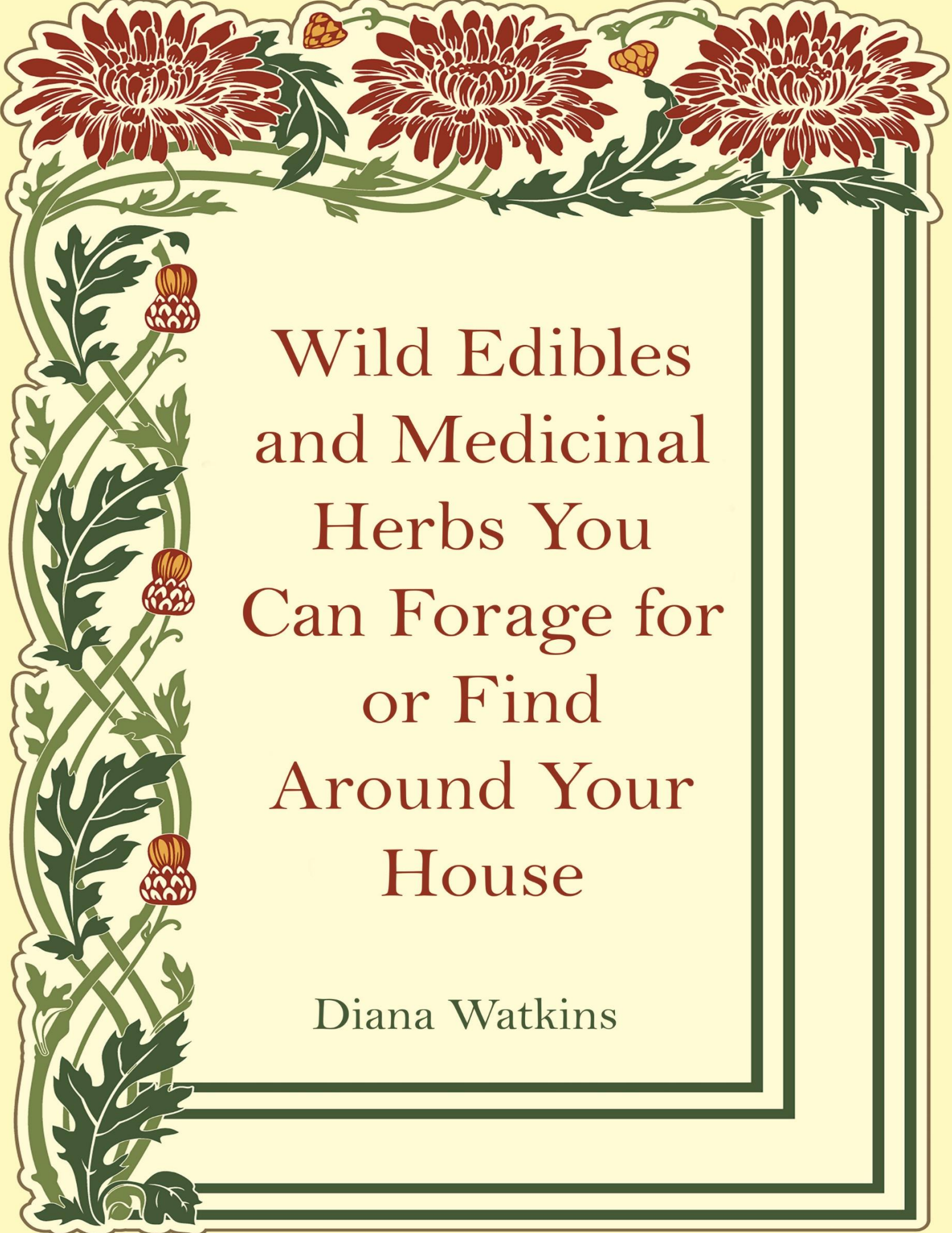


A decorative border surrounds the text. At the top, three large red chrysanthemums are arranged horizontally. Below them, green stems with leaves and small red flower buds curve down the left side of the page. The right side of the page is framed by a simple green double-line border.

Wild Edibles and Medicinal Herbs You Can Forage for or Find Around Your House

Diana Watkins

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Diane Watkins

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Introduction

Foraging is an important survival skill in troubling times. Knowing which native foods in your area are safe to eat could save your life and your family's lives. It is an easily learned skill, with a few important rules.

Rules for Foraging:

1. NEVER eat anything you are not 100% sure of. Do your research and talk to local foragers to learn to identify the edible and medicinal plants in your area.
2. Collect plants in safe, toxin free locations. Plants grown along roadsides will collect the heavy metals and toxins from car exhaust. You wouldn't plant a garden on top of a toxic waste dump, and you shouldn't collect plants there, either. Know which locations are safe for collecting and stay 100 feet back from well-traveled roads
3. Walk around your neighborhood and locate potentially edible plants. Do some research and make sure of your plant. Make note of its location for future use.
4. Always get permission to collect plants on private property and check out the rules on public lands.
5. Try every new food in moderation. You may have a reaction or allergy to a new food. Start small and eat more only after you know your body can handle it.
6. Don't overharvest. Leave behind seeds, roots, and a few plants to get a head start on next year's harvest.
7. Uphill land is less likely to be polluted since dust and exhaust settle downhill. When you have a choice, collect from higher elevations.
8. Wash all collected plants carefully and thoroughly.

Plants with Many Edible Parts

Dandelion, *Taraxacum officinale*

You've probably worked hard to remove this perennial weed from your lawn, but you may still find it in fields, parks, and some gardens.

The plant is a rich source of vitamins, minerals and antioxidants. The leaves, flower buds, flower petals, and roots are all edible.

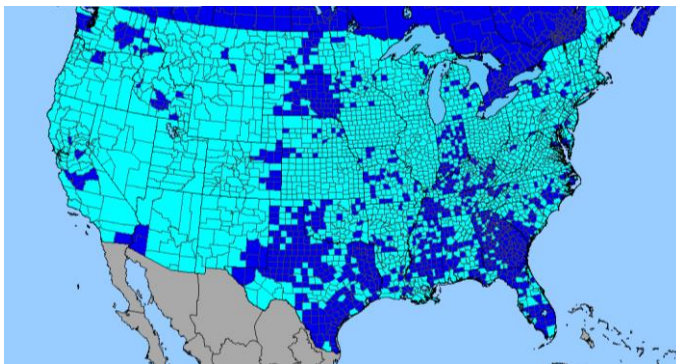
Plant Identification of Dandelions

Dandelion is known to most of us, but check these distinguishing features before eating the plant or using it medicinally:

- Dandelion is a hardy, perennial weed with a rosette base, multiple leaves, and several flowering stems per plant.
- The flowerhead has 150 to 200 yellow ray florets (petals) and no disk florets.
- Green inner and outer bracts appear at the base of the flowerhead.
- Flowers appear from early spring through late autumn.
- Leaves are toothy, deeply notched, and hairless. They are 2 to 10 inches long and form a rosette at the crown.



1. Dandelion flower, photo by Prosthetic Head, CC-SA 4.0



2. Dandelion Range,
<http://bonap.net/MapGallery/County/taraxacum%20officinale.png>

- Dandelions grow to be up to 10 to 12 inches tall.
- Found in most habitats, including lawns, woods, cultivated fields, rocky hillsides, and gardens.
- Dandelion seeds form a distinctive puff ball that children love to blow into the wind.

Edible Use of Dandelions

Dandelion is highly nutritious, loaded with vitamins, minerals, and fiber. They

contain potent antioxidants and may help fight inflammation.

- Dandelion greens are very nutritious and best eaten raw or cooked in the spring, before the flowers appear and they become bitter. Blanching them in water helps relieve the bitterness. Then use them like a pot green, saute them in olive oil and season with lemon juice, or add them to stir-fries.
- Unopened flower buds are good pickled, fried, or boiled. Once the flowers open, use the flower petals raw, cooked, or to make a delicious wine.
- The taproot is best harvested in late fall to early spring. The flavor is mild, so feel free to season them as you like. Or dry the roots, then roast and grind them to make a coffee like beverage.

Medicinal Use of Dandelion

Dandelion is a common medicinal herb, often used as a diuretic because of its high potassium levels. But dandelion is also valuable for treating a number of common illnesses:

- Dandelion root stimulates the gastrointestinal tract and treats issues with the liver and gallbladder. It supports healthy digestion and relieves constipation.
- Dandelion leaves act as a detox and diuretic. They stimulate the liver, gallbladder, and the production of urine.
- All parts of the dandelion plant contain bioactive compounds that help reduce blood sugar by improving insulin sensitivity and controlling the digestion of starchy carbohydrate foods.
- Dandelion lowers cholesterol levels and may decrease the risk of heart disease.
- Dandelion reduces blood pressure by ridding the body of excess fluid.
- Dandelion protects the liver by ridding the body of toxic substances and relieving stress on the organ. Some studies suggest that dandelion may reduce excess fat stored in the liver.
- Early studies suggest that dandelion leaves may help the body fight cancer by preventing the growth of cancerous cells in the organs. Dandelion root may slow the growth of cancer cells in the liver, colon, and pancreas.
- Dandelion may have antimicrobial and antiviral properties which support the immune system.
- Dandelion is a good source of calcium and vitamin K which support the bones and prevent bone loss.



1. Dandelion seeds, Avenue / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/4.0>)

How to Use Dandelion for Medicinal Use

There are no real dosing guidelines for dandelion, but evidence suggests that taking dandelion as a tea or coffee are effective, as well as eating the fresh or dried leaves, and the fresh or dried roots.

These doses have been suggested:

Fresh leaves: 4 to 10 grams daily

Dried leaves: 4 to 10 grams daily

Fresh leaf juice: 1 teaspoon, twice a day.

Fresh roots: 2 to 8 grams daily

Dried root powder: 250 to 1,000 mg, four times a day.

Possible Risks and Side Effects of Dandelion

Some people are allergic to dandelion, especially those who are allergic to ragweed and other related plants. Contact dermatitis can also occur in those with sensitive skin

Dandelion may interact with some prescription medications, especially antibiotics and diuretics

Dandelion Coffee

Add ½ teaspoon to 2 teaspoons of dried, roasted dandelion root to 1 cup of boiling water, according to your taste. Allow it to steep for 20 minutes, then strain. Drink 3 cups per day for medicinal use. Add milk to taste, if desired.

Dandelion Tea

Follow the instructions for dandelion coffee, using 1 to 2 teaspoons of dried dandelion leaves instead of root.

Daylily, *Hemerocallis fulva*



2. Daylily, Photo by Laineypaige, GNU FDL 1.2, CC-SA 3.0

This perennial plant is often found growing along roadsides or in gardens and fields. The shoots, flower buds, flower petals, and tubers are all edible. Start slowly with this plant, as some people have reported allergic reactions when eating the plant.

The daylily is also known as the orange day-lily, tawny daylily, corn lily, tiger daylily, ditch lily, outhouse lily, and wash-house lily. It is not a true lily, but is similar in looks to the flower.

Plant Identification

The daylily is a herbaceous perennial that grows from tuberous roots. Look for the following properties to identify the plant:

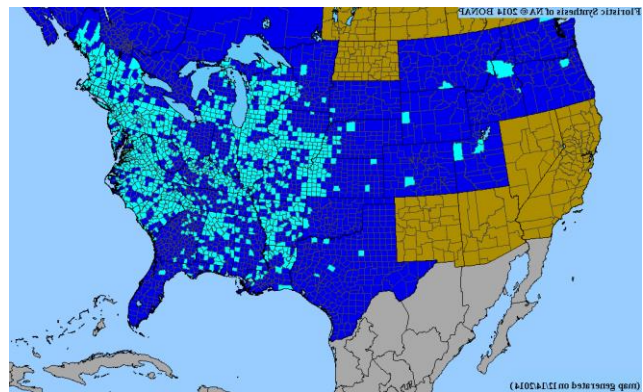
- Stems are 16 to 60 inches tall with linear leaves that are 20 to 35 inches long and a little over 1 inch wide.
- Flowers are 2 to 5 inches across, orange-red in color, with a pale line on each tepal.
- Flowers appear from early summer through the fall on scapes of 10 to 20 flowers. Flowers open in succession, each for one day.
- The fruit is a capsule with three inner valves. Each capsule is 3/4 to 1 inch long and about half as wide.

Edible Use of Daylily

When the bloom opens, but before it fades, pick the flowers and remove the pistils and stamens. Harvest unopened buds from when they are green and at least an inch long until they are about 3 inches long and showing color.

Collect young shoots that are less than 5 inches long.

- Use mature daylily flower petals either dried or fresh. Crumble the dry petals into pasta or rice to add color to the dish.
- Add fresh petals to salads.



5. Daylily Range Map, <http://bonap.net/MapGallery/County/hemerocallis%20fulva.png>

- Use daylily buds raw in salads or saute them in olive oil or butter.
- Use daylily shoots as a crisp spring vegetable sautéed or stir-fried.
- Coat tubers in oil and roast them at 450 for potato-like goodness.

Medicinal Use of the Daylily

- Use a decoction of daylily root or wine to treat the common cold or coughing in infants and children.
- Dried and powdered daylily root and leaves reduces inflammation and relieves pain caused by swelling and fluid retention. Take the powdered root and leaves before a meal.
- Daylily root is a diuretic and helps the body get rid of excess fluid and produce urine.
- A tea made from boiled root can be used to treat irregular or abnormal menstruation.
- The juice of the roots is an antidote to arsenic poisoning.

Kudzu, *Pueraria montana*



Kudzu is an invasive plant that nearly took over the south at one point. It was planted for animal fodder and erosion control, but the animals refused to eat it.

However, it is edible and a valuable source of nutrition when needed.

Plant Identification

Kudzu is a perennial vine that has been imported to the US and grows well in

subtropical regions, especially in the southeast.

6. Scott Ehardt / Public domain

lobes each

- Leaves are hairy on the underside
- Leaves alternate, compound
- Kudzu is a twining vine with stems or tendrils that attach and climb most surfaces, reaching up to 100 ft in height
- Flowers are 1/2-inch-long, purple, in clusters, and highly fragrant
- Tuberous roots and woody stems
- Prefers full sun or partial shade
- Once established, the plant can grow about a foot per day
- Young stems are hairy

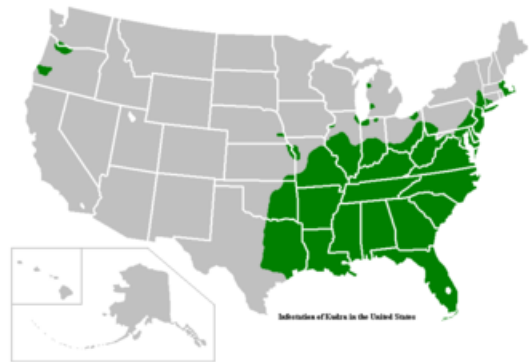
- Large, ovate leaflets with two to three

- Flowers have an intense artificial grape smell
- Seed pods are brown, hairy, flattened, and contain three to ten seeds. Seeds and pods are not edible.

Edible Use of Kudzu

If kudzu grows near you, you won't starve. The entire plant, with the exception of the seeds, is edible. And because of its rapid growth rate, there is always plenty of it spring through fall. Enjoy it in the following ways:

- Juice the young leaves or eat them as a green, they are tough like kale
- Dry the leaves and use them as a tea
- Eat young shoots like asparagus
- Use the blossoms to make pickles or jelly, the flavor is a cross between apple and peach
- Fry older leaves to make chips
- Stew the roots or remove the outer bark and roast like any root vegetable
- Grate, dry, and grind the roots to make a flour



Medicinal Use of Kudzu

- Kudzu is useful for treating dysentery, diarrhea, intestinal problems. It relieves gas and bloating, and helps in digestion. It relieves migraines and is used as a hangover remedy. It relieves muscle aches and pain.
- Treats allergies, fevers, colds, angina pectoris and helps reduce high blood pressure. It improves blood disorders and cardiovascular functions and is said to help relieve stress.
- Kudzu is packed with isoflavones, which act as hormone replacement therapy, treating the symptoms of menopause.
- Some early studies suggest it might be helpful in treating alcoholism. It is said to curb the person's desire to drink.
- The dried root is most often used for medicinal purposes, but the flowers and leaves also have medicinal properties.

Other Uses of Kudzu

Kudzu is useful for making rope, twine, baskets, fuel, compost, soaps, and lotions. It can be baled like hay and used as animal feed. Most animals like it.

Harvesting Kudzu

Make sure your kudzu has not been sprayed with pesticides or herbicides and is not exposed to toxins like road pollution.

Leafy and Salad Vegetables

Clover, *Trifolium*



3. <https://pixabay.com/photos/white-clover-clover-blossom-flower-3419402/>

Clover flowers are sweet and tasty, with a tiny drop of honeydew at the base. As a child, my grandmother taught me how to enjoy the tiny treat by slurping the drop of dew first, then eating the sweet flower whole.

Clover grows in meadows and pastures across the US and as a weed in many yards. Often, farmers plant it as a forage food for livestock.

When walking across a meadow, I look for the patches where the bees tend to congregate. Often, I'll find a patch of clover there.

Plant Identification

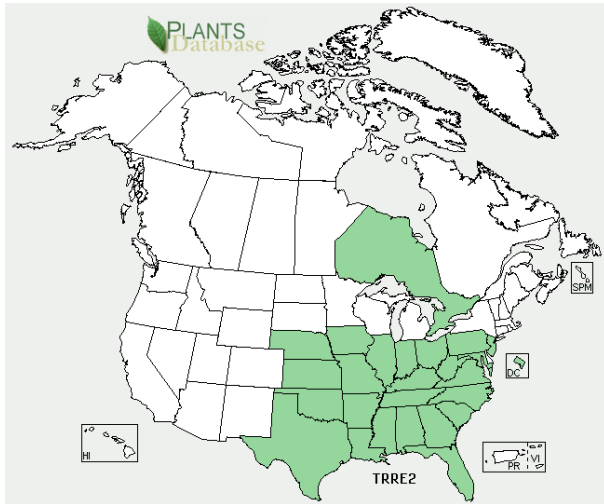
You probably know what clover looks like because you've seen pictures of "lucky" four-leaf clovers. I've found several four-leaf clovers myself; they are more common than you might expect.

Most clover plants have three-leaf groupings, but four, five, or even six sometimes occur. There are about 300 different species of clover with different leaf patterns.

How to Identify Clover:

- Stems usually have three small petal-shaped leaves that are about a half-inch long. The leaves have a white crescent or "V" shape on each leaf.
- Common clover blooms in the spring and summer. The white, light pink, or red flowers are small and form a cluster of petals.
- Clover is a ground cover that stays low to the ground. Stems can branch off and reach up to a foot in length, but they usually stay low.

- They like moist conditions and don't tolerate drought.



8. *Trifolium reflexum* range map,
https://commons.wikimedia.org/wiki/File:Trifolium_reflexum_NA-dist-map.png

Edible Use of Clover

Clover Greens: Clover greens are edible raw or cooked and can be used as a salad green, but are not very tasty.

Most people agree that they taste best cooked like a pot herb. Boil them gently for a nutritious side dish.

Clover Flowers and Seed Heads: Clover blossoms can be eaten raw, made into tea, or ground to replace flour.

To use clover blossoms as a flour:

Start by harvesting red or white clover flowers. Lay them out to dry in the sun for a few hours or dry on a dehydrator. If you have leaves and stems in your flowers, you might want to remove them before grinding.

You can leave them, but they have a strong “green” flavor.

Grind the blossoms in a coffee grinder, spice grinder, food processor, or blender. Eight cups of fresh blossoms will dry down to four cups and grind into 1 cup of flour, so start with a lot of flowers.

To use clover flour, substitute it for up to one quarter of the flour in any recipe. The ground flowers add flavor and nutrition to baked goods and give them a spongy textures and sweet pea flavor.

Roasted clover blossoms are also tasty. Pan roast the blooms until they are crispy.

Clover Taproot: The taproot can be cooked and eaten like a potato.

Clover Tea

3 Red clover blossoms, fresh or 2 to 3 teaspoons dried

Few peppermint leaves, as desired to enhance flavor (optional)

1 cup boiling water

Steep the tea for 15 minutes while it cools. Strain out the flowers and drink warm or allow it to cool. For best results, drink up to three cups a day.

If you prefer your tea cold, you can use 1/2 cup of clover blossoms to a quart of water and steep it in the refrigerator for 24 hours.

Medicinal Use of Clover

- Red clover can be taken as a supplement, dried herb, tincture or in tea form for medicinal use. Two to three cups of tea daily or two to three teaspoons of dried herb are recommended for most medical uses.
- Clover is known to relieve symptoms of menopause by acting as a natural hormone replacement therapy. It also slows bone loss and boosts bone density in pre- and peri-menopausal women.
- Clover protects the heart by increasing HDL (the “good” cholesterol). It has blood-thinning properties which improve blood flow, prevent strokes, and prevents clotting.
- Clover, used as a poultice, treats skin conditions such as eczema, psoriasis, and other skin conditions. Chop the fresh leaves and apply them directly to the skin in the troublesome areas or soak dried herbs in water before applying. Cover the skin and herbs with a cloth to hold them in place.



4. Common Clover: <https://pixabay.com/photos/clover-three-leaf-clover-happy-3928086/>

Harvesting Clover for Edible or Medicinal Use

Harvest clover growing in secluded areas, away from heavy pollution or car exhaust. Harvest blooms that have passed their prime and are starting to fade for use in flour, or fresh, young flowers for tea or roasting. Cut it in the early morning while there is still dew on the flowers.

Harvest the leaves at any time, leaving the remainder of the plant behind to recover.

Warnings:

- NEVER ferment any part of the clover plant. Eat it fresh, dried, or cooked, but not fermented.
- Some people are allergic to clover, so eat a small portion at first until you are sure you are not allergic.
- Because of its anti-coagulant effects, you should never use clover before surgery or childbirth.

Plantain, *Plantago Major*

Plantain is a small perennial, similar to dandelion weed, not the banana like fruit you might expect.

It is found growing wild in back yards, gardens, lawns, and along roadsides across the US.

Plant Identification

- The leaves quickly identify the plant. They are ruffled as if strung on veins of elastic and slightly bowl-shaped.
- The leaves are oval or almost round and have a chunky footstalk. They grow in a rosette at the plant base.
- Each leaf is 2 to 8 inches wide and slightly longer. It has a smooth margin and 5 to 9 veins.
- Greenish-white flowers have purple stamens.
- Flowers are tiny and densely packed on stems that reach 7 to 20 feet tall and rise above the foliage.
- The flowers are mostly eclipsed by greenish-brown sepals and bracts. The flowers produce many tiny, bitter seeds.



10. Plantago Major, H. Zell / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/3.0>)

Edible Use of Plantain

The leaves and seeds of the plantain are edible. Use the leaves in a salad when young and tender. Older leaves are tough and fibrous, but can be used cooked in soups and stews.

The seeds can be ground into a flour substitute. Dry them for storage.

Medicinal Use of Plantain

The plantain herb has many medicinal uses. It is anti-inflammatory, analgesic, antioxidant, immune modulating and a weak whole-body antibiotic. Use it in these ways:

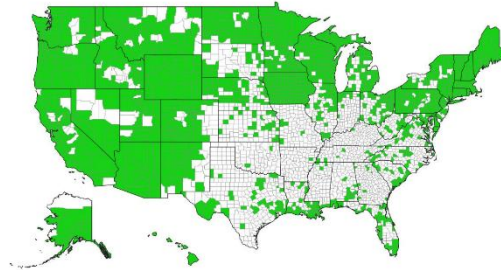
- Use crushed plantain leaves in a poultice to heal minor wounds, sores, and insect bites. It will fight infection and reduce inflammation. To make a poultice, crush or bruise the leaves and apply them directly to the wounds, then wrap with a clean cloth. Change the poultice two to three times daily.

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- Use plantain internally and externally for snakebite. Apply a poultice of crushed fresh leaves directly to the bite to draw out the venom and take 2 tablespoons of freshly pressed plantain juice. Success depends on the type of snake and how quickly the remedy is applied.

broadleaf plantain (*Plantago major*)

EDDMaps



Map created: 8/26/2019

Legend
No Data
Species Reported

- Plantain juice is beneficial for calming inflammations of the mucous membranes, including in the respiratory tract, digestive tract, and urinary tract. Use 2 teaspoons of freshly pressed juice, three times daily.
- Bruise plantain leaves and place on sore teeth to relieve infection, swelling, and pain. Hold it in place until the pain is gone. Soaked, dried leaves can also be used.
- Add a tablespoon of pressed plantain juice to 4 ounces of water and gargle to relieve a sore throat. Swish it around the mouth to reduce inflammation in gum tissue.
- Use plantain seeds for relieving constipation. Make an infusion with crushed plantain seeds and boiling water and take at bedtime. Consume the liquid and the seeds.
- Drink plantain tea twice a day to relieve autoimmune conditions and chronic diseases. Use it regularly, as benefits accrue over time.

11. Plantago Major Range Map,
<https://maps.eddmaps.org/cache/presence/6201.jpg>

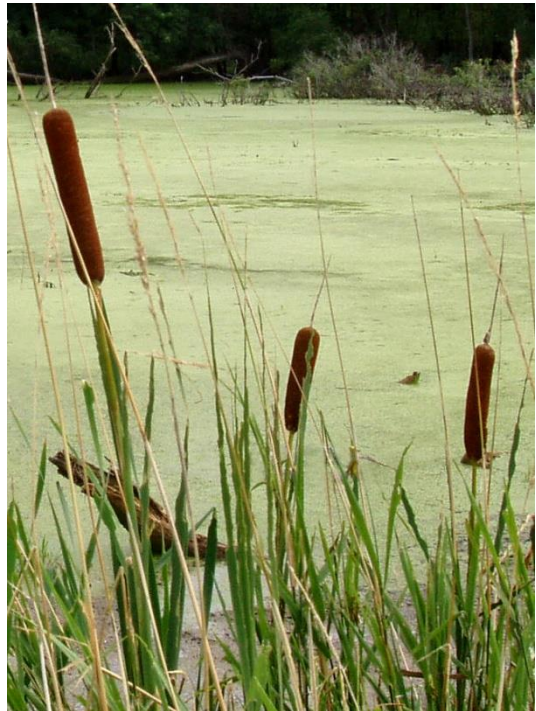
Cattails, *Typha*

Plant Identification

There are about 30 species of cattail plants in the temperate and cold regions of the US. They are often found in fresh or slightly brackish water.

Look for these characteristics of the plant:

- The plants are perennials that emerge from creeping rhizomes.
- Long tapering leaves with smooth margins are hairless, alternate, and mostly basal.
- The flowering spike is a jointless stem.
- Unisexual flowers on a dense cylindrical spike with female flowers that form a sausage-like spike below the male spike.
- Male flowers wither and fall off, leaving brown furry fruiting spikes.
- When mature, the spike disintegrates to release tiny, cottony wind-dispersed seeds.



12. Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=283771>

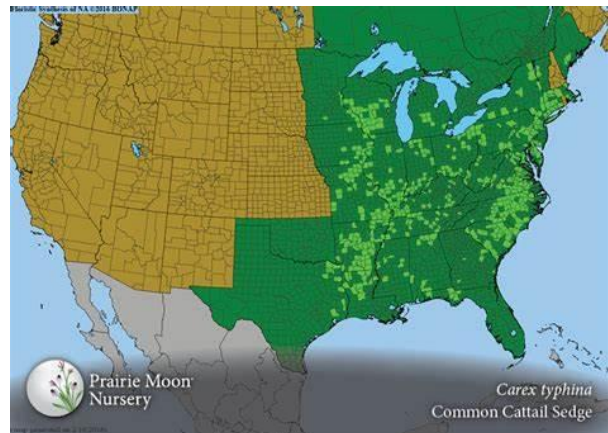
Edible Use of Cattails

Many parts of the typha plant are edible. The rhizomes are high in protein and starch. They can be made into a flour for use in baking.

- The outer portion of young plants can be peeled away, revealing the heart which can be eaten raw or boiled like asparagus.
- The leaf bases are good raw or cooked during the spring when they are young and tender.
- In early summer, remove the sheath from the developing flower spike and boil it for eating like corn-on-the-cob.
- When the male flowers mature in mid-summer, collect the pollen for use as a flour supplement or thickener.
- Boil, steam, mash, or fry the roots and eat them with butter or sour cream like potatoes.
- Make flour by scraping the starch from the root fibers and allow it to dry. The rhizomes contain gluten and have a mildly sweet flavor.

Medicinal Use of Cattails

- Use the starchy root to make a healing poultice for burns, boils, sores, cuts, insect bites, and bruises. Pound the roots and use the pulp or split the root and bruise it before applying.
- Use the fuzz from the flowers for treating skin irritations and small burns. Apply to the wound and cover it with a clean cloth.
- The jelly-like sap that seeps from the lower stems has antiseptic and pain-relieving properties. Scrape it from the young leaves with the back of a knife. Use it to treat small wounds and as a topical pain reliever.
- Use the jelly-like sap to treat toothaches, teething pain, sore gums, and skin irritations.
- Boil the leaves and use the boiling water as an antiseptic skin wash for infections and abscesses.
- Mix 5 to 10 grams of cattail pollen with honey and spread over wounds and infections. Cover with a clean cloth and leave in place. Wash the area and replace the honey-pollen 2 to 3 times a day.
- The jelly-like sap is also an antifungal. Use it to treat nail and foot fungus. Apply 1 or two times daily until the infection is completely gone.
- Eat young cattail flowers to treat diarrhea and dysentery. When fresh flowers are not available, make a tea from the dried flowers or mix root flour in hot water.
- Apply the fuzz from flowers into skin folds to prevent chafing and diaper rash.
- Cattail has anti-inflammatory and antioxidant properties that slow the growth and spread of cancers of all types.
- Burn a cattail leaf and use the ash as a styptic for wounds and as an antiseptic.
- Dust cattail pollen on a wound to stop bleeding and speed clotting.
- Take 5 to 10 grams of cattail pollen by mouth to lessen heavy menstrual bleeding and bleeding and pain after childbirth.
- Take 1 teaspoon of pollen and/or dried flowers to stop internal bleeding and prevent anemia. It stops bleeding due to bruising, hemorrhoids, uterine bleeding, vaginitis, and urethritis. It does not treat the cause of bleeding, only stops it.



13. Cattail Range Map,
<https://www.prairiemoon.com/images/MP/Carex-typhina-Common-Cattail-Sedge.jpg>

Warnings and Side Effects of Cattails

- Cattails have coagulant properties that could present a problem for people with poor circulations.
- Pregnant women should not use cattail.

Cattail Flower Tea

1 tablespoon fresh cattail flowers or 1 teaspoon dried cattail flowers

1 cup boiling water

Pour the boiling water over the flowers and allow the tea to brew for 10 minutes. Sip the tea to treat diarrhea.

Burdock, *Arctium lappa*

Common burdock is a biennial or short-lived perennial member of the aster family that grows in waste settings and disturbed woodlands.

Plant Identification

You'll easily find this plant by looking for the annoying burrs. When burrs aren't present, look for pointed leaves growing in a rosette.

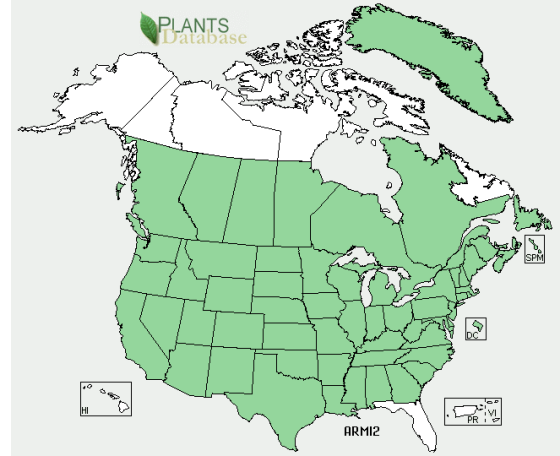


14. Lazaregagnidze / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/3.0>)

- During the first year, no stems grow close to the ground.
- It grows aggressively and flowers in the second year when growing in fertile soil.
- Large basal leaves can be over 18 inches long. The edges are untoothed, but irregular and wavy.
- Leaves are pale on the underside and have an unpleasant odor when crushed.
- Flower stalks reach 3 to 6 feet tall.
- Multiple leaves arise from the flower stalk along with pinkish-purple flowers growing in clusters along the stalk.
- Seed pots have multiple spikes that cause them to stick to everything as if they were Velcro.

Edible Use of Burdock

- The leaves are edible but get tougher as they get older. Use tender, young leaves fresh in salads and cook the tougher older leaves. The flavor is earthy and slightly sweet. Gather them from areas free of toxins and environmental pollutants since the plant concentrates toxins.
- Young roots and the interior of the flower stalks are also edible. The roots have a flavor similar to parsnips.
- Harvest the root in the fall of the first year or in the spring before it sprouts again.
- Roast burdock root for a nutty flavor.
- Parts growing above the ground have a bitter coating.
- Flower stalks and leaf petioles are mellow in flavor.
- Harvest young flower stalks before they become hollow, peel the stalks (twice to remove bitterness) and boil or use it as a stew vegetable.



15. Burdock Range Map,
<https://plants.usda.gov/maps/large/AR/ARM12.png>

Medicinal Use of Burdock Root

- Burdock root is a powerful anti-inflammatory. It reduces swelling and lymph production quickly. Use it as a decoction or tincture.
- Pickle the root in apple cider vinegar. Use the vinegar to treat an upset stomach and eat the root pickles.

Other Wild Greens and/or Flowers

- Chicory
- Chickweed
- Common Burdock
- Dandelion
- Dock
- Fennel
- Grape Leaves
- Lambs Quarter
- Mallow
- Milk Thistle Leaves
- Miner's Lettuce
- Mint
- Oxeye Daisy
- Plantain Shoots
- Pennycress
- Purslane
- Salad Burnet
- Shepard's Purse
- Violet Leaves
- Watercress
- Wild Garlic
- Wild Onions
- Wild leeks
- Glacier lilies
- Camas

Berries

Choke-cherry, *Prunus Virginiana*

Often called bitter-berry, Virginia Bird Cherry, Black Chokecherry, or Western Chokecherry, the fruits are very astringent, but very high in nutrition and antioxidants. The shrub is often considered a pest.

Plant Identification

Watch for choke cherries in open woodlands, forests, ravines, and bluffs. They grow on small trees or shrubs in USDA hardiness zones 2 through 7 and are naturalized in many part of the US.

Identify the choke-cherry by looking for these characteristics:

- Small trees and shrubs grow in open, sunny, or partially shaded areas.
- Shrubs grow in thickets or groups of thin trunks or as single trees.
- Shrubs and small trees are usually less than 30 feet tall and 10 to 20 feet wide.
- Choke cherries have gray or reddish-brown bark marked with rows of raised pores which appear as small horizontal grooves in mature trees.



16. Ryan Hodnett / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/4.0>)



17. Sheri Hagwood. Bureau of Land Management. United States, ID, Bureau of Land Management Jarbidge Resource Area. June 29, 2006. / Public domain

- Leaves are dark green and glossy on the topside. Undersides are pale.
- Leaves are 1 to 4 inches long and up to 2 inches wide.
- Leaf edges are serrated and grow alternately on opposite sides of the stems.
- Leaves turn yellow in the fall and the tree is bare in the winter.
- Flowers appear in April through July, before the leaves are fully open.

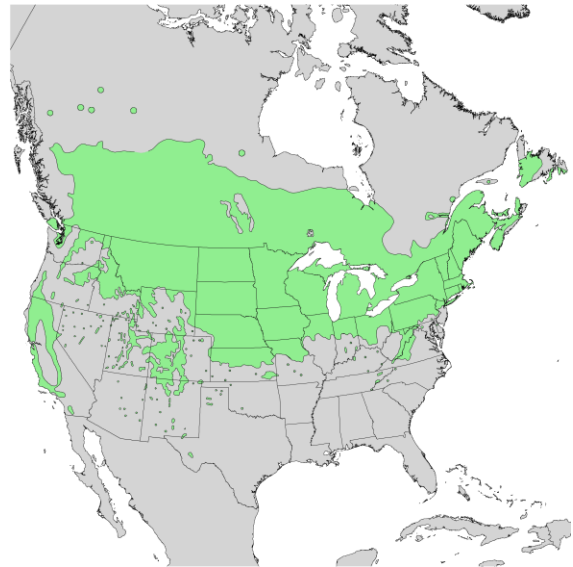
- Flowers grow in flowering spikes that are 3 to 6 inches long.
- Individual flowers are ¼ to 3/8 inches wide and have 5 white petals. They are fragrant.
- Fruits grow in clusters. They are spherical and 1/4 to 3/8 inches in diameter.
- Fruit color varies from white to deep red or black, depending on the variety.
- Fruits drop in mid-fall.
- Fruits are filled with pulp and many small seeds.

Edible Use of Choke Cherry

The berries are too tart for eating raw, but make delicious jams, jellies, sauces, pies, and syrups. They are an important part of the original pemmican recipe.

The fruit is also used to make wine. For cooking and eating, leave the berries on the tree until they are completely ripe. They should be dark purple or black with no hint of red. Leave them on the shrub for another week once they reach this stage.

- The inner bark is used to treat colds, fever, and stomach upsets. Boil the inner bark for 15 minutes, strain it, and drink the tea.
- Tea from the inner bark soothes a cough and works as an antimicrobial.
- Bark tea was used by early Americans to treat consumption and malaria.
- Use bark tea as a stimulant, tonic, sedative, and expectorant.
- It calms the vascular system and treats cardiac palpitations, and irregular or intermittent hear beats.
- Choke cherry bark tea reduces irritation of the mucous membranes in the respiratory, digestive, and urinary tracts.



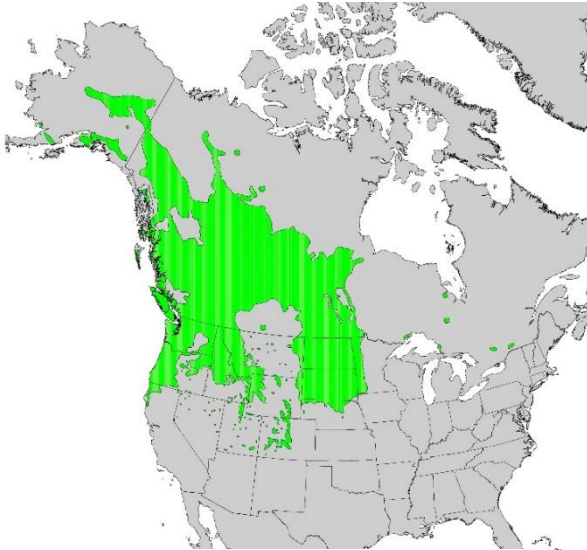
18. By Elbert L. Little, Jr., U.S. Department of Agriculture, Forest Service - USGS Geosciences and Environmental Change Science Center: Digital Representations of Tree Species Range Maps from Atlas of United States trees, Vol. 4, minor Eastern hardwoods U.

Warnings

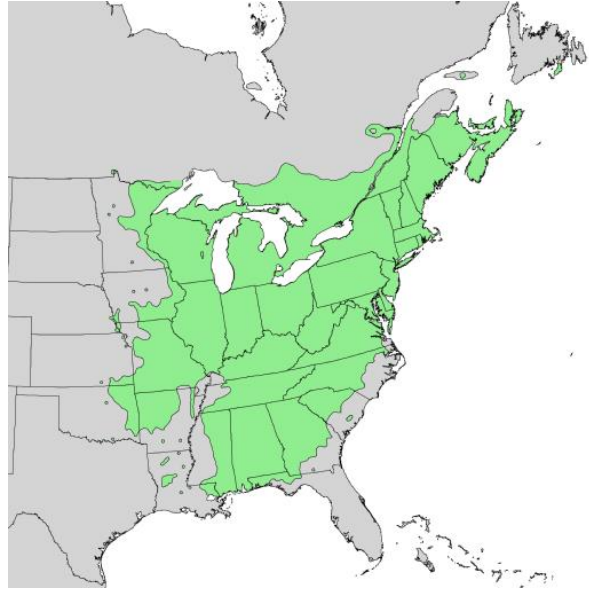
The pit of the choke cherry is poisonous and the fruit and foliage is toxic to horses, moose, cattle, goats, deer, and other animals with segmented stomachs.

Service Berries, *Amelanchier* spp.

Service berries are an attractive edible landscape plant, but many gardeners don't know or use this plant. Sometimes called Juneberry, the tree produces thousands of delicious purple-red berries.



19. *Amelanchier arborea* range map, Elbert L. Little, Jr., of the U.S. Department of Agriculture, Forest Service, and others / Public domain



20. *Amelanchier alnifolia* range map, U.S. Geological Survey / Public domain

Plant Identification

- Service berries are a member of the genus *Amelanchier* and produce a showy display of lacey white flowers that look like lilacs in the spring.
- Service berries are small trees or large bushes with edible fruit. The flavor depends on the variety and some are tastier than others. The best fruit grow on the Saskatoon variety.
- Bushes or trees can grow from 4 feet to 60 feet in height.
- Leaves are rounded to ovate and turn yellow, orange, or red in the fall.
- Fall foliage is attractive and colorful with a pretty gray bark.

Edible Use of Service Berries

Pick these berries as soon as they ripen or you will find yourself competing with a flock of birds.

- Eaten raw, the flavor is similar to blueberries with a grainy texture and mildly sweet flavor.
- Bake them into pies, puddings, or muffins
- Dehydrate them for use like raisins

- Make jam, juice, wine, or syrup with the berries

Medicinal Use of Service Berries

- Service berries are high in antioxidants. They help prevent strokes, cancer, and cardiovascular disease
- Service berries are a traditional Chinese tonic for building the blood and furnishing vital energy.
- Service berries are especially good for strengthening mothers who have just given birth. The red leaves, stems, and flowers can also be used when made into a tea.
- The berries lower blood pressure and bring strength to the heart and lungs.
- Polyphenols and flavonoids in service berries help prevent DNA damage and slow the aging process.
- Service berries are anti-inflammatory which reduces swelling and pain.
- Use a tea made from the seeds of the service berries to soothe the mucus membranes of the mouth and the linings of the lungs.
- Make a tea from the bark of the service berry tree to sooth gastrointestinal distress.
- Service berries are high in vitamins, antioxidants, iron, and minerals which enhance enzyme production and boost the bodies immunity.
-

Prickly Pear Cactus, *Opuntia Ficus-indica*

The prickly pear cactus is a valuable plant in desert like conditions. It is edible as a fruit and vegetable and it stores water in the pads and fruit.

Plant Identification

- The prickly pear is a cactus that grows to be up to 16 feet tall with flat, branching leaf pads.
- The flower and fruit grow directly on the leaf pad.
- The entire cactus is covered with two different kinds of spines, including large fixed spines and small hair-like spines that are difficult to see.



21. <https://www.publicdomainpictures.net/en/view-image.php?image=270078&picture=prickly-pear-cactus-with-fruit>

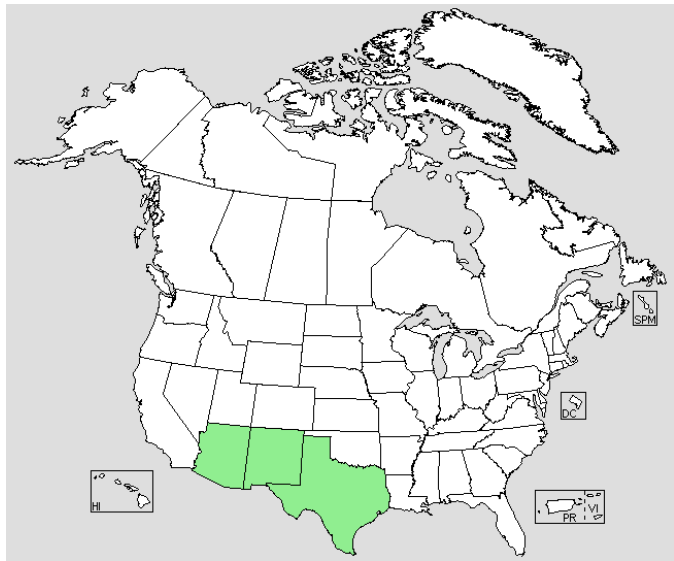
- The flowers are large, single, and bisexual. Tepals are spirally arranged and a hypanthium contains numerous inferior ovaries. Large stamens are arranged in whorled clusters.
- The fruit is a berry containing numerous hard seeds.
- Prickly pear cactus is found in semi-arid and desert-like conditions and can be cultivated in containers. The cactus grows in bush clusters and can regrow from a part of a leaf.
- The cactus has spread beyond the range map below, I have found them growing in Florida.

Harvesting Prickly Pear Fruit and Pads

Harvesting must be done carefully. Dress in protective clothing to avoid contact with the spines.

Follow these steps for safe harvesting:

1. Use tongs to pick the ripe fruit and place them into a bucket for processing. Pick the leaf pads in the same way.
2. Hold each piece of fruit or leaf pad over a flame to burn off the spines completely and charring the skin.
3. Peel off the skin and use the leaf pads or fruits as desired.



22. Prickly Pear Cactus Range Map, ohn T. Kartesz, Biota of North America Program / Public domain

Edible Use of Prickly Pear Cactus

- Both the leaf pads and fruit are delicious. Peel them carefully following the steps above.
- Use the leaf pads as a vegetable in stir-fries, salads, soups, or in juices.
- Cook the fruit and strain out the seeds. Use the fruit in juice or smoothies.

Medicinal Use of Prickly Pear Cactus

- The prickly pear fruit and pads are extremely anti-inflammatory.
- Drink 2 ounces of the juice daily to reduce inflammatory diseases.
- Eat the pads and drink the juice to help control blood sugar in diabetes. The cactus is beneficial to the pancreas and promotes the production of insulin.

- The anti-inflammatory properties are beneficial in treating arthritis and joint pains caused by inflammation. Take 2 ounces of the juice daily. Symptoms decrease over one to two months until maximum relief is achieved.
- Anti-inflammatory benefits also assist in the reduction of plaques in the arteries, reducing the risk of heart disease. The juice reduces cholesterol and enhances blood circulation to all parts of the body.
- Vitamins and other nutrients in prickly pear juice restore the body, reduce fatigue, and relieves muscle soreness caused by injury or overuse.
- Use the pads and juice to treat all inflammatory diseases including skin diseases like psoriasis, eczema, and hives.

Other Edible and Medicinal Berries

- Raspberry
- Blackberry
- Blueberry
- Cranberry
- Huckleberry
- Salmonberry
- Silverweed
- Thimbleberry
- Wild Strawberry

Edible Flowers

Roses and Rose Hips, *Rosa spp.*

Edible roses are delicious and nutritious. You'll find many such roses in gardens and lawns across the country. All roses are edible, but flavor varies. The best tasting varieties include wild roses and the older heirloom varieties.

David Austin's roses are also bred for flavor and culinary use. Most of the newer hybrids are developed for their abundant flowers, not flavor.

Look for roses that are growing on their own roots, not grafted. Fragrant varieties have more flavor.



5. <https://pixabay.com/photos/wild-roses-wildflower-flower-2393637/>

Plant Identification

Most everyone can identify a rose without trouble; however, we offer these tips for plant identification:

- Rose leaves are alternate and serrated. They vary from simple to trifoliate, palmate, or pinnate.
- Most rose flowers have 5 sepals, 5 or more petals and numerous stamens. But these numbers could vary.
- Roses may be vines, shrubs, bushes, ramblers or climbers. Miniature varieties are also edible and medicinal.
- Heritage and wild roses are very fragrant and have a distinctive rose scent.
- Most roses have distinctive thorns.

Grow your own roses for edible use or make sure your source does not use pesticides or herbicides. You want wild, neglected, organically grown roses for edible use.

You can consume the petals, leaves, stems and hips (fruits). The rose hips are high in vitamin C and particularly nutritious. Here are some ways to use roses:

- Make Rose Hip Tea from the fruits

- Grilled rose petals
- Roasted rose stems (remove thorns)
- Make jam or jelly with rose petals and hips
- Use rose petals to flavor beverages, sugar, or honey
- Use rose hips to make vitamin rich syrup, vinegar, tea, or wine
- Steep rose petals to make rose water
- Use steam distillation to make rose oil from rose petals

Medicinal Use of Roses

Roses and rose water have long been used medicinally. Rose water is a very effective astringent that is useful to reduce swelling of the blood capillaries under the skin.

Other uses include:

- Rose Petal Tea cleans the gall bladder and liver and improves bile secretion.
- Rose tea alleviates sore throats and helps heal bronchial infections
- Rose helps ease allergies, soothe coughs, and reduce mucus
- Rose tea reduces fevers and fever-related rashes
- Rose petals are antiseptic and are brewed to make an eye wash for treating infections
- Rose water is antibacterial, antiseptic, and anti-inflammatory. It treats skin conditions including eczema, dermatitis, and moistens dry scaly skin
- Rose oil treats liver problems, nausea, and bacterial stomach, colon, and urinary tract infection
- Rose water or rose tea relieves constipation
- Rose water calms the mind and lifts the heart
- Rose water made with rose leaves is used to treat measles and chicken pox



6. <https://www.flickr.com/photos/59521130@N00/10389688995>

Edible Shoots and Trunks

Bamboo, *Bambusoideae*

Most of us have had bamboo shoots in stir-fries and Asian dishes, but we don't realize that these are the edible shoots of bamboo plants.

Many bamboo varieties have edible shoots, including: *Bambusa vulgaris*, *Phyllostachys edulis*, *Phyllostachys bambusoides*, *Dendrocalamus latiflorus*, *Fargesia spathacea*, *Bambusa blumeana*, and *Bambusa oldhamii*. *Bambusa oldhamii* is common non-invasive landscaping bamboo.



25. Bamboo, annieo76 (Flickr profile) / CC BY
(<https://creativecommons.org/licenses/by/2.0>)

Plant Identification for Bamboo

- Bamboo is a perennial that grows up to 40 feet tall and 3 to 6 inches in diameter. The trees grow in clusters.
- Bamboo trunks are round and smooth on the outside and hollow inside. Nodes are swollen, but have no branches. Lower parts of the trunk have spines between the nodes.
- Bamboo has shiny, simple leaves that are stiff, smooth, and dark green.
- Flowers form in bunches and seeds are shaped like wheat.

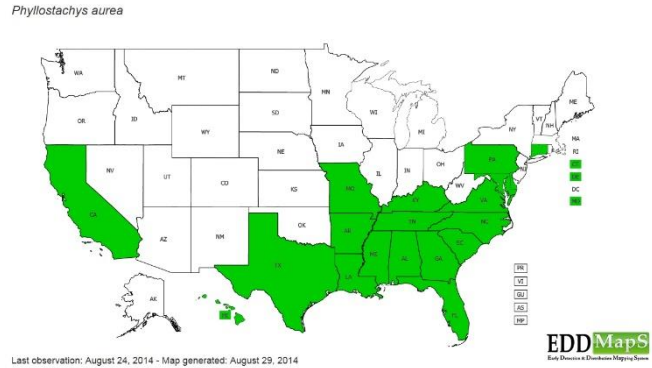
Edible Use of Bamboo Shoots

The edible shoots must be cooked thoroughly before eating. Raw bamboo shoots contain cyanogenic glycosides that are destroyed by cooking. Boil the shoots thoroughly before using them in your dishes. Canning also destroys the toxins.

- Young shoots are flavorful, crisp, and sweet. Older shoots have an acrid flavor that is dissipated by slicing them thin and boiling them in several changes of water.
- Boil the shoots and use them in stir-fries or as a vegetable in Asian dishes.
- Pickle bamboo shoots and use as a condiment or an appetizer.
- Ferment bamboo shoots with beans and other vegetables.

Medicinal Use of Bamboo

- Bamboo juice made from pressed bamboo shoots helps with digestion of protein. The leaves strengthen the stomach and promote healthy digestion.
- Use a decoction made from the tender shoots to treat respiratory diseases. Take the decoction once or twice a day with a tablespoon of honey.
- Make a decoction from the leaves to stimulate menstruation. It promotes and regulates the menstrual periods.
- Use a poultice of the tender shoots for cleaning wounds and infested sores. Use a decoction or the juice of fresh bamboo leaves on ulcers and take the juice twice daily alone or mixed with other juices.
- The leaves of bamboo are a stimulant, aromatic, and tonic. They are useful to stop bleeding and treat spasmodic disorders.



26. Bamboo Range Map,
<https://bugwoodcloud.org/maps/eddmappusstate/3063.jpg>

Roots and Tubers

Canna, *Canna edulis* and *Canna indica*

This sun-loving perennial is often found in flower gardens around the country. The flower, foliage and root, or rhizome, are all edible. The root is fibrous and full of easily digestible starch that can be used like arrowroot.

Plant Identification

Cana Indica, also known as African arrowroot, edible canna, Indian shot, and Sierra Leone arrowroot, is naturalized to the southeastern US.

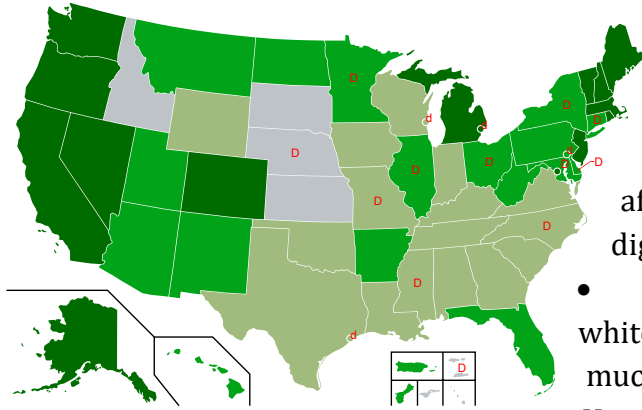
You will find it growing wild in Florida, Texas, Louisiana, and South Carolina. You may also find it cultivated in nearby states.

Recognize it by these characteristics:

- Perennial growing from 1.6 feet to over 8 feet. Frost tender and hardy to zone 10.
- Upright, unbranched stems grow to 6 1/2 feet tall in two lines from the rhizome
- Large, simple leaves consist of petiole, leaf sheath, and leaf blades with parallel veins
- Leaves are broad, green or violet green
- Flowers are male and female, large, and threefold
- Blooms from August to October
- Three free sepals on flowers are green and petals are green, yellow, orange, or red to pink.
- Pollinated by insects
- Rhizomes are up to 2 feet long and divided into bulbous segments
- Surface of rhizome is marked by transverse grooves and scales
- White rootlets emerge from the base of the rhizome
- Fruits are ellipsoid, approximately 1 inch long, with hard, black seeds.



7. Canna Indicia, Stephendickson / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/4.0>)



28. Canna Range Map,
https://en.wikipedia.org/wiki/File:Spring_2018_canna_map.svg

Edible Use of Canna

- Harvest canna shoots in the spring for raw use in salads or in stir-fries.
- Harvest canna rhizomes 6 to 10 months after planting. Cut the stalks at the soil line and dig up the roots.
- Boil or bake Canna rhizomes until they are white to slightly translucent. They will be mucilaginous and sweet to the taste.
- Use canna starch like arrowroot. Grind or finely grate the root into a pulp, then wash and strain to get rid of the fibers. Dry the starch and store for later use.
- Use the leaves and flowers raw in salads or cooked.

How to Prepare and Eat Canna

Canna has a flavor similar to potatoes. Cooked them at a low temperature (250F) for about 6 hours or for 1 hour at 450F. You can bake them, boil them, or mash them. The outer layers remain fibrous, but the centers of young, tender rhizomes are soft and delicious mashed with butter.

Dahlia, *Dahlia pinnata*

Another sun-loving perennial, dahlias come in many varieties and flavors. The flowers are edible as a garnish, but have little taste.

However, the tubers have a pleasant taste that is a featured ingredient in some Central American foods.

The tubers can be eaten raw, but they might be an unpleasant source of intestinal gas. Try a small serving before eating large portions to make sure your body can handle it. Fully cooked tubers don't cause this problem.



29. Dahlia, Emőke Dénes / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/4.0>)

Plant Identification

- Dahlia is a bushy, herbaceous perennial plant.
- It is a member of the Asteracea family
- The form of the flowers is variable, but have one head per stem.
- Flowers are 2 inches to a foot across
- Stems are leafy and grow from 1 foot to nearly 8 feet tall.
- The roots are large and tuberous.
- Stems are hollow with whorled or opposite leaves

How to Prepare and Eat Dahlia

Dig dahlias up in the fall to store the roots for the winter. Clean them and store those you intend to replant. Save the youngest, plumpest roots for cooking.

- Use the flower petals in salads
- Peel the tubers and taste a thin slice. If you like the flavor raw, use them sparingly in salads or coleslaw. Grate them and use them like zucchini in breads. You can also serve them boiled, baked, or roasted with the addition of herbs and spices to add flavor. Cooked dahlia tubers are bland in flavor on their own.

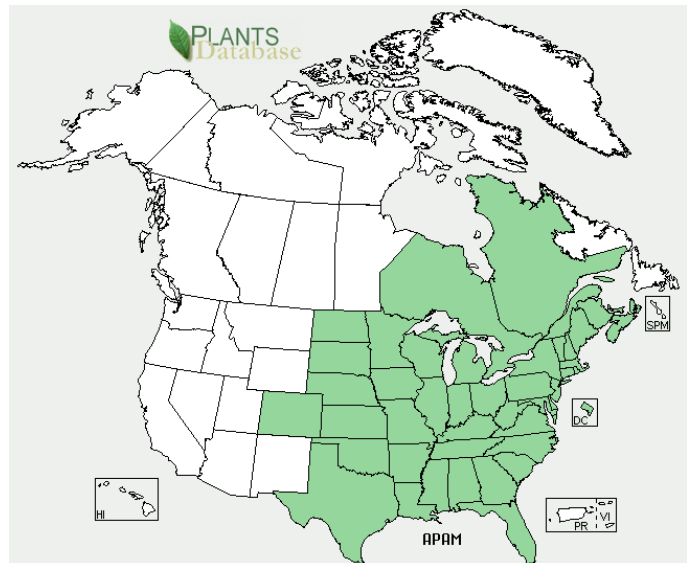
Groundnut, *Apios Americana*

Groundnut, also called Hopniss is a perennial vine often found in gardens and along riverbanks and lakes.

The tubers are edible, tasty, and a valuable source of starch and protein. In warm climates with long growing seasons, the plant also produces beans that are edible, but very fibrous.

The tubers can be harvested all year, but is best done in the fall to rejuvenate the plant.

Once the vines die back, cut them off at about 6 inches above the ground. Dig around the crowns of each vine to harvest the tubers. Leave about half the tubers behind each year to allow the plant to come back the following year.



Wash the roots and dry them before storing them in the refrigerator or root cellar through the winter.

Edible Use of Groundnut

- Small tubers (up to 1 1/2 inches in diameter) don't need peeling, but older tubers with thick skins need peeling before you cook them. Cook them whole or slice them. Coat with olive oil, salt, and pepper and roast them at about 400F until they are easily pierced with a fork. Alternately, parboil them and saute in butter. The flavor is like potato, only nuttier. Skip the heavy sauces, they are delicious as they are.
- Dry the tuber and grind it into a powder to use for thickening soups or stews or adding to flours when baking.
- Use young seedpods and seeds like a pea or bean.

Medicinal Use of Groundnut

- Boil the nut and make it into a plaster to treating wounds and stimulating the growth of healthy tissue.
- Treat gout with daily consumption of groundnut.

Jerusalem Artichoke, Sunchoke, or J-choke, *Helianthus tuberosus*

You probably know this plant as the sunflower, but the roots are often called Jerusalem artichokes.

The flowers are easily identified by the yellow center (not black or brown) and the sandpaper rough leaves that are joined to the stem by winged petioles.

Dig up the tubers and divide them from fall to early spring. Keep half the tubers for cooking and replant the rest for next year's crop.



30. Samtoucan / CC BY-SA (<https://creativecommons.org/licenses/by-sa/3.0>)

They keep for a few weeks in the refrigerator or you can leave them in the ground until they are needed.

Wild tubers are often long and thin, while cultivated varieties are often round. Either is good for eating.

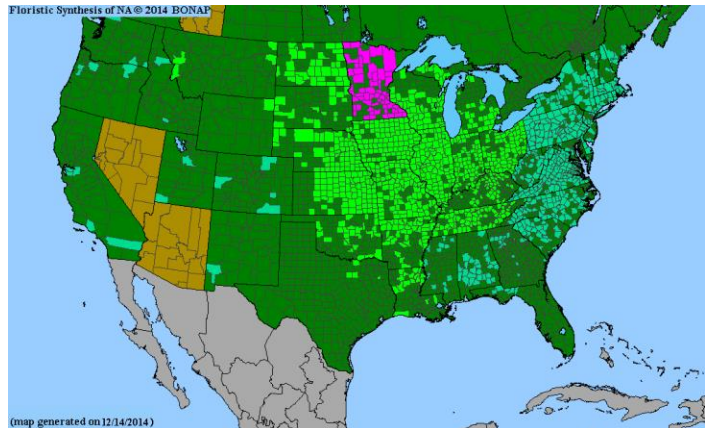
How to Cook and Eat Jerusalem Artichoke

If you harvest your tubers after the first frost, you can eat them crisp and raw in salads or as a dipper. Tubers harvested before the frost often cause intestinal gas and should be eaten cooked to avoid this danger.

Jerusalem Artichokes are good baked, boiled, roasted, or sautéed. Use them in soups or like potatoes, but don't expect a potato-like flavor or texture.

Medicinal Use of Jerusalem Artichoke

- The fiber in Jerusalem Artichoke bulks up the stool and facilitates a normal bowel movement.
- Jerusalem Artichokes have prebiotic benefits to the gastrointestinal tract.
- Jerusalem artichokes contain high amounts of inulin which help regulate blood glucose levels.
- High in potassium, and low in sodium, the Jerusalem artichoke is health for the heart and helps regulate blood pressure.
- The tuber fights anemia with high levels of copper and iron which are essential for new blood cell formation.
- Filled with vitamins, antioxidants, and flavonoid compounds, it helps protect the body from cancers, inflammation, viruses, and colds by boosting the immune system.



31. Jerusalem Artichoke range map,
<http://bonap.net/MapGallery/County/Helianthus%20tuberosus.png>

Tiger Nuts, *Cyperus esculentus*

Tiger nuts are the roots of the chufa sedge, nut grass, yellow nutsedge, tiger nutsedge, or water grass. You'll find it used as an ornamental grass and growing wild in moist soils.

Plant Identification

Tiger Nut Sedge, *Cyperus esculentus*, is an annual or perennial plant that may grow wild or as a cultivated plant. It reproduces by seeds, tubers, and creeping rhizomes.

Look for these characteristics to identify it:

- Triangular stems with slender leaves up to ½ inch wide.
- Flower spikelets produce a cluster of flat, oval seeds with four hanging bracts arranged at 90 degrees across from each other.
- Each bract is about 1 1/8-inch-long, narrowly elliptic and contains 8 to 35 florets.
- Florets are golden brown to straw colored.
- Foliage is tough and fibrous.
- Roots are extensive and fibrous, with scaly rhizomes and hard spherical tubers attached. The spherical tuber is the edible tiger nut.



32. By Auckland Museum, CC BY 4.0,
<https://commons.wikimedia.org/w/index.php?curid=86538199>

Edible Use of Tiger Nuts

- The tubers attached to the fibrous roots are edible. They have a slightly sweet, nutty flavor. They are too hard to eat as is. Soak them in water to soften them before eating raw or cooked.
- Pound or grind the nuts and mix with sugar and water to make Horchata, a sweet, milky beverage.
- Roast the nuts and grind them into flour for baking.
- Press the nuts to make an edible vegetable oil.
- Roast the tubers to use as a coffee substitute.
- Tiger nuts are rich in starch, protein, and fats.
- The more tender leaves at the base of the plant can be used in salads.

Medicinal Use of Tiger Nuts

Tiger nuts are used as a digestive tonic, with a drying effect on the digestive system. They also relieve flatulence, indigestion, diarrhea, dysentery, and colic. They promote menstruation and urine production.

The tubers are aphrodisiac, carminative, diuretic, emmenagogue, stimulant and tonic.

Other Uses

The boiled roots are suitable for use as a fishing bait. Soak the nuts in water for 24 hours, then boil for 20 minutes or more until fully swollen. Use immediately or leave to ferment for up to 48 hours.

Harvesting and Eating Tigernuts

Look for tigernuts in loose, sandy soil. Allow them to grow through the summer and watch the plant in the fall. When the plant dies back, between November and December, harvest the nuts by digging up the roots and removing the tubers.

Wash the tigernut to remove soil, leaves, roots and other foreign material. Then spread them on a drying surface for about three months, turning them once or twice a day. When only 10 to 11% moisture remains, the nuts are ready to store or eat.

Other Root Vegetables

- Chicory
- Wild Sunflower
- Cattails Roots

Trees

Sugar Maple, *Acer saccharum*

When you think of the sugar maple, you probably think of the syrup you enjoy on your pancakes. However, the sugar has much more in store for use in the form of food and medicines.

Plant Identification

The sugar maple tree has a distinctive maple leaf shape that most people recognize.

Look for these traits to identify the tree:

- Maple leaf shape with 3 to 5 lobes and smooth edges
- Leaves are opposite, palmately lobed
- Leaves ooze a varnish-like sticky sap called honey-dew that attracts aphids
- Leaves turn yellow, orange, or red in the fall
- Yellow flowers grow in umbels and appear in April to May
- Fruit are dry samara. Each contains two seeds and paper-like wings that launch it in the wind
- The trunk, branches, and leaves produce a sweet sap that is concentrated to produce maple syrup



33. Sugar Maple Tree,
<https://www.flickr.com/photos/jsjgeology/46277271532>

Recipes and instructions

- Maple syrup is made from the sap and serves as a popular sweetener.
- The sap can also be used in raw form for a sweet drink or for medicinal use.
- The seeds and seedlings are edible roasted or boiled
- Pieces of the inner bark can be cooked, dried, and ground into flour for baking or thickening

Boiled Maple Seeds

Harvest maple seeds in the spring when they have matured, but are still green. Small seeds are sweet while larger seeds tend to be bitter.

Remove the outer skin and boil the seeds until soft, approximately 15 minutes

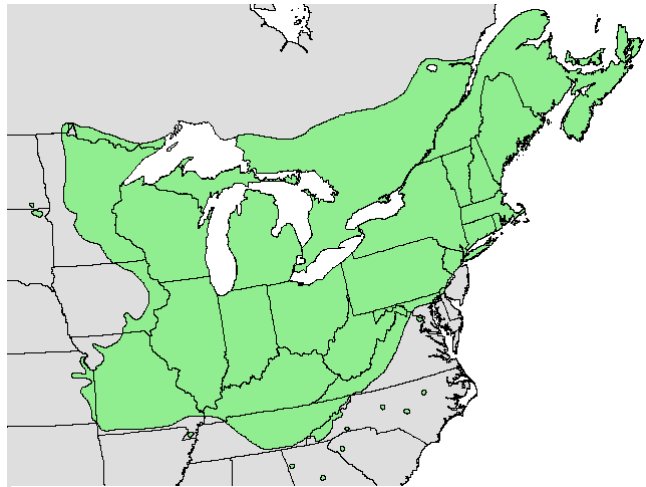
Drain the seeds and season with butter, salt, pepper, or spices of your choice.

Roasted Maple Seeds

Remove outer skin from tender, green seeds. Place them on a baking sheet and season as desired. Bake the seeds at 350 F for 8 to 10 minutes or until done to your taste.

How to Tap and Boil Sap of Sugar Maple for Syrup

Many trees (as listed above) can be tapped to drain the sap for boiling into syrup. The taste varies from tree to tree and may not be to your preferences. Many are bland or tasteless, while some are bitter. The varieties suggested above, and others, produce a good-tasting syrup.



1. Select healthy trees that are at least 18 inches in diameter. You will be able to harvest approximately 1 gallon of syrup per year, per tree.
(With multiple taps, about 1 to 2 quarts per tap.)
2. Cut a V-shaped slash into the tree. Drill a hole about 2 inches deep at the point of the V. Close the hole with a peg until you are ready to insert your spile.
3. Make or purchase a spile to drain the sap. A spile is a hollow tube with a spout on the end. Make it from a metal tube, can lid, or bamboo.
4. Drive a nail into the tree to hang the pail.
5. After collecting the sap, boil it with water, removing any scum that rises to the top. Use 1-part sap to 35 parts water
6. As the sap and water cook down, it will get thicker and leave a clear syrup. Strain the syrup.
7. If desired, a sugar candy can be made by boiling to the soft ball stage, then beat it vigorously and pour into dry molds.

Oaks, *Quercus*

Acorns are an especially valuable forage food because they contain valuable starch, which is sometimes hard to find in forage foods. Acorns can be eaten like nuts, dried and used as a flour, or pressed for the oil.

All acorns are edible, but some taste much better than others. Acorns from the red oak, *Q. rubra* are bitter, while acorns from the white oak, *Q. alba* are sometimes sweet. The bur oak, *Q. macrocarpa*, bears acorns that have a delightful chestnut-like flavor.



35. White oak tree, Msact at English Wikipedia / CC BY-SA (<https://creativecommons.org/licenses/by-sa/3.0>)

Collecting Acorns and Storing



36. Acorns, <https://pxhere.com/en/photo/1061632>

If you have an oak tree nearby, you know that they supply a steady supply of acorns. You'll have to compete with the squirrels, but there will probably be plenty left for you, unless other nearby residents know this secret. (Some varieties of oak, when mature, can drop over 2,000 pounds of acorns a year.)

Gather your acorn supply beginning in September until early spring. Some foragers gather acorns in February and March when the acorns begin to sprout. Newly sprouted acorns are sweeter and

guarantee that the acorn is fresh enough to eat.

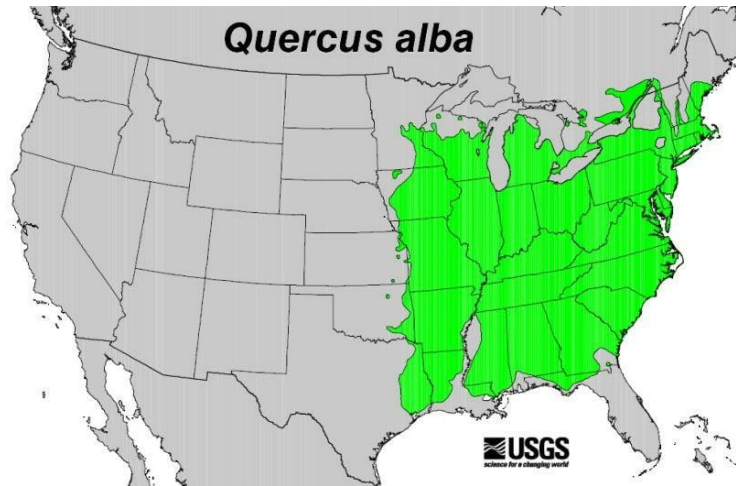
Watch out for acorns that have worms by inspecting the shell for holes. When you see tiny holes in the shell, discard the acorn and go to the next.

Store your acorns in their shells. They will stay fresh for up to 2 years. Once cracked and leached, the oils will spoil quickly, and should be stored in the refrigerator or freezer, if possible.

Shelling and Leaching Acorns

Even sweet acorns need a little leaching to remove tannins that can upset your digestion and harm your teeth.

Shelling Acorns is tedious. They resist the efforts of nut crackers and are best opened by whacking them with a large stone or a hammer. Green acorns can often be opened with a knife.



37. White Oak Range Map,
<http://www.mntreeresources.com/white-oak.html>

Here is the way open and leach fully mature acorns:

1. Remove the cap and put the flat end on a firm surface like stone, brick, or metal. Hit the pointed end of the acorn with a hammer. Long, tapered acorns can be whacked on the side.
2. Dry the cracked acorns in wide, shallow pans.
3. Remove the shells after they are dry enough to shell easily. Drop the shelled acorns into water to prevent oxidation. When they are all shelled, leach them to remove the tannins.
4. Fill a stockpot 2/3 full of water. Add the shelled acorns and bring the water to a boil. As soon as the water boils, drain the acorns and add more water.
5. Bring the acorns back to a boil and repeat the process as many times as necessary to remove the bitterness and achieve an edible nut. This may take a minimum of five water changes or many more.
6. Dry the acorns in the sun, oven, or in the dehydrator. Grind them into a meal or flour and use them to make a roux, as a breading for frying meats, or added to flour in baked goods and pasta. When baking with acorn flour, the cold soak method of leaching, below, is best.

An Easier Method to Remove Tannins, The Cold Soak Method

This method is better, but it takes days, possibly two weeks or more, to remove the tannins.

1. Shell the acorns, following the process outlined above. If you are preparing acorns from the red oak, soak the shelled acorns overnight in water, then remove the papery skins. Shell them into water as mentioned in the leaching process above.
2. When the acorns are shelled, put them in a blender or food processor, filling it about 1/3 of the way full. Add enough water to fill the container 1/2 way.
3. Blend the acorns and water until the acorn meal is fine.

4. Pour the blended acorn meal into a large container, such as a gallon jar or crock. Keep adding acorns until all are blended or the container is full. It should settle out to about half ground acorns and half water. Cover the container.
5. Put the jar in the fridge or a cool place (below 70 F).
6. Each day, pour off the water and refill it with fresh water. Shake it vigorously until the acorn flour is well suspended in the water. (For best quality and flavor, strain the acorns through cheese cloth every day.)
7. Continue straining off the water daily until your flour achieves a bland flavor, with no tannin or bitterness. This will probably take 5 days or more.
8. When the flavor is satisfactory, strain the flour through a fine-mesh strainer lined with cheesecloth. Squeeze the cloth to remove as much water as possible.
9. Dry the flour at a low temperature (approximately 95 F) on a baking sheet in the oven, outside or in a hot garage, or on a dehydrator.
10. At this point, your acorns have the texture or corn meal. You can use them like this to make polenta or as a breading. If you want a true flour, you need to grind it one more time in a spice grinder, coffee grinder, flour mill, or a high-power blender with dry blades.
11. Sift the flour to remove larger pieces and re-grind these bits.
12. Store the flour in quart jars in the refrigerator or freezer for up to two years.

Pine Trees, *Pinus*

Most conifers are edible and medicinal. Every part of the tree is useful including the bark, needles, resin, nuts, and cones.

Pine Nuts (Pinon)

The most recognized edible use of pine trees is the tasty pine nuts, but few of us know anything about how to harvest our own pine nuts.

All pine trees have edible nuts, but most are too small to be worth the effort. The best are the trees with large cones like the Colorado pinyon, Mexican pinyon, and single-leaf pinyon.



38. Pinion Pine tree, Dcrjsr / CC BY-SA
(<https://creativecommons.org/licenses/by-sa/3.0>)

How to Harvest Pine Nuts from Pinecones

Harvesting pine nuts takes a lot of time and effort, but it is not a difficult process. Follow these easy steps to harvest pine nuts:

1. Harvest the pine cones before they open. The cone will ideally still be greenish in color with tightly closed scales. Once a few cones begin to open, the cones are ready to harvest.
2. Grab the cone and twist it to separate from the tree. Wear gloves for this step. Gather a container full of cones to make your efforts worth the effort.
3. Place the pine cones in a burlap bag for 3 weeks to dry. Tie the bag shut. Place the bag in the sun on its side, rotating the bag throughout the day to dry them.
4. Alternately you can roast the pine cones in the oven at 375 F or by the fireside until the scales open. This should take 30 to 45 minutes in the oven.
5. Cool the cones, if you roasted them.
6. Wearing gardening gloves to protect your hands from the sticky sap, pick the nuts from the cones. Pull the scales off the cones to expose the nuts. Nuts are black and oval shaped.
7. Place the pine nuts in a bowl of water and discard any nuts that float. Drain the nuts.
8. Shell the nuts, pinching and rubbing the nut until the shell comes off.
9. Store the nuts in an airtight container in the refrigerator for use within a few weeks, or in the freezer for 3 to 6 months.

Other Edible Uses of Pine Trees

- Use pine nuts in the classic pesto
 - Use in savory or sweet recipes, including breads and cookies
 - That horrid pollen that keeps many of us sniffing through pine pollen season is useful to replace flour in many recipes. Use it to replace up to $\frac{1}{4}$ of the flour. Don't use pine pollen or any pine product, if you are allergic to pine.
 - The inner and outer bark of pine trees is edible, but fibrous. The inner bark is a rich source of vitamin C
 - Flour made by grinding the inner or outer bark can be used to replace flour in some recipes.
 - The flour can also be used to make pesto in the place of pine nuts.
- The flour made from inner bark is useful to thicken soups and stews.

Medicinal Use of Pine Trees

- Pine needles are used to make a tea, astringent wash for the skin, and medicinal salves for skin and wound care.
- Use pine needles to make a hair rinse to treat dandruff and eczema and to help grow healthy hair.

- Pine needles are high in vitamin C, anti-bacterial, antifungal
- Pine needles make an expectorant cough syrup when combined with honey.
- Pine resin is a powerful antibiotic, it heals wounds with all kinds of infections.

To Extract the Pine Resin

The resin extracted from pine can be used as water-proofing and building fires, however, we are concerned with its medicinal use.

To extract the pine tar, burn the branches slowly in a smothered flame. Collect the tar when the fire has cooled.

White Willow Trees, *Salix alba*

Eating tree bark is not particularly good eats, however, it will sustain life. Many of the trees listed here have edible bark, like the white willow.

I decided to mention white willow here because it is also so valuable medicinally.

Use the information listed here for eating the bark for the other trees with edible bark listed below.



39. Willow tree, Geaugagrrl / Public domain

Edible Use of White Willow

- Strip the inner bark into thin strips and boil it several times to use as a noodle
- Dry the inner bark and pulverize it. Remove the fibrous pieces, dry the remaining starch as a thickener or mix it with flour to stretch it.
- Use young willow shoots, buds, and leaves raw or boil them for a more tasty shoot in survival situations.

Medicinal Use of White Willow

- White willow contains a form of aspirin that is useful in treating many forms of pain. It is easier on the stomach than artificially made aspirin.
- Chew white willow leaves to reduce pain for childbirth.

- The bark is useful for relieving joint pain and fevers. It is an anti-inflammatory, antiperiodic, antiseptic, astringent, diuretic, hypnotic, sedative, and tonic.

Other Edible Trees

The sap of many trees can be made into syrup, in the same manner as maple syrup. Note the trees below that list the sap as edible. Drink the sap as a medicinal juice, refreshing drink, or boil into a syrup. Likewise, the inner bark, seeds, and young twigs are also edible in many trees:

- Beech—Sap, inner bark, young twigs
- Pine—seeds, inner bark
- Birch, *Betula*—sap, inner bark dried for flour or boiled as a noodle
- Linden, *Tilia*—young leaves raw or cooked, flowers for tea
- Mulberry, *M. alba* and *M. rubra*—fruit, twigs raw or boiled
- Walnuts, *Juglans*—sap for syrup, nuts
- Oaks, *Quercus*—acorns are edible
- Poplar and aspens—inner bark raw and cooked, or dry and grind into a flour
- Quaking Aspen, *P. tremuloides*—inner bark, raw and cooked, catkins
- Sassafras—green buds, twigs, and leaves, tea from the roots
- Slippery Elm, *ULMUS RUBRA*—inner bark raw or boiled.