely from bitter milky sap and one yellow blossom. Gathering greens along agricultural strips and on urban lawns is especially risky because of chemical treatments.

SOURCES

- https://ipm.ucanr.edu/weeds-identification-gallery/sowthistles/
- https://pfaf.org/user/Plant.aspx?LatinName=Sonchus+asper

Common sowthistle — soft spring greens and yellow flowers · Sonchus oleraceus

Sonchus oleraceus

After winter rain, a green herb with long, soft leaves grows in California gardens, vineyards and beside farm roads. Later, it develops a branching stem topped with yellow flower heads resembling small dandelions. This is common sowthistle, Sonchus oleraceus. Its young spring leaves are eaten raw before they become coarse.



Common sowthistle (Sonchus oleraceus) — soft lobed young leaves and yellow flower heads

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

Sowthistle is an annual or sometimes short-lived biennial herb. The young plant first forms a basal rosette, then develops a fairly tall, branching stem, often half a meter to a meter and a half high. The stem is hollow; if broken, it releases whitish milky sap.

The large, elongated leaves have irregular lobes and teeth. Lower leaves have more obvious stalks, while the bases of upper leaves clasp the stem. The leaf blade is relatively soft and does not feel as prickly as that of the closely related prickly sowthistle. Small, soft, pointed projections may occur at the edges, especially on mature leaves.

Yellow flower heads comprise numerous ray florets and grow in groups at the ends of branches. Before opening they are surrounded by green bracts. After flowering, small dry achenes develop with white, fluffy tufts; the wind carries them far from the parent plant.



Common sowthistle (Sonchus oleraceus) — soft lobed young leaves and yellow flower heads

Sten Porse · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Sonchus oleraceus has spread widely through California as an introduced species. It is especially common on cultivated ground: in vegetable gardens, farmland, orchards, vineyards, along irrigation canals and around buildings.

UC IPM considers sowthistles among the most common weeds of the spring growing season. They occur across nearly the entire state, and where soil is loose and remains moist after rain they sometimes form dense groups. However, in hot, dry places without irrigation, most spring greens disappear by summer.

In the Sacramento Valley, young sowthistle rosettes are particularly noticeable on open ground following a wet winter. Later, the tall flowering stems can be spotted even amid dense grass.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Sowthistle often germinates from late autumn through early spring. In lowland California, soft leaves are available in winter and spring, approximately December through April. Timing depends on rain, irrigation and how quickly plants begin flowering.

Flowers appear mainly in spring and early summer, although individual plants may flower in other months during mild weather. After the fluffy seeds form, the plant quickly completes its life cycle, especially when soil dries. Young shoots of the next generation emerge after moisture returns.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Tender leaves of young Sonchus oleraceus rosettes are eaten raw. Plants For A Future expressly lists them as salad greens. Their flavor is generally milder and less bitter in spring. If stiff points have developed along a leaf margin, they can be removed without heating.

White milky sap is a separate, less common food-related part. An ethnobotanical reference records that Māori in New Zealand chewed dried latex from this species as a natural chewing gum. That does not mean the sap is a substantial food when consumed in large amounts: the historical practice specifically concerns chewing.

Young roots and adult stems have been used differently in some cultures, but their confirmed methods involve cooking. They are not raw food parts in this article. Similarly, yellow flowers must not automatically be treated as salad greens merely because the plant is related to dandelion.

HOW NOT TO CONFUSE IT

Several sowthistle species occur in California. Sonchus asper has noticeably firmer, darker leaves with sharper, prickly margins; Sonchus oleraceus has relatively soft young foliage and upper leaf bases that clasp the stem with rounded lobes.

Sowthistle is easy to confuse with dandelion from its yellow heads and white seed tufts. But Taraxacum officinale has separate, unbranched, leafless flowering stalks. Sowthistle bears several flower heads and numerous leaves on a tall branching stem. For food gathering, the young rosette and precise species identification matter more than one yellow flower.

For identification of Sonchus oleraceus, look for soft green leaves, stem leaves with small, stem-clasping auricles and the yellow heads that develop later. Sonchus asper is often pricklier and glossier. Milky sap alone does not prove edibility: other members of the daisy family also produce it. Plants For A Future confidently lists tender raw leaves, whereas it describes stems and roots eaten after cooking and therefore excluded from this no-fire list.

SOURCES

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- Plants For A Future, Sonchus oleraceus, tender raw leaves and chewing latex: https://pfaf.org/User/Plant.aspx?LatinName=Sonchus+oleraceus
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Slender sowthistle — deeply divided narrow leaves with mild bitterness · Sonchus tenerrimus

Sonchus tenerrimus

On dry vacant ground and beside old walls, a slender herb sometimes grows resembling a dandelion, but with a branching stem and very narrow, deeply divided leaves. Yellow flower heads open at the ends of its branches. This is slender sowthistle, one of three Sonchus species frequently found in California. While the leaves are young, they can be eaten raw as a pungent salad addition.



Slender sowthistle (Sonchus tenerrimus) — finely divided narrow foliage and yellow flower heads

J.claude · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or short-lived perennial herb, generally 30–100 centimeters tall. The stem is branching and soft early in growth; it releases white milky sap when damaged. Lower leaves are long and deeply pinnately divided, but unlike broad-leaved sowthistles their lobes are often extremely narrow, almost threadlike. Upper leaves are shorter and clasp the stem with small auricles. Yellow flower heads resemble little dandelions but occur several to a stem on separate stalks. After flowering, achenes with white tufts of hairs develop and are readily dispersed by wind.

WHERE IT GROWS AND HOW COMMON IT IS

This sowthistle originates from the Mediterranean and was introduced to California. Calflora and Kew confirm its presence in the state, including dry, open disturbed areas, road margins, beside walls and on vacant lots. Compared with Sonchus oleraceus and S. asper, it is unevenly distributed and is often more conspicuous along the warm coast and in the south. Because of possible herbicides and contamination, do not collect it from roadsides or lawns.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In mild lowland climates, seeds germinate after rain in autumn and winter. A tender rosette appears in winter and early spring; once the flowering stem elongates, the leaves become tougher and more bitter. Flowering can continue from spring into summer, sometimes into autumn after rain. Plants complete their cycle quickly during very dry summers. For raw food, the age of the young leaves matters more than the month itself.



Slender sowthistle (Sonchus tenerrimus) — finely divided narrow foliage and yellow flower heads

Omar hoftun · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly records raw leaves of Sonchus tenerrimus eaten in salads. Choose the softest, lightest green leaves before the plant forms a coarse stem. The flavor is slightly bitter, reminiscent of other wild greens of the daisy family. Young leaves can be finely chopped and combined with more neutral salad greens; large quantities are unnecessary. Mature tougher leaves, stems, roots and seeds are not among the confirmed raw foods in this article.

HOW NOT TO CONFUSE IT

Sonchus oleraceus has broader, often toothed leaf lobes, while Sonchus asper has tougher, pricklier leaves. Hawkweeds and other members of the daisy family also have yellow heads, including some inedible plants. A particular danger is taking an unrelated plant with white milky sap for an edible sowthistle: latex does not prove that a species is edible. Examine the long, narrowly divided leaves, branching flower heads and stem. Gather young greens only when identification is certain.

SOURCES

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Garden spinach — tender cool-season leaves from rare escaped plants · Spinacia oleracea

Spinacia oleracea

Beside an abandoned garden bed in the cooler part of the year, low rosettes of smooth, dark-green leaves sometimes remain. The leaves may be round-oval, arrow-shaped or slightly triangular, with long stalks and juicy blades. If the plant continues growing, the rosette elongates and produces inconspicuous greenish flowers. This is garden spinach, rarely recorded outside cultivation in California. Young leaves are eaten raw, but their oxalate content makes large servings and a raw diet based solely on spinach inadvisable.



Garden spinach (Spinacia oleracea) — smooth, dark-green tender leaves in a basal rosette

Merstel007 · CC0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual herb forming a basal rosette, usually about 15–30 centimeters high before flowering. The simple, alternate, stalked leaves are smooth, ovate to spear-shaped, with entire or slightly wavy margins. Some have two small side lobes near the base. As the stem elongates, the plant may reach 50–80 centimeters and form tiny greenish flowers. Male and female spinach flowers often develop on different plants: male flowers occur in clusters near the top, while female flowers appear in leaf axils. Following pollination, compact seed clusters develop, sometimes with hard projections depending on the variety. The plant does not form large, colorful petals or fleshy berries.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora identifies Spinacia oleracea as a nonnative vegetable crop in California, with only isolated records—about a dozen—outside cultivation. It chiefly grows in irrigated beds, former vegetable gardens and places where seed has been discarded. In the Central Valley, spinach is generally cultivated in the cooler season because severe summer heat accelerates bolting. It is not an abundant wild green of forests or chaparral. Old farm sites may contain fertilizer residues, herbicides and bacterial contamination, so unexamined self-seeded plants are unsuitable for raw food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

After autumn rain and cooler weather, young rosettes develop in the valleys; a second period of growth is possible during cool spring weather. The season of tender leaves lasts longer on the coast and in mountain gardens than on the hot Sacramento plain. As days grow longer and temperatures rise, the plant rapidly sends up a flowering stalk, after which leaves become coarser and more bitter. The best raw growth occurs before a long flowering stem appears.

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future explicitly confirms the raw use of Spinacia oleracea: small, soft leaves can be washed thoroughly and added to a cold salad. Their flavor is mild and slightly grassy, sometimes astringent in older leaves. Spinach is rich in oxalates, however, and large amounts are inadvisable, especially for people prone to calcium-oxalate kidney stones; in such cases raw spinach is best avoided. Seeds are sometimes mentioned as food in the source, but sprouting during a journey carries microbiological risks and is not recommended without further verification. Roots and flowering stalks are excluded from the raw diet.

HOW NOT TO CONFUSE IT

Beta vulgaris subsp. maritima has firmer, glossier leaves and a different tall, branching flowering stem. Atriplex hortensis is generally taller, with large triangular leaves and fruits enclosed by bracteoles. Some Chenopodium species resemble spinach in an early rosette, but have a mealy coating on young foliage and different inflorescences. Spinach has smooth leaves, a compact rosette and tiny green flowers without conspicuous petals. Do not taste an unidentified herb merely because its leaf looks like spinach.

SOURCES

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Common chickweed — tender winter and spring greens · Stellaria media

Stellaria media

After the first autumn and winter rains, small carpets of vivid green growth appear on moist California soil. Their stems are thin, their leaves small and oval, and their little white star-shaped flowers look as though they have ten narrow petals. This is common chickweed, Stellaria media. Its tender leaves, stems and flowers can all be eaten raw.



Common chickweed (Stellaria media) — low green mat with tiny white split-petal flowers

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Chickweed is an annual with thin, flexible stems that often lie along the ground, branch and curve upward at their tips. Individual shoots can reach 15–40 centimeters, although the green mat itself appears much lower.

The leaves are light green, soft and small, arranged in opposite pairs. They are oval with pointed tips and smooth, untoothed margins. Lower leaves usually have stalks, while upper leaves may attach to the stem almost without stalks.

A particularly useful identification feature is a narrow line of hairs along one side of the stem. On the next internode, the line often switches sides. The rest of the stem surface is considerably smoother. This detail is easier to see close up than from a distance.



Common chickweed (Stellaria media) — low green mat with tiny white split-petal flowers

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Each white flower is small, usually only a few millimeters across. It has five petals, but each petal is deeply split in two, creating the appearance of ten petals. Five green sepals are visible beneath. Following flowering, a small elongated capsule develops with several very tiny brown seeds.

WHERE IT GROWS AND HOW COMMON IT IS

Stellaria media has spread worldwide from Eurasia and North Africa. In California it occurs almost everywhere except much of the driest desert land. It is particularly common in moist places: gardens, vegetable beds, shady lawns, tree plantings, farm fields and alongside paths.

In the Sacramento Valley, it is especially easy to notice after rain on cool, fertile ground. If a site remains moist, chickweed rapidly forms dense bright-green patches. On the foggy coast, it sometimes continues growing in summer; in the hot Central Valley, it usually disappears with persistent dry heat.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In lower parts of California, young seedlings appear as rain returns, often in November and December. The softest greens are usually available from December through April, although a cool spring can extend the season.

Flowers may develop throughout much of the cool season. UC IPM gives an unusually broad flowering period, from February to September and, under suitable conditions, year-round. That does not mean the herb is present in every place during every month. The foggy coastal season is much longer than that of Sacramento's exposed, dry plain.

After flowering, small seed capsules develop. In favorable moist conditions, chickweed can complete its entire life cycle in only a few weeks and produce another generation.

WHAT IS EATEN WITHOUT FIRE

Young leaves. The soft leaves are eaten raw. Their flavor is mild and slightly grassy, sometimes reminiscent of tender lettuce. In many countries, chickweed is known as a spring salad herb.

Tender stems. Thin, juicy shoot tips are also eaten raw with the leaves. They are softest during active growth; old, drying stems are much less pleasant.

Flowers. The small white flowers are edible raw and can be eaten with green shoot tips. Iowa State University Extension explicitly lists chickweed leaves, stems and flowers as suitable without heating.

Seeds. North Carolina State University Extension also includes the seeds of this species among edible parts and describes raw use. They are extremely tiny, however, and collecting a meaningful quantity is much harder than gathering the greens.

Chickweed contains saponins. North Carolina State University Extension notes that these compounds are poorly absorbed but can be broken down through thorough cooking; this method of eating does not involve heat. Therefore, large daily portions cannot be recommended for raw consumption. Chickweed belongs as a small addition to a meal, not the basis of a diet.

HOW NOT TO CONFUSE IT

Several small plants resemble chickweed. Other mouse-ear chickweeds of the genus Cerastium generally have leaves and stems covered much more densely with hairs. In Stellaria media the hairs are especially noticeable as a single line along the stem.

A more consequential look-alike is scarlet pimpernel, Anagallis arvensis, also known as field pimpernel. It has small opposite leaves and low shoots, but an angular stem and usually reddish-orange flowers rather than deeply split white ones. It is not used as a substitute for edible chickweed. A single soft leaf, without the characteristic flowers and hair line, is not enough for identification.

In Stellaria media one line of hairs runs along the stem, whereas similar Cerastium plants usually carry hairs more widely. Scarlet pimpernel differs in its bright red-orange flowers and shoot shape; it must not be substituted for chickweed. Until the collected plant shows the full combination of characteristic leaves, hairs and flowers, it cannot be identified merely from a low green mat.

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Screwbean mesquite — spiral pods and desert food · Strombocarpa pubescens

Strombocarpa pubescens

Among desert trees, few fruits are as unusual as those of screwbean mesquite: its pods resemble short, tightly coiled springs. They are green at first and become yellowish brown as they ripen. This native species is also known by the older name Prosopis pubescens. Its young beans and mature pods have documented food uses without heating.



Screwbean mesquite (Strombocarpa pubescens) — corkscrew-shaped pods hanging from bipinnate branches

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually a shrubby tree three to eight meters tall, with a branching crown, grayish-brown bark and sharp thorns. The leaves are bipinnate, made up of tiny oval to rounded leaflets arranged in pairs along slender axes. Small pale-yellow flowers cluster in elongated, cylindrical racemes. The most distinctive feature develops after flowering: the pod does not merely curve into an arc but winds around its own axis many times, producing an almost regular screw. Spirals begin green, then gradually dry and turn pale brown. Strombocarpa pubescens is the name used in modern classification; many botanical and food sources continue using Prosopis pubescens.

WHERE IT GROWS AND HOW COMMON IT IS

The natural range is the desert Southwest of the United States and northern Mexico. In California, screwbean mesquite mainly grows where desert soils receive additional moisture: ancient floodplains, streamside areas, seasonal watercourses, shallow valleys and places near saline ground. It occurs in southeastern counties but is not found on every dry slope. Some local stands have been declining, so even where pods are edible, large-scale harvesting is inappropriate.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Pale flower racemes appear in spring; soft green spirals develop in late spring and summer. In hot lowlands, some pods reach maturity during summer, while at certain sites fruits persist into autumn. Young and mature pods differ not only in color but also in firmness. Do not collect old pods from wet silt: they may have been damaged by fungi.



Screwbean mesquite (Strombocarpa pubescens) — corkscrew-shaped pods hanging from bipinnate branches

pompilid · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young green pods. Plants For A Future explicitly states that soft, unripe Prosopis pubescens pods were eaten raw. Their usefulness is limited to the early stage while the pod is still tender.

Mature pods. The USDA describes sweet dried fruits ground into food. After natural drying, a clean pod may be pounded or milled, and the resulting powder mixed with cold water. This is not a recommendation to chew mature seeds: they are enclosed in hard coverings and can damage teeth.

Leaves, flowers, bark and roots are not included in the raw food range. Given the condition of wild populations, it is wiser to investigate food uses on sites where gathering is permitted than to deplete declining stands.

HOW NOT TO CONFUSE IT

Other mesquites, including Neltuma odorata, also have small bipinnate leaves and flowers in similar racemes. Their mature pods, however, are longer and generally do not form evenly coiled cylinders. From a distance, screwbean mesquite may resemble ornamental legume trees whose edible properties are not necessarily the same. Identification requires seeing a spiral pod attached to the corresponding branch, along with leaflet shape and raceme form. Pods found under a tree without its branches and leaves cannot establish the species.

SOURCES

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Common dandelion — fresh salad greens and yellow flowers · Taraxacum officinale

Taraxacum officinale

In late winter and spring, yellow dandelions bloom on California lawns. By day they resemble little circles of sunshine; after flowering they become familiar fluffy white balls. More important as food, however, is that the green rosette appears before the flowers: young dandelion leaves are eaten raw, followed later by fresh flowers and flower buds.



Common dandelion (Taraxacum officinale) — deeply toothed basal leaves, yellow head and fluffy seeds

Elekes Andor · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Dandelion is a perennial herb with a strong taproot extending deep into the soil. Leaves emerge in a rosette from one short basal crown. They are elongated, smooth or slightly hairy, with large, irregular teeth. Many teeth point backward toward the leaf base, giving rise to their comparison with a lion's teeth.

A hollow, leafless flower stalk grows from the center of the rosette. One yellow composite head opens at its tip, made up of numerous narrow ray florets. There are no separate green leaves on the stalk itself. Breaking a stalk or leaf releases whitish milky sap.

After flowering, small dry fruits develop, each with a tuft of white hairs. Together they form a spherical cluster of little parachutes, carried away by the wind. A single plant may show young leaves, an open flower and a maturing fluffy head at the same time.



Common dandelion (Taraxacum officinale) — deeply toothed basal leaves, yellow head and fluffy seeds

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WHERE IT GROWS AND HOW COMMON IT IS

Taraxacum officinale originated in Eurasia and has become one of the most widespread plants in human-disturbed places in California. It grows in lawns, parks, gardens, fields, beside paths and in moist meadows.

UC IPM describes dandelion as a common perennial across nearly the entire state. In the Sacramento Valley, it is particularly noticeable on irrigated ground; without moisture, its growth is limited on dry sites. Leaf rosettes can form dense patches in lawns, but they do not cover hot deserts and wet coastal parks equally.

WHEN THE EDIBLE PARTS ARE AVAILABLE

During a mild Californian winter, leaves may remain green for many months. Tender new growth is especially plentiful after winter rain, often from January through April. Before mass flowering, spring leaves are usually less bitter than they become in summer.

Flowers may already appear in winter and spring in lowland places. With constant moisture, dandelions can bloom in other months as well. Yellow flower heads open in daylight and often close toward evening.

The root remains underground all year. When considered as a separate food part, a spring root after the wet season is generally more tender than an old fibrous root. The mere presence of a root does not mean that every method of preparing it falls within our subject.

WHAT IS EATEN WITHOUT FIRE

Young leaves. They are eaten raw, most often in salads. According to NC State Extension and University of Wisconsin Extension, tender leaves are best before or at the beginning of flowering. Their pronounced bitterness increases with age. Dandelion leaves have long been used as seasonal fresh greens in European countries.

Fresh yellow flowers. These too can be eaten raw. Wisconsin Extension lists the fresh flowers as edible. The outer yellow ray florets are usually milder than the green involucre of the head. Flowers close and wilt quickly, so they do not remain fresh for long.

Unopened flower buds. They are available briefly before a yellow head opens. Wisconsin Extension includes buds among the edible parts of dandelion. This is a different stage from an already opened flower.

Root. Dandelion roots can be eaten; a separate guide to edible wild plants describes them peeled and eaten raw. In spring, roots of young plants are generally more tender. They have a markedly bitter flavor, while large portions may have a laxative effect. For that reason, raw roots are a less everyday part of the plant than spring leaves.

HOW NOT TO CONFUSE IT

Several other yellow-flowered plants on lawns resemble dandelions. For example, cat's-ear, Hypochaeris radicata, also forms a basal rosette and yellow heads, but its leaves are often conspicuously hairy and its flowering stalks may branch. A true dandelion has a separate hollow, leafless stalk ending in one head.

Another important issue is the many species and forms within Taraxacum. California has a rare native dandelion, Taraxacum californicum, which grows in special mountain meadows. It must not be substituted for common, widespread Taraxacum officinale in descriptions or photo captions.

In California, rare Taraxacum californicum inhabits mountain meadows and requires protection; it is not the ordinary urban Taraxacum officinale. An uncertain rosette in a natural mountain habitat should not be gathered. Common dandelion is recognized by one yellow head on a hollow, leafless stalk and a rosette of deeply toothed leaves. The raw parts with the clearest university confirmation are young leaves and yellow flowers; the root is described here only as a separate, cautious raw use, not a universal everyday food.

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New Zealand spinach — fleshy triangular leaves on sandy shores · Tetragonia tetragonoides

Tetragonia tetragonoides

On a warm ocean shore or beside an old vegetable garden, a dense green herb sometimes trails across the ground with juicy triangular leaves. Its stems are fleshy and branching, with little yellow flowers tucked into leaf axils. This is New Zealand spinach, a species unrelated to true spinach but long cultivated as a leafy vegetable. Very young leaves and tips can be eaten raw, but they may accumulate oxalates, so large servings without heating are inadvisable.



New Zealand spinach (Tetragonia tetragonoides) — succulent triangular leaves on spreading coastal stems

Arn · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or short-lived perennial herb with long, spreading, branching shoots reaching a meter or more. The stem is green and succulent, sometimes tinged red, and breaks easily. Alternate leaves are diamond-shaped, triangular or ovate-triangular, with entire margins and short stalks. Their thick, juicy surfaces are sometimes covered with tiny bladder-like cells. Small yellowish flowers without conspicuous large petals grow singly or in small groups in leaf axils. Pollination produces a firm, angular fruit, usually with several projections, resembling a little four-horned capsule. The plant does not form flower spikes like ordinary garden spinach.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Tetragonia tetragonoides as nonnative but widely recorded on California's coast, with more than a thousand observations. Plants are especially common on warm sandy seashores, in coastal shrubland and in disturbed places, sometimes near former gardens. The species tolerates salt spray and summer heat. Far inland in the Sacramento Valley, it is more likely to be a garden plant than an abundant wild resource. Plants on polluted beaches or near discharges are unsuitable for raw food.

WHEN THE EDIBLE PARTS ARE AVAILABLE

With spring warmth and enough moisture, the plant quickly produces new fleshy shoots. In a mild coastal climate growth may continue through much of the warm season, with the tenderest leaves usually in spring and early summer. During hot weather, tips can remain juicy if water is available, while lower leaves age and develop an unpleasant flavor. Flowers and angular fruits appear as the plant grows, usually in summer and autumn.



New Zealand spinach (Tetragonia tetragonoides) — succulent triangular leaves on spreading coastal stems

Frank Vincentz · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Very young leaves and tips. Plants For A Future separately states that very young Tetragonia tetragonoides greens may be eaten raw in salads. Shoots only a few centimeters long are generally the softest; the juicy leaves have a mild grassy flavor and a slightly mucilaginous texture. There is, however, an important limitation: oxalate content may be high, as in true spinach, while mature leaves become harsher. Raw use is therefore suitable only for a small trial portion of a confidently identified plant; anyone at risk of oxalate kidney stones is better off avoiding it raw. Older leaves, angular fruits, seeds and roots are excluded from this no-fire diet.

HOW NOT TO CONFUSE IT

Tetragonia expansa is an older name for the same species, not a separate plant. True spinach, Spinacia oleracea, usually grows as a rosette and has different flowers and fruit. Coastal Carpobrotus species have much thicker, three-sided leaves on quite different trailing stems. Some other salt-marsh succulents also have fleshy foliage but lack New Zealand spinach's characteristic small yellow flowers in leaf axils and horned fruits. Because shores have many kinds of plants, triangular leaves alone do not establish identification.

SOURCES

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Yellow salsify — yellow blossoms and tender spring shoots · Tragopogon dubius

Tragopogon dubius

In spring, a tall herbaceous salsify with bright yellow flowers grows in dry foothills and old pastures. Its long, narrow leaves stand almost upright, while the flower often closes by midday. Later the head becomes a large fluffy sphere resembling an enormous dandelion. The soft young stems and leaf bases of this species can be eaten without fire; young roots are also specifically documented as edible raw.



Yellow salsify (Tragopogon dubius) — yellow flower head with long green bracts and narrow leaves

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HOW TO IDENTIFY IT

A biennial or short-lived plant with a main fleshy root and upright stems approximately 30–100 centimeters tall. During the first season, a basal rosette of long, narrow, grass-like leaves with a conspicuous pale midrib develops. As the stem elongates, its leaves clasp the base. Whitish milky latex emerges when plant tissue breaks. The yellow flower head consists of numerous ray florets and is generally surrounded by eight long, narrow green involucral bracts, often extending noticeably beyond the petals. The mature fruiting head is spherical, with large achenes carrying fluffy parachutes.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora has recorded many occurrences of Tragopogon dubius, including the Sierra Nevada, Modoc Plateau, dry foothills and certain parts of the Sacramento Valley. This introduced Eurasian plant grows on open grassy slopes, old pastures, roadsides and disturbed land. It is uncommon in damp shade but can be abundant on dry ground. Plants beside agricultural fields and roads can accumulate pollutants and should not be collected for raw food at such sites.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young rosettes become visible after winter rains, and short stems begin developing in spring. They are most tender when approximately 5–10 centimeters tall and before becoming fibrous. Flowering takes place during spring and summer, later in cooler mountains; afterward the plant sets seed and completes its cycle. Young roots are preferable before the long flowering stem develops, while old roots are often tough and bitter.



Yellow salsify (Tragopogon dubius) — yellow flower head with long green bracts and narrow leaves

Sinan Çomu · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Very young stems and leaf bases. Plants For A Future explicitly describes them as raw food while the plant is still small. Remove soil, peel away the coarse outer covering if necessary and eat fresh. The flavor is mild with a little bitterness.

Root. The same species reference separately allows eating the fleshy root of Tragopogon dubius raw. Young roots are preferable and must be cleaned thoroughly of soil; they can be sliced finely or grated. Mature roots are often tough, so large raw servings are not recommended. Seeds and old flowering stalks are not used as food without fire.

HOW NOT TO CONFUSE IT

Tragopogon porrifolius has purple rather than yellow heads. Another yellow species, Tragopogon pratensis, usually has shorter green involucral bracts relative to the ray florets. The fluffy seed head alone might be mistaken for a dandelion, but a true dandelion usually has a single leafless flowering stalk, whereas salsify has long leaves on the stem. Milky latex occurs in many other members of the daisy family and is not sufficient evidence of edibility.

SOURCES

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Purple salsify — tender roots and morning violet blossoms · Tragopogon porrifolius

Tragopogon porrifolius

On open grassy ground, a plant sometimes grows with long, narrow leaves resembling the young foliage of grasses. On a cool morning, it opens large violet flower heads and often closes them a few hours later. Later an enormous sphere of fluffy seeds appears in their place. This is purple salsify, or oyster plant, Tragopogon porrifolius. Its very young roots and spring shoots can be eaten raw.



Purple salsify (Tragopogon porrifolius) — violet flower head on a slender stem with grass-like leaves

Robert Flogaus-Faust · CC BY 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A biennial or short-lived perennial herb with a flowering stem generally 30–100 centimeters high. The leaves are long and narrow, with almost parallel veins, tapering to a fine point and clasping the stem at their bases. White milky sap appears when plant tissue is broken. During the first year the plant typically forms a basal rosette and a long, pale, fleshy taproot. From the second growing season, it sends up a branching flower stalk with large purple ray florets. The long green involucral bracts sometimes extend beyond the open corolla. After flowering, a sphere of large achenes develops with long, fluffy parachutes.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Tragopogon porrifolius nonnative to California and reports hundreds of observations. It grows on open disturbed slopes, beside pastures, in rather dry meadows and on former agricultural sites. Patchy growth is possible in the Sacramento Valley, but certain coastal and foothill counties have particularly many records. Raw leaves and roots should not be collected from herbicide-treated sites or alongside busy roads.

WHEN THE EDIBLE PARTS ARE AVAILABLE

First-year rosettes grow after winter rain or in early spring. The young root is best before the plant uses its stored reserves to produce a tall flowering stalk, generally from late autumn through early spring. Tender shoots appear in spring. Purple heads open during spring and early summer, later in cooler highland areas. After flowering, the root becomes woody, the stem coarsens and the seeds disperse in the wind.

WHAT IS EATEN WITHOUT FIRE

Young root. Plants For A Future specifically confirms that it can be eaten raw. The pale, peeled tissue can be grated into a cold salad. Its flavor is mild and slightly sweet, with a characteristic vegetable note.

Spring shoots. Very young soft shoots are also eaten raw.

Flowers. The open purple ray florets may be used as a small fresh addition. Mature, tough stems and old roots are described in the species account as more suitable after cooking, so they are not used in a diet without fire. When looking for an edible root, identify an adult flowering plant in advance rather than digging up unknown rosettes.

HOW NOT TO CONFUSE IT

Tragopogon dubius bears yellow rather than purple heads and differs in its involucral bracts. Similar young rosettes occur among other composites that exude milky latex, including chicory and sowthistles. Digging up a plant without flowering features is risky because identification is harder before bloom. Look for long narrow leaves, a large flower at the tip of the stalk and later a large fluffy globe. The fluffy seed head alone does not prove this species.

SOURCES

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Meadow salsify — tender roots and spring leaves under yellow flowers · Tragopogon pratensis

Tragopogon pratensis

In a cool meadow among grasses, narrow leaves resembling those of a grass can be seen, with a slender flowering stalk rising above them and a yellow head that opens in the morning. After flowering, a large fluffy spherical seed head appears. This is meadow salsify. It is related to the yellow and purple salsifies described earlier, but has its own identifying features and is much rarer in California. Its young roots and leaves can be eaten raw.



Meadow salsify (Tragopogon pratensis) — yellow flower head and long slender leaves

Ivar Leidus · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A biennial or short-lived herb with an upright flowering stalk approximately 30–80 centimeters high. During its first season, a rosette of long, narrow-lanceolate leaves develops, with parallel veins and a whitish central stripe; the leaves taper gradually to a fine tip. Breaking the tissue releases white milky latex. The flowering stalk bears several narrow leaves, with a yellow head of ray florets at its tip. When the head is fully open, the green involucral bracts are generally not much longer than the yellow florets. After flowering, a large sphere of achenes with airy, fluffy tufts appears on the tall stalk. Young taproots are white inside but become fibrous with age.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists Tragopogon pratensis as nonnative to California, with only a small number of records—several dozen observations. It occurs in cool meadows, pastures and disturbed grassland, including mountain valleys, but is much less widespread than Tragopogon dubius. It should not be expected on every vacant lot in the hot central Sacramento Valley. Many similar yellow salsifies belong to a different species, making exact identification essential.

WHEN THE EDIBLE PARTS ARE AVAILABLE

With sufficient winter and spring moisture, young leaves develop first. The root is tenderest during the first year of life or before active flowering-stalk growth in early spring. Yellow flowers open in late spring and summer in cool climates and are soon followed by large, fluffy fruiting heads. After the seeds mature, the root grows coarse. Old plants are generally unsuitable for raw consumption.



Meadow salsify (Tragopogon pratensis) — yellow flower head and long slender leaves

Jim Conrad · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young roots. Plants For A Future separately confirms that Tragopogon pratensis roots can be eaten raw and notes a sweetish flavor due to inulin. Clean the root thoroughly of soil, peel it and grate it finely into cold food. Avoid overmature, fibrous roots.

Young leaves and shoots. These too may be eaten raw while still very soft, with a slight bitterness. The species reference describes mature flowering stems after cooking, so they are not recommended without fire. Large servings of inulin-rich root may cause gas and bloating.

HOW NOT TO CONFUSE IT

In Tragopogon dubius, described separately, the green involucral bracts generally project much farther beyond the petals, and the flowering stalks may be taller. Tragopogon porrifolius has purple flowers. A true dandelion generally has an unbranched, leafless flowering stalk, whereas salsifies bear narrow stem leaves. Before flowering, the species are hard to distinguish, so do not dig up a random rosette for its root. It is better to mark a confidently identified adult plant and then look for new growth at that site.

SOURCES

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Crimson clover — scarlet flower spikes on spring meadows · Trifolium incarnatum

Trifolium incarnatum

In some California spring meadows and former fodder fields, bright red, elongated flower heads rise from a green carpet. This is crimson clover, introduced from the Mediterranean region and grown as a fodder and cover crop. Its small fresh flowers and very young leaflets are described among edible greens, but only small amounts are taken, and random field sprouts are unsuitable for raw food.



Crimson clover (Trifolium incarnatum) — elongated scarlet flower heads above trifoliate leaves

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual herb generally 20–50 centimeters high. Its stems are upright or slightly ascending and covered in soft hairs. Leaves are trifoliate: each comprises three relatively broad oval or obovate leaflets, often with a barely visible notch at the tip and fine hairs. Some leaflets show a paler V-shaped mark. The flower heads are markedly elongated, like short soft spikes a few centimeters long, packed with numerous bright-red, pea-like flowers. Each flower has a narrow tube and a projecting upper petal. Small seed-bearing pods develop later.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora considers Trifolium incarnatum nonnative and records several hundred observations in California, including Sacramento, Placer and Yolo counties. It appears in old sowings, open grassland, at pasture margins and along roads. Sometimes it is deliberately sown as a cover crop, so clover growing near a field is not necessarily wild or free to gather. In desert regions without irrigation, this clover is much less likely.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young rosettes develop after autumn and winter rains, especially in mild lowland climates. Flowering generally takes place in spring and early summer, later in cool foothills. After the flower heads dry, seeds mature and the plant completes its cycle. Leaves are best before stems grow tall and coarse. From the red head, select only fresh, undamaged flowers.

WHAT IS EATEN WITHOUT FIRE

Young leaves and individual fresh flowers. The species entry in PlantaeDB describes their raw use as a small salad addition. Flowers have a slight sweetness; the leaves have a mild, sometimes astringent, legume flavor. Moderation is important: raw clover tissues are fibrous and not always easily digested. Germinated seeds of this species are also eaten in salads, but sprouting while camping carries a high risk of bacterial contamination and is therefore not recommended. Dry seeds are generally ground and processed; without separate confirmation, they are not recommended here raw.

HOW NOT TO CONFUSE IT

Red clover, Trifolium pratense, usually has more rounded, pinkish-purple heads, while crimson clover produces conspicuously elongated scarlet inflorescences. Trifolium repens has white and generally spherical heads. California has many native clovers with red and pink flowers, and color alone is inadequate for identifying a species. The elongated flower head, softly hairy stems and trifoliate leaves matter together. Do not gather plants from chemically treated pastureland.

SOURCES

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Red clover — three leaflets and pink-purple flower heads · Trifolium pratense

Trifolium pratense

In California meadows and old pastures, a perennial herb grows with three-part leaves and dense, round heads of pink-purple flowers. This is Trifolium pratense, red or meadow clover. It differs from white clover in its taller, leafy stems and larger flowering heads. Its tender young leaves and fresh flowers are confirmed as food eaten without fire, but large portions of clover should not be regarded as a universally safe vegetable: the plant contains biologically active compounds and the leaves are often coarse.



Red clover (Trifolium pratense) — rounded pink-purple flower head above hairy three-part leaves

Thomas Skyt · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Red clover is a herbaceous perennial with several ascending stems, usually twenty to sixty centimeters high. Leaves are arranged alternately on short stalks and comprise three oval or egg-shaped leaflets. Many plants have a pale V-shaped marking on the upper surface of each leaflet, though it is absent on some plants and is not a sufficient identifying feature on its own. The leaflets are slightly hairy, with very finely toothed margins. The dense flower heads are almost spherical or egg-shaped, made up of numerous small, pea-like flowers ranging from pink to purple. Upper trifoliate leaves are generally found just below the head. After flowering, small pods containing seeds remain inside the drying head; no long pods hang outside. The root system includes a distinct main root and nodules containing nitrogen-fixing bacteria.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Trifolium pratense as a nonnative species present in many California counties, including Placer, Butte, El Dorado, Humboldt, Sonoma and Sacramento. It is particularly associated with meadows, pastures, irrigated land and former fodder plantings. It can be locally common in cool mountain and coastal areas, but occurs less often on dry, open slopes of the hot Sacramento Valley without water. White clover, Trifolium repens, is often far more familiar on urban lawns, so information about these two species should not be mixed. Garden clover may grow on private or chemically treated property.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In mild climates, leaves emerge after winter moisture returns and remain through spring. The most tender leaflets are generally available before flower heads form. Flowering often begins in spring and continues through summer, especially on irrigated meadows and in cooler areas. As flowers fade, the heads turn brown and seeds mature inside small pods. Aboveground growth declines during intense heat in the Central Valley. The statement that “clover can always be eaten” is false: young leaves and fresh flower heads have a limited period of good quality even when old stalks remain standing.



Red clover (Trifolium pratense) — rounded pink-purple flower head above hairy three-part leaves

AnRo0002 · CC0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Plants For A Future explicitly confirms eating young Trifolium pratense leaves raw, especially before flowering. They are slightly grassy and somewhat hairy, and are suited to adding in small amounts to other greens. The species reference emphasizes that larger quantities of leaves have traditionally been preferred cooked, so enormous bowls of raw clover should not be recommended.

Young pink-purple flower heads are also explicitly listed as edible raw. They may be separated into individual tender flowers and used fresh. Old browning heads become coarse. Dry seeds contain trypsin inhibitors. The species reference allows sprouts after germination, but dry unprocessed seeds are not part of this article's food. Roots are normally cooked and are not considered here.

Clover contains phytoestrogenic isoflavones; people for whom such substances are contraindicated should not consume concentrated preparations or regularly large portions without professional advice.

HOW NOT TO CONFUSE IT

White clover, Trifolium repens, has long creeping stems, small white or pink-tinged heads and separate leafless flower stalks arising from the creeping shoot. Red clover's stems are taller and hairy, with pink-purple heads generally positioned beside leaves. Some native Californian Trifolium also have three leaflets and pink flowers, so species cannot be determined solely by color and three leaflets. Pastures may be chemically treated or contaminated by animal waste. Raw flowers from ornamental beds with unknown treatments are unsuitable for food.

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White clover — creeping three-leaflet greens and white flower heads · Trifolium repens

Trifolium repens

On damp California lawns and beside rural paths, a low green carpet often grows. It consists of small leaves, each with three rounded leaflets; above them, white or slightly pink balls of flowers rise on slender stalks. This is white clover, a widespread perennial. Food references describe its young greens and flowers eaten raw, but this species requires moderation: some plants contain compounds that can release hydrogen cyanide.



White clover (Trifolium repens) — creeping green stems with three leaflets and rounded white flower heads

Prazak · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

White clover is a low perennial herb. Its long creeping stems lie almost on the ground and can form roots where they touch the soil. In this way, one plant gradually covers an entire green patch.

Each leaf consists of three separate leaflets. They are small, rounded-oval, with very fine teeth along the margins. Many leaves show a pale crescent or curved marking, but this marking is not always present. The leaves grow on long, thin stalks, so they rise above the creeping shoots.

Flowers are gathered in a small, spherical head. Up close, it consists of many individual tiny flowers typical of the pea family. They are white at first, sometimes turning pale pink or brown later. After flowering, the heads droop and small dry seed pods form within them.



White clover (Trifolium repens) — creeping green stems with three leaflets and rounded white flower heads

Reaperman · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Trifolium repens originated in Europe and is now widespread throughout most of California, apart from the driest desert areas. It occurs on lawns, pastures, moist meadows, in gardens and fields, and in some forest openings.

In the Sacramento Valley, clover can be particularly abundant on regularly watered ground. Its low stems tolerate mowing and continue growing between the blades of grass. Without summer water, the green carpet may dry out or become dormant, so clover on an irrigated lawn looks different from clover on a dry, sunny roadside.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In a mild climate, leaves may remain throughout winter, with new tender growth after rain. Young greens are generally especially abundant in spring and early summer; on irrigated land, fresh leaves can be available considerably longer.

According to UC IPM, white clover may flower in California from March through December. In cooler areas, the main flowering period is spring and summer. Seeds ripen after the flower heads turn brown, generally during the warm months and autumn.

WHAT IS EATEN WITHOUT FIRE

Young leaves. University food references describe raw consumption of Trifolium repens greens. Tender leaflets have been added in small amounts to other salad greens. Their flavor is mild and slightly grassy.

Young shoots. The thin, creeping shoots are another aboveground part of the plant. Iowa State University Extension classifies the aerial parts of white clover as edible. As with leaves, this concerns tender new growth, not old, woody parts.

Fresh flowers. White clover heads are also listed as edible. Because they consist of many tiny individual flowers, they are most often used as a small addition rather than as a principal leafy food. Raw flowers are available during flowering, whereas young leaves may emerge earlier.

This edible plant has an important natural characteristic. White clover has two biochemical types: some populations can release hydrogen cyanide when their tissues are damaged, while others have little or no such ability. The difference is genetic and cannot be determined by the pattern on the leaf. Fresh white clover should therefore not be consumed in large quantities; regarding a thick lawn carpet as an unlimited source of raw food would be particularly unwise.

HOW NOT TO CONFUSE IT

Strawberry clover, Trifolium fragiferum, also has three leaflets and grows in moist places, but its flower heads later become swollen and pinkish, resembling tiny strawberries. White clover heads retain a more ordinary form and do not become so markedly inflated.

Creeping woodsorrel, Oxalis corniculata, also has three leaflets, but each is distinctly heart-shaped, while its flowers are yellow with five petals rather than the numerous white flowers of a clover head. The number “three” alone cannot identify a plant.

White clover has a feature invisible in the shape of its leaflets: some plants contain cyanogenic compounds and enzymes that can release hydrogen cyanide when tissue is damaged, while others do not. This natural polymorphism is confirmed by research on Trifolium repens. The two forms cannot be distinguished by a white leaf mark. Therefore, mention of raw food use does not make any clover patch a safe basis for a large salad. When the plant's identity and origin cannot be assessed, it is more sensible to choose other greens.

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Garden nasturtium — round leaves, colorful flowers and peppery taste · Tropaeolum majus

Tropaeolum majus

In the mild climate of the California coast, long green vines sometimes trail over old fences and grassy banks. Their round leaves resemble little umbrellas, and red, orange or yellow flowers with long spurs bloom among them. This is garden nasturtium, Tropaeolum majus. It is often cultivated, but also occurs beyond gardens in California. Raw use is documented for its leaves, flowers, tender buds and green fruits, each available at a different stage.



Garden nasturtium (Tropaeolum majus) — rounded shield-shaped leaves and orange spurred flowers

Forest & Kim Starr · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Nasturtium is a herbaceous plant with long, succulent stems. Depending on climate and variety, it forms a low carpet or climbs over nearby plants by means of its long leaf stalks. It is not a woody vine. Young shoots are smooth, green or reddish and break quite easily.

Leaves are rounded, with entire or gently wavy margins. The central feature is that the leaf stalk attaches not at the edge of the blade but closer to its center underneath. Veins radiate in a fan from that point. This shape is called peltate. Leaf size ranges from several centimeters to the width of a palm, depending on age and growing conditions.

Flowers grow singly on long stalks. They have five petals and a conspicuous tube-like spur behind them. Their colors vary: yellow, orange and red, sometimes cream or nearly burgundy. Stamens are visible inside. After flowering, a small green fruit develops, later separating into three rounded seed-bearing portions. Young fruits are succulent; older ones dry out.



Garden nasturtium (Tropaeolum majus) — rounded shield-shaped leaves and orange spurred flowers

Kajetan Dzierżanowski (Ogrodnikk) · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Calflora regards Tropaeolum majus as an introduced plant that has escaped from gardens. Observations are especially numerous in San Francisco, San Diego, Orange and Los Angeles counties and in other coastal areas. It can be found around old gardens, fences, path edges and shaded slopes with moderate moisture.

Around Sacramento, nasturtium is chiefly familiar as a garden plant. The hot, dry summer makes it difficult for succulent growth to persist without irrigation, so it should not be described as a widespread wild weed of the valley. On the cooler coast, it is much more likely to survive and reproduce on its own.

The species originated in Central and South America. Its occurrence in California does not make it native. It belongs in this nature atlas because some escaped plants provide raw food, not because they are found everywhere.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In a mild coastal climate, new leaves appear after autumn and winter rain and may persist nearly year-round in sheltered places. In hotter inland California, the tenderest shoots are often found in winter and spring; plants may dry out in summer heat.

Flowering usually increases in spring and continues through summer in cool areas. Individual flowers can appear from late winter or in autumn, depending on climate. Buds are edible shortly before opening; open flowers are available during the flowering period.

Green fruits develop soon after petals fall, often from late spring into autumn on the cooler coast. Later they dry and separate into three seed portions. These are distinct stages: a soft green fruit and a dry seed have different structures and tastes.

WHAT IS EATEN WITHOUT FIRE

Young leaves. They are eaten raw, providing a peppery taste in salads. North Carolina State University Extension expressly lists them as an edible part of Tropaeolum majus. Tender leaves are softer than old ones and have a characteristic mild mustard-like pungency. Clean leaves can be torn by hand and mixed with other greens.

Open flowers. Fresh petals and the whole tender flower are eaten without cooking. They also have a mildly peppery flavor. Gather flowers only from a positively identified plant: bright color does not establish the edibility of another ornamental species.

Tender buds. Before opening, the buds are still compact but soft. Food references include them among edible parts. They can be eaten fresh as a small, spicy addition. Salting and pickling are not considered here, as they involve different preparation and conditions.

Young green fruits. In nasturtium they are small, formed of three rounded parts and have a pungent taste. The university botanical reference confirms their edibility. Mature dry seeds are also described there as edible, but without separate confirmation of a specific raw use, they are not recommended here as a principal food supply.

HOW NOT TO CONFUSE IT

The combination of a rounded leaf with its stalk attached near the middle, a long succulent shoot and a large flower with a spur is distinctive. Watercress, Nasturtium officinale, despite the similar English common name, has leaves made up of separate leaflets, tiny white flowers and a watery habitat. The two plants belong to different families and grow in different conditions.

Some ornamental plants also have rounded leaves but lack the characteristic floral spur. A beautiful garden flower is not necessarily edible. An especially important practical hazard is insecticide and other chemical treatment of flower beds. Even correctly identified nasturtium should not be taken for food from unknown municipal displays or private gardens without permission.

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Southern cattail — tender pale shoot bases among marsh leaves · Typha domingensis

Typha domingensis

Beside a quiet pond or in a brackish ditch, tall narrow leaves may form a dense green wall. A stalk rises among them with two elongated parts of an inflorescence: a pale male portion above and a brown female portion below. This is southern cattail, one of the cattails whose succulent lower stems and rhizomes are documented as edible without heating.



Southern cattail (Typha domingensis) — tall narrow leaves and separate upper and lower flower spikes

US National Park Service (individual photographer unknown) · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

Cattail is a large perennial herb with underground rhizomes. Its long, flat leaves arise from the base, often reach two to three meters and taper to thin, sharp tips. They are relatively narrow, green and have no large teeth. Orange-brown glandular dots may be visible near the base on the inner surface.

The flowering stalk is straight and tall. Its upper section bears male flowers, while the cylindrical female section below is usually cinnamon brown. A short bare section of the axis is often visible between them. As it ripens, the female section becomes a dense mass of fluffy seeds. Botanists distinguish cattail species by their inflorescences, glands and minute floral details. Spring leaves alone are insufficient for reliable identification.

WHERE IT GROWS AND HOW COMMON IT IS

Typha domingensis occurs in California in marshes, shallow waters, ponds and ditches, particularly in the south of the state. There are observations in Sacramento, Yolo and neighboring counties as well, but not every cattail in the Central Valley belongs to this species. It tolerates slightly saline water better than broadleaf cattail.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young, pale bases emerge when growth resumes in spring; they are generally most tender in spring and early summer. Flowering stems form later, while mature rhizomes persist year-round. Actual suitability for gathering, however, depends less on the month than on the cleanliness of the water body.

WHAT IS EATEN WITHOUT FIRE

Lower pale portions of the stems. The USDA NRCS specifically states that the juicy lower stems of southern cattail may be eaten raw. Peeling off the coarse outer sheaths reveals a softer whitish interior. This does not mean the green upper leaves are also salad food.

Rhizomes. The USDA reference also describes a raw method for this species. Underground portions contain starch and fibers but may be contaminated with silt in their natural setting. Digging them up destroys the plant and requires the landowner's permission.

HOW NOT TO CONFUSE IT

Broadleaf cattail, Typha latifolia, typically has wider leaves, and its male and female flowering sections almost touch. In Typha domingensis there is usually a gap, and brown glands occur near the leaf bases. The similar narrowleaf cattail, Typha angustifolia, often has darker female spikes. Hybrids also occur within this group.

The main danger is not a poisonous look-alike but the water. The CDC reports infections with the parasite Fasciola after raw freshwater plants have been eaten. Wastewater and chemical contamination likewise cannot be excluded by visual inspection. The botanical edibility of these parts therefore does not make raw gathering from an unknown ditch safe.

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Broadleaf cattail — tender spring shoots and starchy rhizomes · Typha latifolia

Typha latifolia

Beside California ponds, quiet backwaters and marshy banks grow tall herbs with long, upright, narrow leaves. During summer, familiar brown cylindrical spikes rise above them. This is broadleaf cattail. Different edible parts are available at different times of year. In this guide to food without fire, the focus is on pale young shoots and cleaned rhizomes. Their seasons and structures differ considerably.



Broadleaf cattail (Typha latifolia) — wide upright leaves and dense brown cylindrical female spike

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HOW TO IDENTIFY IT

Cattail is a perennial herb that forms dense colonies through long underground rhizomes. Its leaves and stems can reach two or three meters. Leaves are long, flat and stalkless, rising almost vertically from the base and clasping the stem at their lower ends. In the broadleaf species they are relatively wide compared with the leaves of some other cattails.

The most recognizable feature appears during flowering. On the tall stalk are two parts of one inflorescence: a narrower male section above, which produces pollen, and a dense female section below. Both may initially be greenish; later, the lower portion turns into a dark-brown cylindrical spike, sometimes longer than a hand.

A young spring shoot looks completely different. A cluster of narrow green leaves emerges from mud or water, and the base of the new shoot is pale, soft and juicy inside. Cattail is thus difficult to identify from early greens alone. In summer, mature inflorescences make it much easier to identify where its colony grows.



Broadleaf cattail (Typha latifolia) — wide upright leaves and dense brown cylindrical female spike

Hans Hillewaert · CC BY-SA 3.0 · Wikimedia Commons

WHERE IT GROWS AND HOW COMMON IT IS

Typha latifolia is one of the widely distributed cattail species in North America and elsewhere. In California it occurs by fresh waters, at the edges of lakes, canals and marshes, and beside slowly flowing creeks, including moist sites of the Central Valley and foothills.

With constant water, it can be very abundant: rhizomes spread, producing large, dense clusters of stems. Dry, open steppe and desert without water are a different habitat, where there are no cattail stands. The essential condition is wet soil rather than proximity to forest.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Spring brings young shoots while their lower portions remain tender. In lowland California, this often means March through May, and later at cooler elevations.

Inflorescences develop in late spring and early summer. At that time yellow pollen appears in the upper male portion. Flowering later ends and the lower spike darkens.

Rhizomes remain underground for most of the year. Ethnobotanical accounts describe their harvest mainly during autumn and winter, after the active growing season, when the underground part contains the plant's stored reserves.

WHAT IS EATEN WITHOUT FIRE

Young pale shoots. The outer green leaf sheaths are peeled away to reveal a soft inner portion, which is eaten raw. North Carolina State University Extension lists raw Typha latifolia shoots as edible at an early stage, when they are about 10–40 centimeters long. After the outer sheaths are removed, the soft pale interior tastes somewhat like cucumber. This is a short spring season; a mature rigid stalk is very different in tenderness from a young shoot.

Rhizomes and pale lower portions of the stems. Cattail has thick horizontal underground stems that store starch. According to North Carolina State University Extension, rhizomes of this species can be eaten raw. They are much denser than young shoots, so they are a different plant part with a different texture.

USDA ethnobotanical reviews identify the Kawaiisu and Cahuilla of California among peoples who used broadleaf cattail for food, together with other North American communities. Methods varied by plant part and must not be attributed identically to every people.

HOW NOT TO CONFUSE IT

Young cattail leaves can be confused with those of yellow flag iris, Iris pseudacorus. Iris has flat fans of leaves and later produces a vivid yellow flower, but never the characteristic cylindrical cattail inflorescence. Iris is poisonous; unidentified young leaves must not be tasted simply because they resemble cattail.

Cattail grows in water and silt and can accumulate pollutants from bottom sediments. Roadside ditches, agricultural runoff, water of unknown quality and stagnant sites are therefore poor sources of raw food. Aquatic habitats may also contain pathogenic microorganisms that simply peeling the outer sheaths will not remove. If water purity cannot be confirmed, it is better not to gather the plant for eating.

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Dwarf bilberry — low alpine mats and sweet blue berries · Vaccinium cespitosum

Vaccinium cespitosum

In wet high-elevation meadows of the Sierra Nevada, low patches of vegetation grow that barely resemble shrubs from knee height. Tiny oval leaves form a dense mat, and small blue berries hide among them in summer. This is Vaccinium cespitosum, dwarf bilberry, spelled Vaccinium caespitosum in some English-language sources. Its fully ripe fruit can be eaten raw without lighting a fire. Unlike tall huckleberry bushes, the harvest here must literally be sought at ground level.



Dwarf bilberry (Vaccinium cespitosum) — low alpine mat with small oval leaves and ripe blue-black berries

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HOW TO IDENTIFY IT

This is a very low deciduous dwarf shrub, often only a few centimeters tall, with many thin woody branches arising from a common base. New shoots are greenish and relatively soft, while old branches are brown and sometimes trailing. The small alternate leaves are oval or obovate, often finely toothed, though almost entire in some populations. In spring, tiny pinkish or whitish drooping flowers with short urn-shaped corollas develop in the leaf axils. Greenish, round berries form after pollination and gradually become bluish black under a fine waxy bloom. A small calyx scar is visible at the fruit tip, and the inside contains numerous tiny seeds. Leaves turn red or yellow and fall in autumn. The combination of low growth, small leaves and a genuine Vaccinium berry helps identify the plant.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora uses the accepted spelling Vaccinium cespitosum and reports several hundred Californian observations. The plant is native to high Sierra Nevada communities, favoring wet meadows, stream banks, subalpine forests and open, cold slopes. It requires adequately moist acidic soil and is not expected as a wild berry on a dry summer lawn in Sacramento. Mats can cover noticeable patches of suitable habitat, but the plants are so short that the yield per square meter is often modest. In some mountain sites, leaving trails is restricted because small turf-forming plants are easily trampled.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves emerge after snowmelt when the soil has thawed but remains moist. Small urn-shaped flowers open in late spring and early summer, later at high elevations. Green berries enlarge over several weeks and change to bluish black. In the Sierra, the most likely season for mature fruit is July through September, strongly dependent on elevation and the year. At sites where snow melts late, August often matters more than June. In autumn, leaves change color and gradually disappear until the following year. Small green berries are not ripe simply because they are visible.



Dwarf bilberry (Vaccinium cespitosum) — low alpine mat with small oval leaves and ripe blue-black berries

Dave Powell, USDA Forest Service, Bugwood.org · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe dark berries. Plants For A Future explicitly confirms raw use of Vaccinium caespitosum fruit, under the synonym of Calflora's accepted spelling Vaccinium cespitosum. A small berry is generally sweetish with a little acidity and often quite aromatic. It can be eaten whole and fresh, including its tiny seeds, or crushed into a cold berry purée. Ripe berries are soft and dark, often with a bluish bloom; hard green fruit is not the same food.

Storage. Delicate berries bruise and begin spoiling quickly without refrigeration. When natural drying is possible in clean, dry air, the fruit must become completely dry without mold. In a damp alpine climate, this is difficult. A small fresh portion eaten on the day of gathering is more reliable as practical food.

Leaves, roots and flowers are not included as raw food. Some references mention Vaccinium leaves in drinks made by brewing, but that is not a reason to eat them raw.

HOW NOT TO CONFUSE IT

Vaccinium membranaceum, the thinleaf huckleberry described earlier, is much taller and has larger leaves. Vaccinium ovatum stays green year-round and is more closely associated with the coast. Vaccinium caespitosum forms a low, almost trailing mat in moist mountain meadows. Closely related Vaccinium species may produce equally blue berries, so identification must consider shrub height, leaves and flowers rather than only fruit. Other alpine meadow plants can have inedible dark fruits; tasting a berry before identification is unsafe. Trampling small bilberry mats can also destroy future harvests.

SOURCES

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Thinleaf huckleberry — dark mountain berries in northern forests · Vaccinium membranaceum

Vaccinium membranaceum

On a sunny edge of a northern California conifer forest, a shrub with thin green leaves and small blue-black berries may grow. Toward the end of summer, birds, bears and other forest animals gather these berries. This is Vaccinium membranaceum, thinleaf huckleberry, one of the Pacific Northwest's most valued mountain berries. Its ripe fruits are edible raw and may be dried naturally for storage. It is not an ordinary weed of the Sacramento Valley: natural records are concentrated much farther north and at higher elevations.



Thinleaf huckleberry (Vaccinium membranaceum) — thin green toothed leaves and ripe almost-black berries

julie (Flickr, Idaho USA) · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Thinleaf huckleberry is a deciduous shrub that sometimes reaches one to one and a half meters, with slender branches. Young shoots are green and slightly angular, while older ones turn brownish. Alternate leaves are thin, ovate or elliptical, with fine marginal teeth, often bright green in spring. Unlike evergreen Vaccinium ovatum, they are not thick or leathery. The small, hanging flowers are greenish pink, with urn-shaped or bell-shaped corollas, usually growing singly in leaf axils. A round juicy berry develops afterward. Its tip shows a small five-pointed crown of remaining calyx parts, characteristic of blueberries and huckleberries. Fully ripe fruit is generally dark purple, sometimes almost black, and may have a waxy bloom. Many tiny seeds lie inside, rather than a single large stone. Leaves turn yellow or red and fall in autumn.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Vaccinium membranaceum as native to California, but records are primarily from northern mountain counties: Siskiyou, Plumas, Del Norte, Humboldt, Trinity, Sierra and Shasta. It is especially characteristic of forest edges, slopes and clearings in moist northern conifer forests, sometimes following fire. There are isolated records in Placer County, but these do not imply abundance in Sacramento itself. Shrubs favor acidic soil and adequate spring moisture, while they can tolerate drier conditions later in the season. In suitable areas, a good berry year may provide a noticeable harvest.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Thin leaves unfold in early mountain spring after snowmelt. Small flowers appear in late spring and early summer, sometimes later at altitude. Green berries gradually enlarge and darken. In northern California they generally ripen from July through September, later on cool high slopes than at lower elevations. A reddish or dark but still hard berry is not necessarily fully ripe. In autumn, leaves color and fall, while birds rapidly remove mature berries. A dried harvest may be available outside the season, but the shrub itself produces no fresh berries in winter.



Thinleaf huckleberry (Vaccinium membranaceum) — thin green toothed leaves and ripe almost-black berries

julie (Flickr, Idaho) · CC BY 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe dark berries. Plants For A Future explicitly confirms the raw use of Vaccinium membranaceum fruit. These berries are juicy, sweet with a noticeable tartness, and often strongly aromatic. They are eaten fresh on their own or crushed into a cold berry mixture. The minute seeds in mature pulp do not need to be removed.

Berries naturally dried without fire. The species food reference notes that Indigenous peoples of the Northwest dried the harvest for winter. To be suitable for storage, the fruit must be ripe, clean and completely dry, with no mold. Cool, damp weather often makes simple outdoor drying difficult.

Leaves, flowers, stems and roots serve only for identification in this article. Hot infusions made from certain Vaccinium species do not justify treating their raw leaves as safe salad greens.

HOW NOT TO CONFUSE IT

Vaccinium ovatum, the evergreen huckleberry of coastal California, has firm glossy leaves that remain through winter. Vaccinium parvifolium generally produces red berries and has differently shaped leaves and green stems. Some ornamental evergreen shrubs bear dark fruit that should not be called huckleberries solely because of a similar color. Thinleaf huckleberry is identified by a deciduous shrub, thin toothed leaves, urn-shaped flowers and dark berries with a small calyx remnant. Rules may restrict gathering in protected forests, and in poor harvest years it is sensible to leave some berries for wildlife.

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Oval-leaf blueberry — blue berries of cool northern forests · Vaccinium ovalifolium

Vaccinium ovalifolium

In a cool northern conifer forest, a low shrub may bear little oval leaves and solitary bluish berries. At the end of summer, fully ripe fruit is soft, with a slight waxy bloom and a pleasant sweet-tart flavor. This is oval-leaf blueberry, widespread north of California but reaching the state at the southern edge of its natural range. Its ripe berries are eaten fresh.



Oval-leaf blueberry (Vaccinium ovalifolium) — oval leaves and waxy ripe blue-black berries

Kristof Zyskowski & Yulia Bereshpolova · CC BY 2.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A deciduous shrub from half a meter to one or two meters tall, sometimes taller in favorable conditions. Young stems are slender and branching, greenish at first and later becoming brown. Leaves are alternate, oval or broadly ovate, with entire or very finely toothed edges and pointed tips, on short stalks. In spring, small pinkish-white urn-shaped flowers with narrow openings appear in the leaf axils. The berries are rounded, generally about a centimeter across, blue-black and often bluish from a waxy coating, with a small calyx scar at their tips. The juicy flesh contains tiny seeds.

WHERE IT GROWS AND HOW COMMON IT IS

The USDA Forest Service includes California among the states within the natural range of Vaccinium ovalifolium, while emphasizing the species' general association with the cool, moist forests of the Northwest. It is not an ordinary blueberry of the Sacramento Valley or a plant of dry southern slopes. Search for it only within the northern cool conifer communities at the range boundary, where acidic soil and sufficient moisture occur. Actual presence at any site cannot be deduced from a general map of states and must be confirmed by botanical observations.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Flowers appear in late spring or early summer; the fully ripe blue-black berries are available in the second half of summer and into early autumn. In cooler northern forest sites, snowmelt and seasonal weather can shift the timing. Assess ripeness by a soft, fully dark berry rather than relying on the date alone.



Oval-leaf blueberry (Vaccinium ovalifolium) — oval leaves and waxy ripe blue-black berries

Alpsdake · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Ripe berries. Plants For A Future explicitly confirms the raw use of Vaccinium ovalifolium and describes a pleasant, sweet flavor with a little acidity. Mature berries are eaten fresh and may also be dried naturally for longer storage. Drying concentrates the flavor, making it somewhat reminiscent of raisins. The berries are relatively small, but in suitable northern locations the shrub may yield a noticeable harvest. Leaves, flowers and roots are not included in this species' confirmed raw diet.

HOW NOT TO CONFUSE IT

Vaccinium membranaceum has thinner leaves with conspicuous small teeth and often taller shrubs. Vaccinium parvifolium usually bears red ripe fruits, whereas oval-leaf blueberry is blue-black when mature. Vaccinium uliginosum is associated with wet alpine meadows but can resemble this species. Hybrids are known among some northern Vaccinium, so one berry cannot reliably identify a plant: consider the leaves, flowers, shrub height and habitat together.

SOURCES

- https://research.fs.usda.gov/feis/species-reviews/vacovl
- https://pfaf.org/user/Plant.aspx?LatinName=Vaccinium+ovalifolium
- https://commons.wikimedia.org/wiki/Vaccinium_ovalifolium

Evergreen huckleberry — dark berries among glossy coastal leaves · Vaccinium ovatum

Vaccinium ovatum

California's evergreen huckleberry does not shed its leaves for winter. During the wet winter, the shrub stays dark green. In spring, reddish new growth appears at the ends of young twigs, followed by tiny pink bells. Closer to autumn, dark edible berries ripen among its firm, glossy leaves.



Evergreen huckleberry (Vaccinium ovatum) — glossy dark leathery leaves and small nearly black ripe berries

Ben Cody · Public domain (PD-self) · Wikimedia Commons

HOW TO IDENTIFY IT

This is a many-branched evergreen shrub, from half a meter to several meters tall depending on conditions. Its twigs are often reddish brown. The leaves are small, oval and leathery, glossy dark green above and noticeably paler beneath. Very fine teeth are often visible along their edges, and young leaves can be reddish.

Flowers resemble tiny urns: white or pale pink, hanging in groups from leaf axils. The fruits are small rounded berries that redden at first, then turn dark purple or almost black when ripe. They are generally glossy and gather in small groups close to the branches.

WHERE IT GROWS AND HOW COMMON IT IS

This is a native species of the Pacific coast, from California to British Columbia. In California, it is especially characteristic of moist coastal forests, the understory of redwood and mixed conifer forests, oak scrub and shaded slopes of the Coast Ranges. Calflora records many observations in Mendocino, Marin, Santa Cruz, San Mateo, Humboldt and other coastal counties.



Evergreen huckleberry (Vaccinium ovatum) — glossy dark leathery leaves and small nearly black ripe berries

Leslie Seaton · CC BY 2.0 · Wikimedia Commons

In suitable moist conditions, it can form dense thickets. However, it is not an everyday abundant berry bush in the hot low Sacramento Valley, open dry fields or deserts.

WHEN THE EDIBLE PARTS ARE AVAILABLE

The leaves stay on the shrub all year. That helps identify it even in winter, but it does not mean the leaves provide year-round food for people.

Flowering in California occurs mainly in spring, roughly March through May, sometimes over a longer period. Berries usually ripen from July to October. On the cool coast some fruits can remain attached later, while ripening dates shift with elevation and weather.

WHAT IS EATEN WITHOUT FIRE

Ripe berries. Fresh dark berries are eaten without cooking. According to the USDA Forest Service, ripening in California usually takes place from July through October; this schedule should not be generalized to every moist region. The flavor can be sweet, sometimes somewhat mealy and distinctive. Fruit may be mashed or crushed, and part of the harvest kept after natural drying. Historical evidence of California huckleberry food use among Indigenous peoples of the Pacific coast is included in the USDA Forest Service review; Karuk publications also mention this berry species.

Dried berries were preserved as food after summer. That makes berry food available later but does not turn the shrub into a year-round fruiting plant.

Fresh leaves, flowers and shoots are not proposed as raw food here: the botanical and historical accounts used for the article confirm that the berries are edible. The shrub is evergreen, but its edible fruits are seasonal. Dark foliage in winter does not imply the presence of ripe berries.

HOW NOT TO CONFUSE IT

The closely related red huckleberry, Vaccinium parvifolium, has red ripe fruit, noticeably greener stems and thinner leaves that more often fall during the cool season. Salal, Gaultheria shallon, has much larger, broader and coarser leaves, with fruit forming different clusters. Do not determine the edibility of an unknown shrub from black berries alone; examine leaves, flowers and branching together.

SOURCES

- USDA Forest Service, Vaccinium ovatum, morphology, season, habitat and fresh/dried food: https://research.fs.usda.gov/feis/species-reviews/vacova
- Calflora, Vaccinium ovatum: https://www.calflora.org/app/taxon?crn=8200
- Karuk Tribe, Uxraah: Native Edible Berries: https://nctcc.org/wp-content/uploads/2017/05/G8L2NativeEdibleBerries_booklet.pdf
- Oregon State University, Vaccinium ovatum: https://landscapeplants.oregonstate.edu/plants/vaccinium-ovatum

Red huckleberry — red berries on bright green forest branches · Vaccinium parvifolium

Vaccinium parvifolium

In the wet conifer forests of Northern California, including on decaying stumps and old fallen trunks, grows a shrub with slender, bright-green branches. The USDA Forest Service notes this connection between red huckleberry and moist forest habitat. Its berries resemble little red beads. They remain red even when fully ripe. This is Vaccinium parvifolium, a native species of moist conifer forests.



Red huckleberry (Vaccinium parvifolium) — bright green thin branches bearing translucent scarlet berries

Meggar (original English Wikipedia uploader) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The shrub generally grows from one to several meters tall. It has many slender branches of a characteristic bright-green color. Even after the leaves fall, the green stems remain clearly visible among the forest litter. The small, oval, alternate leaves are soft and thin, normally with entire margins rather than conspicuous teeth. In the cold season most leaves fall, although some can remain in milder places.

The flowers are small and urn-shaped, pale pink or greenish. They hang from the leaf axils on short stalks. The fruits are spherical, roughly pea-sized or slightly larger, green at first, then pink, becoming translucent scarlet at full maturity. On a slender branch, the berries often hang individually.

WHERE IT GROWS AND HOW COMMON IT IS

Red huckleberry grows in Pacific conifer forests from Northern California through Oregon and Washington to Canada. Within California it is found mainly in wet northern coastal and mountain forests, beside mossy stumps, fallen wood and beneath conifer cover. In soil rich with decaying wood, the shrub may form small groups.



Red huckleberry (Vaccinium parvifolium) — bright green thin branches bearing translucent scarlet berries

Leslie Seaton · CC BY 2.0 · Wikimedia Commons

It is a characteristic native plant of suitable moist forest, but not a typical berry of the Sacramento Valley's open dry fields or a shrub found throughout California without exception.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves open in spring. Flowers most often appear from April through June; in California many botanical observations place flowering in May and June.

Berries redden and ripen later, during summer. For the northern Pacific coast, July through September is a useful guide, particularly August and September. Particular California sites may differ with elevation and temperature. Red huckleberry with fruit is generally not found in winter; its green branches persist even without leaves.

WHAT IS EATEN WITHOUT FIRE

Ripe red berries. They are eaten fresh once the fruit is soft and evenly red. They are generally tart, less sweet than some dark huckleberries. There is evidence of fresh Vaccinium parvifolium food use among Indigenous peoples of the Pacific Northwest; the Californian Karuk booklet Uxraah also includes this species as a berry plant.

Dried berries. In a USDA ethnobotanical review, fresh and preserved fruit is mentioned for Northwestern Indigenous peoples. Natural drying permitted stocks to be used after the season. These accounts should not be confused with hot berry dishes: only food without heating is addressed here.

This article does not recommend eating green stems, bark or leaves raw. They help identify the species, but its verified edible part is the fruit.

HOW NOT TO CONFUSE IT

Evergreen Vaccinium ovatum has firm, glossy foliage throughout the year, and its fruit becomes almost black when ripe. Red huckleberry generally retains green branches, has small, thin leaves and fully ripe red berries. Similarly colored red fruit from another forest shrub cannot identify the species by itself. Leaves, flower shape and green stems must be considered together.

Green, angular twigs are visible even after most leaves fall, but a young shrub can retain some foliage in winter. The USDA Forest Service specifically notes that juvenile leaves may sometimes be evergreen, whereas those of mature shrubs generally fall. Therefore, “red huckleberry is always completely leafless in winter” is not a reliable identification rule.

SOURCES

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- Calflora, Vaccinium parvifolium: https://www.calflora.org/app/taxon?crn=8201
- Portland State University, Red Huckleberry, traits and season: https://gardenecology.pdx.edu/plants/vaccinium-parvifolium-red-huckleberry/index.html
- Karuk Tribe, Uxraah: Native Edible Berries: https://nctcc.org/wp-content/uploads/2017/05/G8L2NativeEdibleBerries_booklet.pdf

Bog blueberry — blue-waxed berries of cold mountain meadows · Vaccinium uliginosum

Vaccinium uliginosum

In wet high-elevation meadows and beside cold Sierra Nevada streams, a low shrub sometimes grows with bluish-blue berries. Its leaves are small and smooth, flowers resemble little white urns, and ripe fruit has a delicate bluish bloom. This is bog blueberry, a Californian native member of Vaccinium whose habitat is quite unlike cultivated blueberries of the warm valleys.



Bog blueberry (Vaccinium uliginosum) — small smooth oval leaves and ripe blue-black berries with waxy bloom

Wkee4ager · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A low, deciduous shrub, generally 20–60 centimeters tall, branching strongly near the base. Young twigs are slender and carry small alternate elliptical or obovate leaves, without obvious marginal teeth. The upper leaf surface is darker and the underside paler, with visible veins. Small white or pinkish flowers hang singly or in small groups from leaf axils. Their corollas are urn-shaped, with a small opening. Round blue-black berries develop beneath a bluish waxy bloom, with a small crown from the calyx visible at the tip.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora lists the species as native to California and associated with wet habitats. It is especially characteristic of mountain meadows, marshy lake edges, damp hollows and sites near streams in the Sierra's high-elevation zones. Calflora also recognizes the native western subspecies V. uliginosum subsp. occidentale. Characteristics of populations worldwide should not be assigned automatically to every local shrub. Bog blueberry generally does not grow wild in the Sacramento Valley.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Snow melts at different times in the mountains, so leaves often unfold and flowers open in late spring or early summer. Berries generally ripen during the second half of summer, approximately July through September, later in high mountain meadows. A ripe berry becomes soft and evenly blue; green or reddish fruit is not ready.

WHAT IS EATEN WITHOUT FIRE

Ripe berries eaten raw. A USDA Forest Service guide to northwestern berry shrubs specifically states that Vaccinium uliginosum fruit is eaten raw or after cooking. In the field, select only soft blue berries with undamaged skins. They are juicy, ranging in flavor from moderately sweet to tart, and contain small seeds. Some of the harvest may be dried without heating, but fruit gathered in wet habitats develops mold very quickly during storage. Leaves and roots are not considered raw food.

HOW NOT TO CONFUSE IT

Bog blueberry differs from Vaccinium cespitosum in height and leaf structure, though the two may grow near each other in alpine meadows. Vaccinium membranaceum usually forms taller shrubs and often has finely toothed leaves; berry color and size vary considerably. Similar dark fruit of other genera does not have the same combination of urn-shaped flower, small floral crown and characteristic fruit calyx. Identify the entire plant, not a single blue sphere.

SOURCES

- Calflora, Vaccinium uliginosum: https://www.calflora.org/app/taxon?crn=8444
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Hookedspur violet — spring greens and purple flowers · Viola adunca

Viola adunca

In spring, a small plant with heart-shaped leaves and violet flowers may appear in a cool meadow or on the edge of a California forest. Dark veins are visible at the center of each flower, and a small curved spur is hidden behind it. This is Viola adunca, hookedspur violet, one of the native wild violets of western North America. Its young leaves and flower buds are described as food eaten without fire. The plant is small, however, and gathering a few leaves should never result in the destruction of a rare local colony.



Hookedspur violet (Viola adunca) — purple veined flower with short curved spur and heart-shaped leaves

DouglasGoldman · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a low perennial with several soft stems, usually only five to fifteen centimeters tall. The alternate leaves are heart-shaped or rounded-ovate, finely toothed along their margins and carried on long stalks. They are tender and slightly hairy in spring, becoming firmer with age. Each flower grows alone on a slender stalk and has five petals. The two upper petals may point slightly upward, the two side petals outward, and the broad lower petal is marked with dark lines that guide insects toward the center. A short spur projects behind the lower petal and is often slightly curved. Flower color ranges from bluish violet to deep purple, sometimes becoming paler near the base. After flowering, a small capsule develops, opening to scatter its seeds. Very young leaves without flowers do not always allow this species to be distinguished confidently from other violets.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Viola adunca as native to California, with more than fifteen hundred observations. It occurs in open woodland, on grassy slopes, in cool coastal communities and in mountain meadows. The species has several morphological forms, and botanists recognize considerable geographical variation within it. Around Sacramento, it is more likely to be encountered on a trip to the foothills or coast than as a widespread urban green. On exposed, dry sites without winter moisture, the violet soon becomes inconspicuous. In some places it is an important food plant for native butterflies, making it particularly unwise to pull up an entire rosette.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Tender green leaves appear after the wet winter period or snowmelt. At low coastal elevations, flowering may begin as early as March; on higher, cooler slopes it may continue into June. Species guides for temperate climates describe spring flowering, but the precise California schedule depends on elevation and precipitation. Flower buds are available immediately before the petals open, while young leaves occur near the beginning of active growth. By summer, flowers have faded on drying slopes and leaves may become tough; in damp, shaded places the foliage persists longer.



Hookedspur violet (Viola adunca) — purple veined flower with short curved spur and heart-shaped leaves

DouglasGoldman · CC BY-SA 4.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future directly confirms their raw use. They are soft, with a neutral green flavor, and a few may be chopped into a cold mixture of leaves. The fresh tissue is sometimes slightly mucilaginous, as is characteristic of several violets. Leaves are not a substantial food supply and should not be gathered from a lone plant at a protected site.

Flower buds. The species-specific source also records them eaten raw. A tender bud can be a tiny addition to greens, but most buds should be left if the goal is to preserve the local population. The same source does not establish raw use of fully opened flowers as clearly, so this article deliberately limits its recommendation to buds.

Roots, mature capsules and seeds are excluded from the edible parts. Gathering where pesticides or pollution may be present is likewise excluded.

HOW NOT TO CONFUSE IT

Viola glabella has yellow flowers and is more characteristic of moist woodland sites; Viola pedunculata often bears large yellow flowers on open spring slopes. Other purple violets are distinguished from Viola adunca by the spur, petal shape, leaf margins and local range. Garden hybrid violets may look similar but do not necessarily share the same species-specific food history. Purple color alone cannot identify a plant: other flowers also have five petals but differ in ovary structure and foliage. If the species is uncertain, leave the small rosette in place.

SOURCES

- https://www.calflora.org/app/taxon?crn=8281
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Stream violet — yellow woodland flowers and tender spring leaves · Viola glabella

Viola glabella

In a cool, damp part of a California forest, where the soil stays soft after spring rain, low-growing yellow violets sometimes bloom. Their flowers resemble little bright lights above broad, heart-shaped leaves. This is Viola glabella, stream violet or smooth yellow violet, a native North American perennial. Tender young leaves and flower buds are described as foods eaten without heating. For this particular yellow-flowered violet, however, a species guide warns of digestive upset if large quantities of flowers are consumed.



Stream violet (Viola glabella) — yellow five-petaled spurred flower over heart-shaped forest leaves

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Stream violet is a small herbaceous plant, usually ten to twenty centimeters tall, with a perennial underground base and soft aboveground stems. The leaves are rounded and heart-shaped, with pointed or slightly extended tips, finely toothed margins and prominent veins spreading from the base. They are alternate and carried on fairly long stalks. In spring, single flowers open on slender pedicels. Each corolla has five yellow petals, the lower one usually marked by fine dark veins. A short spur occurs behind the petal, as on many violets. Green sepals are visible beneath the corolla. After flowering, small seed capsules form and open when ripe. In some plants the petals are almost uniformly yellow, while in others they bear brownish lines. For identification, distinguish true violet leaves from similar foliage of small forest herbs and examine the flower itself.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Viola glabella as native to California, with more than one thousand botanical observations. It is especially associated with moist redwood, Douglas-fir, yellow-pine and red-fir forests, as well as shaded stream banks and forest hollows. On the hot, exposed Sacramento plain, it should not be described as a common lawn green. It may grow in groups on north-facing slopes and in cool mountain woods, but small colonies are easily damaged by excessive gathering. The plant is sensitive to lack of moisture and is seldom conspicuous on a dry south-facing slope.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New leaves develop with spring moisture and after snowmelt. In cool coastal areas, some flowers may open in early spring; at higher elevations they appear later. The species guide gives April–May as the main flowering period, but California's season extends across different elevations and slope aspects. Buds are visible shortly before the yellow petals unfold. By the start of summer drought, some leaves become firmer and flowering stops. Green foliage may persist longer beside a damp stream, but buds and leaves have different edible seasons.



Stream violet (Viola glabella) — yellow five-petaled spurred flower over heart-shaped forest leaves

Stickpen · Public domain · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future directly confirms young Viola glabella leaves eaten raw. They are soft, slightly mucilaginous, with a neutral green flavor; a few can be added to other fresh herbs. An older leaf becomes coarser and is less pleasant to eat. Stripping a whole small plant for a salad makes little sense.

Young flower buds — only a little. The species-specific source mentions their raw use but also warns that the yellow flowers of this violet can cause diarrhea when eaten in quantity. Do not turn whole handfuls of flowers into food. For this cautious catalog, the recommendation is limited to a small amount of positively identified buds. People with sensitive digestion would be better off avoiding the flowers entirely.

Roots, leaves from old rotting plants, seed capsules and seeds are excluded. Raw gathering along streams is appropriate only where soil and water are clean.

HOW NOT TO CONFUSE IT

Viola adunca, described separately, usually has purple rather than yellow flowers. Viola pedunculata also blooms yellow but more often grows on open, grassy spring slopes and differs in leaf and flower-stalk structure. Buttercups of the genus Ranunculus can have yellow five-petaled flowers, but their leaves and corollas are constructed differently, and some buttercups irritate skin and mucous membranes. Not every yellow woodland flower is a violet. The identifying combination in Viola glabella is heart-shaped foliage, five petals with a characteristic lower petal, and a spur. When only leaves are visible, it is better to postpone gathering.

SOURCES

- https://www.calflora.org/app/taxon?crn=8289
- https://pfaf.org/User/Plant.aspx?LatinName=Viola+glabella

Sweet violet — fragrant flowers and soft winter leaves · Viola odorata

Viola odorata

In the cool shade of an old garden or along an overgrown fence, small violet flowers may appear above a carpet of heart-shaped leaves near the end of winter. On a warm day, their scent is delicate and sweet, although not every flower is equally fragrant. This is sweet violet, a European species that occasionally escapes cultivation in California. Its young leaves, buds and open flowers may be eaten raw; the seeds are not used for food.



Sweet violet (Viola odorata) — fragrant deep-purple flowers above rounded heart-shaped leaves

Christian Fischer · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

A low perennial herb, usually five to fifteen centimeters above the ground. It has a short rhizome and creeping runners that root and gradually form separate rosettes. The long-stalked leaves are rounded and heart-shaped, with a deep notch at the base, a rather blunt tip and finely scalloped margins; young blades are sometimes slightly hairy. Leafless flower stalks each bear a single blossom. The five petals have an irregular arrangement: two point upward, two outward, while the lower one is broader and has a short spur. Flower color is usually rich lilac or deep purple, although white forms also occur. The fruit is a small three-valved capsule containing seeds; some later, self-pollinating flowers are almost inconspicuous.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora classifies Viola odorata as nonnative and records around 130 observations outside ordinary garden cultivation. It occurs near old houses, along damp, shaded woodland edges, beside forest paths and streams, including sites in Marin, Santa Cruz, San Mateo, Sonoma and Butte counties and isolated places in Sacramento and Yolo. It is not a widespread wild violet across the whole state: many native Viola grow on natural slopes and in conifer forests. Near homes, respect land ownership and the possibility of soil treatment.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the mild coastal climate, leaves may persist in winter and almost year-round where moisture remains. The tenderest small leaves emerge after winter rain. The first fragrant flowers open in late winter and early spring, and blooming may continue into May in cool shade. With hot summer weather, new leaves become coarser and flowers disappear. For food, choose an undamaged young leaf or a flower just after it opens, not old seed capsules.



Sweet violet (Viola odorata) — fragrant deep-purple flowers above rounded heart-shaped leaves

Majercsik László (LaMa8) · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves. Plants For A Future separately confirms the raw use of Viola odorata leaves. They are soft, mild in flavor and slightly mucilaginous, suitable for a cold green mixture.

Flower buds and open flowers. They are eaten fresh one at a time or added to other plants. Their aroma is delicate and their flavor somewhat sweet. The tough little flower stalks are generally unnecessary.

Calflora warns that the seeds of this species should not be eaten, so mature capsules must not be opened to collect food seeds. Roots and rhizomes are not part of the raw diet.

HOW NOT TO CONFUSE IT

Native Viola glabella frequently bears yellow flowers and has different leaves; Viola adunca usually has blue-violet flowers on more visible aboveground stems. Garden pansies, Viola tricolor and their hybrids, generally have multicolored flowers and less carpet-like growth. Not every violet-colored five-petaled herb belongs to Viola: the heart-shaped leaf, asymmetric spurred blossom and fruit structure matter together. Fragrance can be absent in cold weather and must not be the sole means of identification.

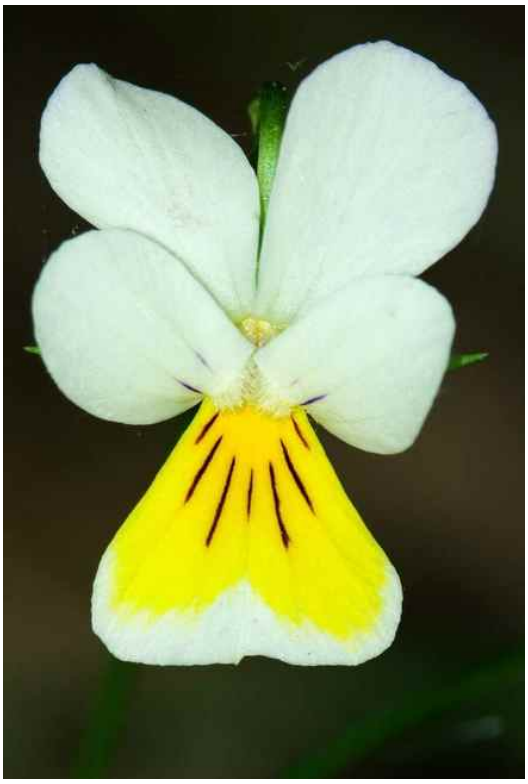
SOURCES

- https://www.calflora.org/app/taxon?crn=8298
- https://pfaf.org/USER/plant.aspx?LatinName=Viola+odorata
- https://www.calflora.org/app/countytaxon?crn=8298

Wild pansy — small multicolored blooms and tender greens · Viola tricolor

Viola tricolor

Near a former flower bed or on a cool, grassy woodland edge, a small plant sometimes appears with flowers combining purple, yellow and white. Each flower resembles a miniature pansy, but the plant is usually much smaller than large-flowered garden hybrids. This is Viola tricolor, wild pansy, an uncommon escape from cultivation in California. Young leaves and flower buds can be eaten raw, and open flowers may be eaten fresh.



Wild pansy (Viola tricolor) — small purple, yellow and white spurred flower with narrow leaves

Bartosz Cuber · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

An annual or short-lived perennial herb, generally ten to twenty-five centimeters tall. Its stems are thin, ascending or branching from the base. The alternate, stalked leaves are rounded-oval below, narrower above and have scalloped margins. Large, deeply dissected stipules are clearly visible at their bases. Flowers are solitary on long stalks, with five unequal petals: the upper ones are generally dark purple, the lateral ones lighter, and the lower yellow with dark guide lines and a short spur. Colors may overlap or blend between individual plants. After flowering, a small three-valved capsule forms and releases tiny seeds when it opens.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora records Viola tricolor as a nonnative violet with only several dozen California observations. It is associated primarily with old gardens, lawns, urban flower beds, cool disturbed grassy sites and occasional self-seeded plantings. It is not a common native plant of moist forests or Sierra Nevada slopes. Large-flowered plants in parks are often other garden hybrids. Pesticides on ornamental flowers may persist after rain; flowers should be gathered for food only from a known, clean site.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In the mild coastal climate, small leaves grow during the cool season. With sufficient moisture, flowering begins in spring, often March or April, and may continue into early summer or recur in autumn. On Sacramento's hot lowlands, plants quickly dry out without irrigation. Young leaves are most tender before active flowering; flower buds just before opening. Mature seed capsules are not gathered for food.



Wild pansy (Viola tricolor) — small purple, yellow and white spurred flower with narrow leaves

Tom.k (Commons credit, author assumed) · CC BY-SA 2.5 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Young leaves and buds. Plants For A Future directly describes them eaten raw; the flavor is mild, and the leaves can be chopped finely into other greens.

Open flowers. Fresh variegated petals are a small edible addition, best shortly after opening. They do not provide a significant quantity of food but suit a cold mixture with leaves.

Calflora notes the seeds of this species as inedible, so seed capsules and their contents are excluded. Roots and old flower stalks are not used.

HOW NOT TO CONFUSE IT

Viola odorata forms dense, low rosettes with long-stalked heart-shaped leaves and generally single-colored, fragrant violet flowers. Large garden pansies, Viola × wittrockiana, have much larger petals, although hybrids can show intermediate forms. Native Viola pedunculata bears bright-yellow flowers on coastal slopes and differs in leaf characters. An isolated multicolored petal cannot identify the species; examine flower size, stipules, leaf shape and fruit.

SOURCES

- https://www.calflora.org/app/taxon?crn=8319
- https://pfaf.org/user/Plant.aspx?LatinName=Viola_tricolor

California wild grape — green spring tendrils and autumn berries · Vitis californica

Vitis californica

Along California rivers and creeks, trees may be so intertwined with long green vines that grape leaves form a curtain over the water. In spring, these vines produce new leaves and slender curling tendrils. In summer, clusters of still-green fruit hang among them, and toward autumn small dark grapes ripen. The native California grape has two edible parts that can be eaten without heating: young tendrils and ripe fruit.



California wild grape (Vitis californica) — lobed leaves and curling tendrils near dark ripe grape clusters

Krzysztof Ziarnek (Kenraiz) · CC BY-SA 4.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a perennial woody climbing vine, not an independent tree. When a support is available, shoots climb shrubs and trunks using branched tendrils. Without support, the long stems trail and intertwine. A single vine may extend for many meters.

Leaves are simple and rounded-heart-shaped, often with three or five shallow lobes, generally about seven to fourteen centimeters wide. Their margins are conspicuously toothed, and strong veins spread from the base. Young leaves are green and soft; in autumn they yellow and fall.

Tendrils emerge opposite the leaves. At first they are tender, nearly straight or slightly curved green threads. Upon meeting a support, they begin to coil. Small greenish flowers grow in clusters from which grape bunches later develop. The round berries are noticeably smaller than table grapes. When ripe, they turn dark blue, purple or almost black and have a skin, juicy pulp and hard seeds.



California wild grape (Vitis californica) — lobed leaves and curling tendrils near dark ripe grape clusters

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WHERE IT GROWS AND HOW COMMON IT IS

Vitis californica is native to California. It grows along rivers and creeks of the Central Valley, in floodplain forests, damp ravines and suitable foothill sites, including at the base of the Sierra Nevada. Close to permanent water, grapevines may be abundant and can drape entire shrubs with their long shoots. They are much less dense on open, hot, dry slopes.

The vines are particularly conspicuous where willows, cottonwoods and other trees beside the water provide support. The presence of this grape in an area does not mean every thicket bears fruit: male and female flowers are generally on separate plants in this species.

WHEN THE EDIBLE PARTS ARE AVAILABLE

New growth and young tendrils emerge in spring, approximately April through June. Small green flowers open in May and June. Clusters then develop and remain green for some time. The USDA Forest Service identifies September as the main ripening month; depending on the site, ripe dark grapes can be found in late summer and autumn, sometimes in October.

After the leaves fall, woody vines remain identifiable, but it is no longer the season for fresh tendrils or berries.

WHAT IS EATEN WITHOUT FIRE

Young tendrils. While a new tendril is soft, it can be eaten raw. Plants For A Future separately documents this use for Vitis californica. Young tendrils taste noticeably tart; as they age, they become woody and lose their tenderness. They occur long before the berries; later they are stiffer and mainly serve to attach the vine to branches.

Ripe grapes. Soft dark fruit is eaten fresh after reaching full maturity; the USDA Forest Service account directly confirms this species' grapes eaten without cooking. Wild grapes can be much more sour and contain more seeds than cultivated varieties. Accounts of California Miwok food mention native grapes, while botanical reviews confirm the fresh edible fruit of this species. Ripe grapes can be crushed without heating to use juice and pulp. Mature fruit was also dried naturally for storage.

Not every part of a grapevine is included among edible foods. For example, leaves used in dishes requiring cooking are not thereby confirmed as a raw food for this species.

HOW NOT TO CONFUSE IT

Wild grape has one broad leaf attached to a stalk and a separate tendril opposite it; its leaves are simple, rather than three independent leaflets. This helps prevent confusion between a young vine and poison oak, Toxicodendron diversilobum, which often has three leaflets and lacks grape tendrils. Cultivated or naturalized grapevines can also grow nearby. To identify Vitis californica precisely, examine leaf shape, clusters and habitat together.

SOURCES

- USDA Forest Service, Vitis californica: https://research.fs.usda.gov/feis/species-reviews/vitcal
- Plants For A Future, Vitis californica, raw fruit and young tendrils: https://pfaf.org/user/Plant.aspx?LatinName=Vitis+californica
- Barrett & Gifford, Miwok Material Culture, Berries and Fruits: https://www.yosemite.ca.us/library/miwok_material_culture/berries_fruits.html

Desert wild grape — small dark clusters in southern canyons · Vitis girdiana

Vitis girdiana

Where a Southern California canyon retains water after winter rains, long vines with broad rounded leaves can sometimes be seen among shrubs. Later, small clusters of nearly black grapes appear. This is Vitis girdiana, desert wild grape, a native climbing vine of southern California. Its berries and tender young tendrils can be eaten without fire, but it should not be confused with the previously described California grape, Vitis californica, found chiefly in the northern part of the state.



Desert wild grape (Vitis girdiana) — hairy vine with rounded leaves and small clusters of dark grapes

Stickpen · Public domain · Wikimedia Commons

HOW TO IDENTIFY IT

The plant is a woody climbing vine capable of winding through neighboring shrubs and small trees. Young shoots are greenish and often noticeably hairy; with age they become brown and more rigid. Tendrils located opposite the leaves coil around supports, holding up the long vine. Leaves are alternate, on long stalks, rounded or heart-shaped, with shallow lobes and toothed margins. Their lower surfaces are often paler and softly hairy. In spring, small greenish-yellow flowers develop in loose, cluster-like inflorescences; they have no large showy petals. After pollination, small green grapes form in clusters. As they ripen, they grow to several millimeters in size and become dark purple or almost black, sometimes with a bluish waxy bloom. A few hard seeds are found inside. The vine drops its leaves in winter, but old woody shoots and the places where tendrils attach remain visible.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Vitis girdiana as native to California, with hundreds of observations mainly in southern counties: San Diego, Orange, Riverside, Los Angeles and San Bernardino, as well as Inyo and Kern. Typical habitats are banks of seasonal streams, canyons, oak woodland and coastal sage scrub where roots reach moister soil. Despite the common name desert wild grape, this is not a grape evenly spread across dry desert terrain without water. Around Sacramento it should not be expected as an ordinary wild vine; Vitis californica is more important in local native communities. An ornamental planting is not a freely available food source either.

WHEN THE EDIBLE PARTS ARE AVAILABLE

In low, warm canyons, new leaves and tendrils emerge in spring after winter dormancy. Small flower clusters develop in late spring and summer, sometimes earlier in warm places. Green grape clusters gradually darken; fully ripe fruit is most often available in late summer and autumn, approximately August through October. In cool sites or shaded canyons the schedule shifts. Leaves may remain until autumn, but foliage alone does not indicate a ripe crop. Following leaf fall in winter, fresh grapes are generally absent; a separate dried supply exists only if fruit has been preserved.



Desert wild grape (Vitis girdiana) — hairy vine with rounded leaves and small clusters of dark grapes

Tortie tude · CC0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe dark grapes are the most obvious raw food from Vitis girdiana. Plants For A Future directly confirms their consumption fresh or dried for winter. They may taste sweet with pronounced acidity, especially when the whole bunch is fully ripe. Small berries can be eaten individually, or crushed so the soft pulp can be separated from the larger seeds. Their small size means there is less pulp to harvest than in cultivated grapes. Clean ripe fruit dried naturally without heating can be stored only when fully dry and free of mold.

Tender young tendrils are separately listed by the same species-specific food reference as edible raw. They are soft only during new growth, becoming coarse and woody later. The source mentions young leaves as wrappers for food that would subsequently be baked. That is a use involving fire and does not justify presenting the leaves as confirmed raw salad greens. Roots, bark and immature green grapes are excluded from the food list as well.

HOW NOT TO CONFUSE IT

Vitis californica often has larger leaves with a different hair covering, and its main range is associated with Northern California. The two species must be distinguished by the combination of leaves, new shoots and geography. Wild grape should not be confused with plants bearing individual black berries: in Vitis the fruits grow in true grape clusters and tendrils arise opposite the leaves. Ornamental vines and nightshades with dark fruit may be inedible. An unknown berry should never be tasted as a way to identify the plant. Vines growing in chemically treated vineyards or beside roads are unsuitable for gathering raw food.

SOURCES

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- https://www.calflora.org/app/countytaxon?crn=8322
- https://pfaf.org/User/Plant.aspx?LatinName=Vitis+girdiana

Cultivated grape — sweet clusters from old naturalized vines · Vitis vinifera

Vitis vinifera

In California, grapes grow not only in rows of vineyards. Near former homesteads and old fences, a vine sometimes survives whose long shoots climb trees, with clusters of grapes hanging under broad leaves toward the end of summer. This is the cultivated European grape, some plants of which have become naturalized. It is especially useful for food without fire: ripe fresh grapes are juicy and sweet and, in suitable weather, can dry naturally into raisins.



Cultivated grape (Vitis vinifera) — clusters of ripe green and purple grapes among broad lobed leaves

Bangin · CC BY 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This is a perennial woody vine with a thickening trunk and long, flexible shoots. Bark on old vines cracks and peels in narrow strips. Alternate leaves are large, rounded-heart-shaped, often with three or five shallow lobes and conspicuous teeth along the edge; their undersides are sometimes densely hairy. Branched tendrils often occur opposite the leaves and support the climbing vine. Flowers are small and greenish in long panicles. Later, compact or loose clusters develop containing round or oval grapes; they may be green, yellow, red, purple or dark blue, with seeds or seedless.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora confirms Vitis vinifera as a nonnative vine in California that has escaped cultivation, with numerous records in various counties. It occurs near rural settlements, along fences, at the margins of old vineyards and sometimes beside riverbeds where moisture is available. Self-seeded vines are possible around Sacramento, but must not be confused with native Vitis californica. Most vines close to vineyards may have been treated with crop-protection chemicals, and their fruit belongs to landowners.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Young leaves emerge from buds in spring, and flowering normally occurs in late spring or early summer. Grapes enlarge through summer, ripening from July to October depending on cultivar, elevation and weather. Fruit changes color and gradually softens; green-fruited varieties may remain pale even at full maturity. A very sour taste often indicates insufficient ripeness. After cooling in autumn, leaves yellow and fall, while the woody vine persists.

WHAT IS EATEN WITHOUT FIRE

Ripe grapes. A mature cluster can be harvested and clean fruits eaten raw, either spitting out or carefully chewing the small seeds if desired: they are edible but hard. Cold crushing yields juice without heating; the skin can be strained off if troublesome. In dry weather, mature fruit may naturally dry into raisins, but only when clean and free of mold and fermentation. Young leaves of certain grape varieties are edible, but species references often require prior cooking. Without separate confirmation of their raw use, grapes remain the principal food recommended here.

HOW NOT TO CONFUSE IT

Native California grape, Vitis californica, and desert wild grape, Vitis girdiana, also produce edible fruit, but have different leaf shapes, hair covering, smaller berries and habitats. A self-seeded cultivated vine may have very small clusters: size alone does not establish the species. Poisonous ornamental vines with similar leaves do not produce genuine grape tendrils and characteristic bunches. Wild cucumber, Marah, also occurs in California, and its fruit must not be mistaken for grapes. Both the species and cleanliness of the gathering site are important.

SOURCES

- https://www.calflora.org/app/taxon?crn=8323
- https://pfaf.org/user/Plant.aspx?LatinName=Vitis+vinifera
- https://ucanr.edu/sites/fruitreport/files/133969.pdf

California fan palm — tiny dark fruits high above desert oases · Washingtonia filifera

Washingtonia filifera

In the dry mountains of Southern California, an unexpected green valley sometimes appears with tall palm trees. These are places where groundwater reaches the surface. California's native fan palm produces numerous small dark fruits that, from a distance, look like black beads hanging from the crown.



California fan palm (Washingtonia filifera) — broad fan-shaped crown, skirt of old leaves and hanging dark fruit clusters

Jim Harper · CC BY-SA 1.0 · Wikimedia Commons

HOW TO IDENTIFY IT

The palm has a single, strong, straight trunk, sometimes reaching fifteen to twenty meters or more. Its top carries a broad, rounded crown of fan-shaped leaves. Each leaf is divided into long, pleated segments, with pale fibers often hanging from their margins — the characteristic behind the name filifera, “bearing threads.” On wild trees, old dry leaves may form a dense brown skirt around the trunk for many years.

Small pale flowers grow in long branching inflorescences emerging from the crown. After flowering, numerous rounded fruits develop on thin branchlets, green at first and later dark brown or black. Each fruit is tiny, roughly pea-sized, containing a large hard stone and relatively little flesh beneath the skin.

WHERE IT GROWS AND HOW COMMON IT IS

The natural habitat of this palm is not all of California but particular moist oases in the southern desert regions. The palm groves of the Coachella Valley and Palm Springs area are especially well known. It is planted far more widely in cities; an ornamental street palm does not prove that a natural grove occurs there.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Inflorescences develop during the warm part of the year. Fruit generally darkens toward late summer and autumn; dry clusters may stay attached to the tree for longer. Because of the trees' height, weather and differences among trees, any gathering calendar is approximate.

WHAT IS EATEN WITHOUT FIRE

Ripe fruit. Indigenous people of the oases, including the Cahuilla, ate the small fruits fresh or dried them. The thin flesh is slightly sweet, although a single fruit offers nothing like the quantity of food in a cultivated date. Sources also describe ground, dried fruit, but for fresh consumption the important part is the soft, mature outer flesh, not an attempt to crack the hard stone with the teeth.

Dried fruit. When the harvest dries naturally, moisture is lost and the sweetness seems stronger. This is food stored without heating, but only if the fruit is clean, sound and free of mold.

HOW NOT TO CONFUSE IT

Mexican fan palm, Washingtonia robusta, is widely planted in California; it is generally more slender, with differences in leaf stalks and leaf bases. Hybrids occur in urban areas. Do not identify a species solely from black fruit or one fan-shaped leaf. True date palm, Phoenix dactylifera, has feather-shaped, rather than fan-shaped, leaves and large elongated dates.

Gathering may be prohibited in natural oases and protected areas. Do not try to knock down heavy clusters, climb the dry leaf “skirt,” or break off fronds. Safe observation does not require disturbing a palm grove.

SOURCES

- USDA Forest Service, Washingtonia filifera: https://research.fs.usda.gov/feis/species-reviews/wasfil
- National Arboretum, Washingtonia filifera: https://www.nationalarboretum.act.gov.au/living-collections/forests-and-trees/forest-10
- Calflora, Washingtonia filifera: https://www.calflora.org/

Banana yucca — fleshy ripe desert fruit among sharp leaves · Yucca baccata

Yucca baccata

On dry rocky slopes of eastern California, low rosettes of stiff, sword-shaped leaves stand among shrubs. In spring and early summer, large whitish bells develop above them. Later, some plants form thick, fleshy fruits resembling short green bananas. This is Yucca baccata, banana yucca. Its fully ripe pulp is known as food eaten raw. Unlike an ordinary garden banana, however, the fruit may remain green even when ripe, while the leaves have sharp tips dangerous to eyes and skin.



Banana yucca (Yucca baccata) — stiff fibrous leaves, cream bell flowers and elongated green fruits

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

This evergreen perennial generally forms one or several low rosettes. Leaves are long, narrow and rigid, ranging from gray-green to bluish, with a strong pointed tip. Their edges often shed slender curled fibers, especially on older leaves. A rosette may measure a meter or more across. When flowering begins, a powerful upright stalk emerges with numerous hanging cream-colored, bell-shaped flowers, each composed of six broad perianth segments. After pollination, thick, elongated fleshy fruits form, sometimes ten or more centimeters long, shaped like short bananas. Fruit is green or slightly yellowish and becomes soft to the touch when ripe, but need not turn bright yellow. The interior contains fleshy tissue with large, flat dark seeds that must be separated before raw consumption.

WHERE IT GROWS AND HOW COMMON IT IS

Calflora recognizes Yucca baccata as native to California, primarily in desert and semi-desert communities, including Joshua Tree Woodland. The USDA Forest Service describes it on dry slopes, rocky sites and in juniper-pinyon woodlands of the western United States. Its natural California range lies chiefly in eastern and southeastern regions, not the Sacramento Valley. Some southern California yuccas are very similar, so fruit should not be selected simply from the general appearance of a prickly rosette. In hot, dry places, fruiting depends heavily on rainfall and pollination, and many plants do not bear fruit every year.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Leaves remain green year-round, but are not proposed as food here. The flower stalk appears in late spring or early summer. White to cream flowers open gradually, after which some ovaries develop into elongated green fruits. Plants For A Future places fully ripe fruit in early and mid-autumn, though other dates are possible in warm places. The principal sign of ripeness is that a fruit is sufficiently soft but has not fallen apart or become moldy. Green color alone does not mean it is unripe. Flesh in an old dry fruit becomes coarse and may decay following occasional autumn rains.



Banana yucca (Yucca baccata) — stiff fibrous leaves, cream bell flowers and elongated green fruits

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Only the soft pulp of fully ripe fruit. Plants For A Future confirms raw consumption of Yucca baccata; ripe fruits are described as sweet and fleshy. Cut the fruit open and carefully separate soft edible tissue from the large, flat seeds and coarse parts of the skin. This is not a ready-peeled banana: the fruit requires careful inspection. Do not eat hard, green, unripe flesh merely because the fruit resembles a cultivated banana.

Small portions. The same species-specific guide separately warns that large quantities of the fruits have caused diarrhea in people unaccustomed to this food. Even a fully ripe fruit is therefore more sensibly eaten in a small serving than treated as a main staple. Sources also describe drying without heat, but all pieces must be thoroughly dried and protected from mold.

Flower buds, stalks, seeds and young leaves were usually prepared using heat in the species food references and are not recommended raw here. Sharp leaf tips can injure eyes when someone approaches the plant.

HOW NOT TO CONFUSE IT

Mojave yucca, Yucca schidigera, is described separately; its leaves are often narrower and particularly rigid, while fruit type and inflorescence position also differ. Joshua tree, Yucca brevifolia, has a tall, branching trunk and a different crown. Hesperoyucca whipplei also has sharp leaves, but its inflorescence and fruit are structured differently. At the rosette stage alone, the resemblance may be considerable: do not eat a fruit without checking the adult species. Do not gather in a protected desert area or cut away leaves for access to one fruit.

SOURCES

- https://www.calflora.org/app/taxon?crn=8374
- https://pfaf.org/user/Plant.aspx?LatinName=Yucca+baccata
- https://research.fs.usda.gov/feis/species-reviews/yucbac

Mojave yucca — mature desert fruit with a leathery rind · Yucca schidigera

Yucca schidigera

In the dry rocky Mojave Desert stand plants with short woody trunks and stiff leaves pointing in every direction like narrow spears. White flowers emerge above them in spring, followed by elongated green fruits. Toward the end of summer, the fruits become brownish and leathery. Historical USDA Forest Service sources and a university publication about Mojave yucca confirm raw consumption of mature fruit. Its outer rind can be bitter, and many hard, dark seeds are contained inside.



Mojave yucca (Yucca schidigera) — stiff spear-shaped leaves and oblong mature desert fruit

Stan Shebs · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Mojave yucca is an evergreen shrub or small tree-like plant, usually from one to several meters tall. Its trunks are grayish brown, with remnants of dead leaves. Dense rosettes of very rigid, long leaves occur at the ends of branches. These leaves are narrow, sharply pointed and often blue-green or gray-green. Long curled fibers are visible along their margins.

The flowers hang in dense, branching inflorescences and resemble large whitish bells, sometimes tinged pink or purple. Thick, oblong fruits about the size of small cucumbers develop where flowers were, usually five to eleven centimeters long. Young fruits are green and fleshy, with internal chambers containing numerous seeds. Later the skin turns yellowish brown, gray-brown or brown, while the pulp becomes firmer.

WHERE IT GROWS AND HOW COMMON IT IS

Yucca schidigera is native to the deserts and dry foothills of southeastern California and adjoining areas. It is particularly characteristic of the Mojave and Sonoran deserts, rocky slopes, plains among creosote scrub and dry sites around Joshua Tree National Park.

In suitable places the yucca is conspicuous from a distance and may grow in groups; in other desert valleys plants are scattered. It does not occur naturally in moist northern forests or Sacramento floodplains. Other yucca species grow in the same region, and they do not always share identical food histories.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Rigid leaves are present throughout the year, but they are not edible greens. Flowering most often starts in spring, approximately April or May, although the schedule varies between years.

Fruit develops after flowering. It remains green through summer, becoming brownish toward the season's end. The National Phenology Network describes Yucca schidigera fruit as mature when its outer surface turns leathery and brown or gray-brown. This stage occurs mainly in late summer and early autumn.

WHAT IS EATEN WITHOUT FIRE

Flesh of ripe fruit. The historical USDA Forest Service review explicitly mentions Indigenous peoples of the American Southwest eating Mojave yucca fruit raw. The bitter skin was peeled away and the fleshy interior of mature fruit used. A developing green fruit and fully mature pulp are different stages and must not be confused. University of California Agriculture and Natural Resources guidance separately notes that the outer rind is often bitter and was removed before consumption.

Fruit is not the same as seeds. Mature fruit contains many firm dark seeds, and edibility of the flesh does not automatically establish the seeds as a separate raw food. Flour was also made historically from seeds, but this article addresses specifically the confirmed raw fruit.

The prickly leaves and lower part of the rosette are not intended for similar consumption. Their stiffness and long pointed tips help identify the yucca but do not make them suitable salad greens.

HOW NOT TO CONFUSE IT

Mojave yucca resembles several other species of Yucca. Joshua tree, Yucca brevifolia, has a different silhouette and shorter leaves, while banana yucca, Yucca baccata, has a different growth habit and its fruiting and food methods must be considered separately. For Yucca schidigera, a useful combination includes very stiff leaves with fibrous edges, a stout trunk, a compact flower cluster and elongated fruits with a leathery brownish skin.

Mojave yucca has sharply pointed, stiff leaves and fruit with a firm rind. Yucca brevifolia, or Joshua tree, and banana yucca, Yucca baccata, are different species: neither a similar rosette nor the word “yucca” alone confirms a food identification. Fruit showing rot or damage is not used.

SOURCES

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- USA National Phenology Network, Yucca schidigera mature fruit: https://mynpn.usanpn.org/npnapps/species/Yucca/schidigera
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Jujube — sweet autumn fruit on thorny branches · Ziziphus jujuba

Ziziphus jujuba

Toward the end of summer, small oval fruits ripen beside old houses and gardens in California's warmer areas. They begin light green, then develop brown spots, and finally turn almost chestnut brown. Eaten at the crisp stage, a ripe fruit tastes rather like a sweet apple; when it has dried, it resembles a date. This is jujube, or Chinese date, an Asian tree long cultivated in California gardens. Both fresh ripe fruit and fruit that has dried naturally on the tree are suitable for eating.



Jujube (Ziziphus jujuba) — glossy three-veined leaves and brownish ripe oval fruit

Tokyo Watcher (English Wikipedia) · CC BY-SA 3.0 · Wikimedia Commons

HOW TO IDENTIFY IT

Usually a fairly small deciduous tree, three to eight meters tall, with a spreading crown and zigzagging side branches. In some varieties, the young shoots have paired spines, one longer and the other shorter and curved. The leaves are alternate, glossy, small, oval or ovate, with three conspicuous veins running from the base toward the tip and finely toothed margins. In early summer, small greenish-yellow flowers with five petals appear in the leaf axils; they are not particularly noticeable from a distance. Later, oval drupes develop, usually two to four centimeters long. Under the thin, smooth skin is firm, whitish flesh surrounding one hard, elongated stone.

WHERE IT GROWS AND HOW COMMON IT IS

Jujube is not part of California's native wild flora. It is cultivated in warm valley gardens, including the Sacramento area and Solano County, as well as farther south. The University of California describes fruit harvests from private gardens in Solano County. Self-seeded trees and old abandoned plantings are possible, but there is no evidence here to call jujube a common naturalized tree throughout the state. When searching for edible plants, a fruit tree in someone else's garden must not be treated as a publicly available resource.

WHEN THE EDIBLE PARTS ARE AVAILABLE

Small flowers open in late spring or early summer, after which the fruits grow through the warm months. Around Sacramento, ripening often begins in August and continues through September; late varieties fruit in autumn. Green hard fruit, brown-spotted crisp fruit and shriveled fully mature fruit may occur on the branches simultaneously. Flavor changes with ripeness: a green fruit is not very sweet, while a brown one becomes more sugary.



Jujube (Ziziphus jujuba) — glossy three-veined leaves and brownish ripe oval fruit

Satish Krishnamurthy · CC BY 2.0 · Wikimedia Commons

WHAT IS EATEN WITHOUT FIRE

Fully ripe fruit. At the juicy, crisp stage, the flesh is eaten raw around the single hard stone, much like a small apple. Once the fruit has shriveled naturally on the branch, it can still be eaten without cooking: it is drier and has a date-like consistency. Do not bite into the stone or eat it with the flesh. Jujube is convenient because its sweetness requires no boiling, roasting or added sugar. Young leaves and twigs are not confirmed as raw food in the species reference used here and should be left on the tree.

HOW NOT TO CONFUSE IT

Other ornamental plants produce small, similar drupes, but jujube has leaves with three strong veins arising near the base, tiny greenish flowers and oval fruits that turn brown. True date palm, Phoenix dactylifera, has none of these leaves or branches: its dates grow on a palm. Indian jujube, Ziziphus mauritiana, has similar fruit but is a different species with different leaf hairiness and growth features. If a tree cannot be identified from its characteristic leaves and flowers, brown fruit alone is insufficient evidence.

SOURCES

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- https://pfaf.org/USER/Plant.aspx?LatinName=Ziziphus+jujuba
- https://www.ars.usda.gov/arsuserfiles/20220500/onlinepollinationhandbook.pdf

Water

The Wintu — the streams where they lived and drew water

Clear Creek and the mountain valleys of Northern California

Forest valleys and mountain slopes stretch across the western part of what is now Shasta County. Clear Creek, Willow Creek, and other waterways in the upper Sacramento River basin flow through them. For the Wintu people, these streams were part of everyday life: settlements stood nearby, and their water was used for drinking, preparing food, and other household activities.

The United States National Park Service documents this relationship in “The Wintu,” a historical account of the lands that now form Whiskeytown National Recreation Area.

Settlements beside the streams



The Wintu — the streams where they lived and drew water

United States Geological Survey (USGS). Public Domain US (USGS). Wikimedia Commons .

One early settlement stood at the confluence of Clear Creek and Willow Creek, near what is now Camden House. Historical accounts record its name as Soo’-yeh-choo’-pus. The streambanks gave residents access to water, while the river valleys connected neighboring places where people lived and gathered natural resources.

The streams provided more than drinking water. Salmon traveled seasonally through Clear Creek and the larger Sacramento River. Wintu residents caught fish, and river water was part of food preparation and ordinary household life.

Winter near the water



The Wintu — the streams where they lived and drew water

Greg Grossmeier, 2012. CC BY-SA 3.0 . Wikimedia Commons . Resized for the web..

The National Park Service account notes that the Wintu lived near Clear Creek and other local streams during winter. These places offered accessible waterways and nearby locations known to generations of residents.

Paths from the settlements led to places where people gathered acorns, plants, and other resources. Stream water was a constant part of this natural system.

Summer in the mountains

When the lower valleys became intensely hot, people moved to higher elevations, including Shasta Bally and other mountains. These upland areas were cooler; people hunted there and gathered seasonal plants.

Settlement patterns and seasonal camps therefore changed throughout the year. Winter life was more often centered on valley streams, while summer activities shifted to the higher slopes.

A familiar river landscape

The Clear Creek area looks very different today. Roads, Whiskeytown Reservoir, and other structures now occupy parts of the landscape. Yet the valleys still contain the streambeds and mountain creeks described in historical accounts of the Wintu.

The central point of this account is simple: people did not depend on water brought in from elsewhere. The streams around them supplied water for drinking, cooking, and daily needs, while knowledge of seasonal camps made it possible to live both in the valleys and higher in the mountains.

Source: National Park Service, Whiskeytown National Recreation Area, “The Wintu” — https://www.nps.gov/whis/learn/historyculture/the-wintu.htm.

The Kumeyaay — how stones helped retain water in the valleys

Traditional rock-drops on Campo Kumeyaay land

Southern California has dry summers and rainy winter months. In small valleys, water flowed through stream channels after rainfall, carrying soil particles downstream. The Kumeyaay knew how to influence this flow without concrete walls or pipes: they placed small groups of large stones in the streams.

This practice is described in a joint educational project by the Campo Kumeyaay Nation and the Smithsonian’s National Museum of the American Indian. It is known as a rock-drop — a stone barrier along the path of flowing water.

Why the stones were used



The Kumeyaay — how stones helped retain water in the valleys

Nelro2. Public Domain (author release). Wikimedia Commons .

Large stones placed in a stream channel held back some of the soil carried by the current and helped reduce erosion along the banks. Water remained near the ground surface for longer. The area around the stones stayed wetter, making it easier for plants to grow and attracting animals.

The stony stream and its vegetation formed an interconnected system. Retaining moisture in the soil mattered beyond a single rainfall: it sustained living parts of the valley that depended on seasonal wet conditions.

What is known about the construction of a rock-drop

1. People chose a section of a stream through which water flowed during the rainy season.
2. They placed a group of large stones in the channel. The stones themselves are the documented component of the structure.

3. When runoff passed through, these stone obstacles changed the movement of water and reduced the amount of soil washed away.
4. Moisture remained nearby for longer, allowing plants to grow. Birds and other animals came to these places.

These are the basic documented elements of the practice, not an exact set of instructions from a particular builder. The source does not specify a required number or size of stones or the order in which individual stones were laid.

Who chose the locations

The historical Kumeyaay account mentions the kuseyaay — people with specialized knowledge of their environment. They gave advice, including about where to place rock-drops. Such decisions formed part of broader knowledge about rainfall, stream channels, and vegetation.

Paul Cuero Jr., a member of the Campo Kumeyaay, explained that limited water supplies made knowledge of water conservation essential. These practices did not depend on modern deep-well drilling.

Water in the valley

Rock-drops were a way to manage surface runoff and retain moisture in the natural environment. They were not filters that disinfected drinking water, nor were they containers for transporting it. Their purpose was different: to keep more water in the valley itself.

Source: Campo Kumeyaay Nation and Smithsonian National Museum of the American Indian, “About Our Homeland,” Kumeyaay Environmental Management — https://americanindian.si.edu/environment/kumeyaay/Homeland.cshtml.

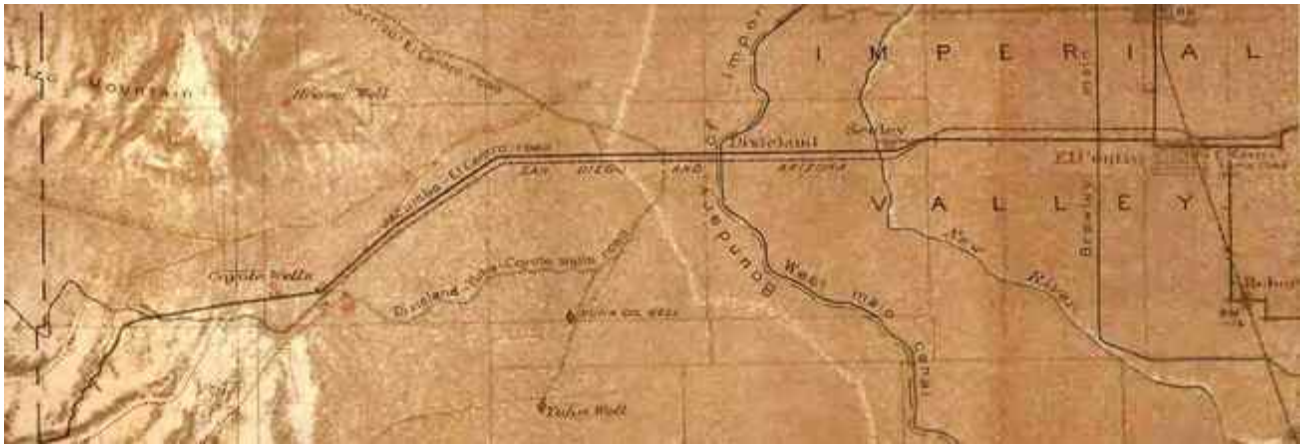
The Kamia — how they used the Yuha wells in California's desert

How people found water in the sands of southeastern California

The Kamia lived in the arid lands of what is now Imperial County. A group related to the Kumeyaay, they were associated with the Colorado River valley and the desert areas east of the San Diego mountains. Their knowledge of natural water sources proved especially important in the spring of 1774, when Juan Bautista de Anza's expedition crossed the desert.

Where the water was found

Wells later known as the Yuha Wells or Santa Rosa de las Lajas were known among the sands of the Yuha Desert. They lay northwest of Mount Signal, within present-day California. For people crossing the desert, this was a destination they sought deliberately.



The Kamia — how they used the Yuha wells in California's desert

United States Geological Survey. Public domain (U.S. government). Wikimedia Commons .

Who used the source

The historical record concerning the Yuha wells explicitly states that the Kamia people used them. In March 1774, they showed the location to Anza's scouts.

How people obtained water



The Kamia — how they used the Yuha wells in California's desert

Verdelunar. CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

The water was not exposed in a large open lake. It was drawn from wells dug in the earth. The expedition account states that the wells had to be opened and cleared before water could be collected. During the visit in December 1775, people worked to gain access to the water from the time of their arrival until noon the following day. The wells then supplied drinking water.

Why the sand mattered

In the desert, water sources could lie beneath the surface of a dry channel or in sandy ground. People knew not only which direction to travel, but also the particular places where water remained underground. On reaching a familiar well, a traveler could obtain water by reopening access to it.

When

The expedition recorded visits to the wells on March 8, 1774, and December 11–15, 1775. These dates document historical visits, not the only season in which the Kamia used the source.

What the map shows

A 1920 map published by the United States Geological Survey marks the Yuha Wells and other water locations in the desert of Imperial County. It preserves their position within California's natural landscape.

Historical sources:

- California historical marker, Yuha Well: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=8661
- Juan Bautista de Anza National Historic Trail, Wells of Santa Rosa / Yuha Well: https://home.nps.gov/juba/learn/historyculture/california-anza-trail-sites.htm
- “The Kumeyaay Way,” on the relationship between the Kamia and Kumeyaay: https://www.kumeyaay.info/kumeyaay_way/.

The Ohlone and Coast Miwok — woven containers for water

How baskets made from plants became part of everyday life around San Francisco Bay

Ohlone and Coast Miwok communities have long lived along the shores of San Francisco Bay and the neighboring coastline. They made baskets from plant materials for everyday use. These objects served different purposes: some held food supplies, while others were used to store water.

The National Park Service historical overview “Ohlones and Coast Miwoks” explicitly mentions baskets made for food and water. These vessels were part of life in settlements where local vegetation supplied materials for weaving.

Why a container was needed



The Ohlone and Coast Miwok — woven containers for water

Anza Trail National Park Service; basket by Linda Yamane. Public Domain US (federal photograph; separate rights in the crafted object may apply). Wikimedia Commons .

Water could be found in streams, springs, and other natural places. But it still had to be brought to the place where people lived and kept their supplies. They used portable vessels for this purpose. A basket made of natural materials could form part of a household alongside other objects made from plants.

Unlike a heavy stone basin, a woven container was movable. It could be carried when people traveled between camps, kept near other supplies, or used within a settlement.

Where the basket makers lived

South of the Golden Gate, the lands of different Ohlone groups extended as far as the Monterey coast. To the north, Coast Miwok communities lived in what is now Marin County and southern Sonoma County. Their settlements included bay shores, coastal lagoons, and areas along streams.

Families used both permanent and seasonal settlements. In each, woven objects helped them handle everyday supplies.

What survives today

Weaving remains a living tradition among contemporary Ohlone artists. For example, Linda Yamane, a Rumsen Ohlone artist, made a basket that was presented to the Presidio Officers’ Club in San Francisco in 2014. A National Park Service photograph shows an authentic contemporary basket made by an artist of this people.

The object in that photograph has not been identified as a water vessel. It illustrates the continuing tradition of plant-fiber weaving; the historical use of baskets to hold water is established separately by the National Park Service text.

Woven water containers were part of centuries of knowledge about plant materials. The historical overview records their purpose, although it does not describe the exact shape or dimensions of a water basket or explain how an individual maker rendered a particular vessel capable of holding liquid.

Historical source: National Park Service, “Ohlones and Coast Miwoks,” everyday life section — https://home.nps.gov/goga/learn/historyculture/ohlones-and-coast-miwoks.htm.

The Chemehuevi — rainwater in natural rock basins called tinajas

Tinajas and travel across the Mojave

In the dry Mojave Desert, water was not always close to a settlement. Travelers knew the locations of springs, small watering places, and hollows in rock that retained water after rain. Across the Southwest, these natural rock reservoirs are called tinajas.

The Chemehuevi had a network of trails between the Colorado River and the western parts of the desert. People remembered the names of watering stops and planned their journeys around the availability of water. Some sources flowed permanently; others depended on recent rain.

How a rock basin held water



The Chemehuevi — rainwater in natural rock basins called tinajas

Jesse Pluim, Bureau of Land Management California. Public Domain US (federal employee). Wikimedia Commons .

The depressions in the rock formed naturally. After rainfall, water ran down the stone into a lower basin and remained there until it evaporated or drained away through cracks.

Such a basin differed from a dug well: its sides and bottom were already made of solid rock. In mountain canyons, several hollows could sometimes be found at different heights.

Water stops along the trail

A research report drawing on accounts by George Laird and Matavium preserves a Chemehuevi route across the desert. From the Colorado River, the trail led to a place called Muhunangkavikyavo’o, or Owl Ear Tank. Other stops mentioned along the way include Paasa, also called Piute Spring, and Tooyagah, or Rock Spring.

Each watering place mattered not in isolation but as part of a long journey. Families traveling more slowly chose routes with shorter distances between springs. Matavium's account notes that the timing of a journey was planned with regard to how much water the scarce sources contained.

How water was carried

When the route passed between watering places, people carried water in vessels. One historical account states that water containers were placed in a carrying basket or net.

The natural basins themselves did not provide an unlimited supply. Rock reservoirs could fill after rain and later become dry again. Knowing both where they were and what condition they were in was therefore especially important.

The Chemehuevi remembered more than the direction of a trail. Their knowledge included names for springs, reservoirs, and passages between mountains. As a result, the desert was not a collection of random points but a landscape of known places along a journey.

Historical source: “SES Solar One — Cultural Resources, Data Request 102” (2010), section on Chemehuevi trails, pp. 16–17, accounts attributed to Matavium and George Laird — https://efiling.energy.ca.gov/GetDocument.aspx?DocumentContentId=47511&tn=55663.

The Karuk — making a cold manzanita berry drink

Plants, water, and a woven basket

In the Klamath River valley, manzanita was a familiar berry-bearing shrub. People gathered its fruit, dried it, and stored it for the time when the fresh harvest was no longer available. The Karuk also had another way of using these berries: they made a drink that required neither a fire nor boiling water.

The Karuk Tribe's own publication, Uxraah: Native Edible Berries, describes gathering the fruit, drying it in baskets, and making a drink with water.

Gathering the berries



The Karuk — making a cold manzanita berry drink

Burkhard Mücke. CC BY-SA 3.0 . Wikimedia Commons . Resized for the web..

Manzanita fruits grow in small, rounded clusters among dense evergreen leaves. Ripe fruits could be picked from the branches, but historical accounts also preserve a shaking method: a basket was placed or a cloth spread beneath a shrub, and the berries were knocked from the branches.

Drying in the sun

The gathered berries were spread out in a flat woven basket called a muruk. There they dried in the sunshine. Another basket, a sípnuuk, was used for storage. Sun-drying meant that part of the harvest could be kept after the picking season.

How the drink was made

1. Gathered manzanita berries were taken for use.
2. The berries were placed in water and left to impart their flavor.
3. The liquid was separated from the fruit by straining the drink through a shallow, plate-shaped basket.
4. Another method was also known: water was allowed to pass through a layer of berries, gradually taking on their flavor.

The result was berry-flavored water with the distinctive taste of manzanita. No fire was used in this method.

The berries were also connected to the seasonal rhythm of life. They were gathered when ripe, dried in flat baskets, and later taken from storage. Preparing the drink required water and simple implements made from plants, of the kind already used in everyday life.

The entire preparation took place without fire: the berries imparted their flavor to the water, and a woven basket helped produce the finished drink.

Source: Karuk Tribe, Uxraah: Native Edible Berries (2016), “Manzanita berry” section — https://nctcc.org/wp-content/uploads/2017/05/G8L2NativeEdibleBerries_booklet.pdf.

The Nomlaki — drinking stream water from a cupped hand

A small detail of everyday life in Northern California

The Nomlaki lived on the western side of the Sacramento Valley. Their settlements lay near streams and springs among the foothills of the Coast Ranges. An unusually precise account of how they used water in everyday life has survived.

In 1951, anthropologist Walter Goldschmidt published Nomlaki Ethnography, based on field interviews with Nomlaki descendants in the 1930s. Its section on water describes how a person drank directly beside a stream or spring.

Water at a natural source



The Nomlaki — drinking stream water from a cupped hand

Nickdp190. CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

People came to flowing water or a spring to drink. A container was not always necessary: water could be lifted to the lips with the hand itself.

The movement of the hand

A person curved the palm into a small cup, lowered it to the water, and scooped up a little. The hand was then raised to the mouth, and the water was drunk from the palm.

Goldschmidt noted one detail in particular: people did not lower their faces all the way to the surface. They brought the water up to themselves instead of lowering their faces into the stream.

This simple method required neither a clay bowl, a wooden dipper, nor a woven vessel. For a few moments, the hand itself became a cup.

When people drank

The source describes ordinary drinking at a stream, but also records a separate custom associated with work. Some groups — for example, people out hunting or gathering seeds — might postpone drinking until the task was finished or until sunset. This was a particular practice, not a description of every everyday visit to a spring.

Where the Nomlaki lived

Their traditional territory lay west of the Sacramento River valley, between the areas of Stony Creek and Cottonwood Creek. Small waterways descended from the foothills toward the larger river. Settlements could stand close to springs and streams.

Nature supplied the water, and a cupped hand made it possible to drink without a separate vessel. That gesture, together with references to streams and springs, has been preserved in a twentieth-century record.

Historical source: Walter R. Goldschmidt, Nomlaki Ethnography (1951), “Water” section, printed pp. 411–412 — https://digicoll.lib.berkeley.edu/record/82970.

The Kawaiisu — woven water bottles and a spoon for pine resin

Two objects from the basketry history of the Tehachapi Mountains

In the mountain settlements of the Kawaiisu in Southern California, people made not only baskets for seeds but also water bottles from tightly interwoven plant shoots. These containers required particularly close weaving so that liquid would not escape through gaps between the fibers. Historical sources preserve accounts of both the water vessels and an unusual implement: a small woven spoon for pine resin.

Researcher Maurice Zigmond described this tradition in his 1978 article “Kawaiisu Basketry.” His study explains the difference between baskets intended for dry materials and vessels designed to hold water.

Close weaving



The Kawaiisu — woven water bottles and a spoon for pine resin

Dcrjsr, 8 Oct 2011. CC BY 3.0 . Wikimedia Commons . Resized for the web..

Willow shoots formed the basis of many Kawaiisu woven working objects. In a woven water bottle, the rows were interlaced very closely. Unlike an openwork sifting basket, the aim was to leave as little open space as possible between the fibers.

Pinyon pine resin

A second part of the historical technique was resin from the pinyon pine. It was applied to the surface of the woven vessel, filling small openings in its plant-fiber wall. This method made it possible to create a more water-resistant container.



The Kawaiisu — woven water bottles and a spoon for pine resin

Dcrjsr, 4 Jul 2010. CC BY-SA 3.0 . Wikimedia Commons . Resized for the web..

A special woven object — a resin spoon — was used for this work. The University of California, Davis anthropology museum holds an example known as san-na-que-ah-but-zy.

How the practice was documented

Clinton Hart Merriam visited Kawaiisu settlements near Piute Mountain. In his field notes, he mentioned water baskets and two resin spoons that he acquired. He described their purpose: hot pine resin was poured from the spoon onto woven water bottles.

This detail distinguishes the resin treatment from methods of handling water that did not require heat. The historical object was used to work with a heated material.

A water vessel and a tool

The bottle and the resin spoon had different purposes, but both belonged to the Kawaiisu tradition of weaving with plant materials. The bottle was designed to store and carry water; the spoon was used to treat its walls.

Alongside other local knowledge of plants, this technique shows how the properties of willow and pinyon resin were combined in one everyday household object.

Sources: Maurice L. Zigmond, “Kawaiisu Basketry” (1978), pp. 200–201 — https://escholarship.org/uc/item/3dw6f08j; UC Davis Department of Anthropology Museum, “Kawaiisu Resin Spoon, San-na-que-ah-but-zy” (2016) — https://anthromuseum.ucdavis.edu/news/february-5-2016-kawaiisu-resin-spoon-san-na-que-ah-zy.

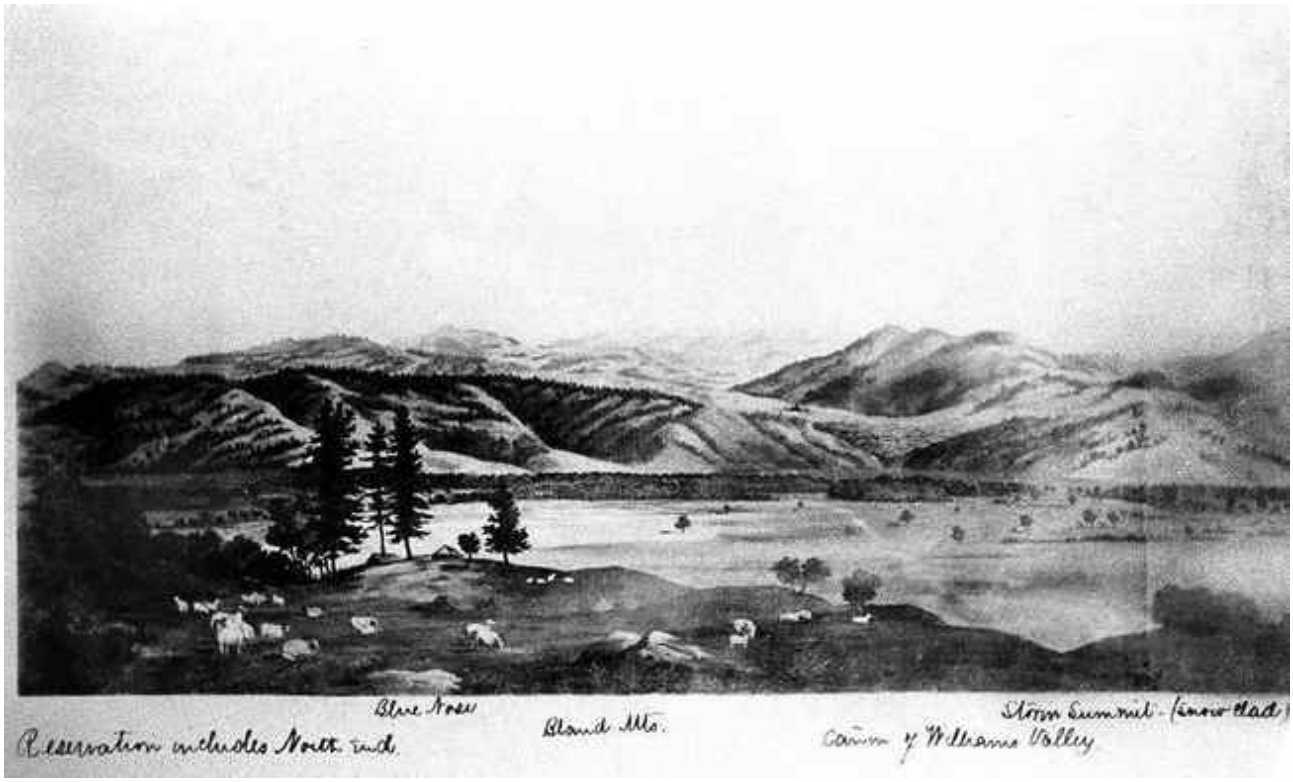
The Yuki — how they cared for natural springs in Northern California

Water, earth, and stones in Round Valley country

In the mountains and valleys of Northern California, the Yuki knew places where water emerged naturally from the ground. People visited these springs for drinking water. Some sources were not beside their homes and had to be reached on foot.

In 1944, anthropologist George Foster published detailed accounts of Yuki life collected during field research. His book A Summary of Yuki Culture preserves evidence of how people cared for their water sources.

Springs used by communities



The Yuki — how they cared for natural springs in Northern California

Photographer unknown; archival copy, Dorothy Morehead Hill Collection CSU Chico / Indian Office. Public Domain US (US federal government label on Wikimedia Commons). Wikimedia Commons .

Springs were associated with Yuki settlements. People knew where to find them and maintained the depressions from which they collected water. A good spring was highly valued, and its water was preferred to river water or water from an ordinary well.

Foster recounts a story connected with Ralph Moore's family. Moore's father did not want to drink water from a pump; instead, he walked about half a mile (roughly 800 meters) to his favorite spring. A familiar natural source thus remained important even after pumps had become available.

What people did at a spring

1. They cleared material that had accumulated in the spring's basin and made it harder to reach the water emerging there.

2. If the water was difficult to draw because the basin was too shallow, they deepened the depression.
3. They lined the edges with stones found nearby. The stone lining helped maintain the shape of the small watering place.

The result was an open basin connected to the natural point where groundwater reached the surface. This practice made use of the earth itself and stones found nearby.

Where the springs were

The account concerns Yuki lands in the northern part of present-day Mendocino County, including the Round Valley area. Among the mountains and wooded slopes were numerous small water sources. Residents of neighboring settlements knew their locations.

An archival panoramic photograph of Round Valley and its surrounding hills has also survived. It shows the natural landscape of the valley where the Yuki lived.

In Foster's account, a spring was not just a chance puddle left by rain but a familiar place that people looked after: they cleared it, deepened it when necessary, and maintained its stone edging.

Historical source: George M. Foster, A Summary of Yuki Culture (1944), printed p. 173 — https://digicoll.lib.berkeley.edu/record/84123/files/ucar005-004.pdf.

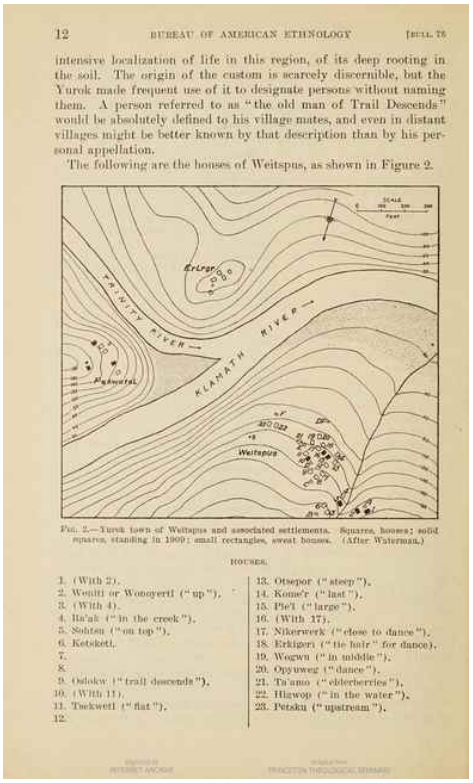
The Yurok — drinking water from the We’itspek spring

The village of Weitspus at the confluence of the Klamath and Trinity rivers

In northwestern California, two large rivers, the Klamath and the Trinity, meet among forested mountains. The Yurok village of Weitspus stood near their confluence. In 1920, ethnographer Thomas Talbot Waterman published a detailed record of local place names, houses, and water sources. Among the places he described was a small spring called We’itspek.

Two closely related names

Weitspus was the name of the settlement, while We’itspek referred primarily to the nearby spring. Waterman noted that local people used the two names in closely related ways. In the historical record, both are associated with the meeting of the two rivers.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intensive localization of life in this region, of its deep rooting in the soil. The origin of the custom is scarcely discernible, but the Yurok made frequent use of it to designate persons without naming them. A person referred to as "the old man of Trail Descends" would be absolutely defined to his village mates, and even in distant villages might be better known by that description than by his personal appellation.

The following are the houses of Weitspus, as shown in Figure 2.

FIG. 2.—Yurok town of Weitspus and associated settlements. Squares, houses; solid squares, standing in 1909; small rectangles, sweat houses. (After Waterman.)

HOUSES.

1. (With 2).
2. Wenitl or Wonoyertl ("up").
3. (With 4).
4. Ha'ak ("in the creek").
5. Sohtsu ("on top").
6. Ketskrtl.
7.
8.
9. Ohlokw ("trail descends").
10. (With 11).
11. Tsekwetl ("flat").
12.
13. Otsepor ("steep").
14. Kome'e ("last").
15. Ple'l ("large").
16. (With 17).
17. Nikerverk ("close to dance").
18. Erkigori ("tie hair" for dance).
19. Wogwn ("in middle").
20. Opyuweg ("dance").
21. Ta'amo ("elderberries").
22. Hiawop ("in the water").
23. Petsku ("upstream").

The Yurok — drinking water from the We’itspek spring

A. L. Kroeber. Public domain (1925). Wikimedia Commons .

Where people got their water

A small stream ran through the village. Despite its proximity, residents formerly preferred not to take their drinking water from it. Instead, they went to We’itspek spring, a short distance upstream from the settlement.

Several kinds of water source therefore existed close to the houses: a major river, a small stream, and a separate spring. In everyday life, residents distinguished between these sources and knew where to go specifically for drinking water.

The spring's location

The spring was associated with a particular place near Weitspus. Its name was remembered alongside that of the settlement, and Waterman marked the source on a historical diagram. The village itself occupied land on both sides of a small creek near the Klamath.

By the time Waterman conducted his research, gold mining had already changed the shape of some riverbanks. Historical maps are therefore especially useful for understanding where the water sources had been before those alterations.

Waterman's book preserves a simple detail of daily life: people chose a familiar small spring for drinking water even though a stream flowed near their houses.

Historical source: T. T. Waterman, Yurok Geography (1920), printed p. 257, item 21, and map 26 — https://digicoll.lib.berkeley.edu/record/82790/files/ucp016-006.pdf. A historical map of the Weitspus area was also published by A. L. Kroeber in 1925 — https://commons.wikimedia.org/wiki/File:Yurok_Town_of_Weitspus.jpg.

The Miwok — drinking from small woven basket cups

A little basket for water and manzanita berry drinks

In central and northern California, Miwok people used plant-fiber baskets of many sizes. Among them were very small vessels that could easily be held in the hand. People drank water and beverages made from manzanita berries from these little baskets.

Ethnographers Samuel Barrett and Edward Gifford described the objects in their 1933 book Miwok Material Culture. They recorded local names, the shape and purpose of the cups, and the dimensions of several museum specimens.

What the cup was made of



The Miwok — drinking from small woven basket cups

Daderot, photo 15 Nov 2013; basket maker unidentified. CC0 1.0 Universal (photo dedicated to public domain). Wikimedia Commons .

The cups were made from plant material using closely worked coiled basketry. Shoots or fibers were joined into a low, rounded vessel with an open top. Such a cup was quite different from the large baskets intended for cooking and storing food.

It could be brought to the water, used to scoop up a little, and raised to the mouth. The historical record explicitly states that the small baskets were used to drink water and manzanita beverages.

What the vessels were called

Different Miwok groups had their own names. Barrett and Gifford recorded pulī’sa among the Plains Miwok, pudī’sa among the Northern Miwok, pūlī’ssa and sō’tonō among the Central Miwok, and pūla’kka among the Southern Miwok.

The names varied by locality, but they described a similar kind of small woven drinking vessel.

Dimensions of actual cups

In their museum inventory, the ethnographers listed a Northern Miwok cup with a rim diameter of about 168 millimeters. Another Northern Miwok specimen was recorded as approximately 76 millimeters high.

Other sizes also existed, but both examples show small, hand-held vessels. These should not be confused with large baskets that could be used to cook food with heated stones.

What people drank from them

The cup could hold ordinary drinking water. It could also be used for a drink made from the berries of local manzanita shrubs and water. It was a versatile small vessel for everyday use.

The variety of woven vessels had a purpose: large baskets suited storage and food preparation, while small ones served for pouring and drinking.

What has survived

Researchers described and photographed real Miwok cups, listing several examples under museum catalog numbers. Other Miwok baskets have survived to the present as well, including a basket made before 1917 and now held by the Oakland Museum of California.

The museum object illustrates a genuine Miwok weaving tradition, although its use specifically as a drinking vessel has not been established. Information about the water cups themselves comes from the ethnographic record.

Historical source: S. A. Barrett and E. W. Gifford, Miwok Material Culture (1933), “Techniques,” descriptions, catalog numbers, and dimensions of small basket cups — https://www.yosemite.ca.us/library/miwok_material_culture/techniques.html.

The Cahuilla — stepped earthen wells called temakawomal

How people reached water beneath the desert ground

In the dry valleys of Southern California, the Cahuilla knew places where water remained even after streambeds had dried up. In some places, water emerged naturally as a spring. Elsewhere, people had to descend into the ground to reach it.

The Desert Cahuilla called these wells temakawomal — an “earthen olla.” The name is preserved in the history of the Augustine Band of Cahuilla Indians. These wells were unlike narrow modern boreholes: a broad earthen passage descended in successive steps. A person could walk down to the water without needing a long dipper suspended on a rope.

How a temakawomal was constructed



The Cahuilla — stepped earthen wells called temakawomal

C. C. Pierce (1861–1946). Public domain US (pre-1930). Wikimedia Commons .

1. People located a place where groundwater remained beneath the dry surface.
2. They dug an open depression with earthen steps, descending below the level of the surrounding desert.
3. At the bottom of the steps, they reached the water and could collect it directly where it came to the surface.
4. If the groundwater level fell, the descent could be extended farther downward. The steps made it possible to reach deeper water without changing the natural source.

The open arrangement had another feature. According to the tribal account, animals could also drink from these wells. For people in desert settlements, these were familiar watering places visited regularly.

Where the wells were located

Cahuilla settlements in the Coachella Valley stood near streams, springs, and places where groundwater could be reached through the soil. Sometimes pressure from underground brought water to the surface on its own. Where it did not, people created stepped earthen descents.

A historical photograph taken by Charles Chester Pierce around 1903 shows a Cahuilla well near Martinez. The earthen edge, a small depression, and dense vegetation around the watering place are visible.

Here, water and earth together formed the structure: the soil served as its walls, the dug steps as its staircase, and desert groundwater remained the source.

Sources: Augustine Band of Cahuilla Indians, “History & Heritage,” “Water Wells” — https://tribe.augustinetribe-nsn.gov/history-heritage/. Historical photograph: Charles C. Pierce, CHS-2310 — https://commons.wikimedia.org/wiki/File:Indian_well_at_Martinez,_showing_the_heavy_vegetation_around_it,_ca.1903_(CHS-2310).jpg.

The Cahuilla — a sweet mesquite drink made without fire

Menyikish pishpakhatem in the Coachella Valley

In the hot Coachella Valley, mesquite trees grew near Desert Cahuilla settlements. People recognized the trees by their small paired leaflets, pale elongated flower clusters, and seed pods that ripened in summer. Mesquite provided food that could be prepared without a fire: ripe pods could be eaten fresh, while the pods themselves could be mixed with water to make a sweet drink.

The Augustine Band of Cahuilla Indians preserves its name, menyikish pishpakhatem. The tribe's historical account says that children especially enjoyed this drink.

Gathering mesquite



The Cahuilla — a sweet mesquite drink made without fire

Robb Hannawacker / Joshua Tree NPS. Public Domain US (NPS government work). Wikimedia Commons .

The flowers appeared in June. Long pods ripened on the trees in July and August. During the fruiting season, Cahuilla people gathered the sweet harvest to eat immediately, dry for later, or make into a drink.

How the pod drink was prepared

1. Ripe pods of honey mesquite were gathered.
2. The pods were crushed to release their sweet contents.
3. The crushed pods were mixed with water. The water absorbed their sweetness, producing a slightly thick drink.
4. The drink was consumed fresh. This method required neither fire nor cooking.

The same tradition included another drink, made from the tree's flowers. Gathered flower clusters were dried in the sun and then placed in water. This produced a refreshing liquid with a plant flavor, again without heating.

Mesquite was closely connected with Desert Cahuilla settlements. Historical accounts by researchers describe many villages located near dense mesquite groves. People knew when flowers appeared and when the pods began to ripen.

A photograph taken at the Oasis of Mara in Joshua Tree National Park shows the long pods of honey mesquite among its leaves. It depicts the plant material used by the Cahuilla to make menyikish.

Tribal source: Augustine Band of Cahuilla Indians, “History & Heritage,” “The Honey Mesquite Bean” — https://tribe.augustinetribe-nsn.gov/history-heritage/. Photograph: Robb Hannawacker, Joshua Tree National Park, 2007 — https://commons.wikimedia.org/wiki/File:Honey_Mesquite_(Prosopis_glandulosa)_beans;_Oasis_of_Mara.jpg.

The Cahuilla — tightly woven nčat baskets for carrying water

Natural vessels in desert California

In the Coachella Desert, water was central to life in every Cahuilla settlement. People obtained it from familiar springs and earthen wells. They knew how to make water containers entirely from plants: interwoven stems and fibers formed the sturdy walls of a basket.

The Augustine Band of Cahuilla Indians preserves the word nčat — “basket.” Women made woven objects of different sizes. Some were used to gather seeds and fruits; others served purposes around the home. Certain baskets were woven so tightly that they could be used to carry water.

What the baskets were made from



The Cahuilla — tightly woven nčat baskets for carrying water

George Wharton James, CHS-3825. Public domain US. Wikimedia Commons .

Natural grass stems and strong strips of plant material were used. In David Prescott Barrows's historical account (1900), the core of a coiled row consisted of a narrow bundle of grass. The working strip could be obtained, among other materials, from rush stems or finely split sumac branches. No artificial material was needed for this weave.

How the plant rows were joined

1. Several grass stems were gathered into one long, narrow bundle, forming the core of the first row.
2. A thinner strip of plant material was wound tightly around the bundle, gradually turning it into a spiral.
3. The working strip was passed through the neighboring lower row, then wound around the upper bundle again. Each pass joined the two rows.
4. Each loop was pulled tight. The neighboring rows fitted increasingly closely together as the basket wall gradually rose.
5. The spiral continued until the basket reached the required depth. In fine Cahuilla basketry, five to seven coiled rows could fit within one inch — about 2.5 centimeters.

This coiling method was recorded by an observer in Cahuilla settlements. The ability to transport water in particularly tightly woven baskets is separately preserved in the Augustine Band's own account.

How the baskets were used

Water collected from a spring or well was carried back to a camp in a woven vessel. Other natural water-holding places existed in Cahuilla country, including stepped wells called temakawomal, from which people obtained water for everyday needs.

A historical photograph

Around 1900, George Wharton James photographed Cahuilla basket maker Maria Los Angeles at work. The image shows an unfinished woven object in her hands, with prepared materials nearby.

Sources:

- Augustine Band of Cahuilla Indians, “History & Heritage,” “Basket-Makers” — https://tribe.augustinetribe-nsn.gov/history-heritage/
- David Prescott Barrows, The Ethno-Botany of the Coahuilla Indians of Southern California (1900), “Baskets and Basket-Making,” pp. 42–44 — https://upload.wikimedia.org/wikipedia/commons/d/d1/The_ethno-botany_of_the_Coahuilla_Indians_of_Southern_California_%28IA_ethnobotany00barrrich%29.pdf.

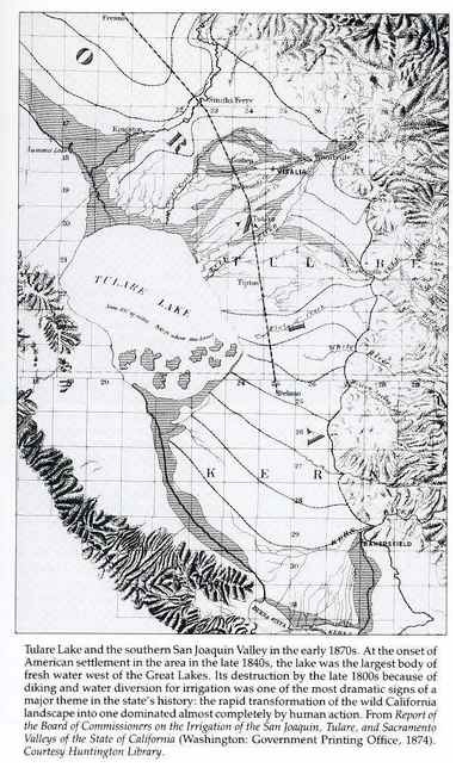
The Tachi Yokuts — an ah’ch water bottle woven from tule

An authentic vessel from 1903, near Tulare Lake

On June 5, 1903, Clinton Hart Merriam acquired a water bottle made from plant material by a Tachi Yokuts woman. She lived in a tule house at a settlement roughly seven miles southeast of Lemoore in Central California. Merriam recorded the vessel's name in his field notes as ah’ts or ah’ch.

The object has survived. It is now held by the University of California, Davis anthropology museum under inventory number CHM 873. The scholarly description records not only the bottle's dimensions but also details of its close plant-fiber weaving.

Dimensions and shape



Tulare Lake and the southern San Joaquin Valley in the early 1870s. At the onset of American settlement in the area in the late 1840s, the lake was the largest body of fresh water west of the Great Lakes. Its destruction by the late 1800s because of diking and water diversion for irrigation was one of the most dramatic signs of a major theme in the state's history: the rapid transformation of the wild California landscape into one dominated almost completely by human action. From *Report of the Board of Commissioners on the Irrigation of the San Joaquin, Tulare, and Sacramento Valleys of the State of California* (Washington: Government Printing Office, 1874). *Courtesy Huntington Library.*

The Tachi Yokuts — an ah’ch water bottle woven from tule

Board of Commissioners on Irrigation of San Joaquin, Tulare, Sacramento Valleys / US Government Printing Office. Public Domain (1874, U.S. Government Printing Office). Wikimedia Commons .

The museum vessel is approximately 25 centimeters high and 19.5 centimeters in diameter. It has a rounded body and a relatively narrow neck. Unlike a large, open basket, this shape is convenient for carrying liquid.

What the bottle was made of

The main plant material was tule, which grew in the valley's wetlands. The museum describes a firm weave: the strands binding the plant-fiber foundation run diagonally. The walls were woven closely enough for the vessel to retain its shape.



The Tachi Yokuts — an ah’ch water bottle woven from tule

Gordon Leppig and Andrea J. Pickart, U.S. Fish & Wildlife Service. Public Domain US, federal USFWS work. Wikimedia Commons .

One feature of this particular surviving specimen is important: **it has no coating of pine resin**.

How woven water bottles held liquid

The Tachi and other Plains Yokuts used different methods to reduce leakage from woven vessels. The museum describes two possibilities.

The first relied on the properties of tule: the container was soaked with water, causing the plant parts to swell and the spaces between them to become smaller.

In the second method, pine resin coated the surface of the bottle, filling the openings between fibers. But this treatment must not be attributed to every object: the surviving bottle CHM 873 has no resin coating.

Other possible uses

The museum notes that vessels without a resin coating were sometimes used for seeds as well. The surviving object therefore illustrates two potential uses of plant-fiber containers: holding dry provisions and retaining water in a woven vessel.

A tradition beside Tulare Lake

The valley around the lake supplied plentiful tule and other plants used in weaving. People made large mats, house coverings, baskets, and water bottles from them. These objects differed in form, but all reflected knowledge of the flexibility and strength of plant fibers.

The authentic vessel acquired in June 1903 preserves a particular shape, set of dimensions, and the old name ah’ch — a rare opportunity to compare a historical account with an actual object.

Sources: UC Davis Department of Anthropology Museum, “Tachi Yokuts Waterbottle” (2015) — https://anthromuseum.ucdavis.edu/news/july-16-2015-tachi-yokuts-waterbottle; C. Hart Merriam, Field

Work Among Yokuts Tribes, 1902–1904, field record from 1903 — https://digicoll.lib.berkeley.edu/record/84252.

The Chemehuevi — protecting small desert springs with stones

Stones over emerging water and vessels carried along trails

In the Mojave Desert, it was important to know not only the locations of major rivers but also where small quantities of groundwater emerged. The Chemehuevi remembered springs and seasonal watering places, traveled between them along familiar trails, and passed this knowledge to later generations.

A historical and ethnographic study submitted to the California Energy Commission in 2010 preserves information on how the Chemehuevi cared for small natural water sources. The material draws on research by Catherine Fowler and records of historical accounts.

Stones over a small spring



The Chemehuevi — protecting small desert springs with stones

National Park Service NPGallery photographer not specified. Public Domain US (NPS employee official work). Wikimedia Commons .

Some small springs were covered with stones at times. According to the explanation cited in the source, this protected the water from interference by animals and other people.

This was a matter of covering a natural point where water emerged, not constructing a large well. The research provides no measurements for the stones, number of layers, or precise laying pattern. The historical detail is the practice itself: small sources could be protected using material found close at hand.

Where the water trails ran



The Chemehuevi — protecting small desert springs with stones

Jesse Pluim, Bureau of Land Management California. Public Domain US (federal employee). Wikimedia Commons .

The Chemehuevi trail network connected the Colorado River with springs and natural rock reservoirs in the Mojave Mountains. Some sources held water all the time, while others depended on recent rainfall.

Families moving at a slower pace selected routes where watering stops were closer together. Fast messengers could follow more direct routes with greater distances between springs.

How water was carried

Matavium's account includes a description of water containers: they were carried inside a burden basket or carrying net. These objects helped people move a supply of water from one source to the next.

On reaching a watering place, travelers considered the journey still ahead. Planning a crossing was especially important where a seasonal reservoir might dry out between rains.

Who went to the springs

The historical research also states that women trained in scouting terrain and traveling along trails could go to distant springs to collect water during journeys. Knowing the route was part of everyday preparation for travel.

How protecting a spring differed from storing water

A spring covered with stones remained a natural watering place. A water vessel, by contrast, allowed someone to carry some of the water away. These were two distinct practices that could be combined on long journeys through the desert.

Historical source: SES Solar One — Cultural Resources, Data Request 102 (2010), section on Chemehuevi water sources and trails, citing Fowler (2004), Laird (1976), and Matavium — https://efiling.energy.ca.gov/GetDocument.aspx?DocumentContentId=47511&tn=55663.

Shelters

The Kumeyaay — building a domed e’waa step by step

Willow, tule, and plant-fiber ties in Southern California

On Kumeyaay lands in Southern California, people built dwellings with rounded roofs and low entrances. One such house was called an e’waa. Its shape was made not from heavy logs but from long, flexible branches bent toward one another. A covering of plant materials was laid over the framework.

Tule — wetland plants growing near fresh water — was especially suitable for rainy weather. Dried stems allowed air to move between the fibers, while the fibers swelled when wet, making the outer layer denser.

What the house was made of



The Kumeyaay — building a domed e’waa step by step

Edward S. Curtis. Public domain (US). Wikimedia Commons .

Willow. Long, flexible branches formed the dome's foundation. They served as upright supports and curved inward, meeting near the top of the dwelling.

Plant-fiber ties. Strong cords made from yucca or agave fibers held the poles together and secured the outer covering.

Tule. Long wetland stems were gathered, dried, and tied into bundles. In rainy weather they covered the framework, gradually forming a dense roof.



The Kumeyaay — building a domed e’waa step by step

sdpitbull. CC BY 2.0 . Wikimedia Commons . Resized for the web..

Stones. Stones were arranged around the outside edge of the dwelling. This ring made it more difficult for small animals to enter.

How the dome was assembled

1. A site was selected and a circular outline marked out for the dwelling. Long willow branches were positioned along this circle.
2. The lower ends of the branches were fixed into the ground. The branches were bent inward to create a rounded form above the middle of the site.
3. The upper parts of the framework were joined with plant-fiber cords. Additional crosswise branches were tied to the principal arches.
4. Tule stems were gathered and left to dry. They were then tied into bundles suitable for fastening to the framework.
5. The bundles were tied progressively to the outer arches, covering the sides and top of the house. A separate opening was left for the entrance.
6. Stones were laid around the lower edge. In some dwellings, soil and clay were also packed against the lower part of the walls.
7. Tule mats were spread over the earthen floor inside. They provided places to sit and sleep.

The covering could vary by location and season. Looser brush was also used in dry weather, while tule was chosen where a denser layer was needed for protection against rain.

A photograph published in Edward Curtis's historical collection in 1926 shows a Kumeyaay woman beside a house in Campo. Its finished shape and plant covering are visible. A modern photograph titled Kumeyaay Home, taken in 2006, shows another example of this kind of structure.

Sources: Kumeyaay Diegueño Land Conservancy / Sycuan Band of the Kumeyaay Nation, “Learning Landscapes,” section on the e’waa — https://www.parks.ca.gov/pages/663/files/LearningLandscapes_Edited_20201120v1c%20REMEDIATED.pdf; “A Teacher’s Guide to Historical and Contemporary Kumeyaay Culture,” section 1.5, Shelter — https://mtrp.org/wp-content/uploads/2024/08/kumeyaay_teachers_guide.pdf.

The Kawaiisu — a tomo kahni winter house built for rain

The Tehachapi Mountains, Southern California

The Kawaiisu built winter houses called tomo kahni from plants and stones. Each house had a rounded base, and branches rose toward one another to form a dome resembling an upturned basket. Outer layers of brush, bark, and tule filled the gaps between poles. A woven plant mat hung over the entrance. Inside, people slept with their feet pointing toward the center of the dwelling.

Materials used

Willow or juniper poles formed the framework; thinner branches made the inner and outer lattice; bundles of brush filled the spaces; large pieces of bark or tule mats formed the covering; natural stones made a ring at the base; and a separate mat covered the entrance. The historical description of this house does not require metal fasteners: its parts were joined with plant materials.



The Kawaiisu — a tomo kahni winter house built for rain

Chevy111. CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

How a tomo kahni was built — step by step

1. The base. A location was chosen for a round winter dwelling. The lower ends of sturdy branches and poles were placed along the outline of the planned house. At one documented settlement, individual houses measured approximately 12–15 feet across.

2. The framework. Willow or juniper poles were directed upward and connected to one another. This produced a rounded form that narrowed toward the top. Ties made from flexible branches held the pieces together.
3. Crosswise branches. Thinner branches were fastened both outside and inside the main poles. This gave the framework depth, leaving space between the two layers of branches for plant filling.
4. Brush filling. Bundles of brush were packed into the spaces between the branches, filling the openings. The resulting thick wall was made entirely from local vegetation.
5. Rain covering. Bark or sheets of tule — long wetland stems — were laid over the outer brush layer. They concealed the branches and formed an additional roof. The historical account of the tomo kahni explicitly describes this covering as a way of making the house tight against rain.
6. A ring of stones. Natural stones were arranged around the base. The ring helped hold the lower edges of the structure in place during strong winds.
7. The entrance. An opening was left on one side and covered with a hanging mat. It could be pushed aside to enter and lowered again afterward.

Where and how people slept

A small hearth surrounded by stones stood at the center of the dwelling, with an opening above it to let smoke escape. People lay on the floor with their feet toward the center, facing the hearth. During the cold season they used blankets made of rabbit skins, wrapping themselves in them at night.



The Kawaiisu — a tomo kahni winter house built for rain

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

When the house was used

The tomo kahni was a winter house. In summer, Kawaiisu people moved to higher, cooler parts of their territory and made other structures, including open shade shelters called hava kahni. Simple branch windbreaks were also known at short-term camps.

The winter tomo kahni differed from a summer shelter above all in its thick plant covering and enclosed shape. Separate layers of framework, branches, brush, bark, or tule were all made from natural materials.

Sources: California State Parks, “The Kawaiisu Culture” — https://www.parks.ca.gov/?page_id=24579 California State Parks, “Tomo-Kahni: Kid’s Page,” sections on shelter, clothing, and rabbit-skin blankets — https://www.parks.ca.gov/?page_id=24583

The Coast Miwok — a kotcha dwelling of willow and tule

The coast of Marin and southern Sonoma

Among the Coast Miwok, a small family dwelling was called a kotcha. It protected people from bad weather and provided a place to sleep. The materials depended on what grew nearby. Where large redwoods were available, broad strips of bark were used. Around Point Reyes, where redwood bark might not be available, houses were built from willow poles and the wetland plant tule.

The willow framework

Long willow poles were collected to form the foundation of the house. They made up the framework of a small dwelling. Bark was stripped from the poles, and joints were secured with plant-fiber ties. This created a structure that could be covered with long wetland stems.



The Coast Miwok — a kotcha dwelling of willow and tule

Sarah Stierch (Missvain). CC0 1.0. Wikimedia Commons .

Gathering tule

Tule grew near water, in marshes and along shallow banks. Its long stems were harvested in nearby wetlands and carried to the house under construction. On the finished framework, they became an outer covering against wind and rain.

How the kotcha came together

1. People chose a place for a small family dwelling and determined the area that needed to be covered by the roof.
2. A framework of willow poles was assembled, establishing the shape of the future house.
3. Bark was stripped from the poles, and the poles were tied together.
4. Tule stems gathered in the marshes were laid over the framework, gradually covering the walls.
5. The plant covering was made dense. To protect against winter rains, it was as much as two feet thick — approximately 60 centimeters — in some places.
6. An entrance was left in the covering so people could go inside.
7. The interior served as a place to rest at night. Coast Miwok kotcha dwellings are known to have had slightly sunken earthen floors covered with woven tule mats and hides.

Another type — the bark house

In coastal forests, the Miwok also built kotcha dwellings with frameworks made from strong Douglas-fir poles. These poles were tied with vines, while broad strips of redwood bark covered the exterior walls and roof. Soft mats and hides were spread on the earthen floor inside.

The form of a dwelling was closely connected to the environment around the settlement: willow and tule in wetland areas, and bark and sturdy wooden poles in the forest.

At Olompali State Historic Park, reconstructed Coast Miwok dwellings covered in plant materials can be seen today. A modern photograph shows their silhouette and outer tule covering.

Historical source: National Park Service, “Guide to the Miwok Village: Kule Loklo,” sections “Tule House” and “Redwood Bark House” — https://npshistory.com/publications/pore/brochures/miwok-village.pdf. Photograph: Sarah Stierch, Olompali State Historic Park, 2016 — https://commons.wikimedia.org/wiki/File:Miwok_dwellings.jpg.

The Sierra Miwok — a conical house made of bark slabs

Umū'tca, Sierra Nevada

In the mountainous regions of California, the Miwok built conical dwellings from large slabs of tree bark. One such house was known as an umū'tca. Its distinguishing feature was that the bark could serve as both wall and roof: large pieces were leaned together, supporting the structure without a central pole.

The principal material

The ethnographic work of Barrett and Gifford specifically identifies the bark of California incense cedar, now known scientifically as Calocedrus decurrens. Bark from pines and giant sequoias was also used at different elevations. Bark was taken from trees that were already dead: large detached sections provided ready-made natural slabs.



The Sierra Miwok — a conical house made of bark slabs

Almonroth. CC BY-SA 3.0 . Wikimedia Commons . Resized for the web..

What the house looked like

The house was conical, with a rounded earthen floor. For mountain dwellings, ethnographers give a diameter of approximately 8–15 feet, or 2.4–4.6 meters. The entrance opened directly through the sloping wall. Sometimes pine needles were added to the inner surface, and earth was piled against the bottom of the exterior.

How the house was assembled



The Sierra Miwok — a conical house made of bark slabs

Eadweard Muybridge. Public domain (pre-1931). Wikimedia Commons .

1. Bark slabs. Long, wide pieces of bark were selected, thick enough to stand at an angle. Large sections of incense cedar, with their thick fibrous bark, were particularly valued.
2. A circle on the ground. The future dwelling had a rounded outline. Large slabs were placed along its perimeter, leaving a space where the entrance would be.
3. The first cone. Each slab was tilted with its upper end toward the center of the planned house. The tops leaned against one another. This produced a self-supporting cone with neither a separate framework nor a central pole.
4. Covering the gaps. New pieces of bark were laid over the joints between the first slabs. Subsequent layers covered the spaces between earlier ones. According to the historical account, there were three or four thicknesses of bark at the joints. This overlap made the covering tight against rain.
5. The entrance slab. An opening was left in one sloping side for entry. A separate, large piece of bark was kept in front of it. When the opening needed to be closed, the slab was leaned against it; there was no special door frame.
6. The lower part. In some versions, earth was banked up around the base. The bottom edge of the bark was surrounded by a low earthen embankment. Inside, the earthen floor could remain uncovered or be covered with bedding.
7. Bedding on the floor. For sleeping, Miwok people piled up pine needles and spread mats or hides over them. Sometimes a small mound of needles served as a pillow. Natural materials therefore formed both the roof of the house and its sleeping area.

How this differed from a branch-frame dwelling

The Miwok also had another type of house: a conical framework of poles was covered with grass, brush, or tule. Plant materials were arranged in rows and tied with wild grapevine. A house made from large slabs of bark did not necessarily require such a framework or ties.

A reconstruction of this type of bark dwelling can be seen today at Yosemite Village. In an 1872 historical photograph by Eadweard Muybridge, Miwok people stand near a bark structure beside the Merced River.

Historical source: S. A. Barrett and E. W. Gifford, “Miwok Material Culture,” Dwellings section (1933) — https://www.yosemite.ca.us/library/miwok_material_culture/dwellings.html.

The Central Miwok — a portable tcaama shelter made of tule mats

How tule mats became a conical house

In the Sierra Nevada foothills, the Central Miwok knew a distinctive type of portable dwelling called tcaama. Unlike houses made of heavy bark slabs, this dwelling's principal portable components were mats woven from the wetland plant tule. A separate mat covered the entrance.

The tcaama is documented in the ethnographic account by Samuel Barrett and Edward Gifford published in 1933. The researchers recorded the house's name, shape, and materials, as well as an important feature: the mats were attached to sticks so they could be rolled up and carried away.

Materials



The Central Miwok — a portable tcaama shelter made of tule mats

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Tule is a collective name for long-stemmed wetland plants used to make large, flexible mats. These woven sheets were more than bedding: they covered the sides of the dwelling.

Sticks formed part of the fastening system for the mats. They helped people roll up and carry the plant-fiber sheets. The source does not specify the exact number of sticks or how they were joined.

An entrance mat was a separate piece of tule matting that closed the doorway.

How the portable house was arranged

1. The house had a conical shape. Its outer covering consisted of tule mats.
2. The woven sheets were attached to sticks, allowing each section to be rolled up into a portable bundle.
3. An entrance was left in the side of the cone and closed with a separate mat.
4. When the dwelling was moved, the plant-fiber sheets could be rolled up together with the sticks attached to them, then unrolled at the next campsite.

This ability to roll up parts of the covering distinguished the tcaama from a house that had to be built anew each time from large, immovable materials.

Where the tcaama was used

Barrett and Gifford associated this dwelling with the Central Miwok and with areas below 1,500 feet above sea level, approximately 460 meters. These were foothill and lowland areas where suitable wetland plants grew.

The Miwok used other kinds of summer shelters as well, including open structures made from branches and grass; in mountain forests, there were conical bark houses. The tcaama, however, was distinguished by its covering of rollable mats and its mat door.

Historical source: S. A. Barrett and E. W. Gifford, “Miwok Material Culture” (1933), Dwellings section — https://www.yosemite.ca.us/library/miwok_material_culture/dwellings.html.

The Payómkawichum — three kinds of kíicha houses

The Luiseño people, the Temecula Valley, and the mountains of Southern California

The Pechanga Band preserves descriptions of the traditional houses of the Payómkawichum (Luiseño), known as kíicha. These dwellings served primarily as places to sleep and as shelter during bad weather. Most other daily activities took place outdoors. Houses could be round, domed, or conical, but their construction varied with the plants growing nearby: willow, cedar bark, or wetland tule.

How long construction took

The published tribal account states that a new kíicha usually took several days to build. When a house wore down, people repaired it, so a well-made dwelling could last for years.



The Payómkawichum — three kinds of kíicha houses

Jim Morefield. CC BY-SA 2.0 . Wikimedia Commons . Resized for the web..

First type — Şaxáatal kíicha, the willow house

Willow grew along waterways in the Temecula Valley and was a common building material. Willow houses were constructed with a double framework of willow branches.

1. The base. A shallow, circular depression, approximately one or two feet deep (about 30–60 centimeters), was dug to create a level earthen floor.
2. The double framework. Willow poles formed two rows of supports. A space remained between them for smaller branches.
3. Filling the walls. Willow branches, twigs, and leaves were packed tightly into the space between the two layers of the framework. This created a wall made from plants.
4. Roof and location. Willow houses were often placed on gentle slopes where rainwater would flow downhill across the ground. The overall shape of the house remained rounded.

Second type — ’éesatal kíicha, the cedar-bark house



The Payómkawichum — three kinds of kíicha houses

Gmihail. CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

In the mountains, the Payómkawichum used large slabs of cedar bark gathered from dead trees. These houses were also erected over a shallow, circular depression. Unlike a willow house, however, the roof consisted of broad pieces of bark.

1. Upright supports. A framework of poles was erected above the base to support the bark slabs.
2. The first layer. Wide slabs of cedar bark were laid across the framework.
3. Overlapping layers. Further slabs were placed on top to cover the joints. The tribal account mentions three or four layers of bark. This overlap protected against wind, rain, and snow.

Third type — Pivéesatal kíicha, the tule house

Where lakes and rivers were nearby, people gathered the long stems of tule. For this kind of home, a willow framework was covered with fresh tule stems.



The Payómkawichum — three kinds of kíicha houses

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

1. The willow base. Flexible branches established the shape of the dwelling.
2. Fresh tule. Long green stems were bent, laid over the framework, and tied to it.
3. The roof. The joined stems formed an outer layer that shed rainwater. Such houses were especially used in spring and summer, when their interiors were cooler on hot days.

Sleeping in all three houses

The floor was covered with mats made from Juncus rushes or tule. Fur and hides supplied additional coverings. The entrance was closed with a mat or hide that hung in the opening and could be moved aside when someone entered.

The three kinds of kíicha show different answers to the same need. Near streams, a house could be made from willow; in the mountains, it could have a layered cedar-bark roof; and beside lakes, it could be covered with flexible tule.

Tribal source: Pechanga Band of Indians, “Traditional Homes” — https://www.pechanga-nsn.gov/index.php/culture/customs-and-traditions/traditional-homes.

The Miwok — open summer shelters of poles and plant coverings

Open shelters for work, rest, and sleep

During the hot, dry summer in Central California, Miwok people did not always need thick walls. At seasonal camps they built light shelters where they could rest by day and sleep at night. The plant covering provided shade while air moved freely through it.

Samuel Barrett and Edward Gifford recorded several local names for these shelters in their 1933 book Miwok Material Culture. Among the Plains Miwok, a name was wo’lle; among the Northern Miwok, ko’llī; and among the Central Miwok, mole.

Two forms of summer shade



The Miwok — open summer shelters of poles and plant coverings

S. Rae / Flickr. CC BY 2.0 . Wikimedia Commons . Resized for the web..

One form had a simple conical framework of poles covered with plants. Another was rectangular, with an almost flat top. Both were light structures, not intended to support a heavy earthen roof.

The flat shelter was particularly suitable for an open summer camp. By day it served as a convenient place for work and rest; at night, people could sleep beneath it. The same space had different uses over the course of a day.

What the covering was made of



The Miwok — open summer shelters of poles and plant coverings

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Poles. Wooden supports established the shape — either a cone or an open rectangular structure.

Brush, grass, and tule. These plants formed the upper covering. Depending on the place, people could use long wetland stems, dry grass, or branches.

Flexible grapevine. The ethnographic account explicitly mentions wild grapevines used to fasten plant materials to the framework.

How such a shade shelter was arranged

1. Poles were set up to form a conical or nearly flat shelter.
2. Plant materials were laid over the frame. For the conical structure, the account describes overlapping rows of covering.
3. The plants were tied with flexible grapevines to keep them attached to the poles.
4. During the dry summer, the covering was relatively loose. Air could pass through it while the space beneath remained shaded.
5. The area under the plant roof stayed open for ordinary daily activities and nighttime rest.

The key was not the weight of the material but the combination of shade and airflow. These shelters differed from winter houses of earth and bark, which protected people against cold and bad weather.

When the shelter was used

The ethnographers associated these structures with the hot, dry summer season and temporary summer camps. At that time, Miwok people could prefer light shade to a densely covered house.

A historical account of everyday life is connected with these summer shelters: women and children worked or rested in the shade by day, and at night the same place became a sleeping area.

Source: S. A. Barrett and E. W. Gifford, Miwok Material Culture (1933), “Dwellings” — https://www.yosemite.ca.us/library/miwok_material_culture/dwellings.html.

The Chemehuevi — an open summer house with a plant-covered roof

How people created a large shaded space in the desert

Around 1900, photographer Charles Chester Pierce photographed a Chemehuevi summer house. His image preserves a large shelter made from wooden poles, beneath whose roof people rested during hot weather.

The house is unlike a small, enclosed winter dwelling. Its roof extends broadly over the ground, while the sides remain open. Air can flow freely through the entire space beneath the shelter.

What the summer house was made of



The Chemehuevi — an open summer house with a plant-covered roof

Charles C. Pierce. Public domain (US). Wikimedia Commons .

Supports. Tall wooden poles held up the roof. The historical photograph shows uprights separating the shaded space from the open desert ground.

Roof framework. Wooden elements ran across the top of the supports and carried the outer covering. Together they provided a sturdy upper framework.

Plant covering. Long stems were laid side by side over the wooden parts. They provided dense shade beneath the roof. The species of plant used for this covering cannot be identified from the photograph.

A place for resting. On one side beneath the shelter, a woman lies directly on the ground. On the other side, two men rest on squared wooden beams. A table beside one of the poles holds everyday objects and blankets.

Another structure nearby. In the background is a second, smaller house of sticks and branches, also covered by a plant roof. Structures of different sizes stood together at one camp.

How it was used

The broad plant-covered roof shaded people resting, sitting, or working outdoors. Solid walls were not needed to protect the space from the summer sun.

Pierce's photograph shows both the house and the space within it: the supports, the wooden roof framework, its plant covering, and people resting in the shade. This kind of dwelling served as an open summer place for rest.

Historical photograph: Charles C. Pierce, “Chemehuevi Indian summer house,” circa 1900, California Historical Society Collection, CHS-3515 — https://commons.wikimedia.org/wiki/File:Chemehuevi_Indian_summer_house,_ca.1900_(CHS-3515).jpg.

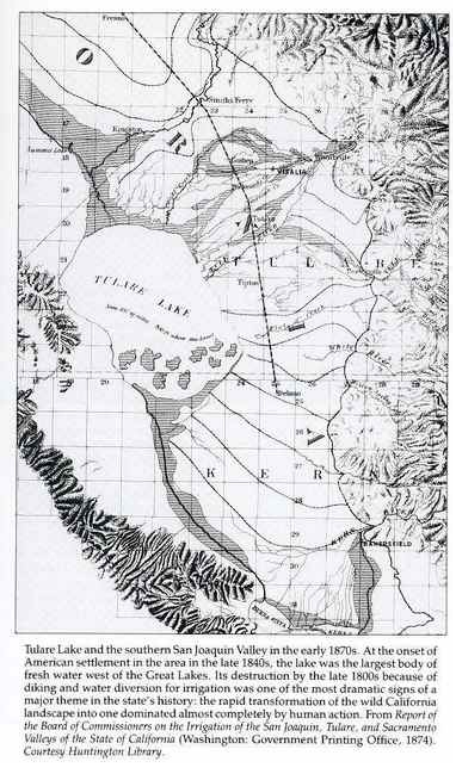
The Tachi Yokuts — a large oval house of willow poles and tule mats

A historical record near Tulare Lake, 1903

On June 4, 1903, naturalist and ethnographer Clinton Hart Merriam visited a Tachi Yokuts settlement about six miles southeast of Lemoore, California. Among smaller dwellings, he saw large oval houses covered with sheets of tule, a tall wetland plant that grew around Tulare Lake.

One house was approximately 35–40 feet long, or about 10.7–12.2 meters. Merriam estimated its height at roughly eight feet (2.4 meters). Its size and broad shared interior distinguished it from a small portable shade shelter.

A willow framework



Tulare Lake and the southern San Joaquin Valley in the early 1870s. At the onset of American settlement in the area in the late 1840s, the lake was the largest body of fresh water west of the Great Lakes. Its destruction by the late 1800s because of diking and water diversion for irrigation was one of the most dramatic signs of a major theme in the state's history: the rapid transformation of the wild California landscape into one dominated almost completely by human action. From *Report of the Board of Commissioners on the Irrigation of the San Joaquin, Tulare, and Sacramento Valleys of the State of California* (Washington: Government Printing Office, 1874). *Courtesy Huntington Library.*

The Tachi Yokuts — a large oval house of willow poles and tule mats

Board of Commissioners on Irrigation of San Joaquin, Tulare, Sacramento Valleys / US Government Printing Office. Public Domain (1874, U.S. Government Printing Office). Wikimedia Commons .

A wooden framework of willow poles formed the foundation. Long, flexible poles established the oval outline and supported the covering of large mats.

A narrow, elongated oval opening was left along the top of the dwelling. Smoke from the fires inside escaped through it. Merriam specifically recorded this opening as a feature of the house's design.

Large sheets of tule



The Tachi Yokuts — a large oval house of willow poles and tule mats

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Mats covered the sides and upper parts. According to Merriam, some sheets were 12–15 feet high, approximately 3.7–4.6 meters, and covered substantial portions of the walls and sloping roof.

The mats were not made like ordinary baskets. Round tule stems were laid parallel and close together, then bound at short intervals with cord. These bindings produced a large, flexible sheet.

How the dwelling was assembled

1. A long, oval framework of willow poles established the house's shape.
2. Large tule coverings were made separately, with stems laid side by side and repeatedly bound across their width.
3. The finished sheets were placed over the poles, covering broad areas of the side walls and roof.
4. A long, narrow opening remained at the top for smoke to escape.
5. Other mats were spread over the earthen floor, serving as bedding at night and places to sit during the day.

These steps are arranged in a clear order based on the materials and parts described. Merriam did not record a complete timetable for the builders or the precise number of poles used in any one dwelling.

Inside the large house

Merriam observed plant-fiber mats on the ground. They were used both for sleeping and for sitting during the day. The Tachi made both large roof coverings and separate mats for household use.

The surrounding wetlands supplied long tule stems, while local willows provided flexible poles. Together, these two natural materials shaped the oval houses beside Tulare Lake.

Historical source: C. Hart Merriam, Field Work Among Yokuts Tribes, 1902–1904, entry for June 4, 1903, printed p. 404 and following — https://digicoll.lib.berkeley.edu/nanna/record/84252/files/ucas068-003.pdf?registerDownload=1&version=1&withMetadata=0&withWatermark=0.

The Mountain Cahuilla — building a samat house with six main posts

Mountain settlements of the Cahuilla, Southern California

Mountain Cahuilla villages had houses known as samat: dwellings with a rectangular base, wooden posts, and a roof made from plants. One of the most detailed descriptions of their construction was recorded in the late nineteenth century and published in 1900. It preserves not only the names of plants but also pole lengths, post positions, and the spacing of roof components.

Materials used

Sturdy wooden poles came from a local shrub called o-ot — chamise (Adenostoma), which could grow into large bushes on mountain slopes. The wood of large manzanita shrubs and oaks was also used for heavier structural parts. Fresh, flexible yucca leaves were used to tie the parts together. Willow branches formed the walls, while tule, local grasses, and reeds provided the roof covering.



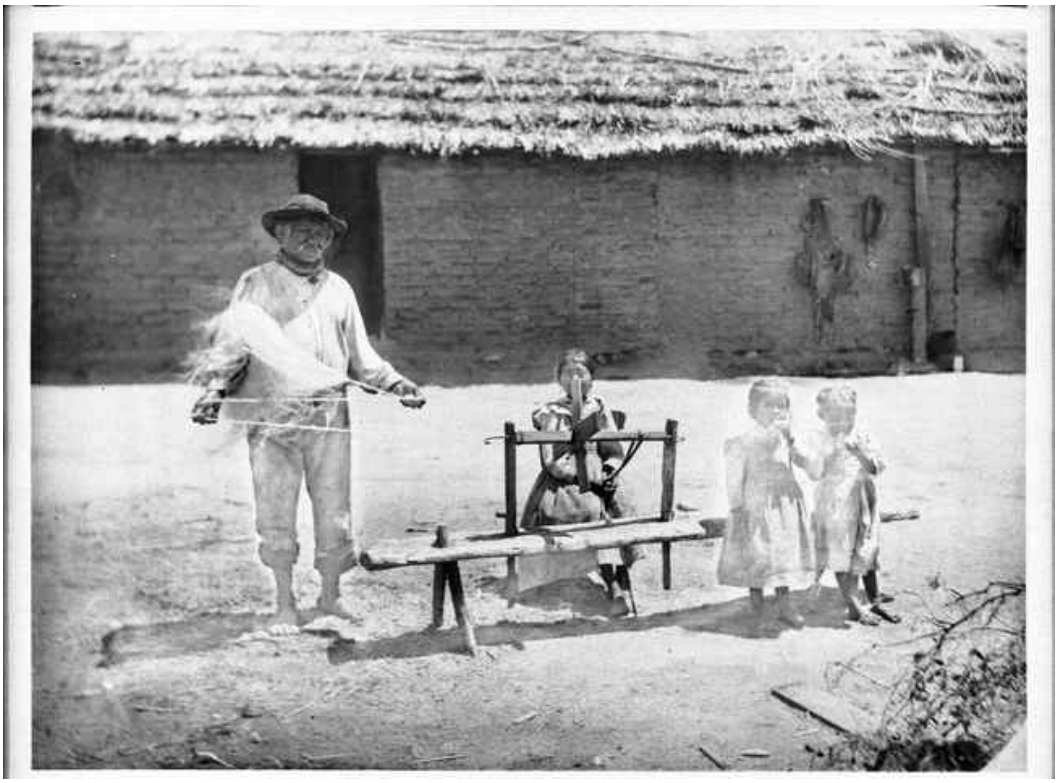
The Mountain Cahuilla — building a samat house with six main posts

Charles C. Pierce / California Historical Society CHS-547. Public Domain US. Wikimedia Commons .

What the samat looked like

Its base could measure about 12 by 18 feet, approximately 3.7 by 5.5 meters. Two tall posts supported the high center of the roof, while shorter posts stood at the corners. A longitudinal beam and side supports established the roof's slope.

Construction, step by step



The Mountain Cahuilla — building a samat house with six main posts

George Wharton James, CHS-3831. Public domain US. Wikimedia Commons .

1. Location and dimensions. A rectangle was marked out for the planned house. Mountain Cahuilla people favored slight elevations and gentle slopes near valleys.
2. Six main posts. Thick poles with natural forks at their tops were placed at the four corners, leaving approximately four feet (1.2 meters) above ground. At the midpoint of each end, another, taller forked post was erected. These stood about eight or nine feet high (2.4–2.7 meters). Sometimes a seventh post was added beside the front post to define the edge of the entrance.
3. Three longitudinal beams. Three long poles rested in the forks: one upper beam running along the center and two side supports. The natural forks themselves held the ends of the beams.
4. Sloping rafters. Roof poles ran from the upper longitudinal beam down to the side beams. Thinner branches were laid above them parallel to the ridge at intervals of six to eight inches, or about 15–20 centimeters.
5. Yucca ties. All parts of the roof were fastened with fresh, flexible yucca leaves. These plant-fiber ties held the beams, sloping poles, and crosspieces together.
6. Willow walls. Additional stakes were driven into the ground along the sides. Willow branches were woven tightly between them. The Cahuilla called willow sak-hat. In some places, gaps between the branches were filled with damp soil or clay.
7. Plant-covered roof. Tule stems were arranged in flat bundles on the sloping roof. Thin poles were then laid across the bundles to hold them down, and those crosspieces were fastened with strips of yucca leaves. Tall grasses and reeds were also used in mountain areas.
8. The ki-mil entrance. An opening was left in one end, approximately 1.4–1.5 meters tall and 60–90 centimeters wide. A strong wooden crosspiece was secured above it. At night, the entrance could be closed with a simple separate screen of poles, held in place by a prop or stones.
9. Earthen floor. The surface inside was slightly excavated and then packed down. Sometimes earth was banked around the base of the house outside. A smoke hole was left in the roof near the upper beam.

10. Bedding. Inside, people slept on coverings and hides spread across the earthen floor. Some houses had raised sleeping platforms made from wooden poles along the walls.

What people did in summer

During the hot season, the Cahuilla also used separate open shade shelters called táish-kish-lu. These were square, with almost flat roofs. Light poles were bound together with pieces of yucca, and the roof and sides were covered with willow branches. People rested and carried out household activities beneath these shelters by day while air circulated freely between the branches.

A settlement could therefore have both a more closely covered house for cooler weather and an open plant-covered shade shelter for the hot months.

Historical source: David Prescott Barrows, The Ethno-Botany of the Coahuilla Indians of Southern California (1900), chapter III, “Houses and House-Building,” pp. 35–40 — https://upload.wikimedia.org/wikipedia/commons/d/d1/The_ethno-botany_of_the_Coahuilla_Indians_of_Southern_California_%28IA_ethnobotany00barrrich%29.pdf.

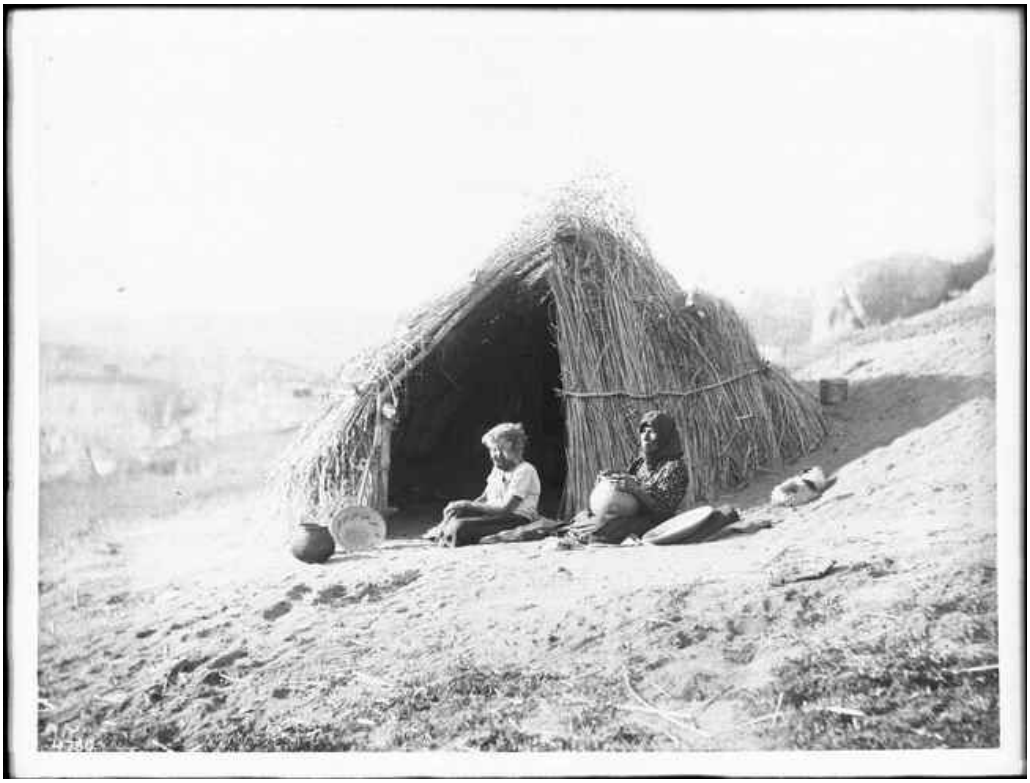
The Cahuilla — a round kish house roofed with tule and palm leaves

A roof of tule and palm leaves

In desert settlements of Southern California, Cahuilla people built round houses called kish. Their roofs began close to the ground and rose in a dome over the living space. Instead of long logs and stone masonry, these houses used flexible branches and plants that grew near water.

Some kish houses measured 15–20 feet across, about 4.5–6 meters. Inside was an earthen floor with a place for a hearth and an area where a family rested and slept.

What the house was made from



The Cahuilla — a round kish house roofed with tule and palm leaves

George Wharton James, CHS-4750. Public domain US. Wikimedia Commons .

Long willow branches formed the main structure. They were bent to create a rounded framework. Whatever plant covering was available was placed over the outside: long wetland tule stems, fan-palm leaves, or other local plants. Tule was also woven into mats for the floor and entrance.

How the domed kish was assembled

1. A level place was chosen, and the round outline of the future dwelling was marked out.
2. Long, flexible willow branches were bent inward to form a dome above the site.
3. Plant materials were laid over the branch framework. Tule was used near marshes; in areas with palm oases, large fan-palm leaves were available.
4. An entrance was left at the front and could be closed with a tule mat.
5. An opening was left near the top of the roof for smoke from a hearth in the middle of the earthen floor to escape.
6. Tule mats were spread inside. They covered the ground and provided places to sit and rest.

What a real house looked like

Around 1900, photographer George Wharton James photographed two Cahuilla women in front of their kish. Behind them, the photograph shows a closely covered, rounded dome with a plant roof. The women sit on coverings, with baskets and clay vessels nearby.

Mountain Cahuilla communities also had other dwellings, including rectangular samat houses made from tall poles. The round kish was a distinct structure: its framework relied on bent willow branches rather than straight walls and a longitudinal beam.

Sources: “The Cahuilla Indians,” California State University, San Bernardino, “Shelter” — https://www.csusb.edu/sites/default/files/Unit_3.2_Cahuilla_Student_Reader.pdf; Santa Rosa Band of

Cahuilla Indians, “Culture” — https://new.santarosacahuilla-nsn.gov/culture.html. Historical photograph: George Wharton James, CHS-4750 — https://commons.wikimedia.org/wiki/File:Coahuilla_Indian_women_in_front_of_their_%22kish%22_California,_ca.1900_(CHS-4750).jpg.

Sleep

The Sierra Miwok — making a bed from pine needles

Sleeping on earthen floors in California's mountain dwellings

In forest settlements of the Sierra Nevada, Miwok people made sleeping places from natural materials. The foundation was not a wooden bed but the dwelling's earthen floor, covered with pine needles. A mat or covering was spread over the needles. Such bedding formed part of the everyday arrangement of a home.

What made up the sleeping place

Pine needles. The 1933 book Miwok Material Culture describes needles from two pines: Digger pine (Sabine pine) and western yellow pine (ponderosa pine, Pinus ponderosa). The needles were laid over the earthen floor, creating a layer between the ground and the upper bedding.



The Sierra Miwok — making a bed from pine needles

Forest & Kim Starr. CC BY 3.0 . Wikimedia Commons . Resized for the web..

Mats. Mats were spread over the layer of pine needles. The ethnographers also recorded the use of hides as bedding. The needles lay underneath, while a person rested on the covering above them.

Pillows. Sometimes a separate small heap of pine needles was gathered to support the head. On other occasions, a rolled-up coyote-hide covering served the same purpose.

How a sleeping place was arranged

1. The dwelling had an earthen floor. Pine needles were spread over the part of the floor intended for sleeping.
2. A mat or other bedding was laid over the needles. People slept on this upper layer.
3. When needed, a small pillow was made from more pine needles near the head of the sleeping place.

Not every sleeping place was directly on the ground. For some people, a raised bench was made from willow or other wooden poles. According to the ethnographic account, these beds stood 15–18 inches (approximately 38–46 centimeters) above the floor. They were a separate, less common arrangement.

The materials used for sleeping were closely connected to the house itself: large slabs of bark formed the walls and roof, while the needles of local pines provided a soft lower layer for bedding. The historical record preserves both ways of sleeping — on the floor and on a wooden platform.

Source: S. A. Barrett and E. W. Gifford, Miwok Material Culture (1933), “Dwellings” — https://www.yosemite.ca.us/library/miwok_material_culture/dwellings.html.

The Kumeyaay — sleeping on tule mats

Plant-fiber bedding inside the domed e’waa

In Southern California, Kumeyaay people built domed e’waa houses from willow branches. Plant materials covered the flexible framework, while the floor inside remained earthen. For sleeping, people used mats made from the wetland plant tule or blankets made from rabbit skins.

This practice is described in A Teacher’s Guide to Historical and Contemporary Kumeyaay Culture, prepared by researchers at San Diego State University with support from several Kumeyaay communities.

What the sleeping place looked like



The Kumeyaay — sleeping on tule mats

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Inside the house, a person lay on a plant-fiber mat spread over the ground. Above was the domed willow framework, covered on the outside with tule stems, leaves, or brush.

Tule grew in damp places, alongside waterways and in marshes. Its long stems were suitable for joining into wide sheets. The same plant material was used for covering dwellings and making bedding.

What the bedding consisted of

The plant layer. A large tule mat separated the person lying down from the bare earthen floor.

Another covering. The source also specifically mentions blankets made from rabbit skins. These, too, served as bedding; depending on the circumstances, people used woven plant mats or fur.

The house around the bed. Walls and a roof made of willow branches and plants formed a sheltered space. An opening was left for the entrance, and the upper part of the dwelling could have a smoke hole.

What is known about the mats themselves

The historical guide explicitly confirms that Kumeyaay people slept on tule mats. However, it does not provide a detailed sequence for weaving the mats, stem measurements, the width of a sleeping mat, or the number of ties used.

The most reliable picture, therefore, is the arrangement of the sleeping place itself: an earthen floor, a wetland-plant mat, and a domed dwelling around it.

The Kumeyaay lived in different environments, from relatively moist foothills to dry areas of Southern California. Where tule grew, its stems supplied material for everyday objects. Inside an e’waa, it could become a soft plant-fiber surface on which people rested at night.

Historical source: Geralyn M. Hoffman and Lynn H. Gamble, A Teacher’s Guide to Historical and Contemporary Kumeyaay Culture (2006), section 1.5, “Shelter,” p. 9 — https://mtrp.org/wp-content/uploads/2024/08/kumeyaay_teachers_guide.pdf.

The Tachi Yokuts — weaving a large tule sleeping mat

Tule stems and crosswise cords near Tulare Lake

In the early twentieth century, Clinton Hart Merriam visited a Tachi Yokuts settlement near Lemoore, California. On June 4, 1903, he saw large oval houses covered with tule. Inside were separate plant-fiber mats on which people slept at night and sat during the day. On subsequent visits, the researcher recorded how the stems were joined into close-fitting sheets.

Tule grew in the wetlands surrounding Tulare Lake. Its long stems were used both for house walls and for sleeping mats. The intended use, however, affected how closely the stems were joined: mats for the floor were bound more tightly than some large wall coverings.

The dimensions of a sleeping mat



The Tachi Yokuts — weaving a large tule sleeping mat

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Merriam noted that sizes varied, but mats measuring approximately six feet wide and eight feet long — around 1.8 by 2.4 meters — were common. A mat this wide provided a place to lie down at night; during the day, it remained a place to sit.

How the stems were joined

1. Long, round tule stems were laid parallel to one another to form a broad sheet.
2. Two strands or cords were laid crosswise, one along the front of the stems and the other along the back. As the stems were fastened together, the cords alternately passed around neighboring stems.
3. Further crosswise bindings were repeated along the mat. For a large wall covering, Merriam described gaps of about ten inches (25 centimeters) between bindings. For sleeping and floor mats, those gaps could be considerably smaller — around four inches (10 centimeters).
4. The cords were drawn tight so that the long stems lay closely against one another, leaving almost no gaps between neighboring plant parts.
5. The upper and lower ends were bent over and secured with a crosswise tie. Sometimes a woven border was added along the sides.

The result was a large, flexible plant-fiber surface. Unlike a basket with high sides, the mat was flat and was designed either to lie on the ground or to cover a dwelling's framework.



The Tachi Yokuts — weaving a large tule sleeping mat

Gordon Leppig and Andrea J. Pickart, U.S. Fish & Wildlife Service. Public Domain US, federal USFWS work. Wikimedia Commons .

Mats inside the house

Merriam recorded that some large tule sheets covered the willow poles of an oval dwelling while others lay directly on its earthen floor. It was the floor mats that people used for sleeping and sitting. In one observation, a woman with a newborn child remained on such a mat.

Merriam's materials also preserve a diagram showing how round stems were bound together, drawn from accounts and observations among the Tachi in 1904. It illustrates the importance of frequent crosswise ties in making the mats.

Historical source: C. Hart Merriam, Field Work Among Yokuts Tribes, 1902–1904, field notes from 1903–1904, published in 1967, printed pp. 404–408 — https://digicoll.lib.berkeley.edu/record/84252.

The Kawaiisu — sleeping with their feet toward the center of a winter house

Feet toward the center and blankets for cold nights

In the Tehachapi Mountains, Kawaiisu winter houses were called tomo kahni. A historical description preserved by California State Parks includes an unusually precise detail about sleeping arrangements: people lay with their feet pointing toward the middle of the house.

The tomo kahni was a rounded dwelling resembling an upside-down basket. It was covered with branches, brush, bark, or tule mats. A small hearth surrounded by stones stood at the center, and a smoke hole was left in the upper part of the roof.

How people arranged themselves inside



The Kawaiisu — sleeping with their feet toward the center of a winter house

Chevy111. CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

Sleeping places were positioned around the central space. People lying down to rest pointed their feet toward the hearth. The source describes the orientation of their bodies relative to the center of the house, not any single sleeping posture.

This arrangement was related to the house's design: the round interior had a shared center. People could settle along the outer edge of the room.

What they used as blankets

For cold weather, Kawaiisu people made large blankets from rabbit skins. California State Parks materials explain that the skins were joined into a single covering, which people wrapped around themselves at night. It helped retain warmth during the cold season.

In winter, the sleeping place was inside a closely covered plant-material house. The roof was made from branches and brush, while the outer covering of bark or tule mats helped protect the interior against bad weather. A hanging mat closed the entrance.

The middle of the house

The hearth was surrounded by a circle of stones at the center of the dwelling, with an opening in the roof overhead. On cool nights, stones could be warmed in the hearth. In the historical account of sleeping positions, however, the key detail is not the heating method but the direction people faced: their feet were toward the center.

Where and when

The account concerns the Kawaiisu winter house of the Tehachapi region. In summer, people made more open dwellings and shade shelters called hava kahni, which were constructed differently from the enclosed winter house.

The description of the tomo kahni helps us picture not only the shape of the domed dwelling but also the position of people while sleeping: several sleeping places near the perimeter, with their feet toward the shared center.

Historical source: California State Parks, “Tomo-Kahni: Kid’s Page,” sections “Shelter” and “Clothing and Rabbit Skin Blankets” — https://www.parks.ca.gov/?page_id=24583.

The Plains Miwok — large tule mats for sleeping

The Delta and plains between Sacramento and Stockton

The Plains Miwok made mats from wetland plants called tule and used them primarily for sleeping. Ethnographers Barrett and Gifford even recorded approximate dimensions: some mats were around seven feet long and three to four feet wide. These were broad sheets of plant material on which a person could lie on the ground.

What they were made from

The historical account names at least two kinds of tule. One had stems that were round in cross-section, while the other had three-sided stems. The long stalks of these wetland plants were joined together to form a mat.



The Plains Miwok — large tule mats for sleeping

Krzysztof Ziarnek (Kenraiz). CC BY-SA 4.0 . Wikimedia Commons . Resized for the web..

How the mat was constructed

Many long stems lay side by side, tied together into one broad covering. In the ethnographic account, this object is called he’sə — a mat of the Plains Miwok. Its dimensions made it suitable not only as bedding for one person but also as a large covering for an earthen floor.

How people slept

The mat was spread out on the floor, and people lay on it. In other Miwok regions, pine needles were also piled on the ground, with mats and hides spread over them. These were different approaches shaped by locally available materials: tule near wetland settlements, pine needles in mountain forests.

How it was used during the day

The same mats were spread on the floor and used as a covering for communal meals. The plant-fiber sheet served both as bedding and as an ordinary part of the living space.

Where people lived

The Plains Miwok inhabited the low, marshy lands of the Sacramento Valley and the Delta toward Stockton. Long-stemmed wetland plants grew nearby, providing material both for dwellings and for mats.

When they were used

The source describes everyday use of mats without limiting it to a particular month. People used bedding throughout the year.

Sources: S. A. Barrett and E. W. Gifford, Miwok Material Culture (1933), “Mats,” pp. 244–245 — https://www.yosemite.ca.us/library/miwok_material_culture/miwok_material_culture.pdf; “Dwellings” — https://www.yosemite.ca.us/library/miwok_material_culture/dwellings.html.

The Chemehuevi — sleeping on a raised platform beneath a branch arch

Desert California, around 1900

Photographer Charles Chester Pierce left a rare image of a Chemehuevi sleeping place. In it, a man rests near his fields beneath a light arch made of branches. Instead of a familiar bed, there is a platform of long wooden poles raised above the ground.

How the sleeping place was arranged

The first feature that catches the eye is the lower platform. Long poles and branches lie side by side, forming an elongated surface large enough for a person. The platform is raised off the ground, leaving an open space below it.



The Chemehuevi — sleeping on a raised platform beneath a branch arch

Charles C. Pierce. Public domain (US). Wikimedia Commons .

Above is another structure: an arched shade shelter. Bent branches create a rounded line overhead, with their ends resting on either side of the sleeping place. The arch provides shade, but it is not an enclosed house; air can move freely along the sides.

A folded blanket lies beneath the sleeper's head. The historical caption explicitly calls it a pillow. The bed thus consisted of a few simple things: a wooden platform, a branch shade shelter, and a soft folded covering beneath the head.

Where and when

The photograph dates to approximately 1900. In the California Historical Society archive it is described as the sleeping place of a Chemehuevi man while tending his fields. The setting is associated with the desert region around Palm Springs.

This photograph preserves a real way of arranging daytime rest: sleeping above the ground on a platform of branches, sheltered from the sun by an arch of plants.

Historical photograph: Charles C. Pierce, “Chemehuevi Indian man sleeping in his sleeping shelter in the field,” circa 1900, California Historical Society, CHS-3527 — https://commons.wikimedia.org/wiki/File:Chemehuevi_Indian_man_sleeping_in_his_sleeping_shelter_in_the_field,_ca.1900_(CHS-3527).jpg.