



How-to- GROW GARDENING HANDBOOK

*A Helpful Guide to Growing
Your Favorite Vegetables, Herbs,
Fruits and More*

Dr. Joseph Mercola

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INTRODUCTION

Have you ever wanted to grow your own food, but didn't know where to start? While it can be intimidating at first, anyone can start their own garden, and a bountiful harvest nurtured by your own hands is always well worth the time and effort.

Growing your own fruits and vegetables provides peace of mind, since you're in control of the growing environment, from seed selection to harvesting. Using sustainable, regenerative farming methods for your garden not only guarantees that your food is free from harmful chemicals, but also reduces your carbon footprint (or what's called "foodprint").

Having a food garden also allows you to harvest produce at their peak ripeness, which is also when they're at peak in terms of nutrition, flavor and texture. What's more, the simple act of going outside to tend to your plants can benefit your health, as it helps you stay active and even lets you get some much-needed vitamin D from the sun.

With the threat of food shortages and inflation spiraling out of control, having a variety of fruits and vegetables just a few steps away from your kitchen is also a smart way to guarantee your food supply in case of emergencies and save money in the long run.

There's no arguing that growing your own food is one of the most rewarding ways you can do for your health and the Earth. If you're ready to start gardening, this e-magazine can help you learn basic gardening skills, including how to choose the right plant varieties, the best time of the year to plant, when to water and harvest, and so on. Read this thoroughly, and hopefully, by the time you reach the last page, you have all the know-how that you need to make your home garden flourish along with your health.

Dr. Joseph Mercola



HOW-TO-GROW
VEGETABLES
(Cruciferous)



How to Grow Arugula

Best time to plant: 🌸 Early spring or 🍁 fall

Harvest: 40 days after planting



While known as a salad green with a tangy, slightly peppery kick, **arugula** is actually a relative of the cruciferous family, which includes radishes, Brussels sprouts, kale, cauliflower and broccoli.

Like other members of this family, arugula contains a number of medicinal nutrients, including cancer-fighting compounds and carotenoids known for their importance for good eyesight.

Health Benefits of Arugula

Arugula also contains about **480 milligrams (mg) of nitrates** per 100-gram serving, which your body uses as raw material to make nitric oxide (NO), an important biological signaling molecule that supports normal endothelial function and protects your mitochondria.

Acting as a potent vasodilator, NO helps relax and widen the diameter of your blood vessels, supporting healthy blood flow and oxygenation of your tissues. It also carries away waste material and carbon dioxide. A diet high in nitrate is a natural strategy recommended

for the treatment of prehypertension and hypertension (high blood pressure), and helps protect against heart attacks.

DID YOU KNOW?

Arugula contains the highest levels of nitrates of any vegetable, which may help lower blood pressure.

Growing Arugula

Arugula is a cool season crop, and can be added to your fall garden plantings. It's forgiving in that it can tolerate low-fertility soils and frost, and is really easy to care for, although it does best in humus-rich soils with a pH between 6 and 6.8. Seeds germinate best at temperatures between 40 and 55 degrees F (4 to 12 degrees C). Plant your seeds directly into your garden bed, but avoid planting them in a spot where you just harvested another cabbage family crop.

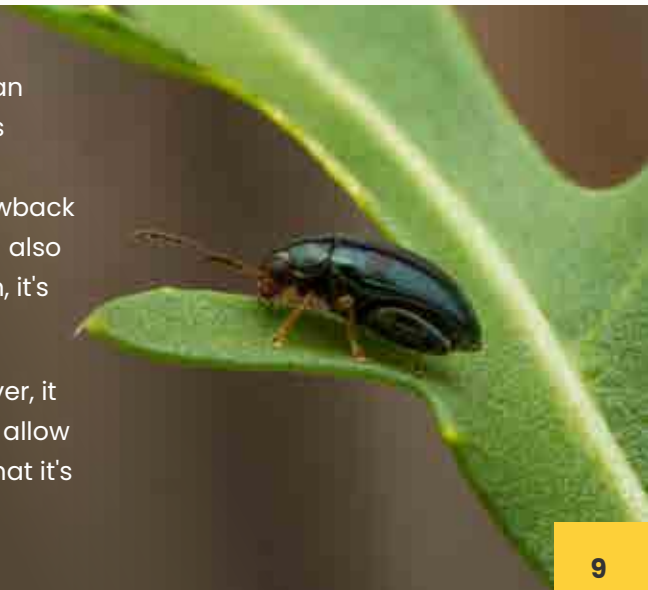
There are two main types of arugula. **Common arugula** (*Eruca sativa*) is best for eating and cooking, as it produces large, lush growth, while the **wild Italian arugula** (*Eruca selvatica*) – which does have a bolder flavor – tends to be more stemmy. The Italian variety will also bolt faster.



Plant your seeds about one-fourth inch deep, 1 inch apart. Rows should be about 3 inches apart. Seedlings will sprout in about 10 to 14 days. Arugula will do well planted next to lettuce and peas. For a continuous harvest through the fall, plant new seeds every two weeks up until about four weeks before your first frost date. Dry, hot weather will speed bolting. If temperatures are still on the high side, you can slow bolting by providing shade and making sure the soil doesn't dry out.

A common cabbage family pest is the **flea beetle**. Row covers can be used to protect tender seedlings. Another protective measure is to sprinkle food grade diatomaceous earth around the seedlings. Diatomaceous earth is available at most garden centers. One drawback is that it will kill any soft-body insect, so in addition to fleas, it could also have a detrimental effect on worms and even bees. For this reason, it's best to use it only when absolutely necessary.

Another alternative suggested is Reemay fabric. Used as a row cover, it allows about 75% of sunlight through, and is permeable enough to allow water through – but not the pests. Simply pin the fabric down so that it's loosely covering the plants, allowing for growth.



Harvesting Arugula

Mature arugula is ready to harvest in about 40 days. "**Graze**" **harvesting** means selectively picking just a few leaves here and there to add to your cooking. The smaller the leaf, the milder its flavor will be. Alternatively, use a pair of garden shears to cut back about one-third of each plant, selecting the largest leaves in each bunch. The remainder will continue to regenerate and grow back.

Once the arugula starts to flower, it'll start turning bitter. At this point, your best option is to pull the whole plant out by its roots. Salvage whatever leaves you still find edible and compost the rest. Arugula tends to bolt quickly, so keep an eye out for the telltale signs of flowers and harvest right away. Ideally, harvest at a time when it's cooler and shadier, as the leaves will wilt quickly when cut in full sun.

Arugula seeds are easy to collect and save, and can be stored for up to five years. The plant will produce small, white flowers. Once flowers emerge, small seed pods will start to form along the stem. If you like, you can actually eat the seeds. They have a strong spicy kick, similar to a radish. Once the plant bolts, the leaves will turn bitter and begin to brown.

There are a number of ways to collect the seeds. Some will cover the stem with a nylon stocking to catch the seeds as the pods break open. Alternatively, clip the stem, tie a paper bag around it and hang upside down to dry.

To check if the seeds are ready to be collected, gently shake the seed pod. The seeds are ready when you hear them rattling around inside the pod. Eventually, the pods will break, releasing the seeds, or you can crush the pod if you like. Store your seeds in a paper envelope or jar in a cool, dark, dry place. Alternatively, store them in a zipper bag in your refrigerator.



Arugula is a popular salad green, but can be added to any number of dishes, such as sandwiches and hot or cold pesto, although it will lose some of its peppery punch when cooked.



How to Grow Bok Choy

Best time to plant: ❄️ Late winter to 🌸 early spring | **Harvest:** 🌸 Spring to 🌞 early summer

Bok choy (*Brassica rapa*) is a type of Chinese cabbage characterized by broad green leaves flaring outward from an upright head. Its stalks, which resemble a fatter type of non-string celery, can be either green or white. Bok choy flower stalks emerge from the center of the plant during warm weather and can shoot up to be twice the size of the plant. Because bok choy matures quickly and regrows easily, you won't regret the time spent cultivating this tasty, nutrient-dense vegetable.

Health Benefits of Bok Choy

As a dark green leafy vegetable, bok choy is a rich source of vitamins A, C and K, as well as minerals such as calcium and iron. Following are some of the health benefits of bok choy:

Builds healthy bones The calcium, iron, magnesium, phosphorus and zinc in bok choy, as well as its healthy amounts of vitamin K, support your body in building and maintaining healthy bone structure and strength.

Decreases blood pressure Calcium, magnesium and potassium, all of which are present in bok choy, have been found to decrease your blood pressure naturally. Potassium, in particular, acts as a vasodilator to relieve tension on your blood vessels.

Encourages immunity The vitamin C found in bok choy helps stimulate the production of white blood cells,



FUN FACT

Beyond its use in the Korean fermented dish known as kimchi, bok choy is delicious in stir-fries or eaten raw, adding a satisfying crunch to salads and sandwiches.

while selenium also plays a role in fighting infection by stimulating production of your body's killer T-cells.

Improves eyesight Bok choy is a good source of vitamin A, as well as the carotenoids lutein and zeaxanthin — nutrients known to protect your eyes and lower your risk of age-related macular degeneration.

Possesses anticancer properties

Bok choy contains powerful antioxidants like vitamins A and C and phytonutrients such as isothiocyanates, lutein, sulforaphane, thiocyanates and zeaxanthin, which stimulate detoxifying enzymes and may protect against cancers of the breast, colon, lung and prostate. Folate and selenium also play anticancer roles.

Promotes healthy skin

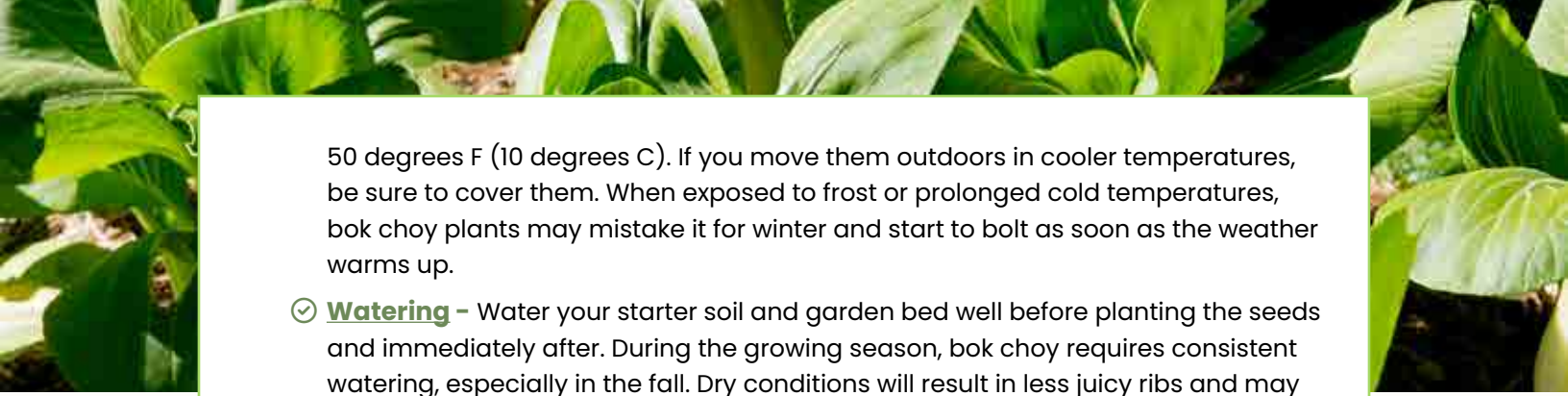
Bok choy's rich stores of vitamin C support your body's need for collagen, which is vital for healthy, supple skin. Vitamin C is also a powerful antioxidant that may help reduce your risk of skin damage. The iron and zinc in bok choy play a role in collagen production and maturation as well.



Growing Bok Choy

Bok choy is a **biennial plant and somewhat winter-hardy**. As a cool-season crop, it will quickly flower and bolt to seed when temperatures warm up in the spring. Here's what you need to know to grow bok choy in containers or your vegetable garden:

- ✓ **Soil** - Bok choy will flourish in well-draining soil with lots of rich, organic matter, ideally with a pH of 6.5 to 7.0.
- ✓ **Sowing indoors** - To get a jump-start on the growing season, start bok choy seeds indoors about four to five weeks before the last expected frost in your area. Plant seeds one-half inch deep, spaced 1 inch apart. Bok choy seeds germinate quickly, usually within four to eight days.
- ✓ **Sowing outdoors** - You can directly seed bok choy outdoors, in containers or your garden bed, beginning one to two weeks before the date of your last expected frost. The planting instructions for indoor sowing also apply outdoors.
- ✓ **Sun** - Bok choy can handle full sun, but will thrive in partial shade. Three to five hours of sun daily is ideal. In summer, partial shade can prevent your plants from premature bolting.
- ✓ **Thinning** - Thin your plants when they have a couple of inches of growth. For full-sized bok choy, thin to allow for at least 6 to 8 inches, about 15 to 20 centimeters (cm), of spacing between plants. The thinned plants are edible and will be tender and delicious, so be sure to eat them!
- ✓ **Transplanting** - Do transplants when nighttime temperatures are consistently maintained above



50 degrees F (10 degrees C). If you move them outdoors in cooler temperatures, be sure to cover them. When exposed to frost or prolonged cold temperatures, bok choy plants may mistake it for winter and start to bolt as soon as the weather warms up.

- ✔ **Watering** - Water your starter soil and garden bed well before planting the seeds and immediately after. During the growing season, bok choy requires consistent watering, especially in the fall. Dry conditions will result in less juicy ribs and may also cause premature bolting.
- ✔ **Pest prevention** - Use floating row covers to minimize damage from pests like cabbage loopers, cabbage worms, flea beetles, aphids, slugs and white flies.

There are **four basic ways** to grow and harvest bok choy:

- 1 Baby bok choy** Plant seeds for these fast-maturing dwarf varieties 3 to 4 inches (about 8 to 10 cm) apart in every direction. Slice entire mini-heads off at soil level when they reach a desirable size or as soon as you see the tip of a flower stalk rising out of the center of the plant. For a continuous supply, plant a few dozen seeds every two weeks throughout the spring and, if desired, again in midsummer to fuel your fall harvests.
- 2 Baby bok choy greens** Ready to harvest in as little as 30 days, baby leaves are the speediest way to grow bok choy. You'll want to plant about 60 to 100 seeds per square foot in your garden. As soon as the plants reach 4 to 5 inches (10 to 13 cm) tall, you can begin harvesting the leaves by cutting about 1 inch above the base of the leaves. For a continuous supply of fresh greens, plant new seeds every four to six weeks throughout the growing season.
- 3 Individual ribs and leaves** Cultivate bok choy as you would a whole, mature plants (see below), but start harvesting individual leaves as soon as the first outer leaves present with fat crisp ribs. This usually happens in about 45 to 60 days after seeding. For a continuous supply, plant a few seeds every four weeks throughout the spring and again in midsummer if you want a fall harvest.
- 4 Whole mature plants** Large bok choy plants can take 60 to 80 days to fully mature. You can shorten the time in the garden by starting seeds indoors and transplanting when overnight temperatures stabilize around 50 degrees F (10 degrees C). For a continuous supply, plant a few seeds every two weeks during springtime and again beginning in midsummer if you want a fall harvest.



Harvesting Bok Choy

Given proper growing conditions, and depending on the variety, weather and climate, the most common types of bok choy reach maturity in about **45 to 60 days**.

The best technique for harvesting bok choy is to use a sharp knife to slice the plants off about 1 inch above the ground. **(Remember: Using the right knife can increase nutrients.)** In doing so, bok choy will automatically regrow a second time. The new crop will be characterized by smaller yet equally tasty leaves and stalks.

How to Grow Broccoli

Best time to plant: 🌸 Spring or 🍁 fall

Harvest: ☀️ Summer or 🍁 late fall



While **broccoli** (*Brassica oleracea var. italica*) requires certain growing conditions to thrive, it is a great choice for a home vegetable garden. Here's what you need to know to successfully grow broccoli.

Health Benefits of Broccoli

With each satisfying crunch, broccoli delivers great-tasting nutrition and a slew of health-promoting benefits. It's low in calories and contains fiber, which is vital to your digestive health.

It also contains vitamins A and K, B vitamins, as well as iron, magnesium, potassium, selenium and zinc. Furthermore, it's an excellent source of phytonutrient glucosinolates, flavonoids and other health-boosting antioxidant and anticancer compounds. According to Mother Earth News,

"broccoli is a nutritional superfood that will strengthen your immune system, help maintain strong bones, and help protect you from cancer and heart disease."

DID YOU KNOW?

Broccoli has twice the vitamin C of an orange!

Growing Broccoli

You may be able to buy broccoli seedlings from a local nursery, but I recommend starting your own plants from organic seeds. It's easy to do, and you will enjoy the process of seeing tiny seeds transformed into hearty plants. Below are tips that will enable you to successfully cultivate broccoli in your garden or on your patio:

1. Sow broccoli seeds indoors seven to nine weeks before the date of the last expected frost.
2. After germination, which is usually four to five days, maintain your plants under lights or place them in a sunny area with a temperature of 60 to 65 degrees F (16 to 18 degrees C).
3. Keep the soil moist but not wet.
4. To avoid premature heading, seedlings must be about 6 inches tall, about 15.24 centimeters (cm), with two to four true leaves, before they can be transplanted into your garden.
5. You must harden the plants for at least one week prior to transplanting.
6. When transplanting the broccoli seedlings into your garden, be sure to set the plants 1 to 2 inches (2.54 to 5.08 cm) deeper in the garden than they grew in the indoor containers.
7. Space them 1 to 2 feet (30 to 60 cm) apart in rows that are roughly 2 to 3 feet (60 to 90 cm) apart; proper spacing is important since crowding will result in smaller heads.
8. Gently pat the soil around each plant.

Ideal Growing Conditions for Broccoli

As you make plans to grow your own broccoli, Mother Earth News presents four important aspects that must be considered to create the ideal growing conditions.

Season Broccoli is a cool weather crop, so you'll achieve the best results by growing it in spring or fall. Cool days and nights are essential once broccoli flower heads begin to form. Broccoli grows best when soil temperatures range between 60 and 70 degrees F (16 and 21 degrees C).

Soil Broccoli seedlings will thrive when they are planted in compost-rich, well-drained soil. A soil pH between 6.0 and 7.0 is optimal. If using an existing garden bed, be sure to loosen up the top layer of soil, mixing in about 1 inch of mature compost prior to planting.

Sun Keep in mind that broccoli prefers full sun. If you live in an area prone to warmer temperatures, a little bit of shade will prevent your broccoli plants from bolting.

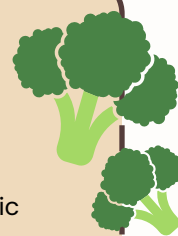
Supplements To give your broccoli plants an added boost, you may consider supplementing your soil with a high-nitrogen, organic fertilizer like alfalfa meal. If you have access to composted poultry manure, that also works well. Water the soil thoroughly before transplanting seedlings.



Additional Tips for a Bountiful Harvest

Here are a few additional considerations that will help you grow a bountiful broccoli harvest:

- ✓ Maintain the garden bed free of weeds and keep the soil loose.
- ✓ When daytime temperatures exceed 75 degrees F (24 degrees C), add a thick layer of organic mulch to conserve moisture and cool the soil.
- ✓ Broccoli must be well watered: Plan to add 1 to 1.5 inches (about 2.5 to 4 cm) of water a week.
- ✓ During dry spells, soak the plants extra well, as a lack of water will result in tough stems.
- ✓ During unseasonably cool weather, you may want to protect your broccoli plants with cloches or row covers.
- ✓ For a spring crop, fast-maturing varieties like Packman are an excellent choice, whereas a slow-maturing variety like Marathon works great in winter in areas where the ground does not freeze.



Preventing Pests

While it's the least affected of all cabbage-family plants, broccoli can still be vulnerable to pests, including leaf-eating **caterpillars, army worms, cabbageworms, cabbage loopers, aphids, flea beetles and slugs.**

The best way to deter pests is to use row covers. Fall crops tend to have fewer problems with these pests than spring ones.

If insect involvement is light, you may be able to get by with inspecting the plants regularly and removing any offending pests by hand.

If you're dealing with cabbage root maggots, plant your seedlings deeply and press the soil firmly around each stem. You can also prevent adult cabbage worm maggots from laying their eggs by placing a square of window screen or a lightweight cloth around each broccoli plant.



Harvesting Broccoli

When your plants reach maturity, harvest broccoli heads while the beads in most of the crown are still tight, before the florets begin to open and turn yellow. It's best to cut just below the point where the stems begin to separate. Mother Earth News suggests you **cut the stems at an angle** to prevent water from pooling inside the stem, where it may potentially cause rot.

After harvesting the main head, tender side shoots should continue to form along the lower stalk. Continue watering the plant and cutting it, and broccoli will keep producing until the weather turns too hot or too cold. If all goes well, you can expect to achieve a yield of 1 pound of broccoli per foot, assuming plants are spaced about 1.5 feet (46 cm) apart.

How to Grow Brussels Sprouts

Best time to plant: ☀️ Early to mid-summer

Harvest: 🍁 Mid-fall or ❄️ early winter

Brussels sprouts (*Brassica oleracea* var. *gemmifera*) are a valuable addition to your home garden, and while they require quite a bit of space, they are among the hardiest of the cabbage family. If you time your planting to coincide with fall frost, they'll actually be tastier, as the overnight chill brings out their sweetness. While they rarely do well in hotter climates, some newer hybrid varieties allow for greater temperature variances.

Health Benefits of Brussels Sprouts

Brussels sprouts contain higher amounts of glucosinolates than broccoli. The **glucosinolate glucoraphanin**, in particular, acts as a precursor of sulforaphane, which influences carcinogenesis and mutagenesis.

In one study, men who ate about 1.5 cups of Brussels sprouts daily for five weeks had a 28% decrease in DNA damage, which the researchers concluded showed "that consumption of cruciferous vegetables [Brussels sprouts] may result in a decreased cancer risk."

One cup of cooked Brussels sprouts also contains more than 240% of the recommended dietary allowance for vitamin K1, and nearly 130% of the RDA for vitamin C. They're also a good source of fiber, manganese, potassium (which helps control your blood pressure by balancing the rather high sodium), choline, B vitamins, antioxidants and other health-promoting phytochemicals.

FUN FACT

Brussels sprouts have been found to be less severely affected by the blanching process, retaining far more of their glucosinolate than broccoli when blanched.





Growing Brussels Sprouts

A perfect cool weather crop, transplant your Brussels sprout plants into your garden **about 100 days before the first frost date**. You can start your plants either indoors or out. If growing them directly in your garden, plant the seeds about 1/2-inch-deep (1.3 cm) and once they've reached a height of about 5 inches (around 13 cm), thin them out so that they're spaced about 2 feet (60 cm) apart. They'll grow best in full sun but can handle partial shade.

Alternatively, start your seeds indoors in starter containers four to five weeks before transplanting. When transplanting them into your garden, plant them a little bit deeper than they originally grew. The lowest leaves should be just above ground. **Mulching around them will help retain moisture. If you let them dry out, the crop will usually fail.**



As for the soil, it should drain well, but needs to be packed or pressed, as excessively loose soil will encourage clubroot, a common disease affecting the cabbage family. Once or twice a month, spray the leaves with **compost tea or seaweed extract**. They're very nitrogen dependent, so be sure to use plenty of high nitrogen compost. Brussels sprouts also grow well next to bush peas and beans for this reason, as these plants deliver an extra shot of nitrogen to the soil.

As the plant matures, remove yellowing leaves to allow the sprouts room to grow. Just be sure to leave several of the largest, healthiest leaves toward the top. If you want or need the plant to mature faster, pinch off the top of the plant, but make sure you still have some healthy, fully expanded leaves remaining.

Another growth-promoting tip by the Mlgardener is snapping off most or all the leaves, leaving only a healthy bunch at the crown, promoting maturation of the Brussels sprouts. This will shock the plant into maturation and funnel energy toward the sprouts.



Harvesting Brussels Sprouts

The Brussels sprouts are ready to harvest in 80 to 100 days (depending on the variety) or when they're about 1 inch (2.5 cm) in diameter. You can let them grow larger, but the smaller ones are more tender and tend to have a more pleasant flavor. **Harvest the sprouts from the bottom, up, by twisting them off the stem.**


Should you expect a hard freeze, you can still salvage your crop. Dig out the plant, remove any remaining leaves, hang the plant upside-down in a cool place and harvest as the sprouts mature. Sprouts that fail to develop into firm heads, remaining loosely bound instead, is a sign of heat exposure. Essentially, the weather was too warm.

Also **avoid washing them before storing.** Simply remove any damaged outer leaves and place them, unwashed, in the vegetable bin in your fridge. Wash them right before cooking if needed.

The best way to preserve your Brussels sprouts if you cannot eat them within a day or two of harvesting is to **freeze them.** But first, they need to be blanched. After picking off any damaged or coarse outer leaves, wash them and sort by size into small, medium and large.

Small heads should be blanched for three minutes, medium-sized sprouts for four minutes and large heads for five minutes. You can blanch 1 pound (about 1/2 kilo) of sprouts in a gallon of water per batch. To stop the cooking process, immerse the Brussels sprouts in ice water for the same amount of time as the blanching. Drain the Brussels sprouts on a paper towel. Once dry, pack into a freezer container. They'll keep for up to one year if frozen at or below zero degrees F (-18 degrees C).

Flavor goes 
hand in hand
with freshness 

so avoid storing or refrigerating
your Brussels sprouts for more 
than two days.



How to Grow Cabbage

Best time to plant: 🌸 Early spring or ☀️ late summer

Harvest: ☀️ Mid to late summer or ❄️ winter to 🌸 early spring



With its high concentrations of antioxidants and anti-inflammatory compounds, **cabbage** (*Brassica oleracea var. capitata*) is one of the healthiest vegetables you can eat. You may be tempted to rely on your local grocery store for cabbage, but growing your own is so much more rewarding, both in terms of freshness and flavor. What's more, growing cabbage is incredibly easy, and if you time your planting right you can expect to harvest it during the summer as well as the late cold-weather season.

Health Benefits of Cabbage

It contains powerful antioxidants like vitamins A and C and phytonutrients such as thiocyanates, lutein, zeaxanthin, isothiocyanates and sulforaphane, which stimulate detoxifying enzymes and may protect against breast, colon and prostate cancers. Cabbage also contains a wealth of **anti-inflammatory nutrients** to help keep inflammation in check.

Among them are **anthocyanins**, a type of polyphenol that is particularly plentiful in red cabbage, although all types of cabbage contain anti-inflammatory polyphenols. Cabbage also

contains healthy amounts of B vitamins, including folate (which is better than the synthetic form known as folic acid found in many supplements), vitamin B6, vitamin B1 and vitamin B5.

B vitamins are not only important for energy, they may also slow brain shrinkage by as much as sevenfold in brain regions specifically known to be most impacted by Alzheimer's disease.

As a cruciferous veggie, in the same family as broccoli, Brussels sprouts and cauliflower, it also contains **glucosinolates**, phytochemicals that break down into indoles, sulforaphane and other cancer-preventive substances.

Growing Cabbage

Cabbage is one of those vegetables that taste better after a frost. This is because as temperatures drop, the cold causes the plants to break down energy stores into sugar, leading to a sweeter, tastier flavor. Some types of cabbage can even be grown in temperatures as low as 26 degrees F (-3 degrees C).

Most winter veggies are planted in mid- to late summer so they are strong and ready for when the temperatures drop, and then ripe for harvest in winter or early spring. Timing this depends on how long each plant takes to reach maturity, however, and this is where choosing the proper varieties is key.

While some cabbage plants reach maturity in 90 days, early varieties take just 60 days to reach maturity. Further, you'll probably want to plant a crop to harvest during the summer months, as well.

DID YOU KNOW?

Different types of cabbage (red, green and Savoy) contain different patterns of glucosinolates, which suggests you should try to eat a variety for the best health effects.

Starting Cabbage From Seeds

While you can purchase cabbage plants at most garden centers, it's easy to grow them yourself from seed. Start seeds indoors **eight to 10 weeks before your last frost of the spring** for summer harvests, and **12 to 14 weeks before your first fall frost** for late varieties.

"Place in a sunny spot or under lights with temperatures between 60 and 70 degrees F (15 to 21 degrees C), and keep the soil uniformly moist. When daytime temperatures reach 50 degrees F (10 degrees C) and seedlings have three leaves, plant them outdoors," Rodale's organic Life recommends.



As for seeds, look for non-GMO, organic seeds or consider saving seeds from your own crop. The latter may be a challenge, as cabbage produces seed in its second year (it's a biennial crop). This means only areas with mild winters will allow the seedlings to survive through the winter and produce seeds come summer. An alternative is to transfer cabbage plants in a cool place for the purpose of harvesting seeds the next growing season.



Where to Plant Cabbage Best

A sunny, well-drained spot works best, and healthy soil will help your cabbage plants to thrive. Adding organic compost to your soil is recommended, as is a layer of mulch or wood chips to help lock in moisture. If your cabbage leaves start to yellow, adding **compost tea**, which is basically the liquid from compost steeped in water, to the soil as an extra feeding may boost plant growth and encourage faster maturation.

Cabbage plants are heavy feeders, meaning they deplete the soil of nutrients relatively quickly. Because of this, it's best to plant them apart from other heavy feeders like broccoli and cauliflower. In addition, rotate crops each year to discourage diseases. Excess water (including heavy rain) can cause cabbages to split. If you notice a split starting, or expect a heavy rain to hit, use a spade to sever the plant's roots in one or two spots, or twist the plant, pulling up slightly, to dislodge the roots.

Both methods will slow the plant's growth, preventing splitting and bolting. If the cabbage does split, don't worry — it can still be used to make sauerkraut. As for pests, many, including **harlequin bugs, slugs, snails and cabbage worms** can be removed by hand (be sure to check the undersides of leaves). Damage from **cutworms** can be prevented by placing a "collar" made from a plastic cup around young seedlings (push it down about 1 inch into the soil).



Harvesting Cabbage

When the cabbage head is firm to the touch, use a sharp knife to cut it from the stalk. Heads that don't feel firm are not yet ready for harvest. Smaller cabbage heads will often grow from the stem, provided you leave the outer leaves and roots, so don't pull it out of the ground yet. If you're not interested in encouraging a second crop to grow, the loose outer leaves can be tossed into your compost pile or eaten — it's up to you.

Once the harvest is complete, pull the stem and root from the ground and compost the remainders (as long as the plant is healthy; avoid throwing diseased plants into your compost bin). Store cabbage in your refrigerator for two weeks or in cold storage (32 to 40 degrees F or 0 to 4 degrees C) for five or six months (the latter being perfect for your winter harvest).

How to Grow Cauliflower

Best time to plant: 🌞 Late summer (indoors)

Harvest: 🌸 Spring

Cauliflower (*Brassica oleracea var. botrytis*), which like broccoli is a member of the cruciferous family, contains an impressive array of nutrients, including vitamins, minerals, antioxidants and other phytochemicals. It's a good source of vitamin K, protein, thiamin, riboflavin, niacin, magnesium, phosphorus, fiber, vitamin B6, folate, pantothenic acid, potassium and manganese.

Cauliflower is also packed with natural antioxidants such as vitamin C, beta-carotene, kaempferol, quercetin, rutin, cinnamic acid and others. Antioxidants are nature's way of providing your cells with adequate defense against attack by excessive amounts of reactive oxygen species. As long as you have these important micronutrients, your body will be better equipped to resist damage caused by everyday exposures to pollutants, chronic stress and more.



FUN FACT

Cauliflower can be seasoned and mashed as an alternative to potatoes.

Health Benefits of Cauliflower

Because of its beneficial effects on numerous aspects of health, cauliflower can easily be described as a **superfood**. Some of its most valuable health benefits include:

Fighting cancer Cauliflower contains the cancer-fighting compounds sulforaphane and isothiocyanates, the former of which has been shown to kill cancer stem cell responsible for metastasis or spread of cancer.

Boosting heart health Sulforaphane in cauliflower also helps improve blood pressure and kidney function. Scientists believe sulforaphane's benefits are related to improved DNA methylation, which is crucial for normal cellular function and proper gene expression, especially in the easily damaged inner lining of the arteries (endothelium).

Lowering inflammation Chronic inflammation is a hallmark of most disease. Cauliflower contains anti-inflammatory nutrients to help keep inflammation in check, including indole-3-carbinol, an anti-inflammatory compound that may operate at the genetic level to help prevent the inflammatory responses at its foundational level.

Supporting detoxification Cauliflower helps your body's ability to detoxify in several ways. It contains antioxidants that support Phase 1 detoxification along with sulfur-containing nutrients important for Phase 2 detox activities. The glucosinolates in cauliflower also activate detoxification enzymes.

Boosting brain health Cauliflower is a good source of choline, a B vitamin known for its role in brain development. It also helps improve cognitive function, learning and memory. It may even diminish age-related memory decline and your brain's vulnerability to toxins during childhood, as well as conferring protection later in life.

Aiding digestion Cauliflower is an important source of dietary fiber for digestive health.

Growing Cauliflower

Cauliflower tends to require a little more care and attention than some other vegetables, but with some preplanning, it's an excellent cool weather crop. Attempts to grow cauliflower in temperatures above 80 degrees F (26 degrees C) will usually fail. You can start your seeds in late summer, however, if you plant them **indoors in a cool spot**. As long as your local temperature does not fall below 20 degrees F (-6 degrees C), you can grow cauliflower over winter and harvest in the spring.

As a general rule, you'll want to start your seeds four to six weeks before the last frost date. Cauliflower will grow best if started in seed trays with **seed compost** rather than regular multipurpose compost.

Sow one or two seeds per cell at a depth of about one-half inch. If both seeds germinate, select the most robust seedling and snip off the weaker one with a pair of shears. Avoid pulling it out as this may damage the roots of the remaining plant.

Gently wet the seed tray and place it in a **greenhouse, cold frame or windowsill** until the seeds germinate, which takes about four weeks. Keep the seeds moist but avoid overwatering, as when the plant is forced to search for water, it forces a more robust root system. Excessive heat in combination with insufficient light will result in tall "leggy" seedlings, so make sure there's plenty of light without cooking the plants.

Before transplanting the seedlings into your garden, harden them off for **seven to 10 days** by placing them outdoors, starting with a couple of hours and slowly increasing the time each day. Once they're ready to be transplanted, keep the following **guidelines** in mind:



Cauliflower is finicky when it comes to soil quality. It requires high-nutrient soil and must be well watered throughout the growing season. There are a number of different varieties to choose from, depending on your local climate and desired maturity rate.

Soil considerations

Cauliflower requires soil rich in nitrogen and potassium with a pH between 6.0 and 7.0. Prepare your bed by mixing in a generous amount of organic compost. Soil should also be well compacted, so it's best to prepare your planting bed a few weeks or months in advance. Alternatively, be sure to tamp the soil down firmly with your boot around the plant's roots.

Transplant on an overcast day

Ideally, transplant your cauliflower on an overcast day or in the evening to prevent wilting.

Plant and row spacing

Space each plant about 20 to 25 inches apart, with the same amount of distance between rows. Placing them too close together will result in smaller heads, so avoid the temptation to crowd them together.

Fertilizer recommendations

Every two weeks, apply a natural high-nitrogen fertilizer such as liquid seaweed feed (best), fish emulsion, compost tea or a combination of seaweed and chicken manure pellets. If you notice browning of the heads or if the plant develops distorted leaf tips, the plant is likely lacking in boron.

Apply a foliar feed like liquid seaweed extract once every two weeks until the symptoms clear up. Planting a fall cover crop of vetch or clover will help enrich the soil with boron for the next season.

Blanching

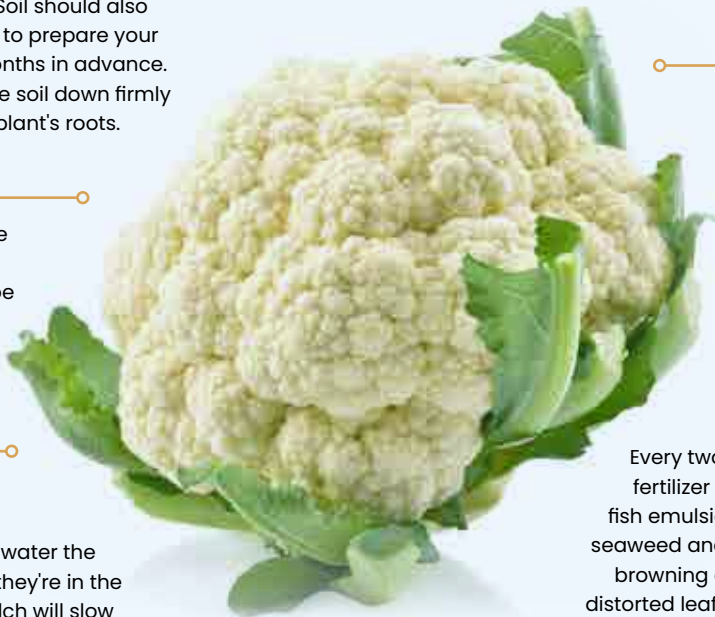
If you're growing a regular white variety, once the flower heads reach a size of about 2 inches, be sure to provide some shade if you want to avoid yellowing of the heads.

Watering

An hour before transplanting, water the plant trays. Water again once they're in the ground but avoid soaking. Mulch will slow down evaporation and protect against heat. Make sure the plants stay moist throughout the growing season. Bitter cauliflower is a sign of insufficient watering. Creating a small dam around the plant will help prevent water runoff.

Pest prevention

Use a featherweight row cover to protect the plants from pests.



Harvesting Cauliflower

Your cauliflower is ready for harvest once the heads reach a size of **6 to 12 inches in diameter**. Be sure to harvest while the heads are tight and unopened. Using a sharp knife, cut the stem just below the head, leaving a few leaves as protection for the curds. Should your crop get hit by a heavy frost, harvest the frozen heads and cook them immediately. They'll be inedible if you allow the heads to thaw and refreeze.



Cauliflower is **best used right away**, but can stay fresh for a few weeks if refrigerated. Another alternative, if you need to store the cauliflower for a longer period of time, is to **uproot the whole plant** and hang it upside down in a cool, dry place. This way, the cauliflower will stay fresh for up to one month without refrigeration.

How to Grow Collard Greens

Best time to plant: ☀️ Late summer to 🍁 early fall

Harvest: 🍁 Fall or ❄️ winter



Collard greens (*Brassica oleracea* var. *acephala*) are one of several tasty winter-season vegetables, and some suggest a touch of frost actually improves their flavor. Like all dark leafy greens, they provide many of the nutrients you need as part of a healthy diet.

Collard greens **rank No. 3** in the Environmental Working Group's 2023 **"Dirty Dozen" list**, and have been called out in the past as "commonly contaminated with highly toxic organophosphate insecticides." If you are unable to buy organic collard greens in your area, that is just one more reason to consider growing your own.

Health Benefits of Collard Greens

Collard greens pack a wealth of **cancer-fighting glucosinolates** that support healthy detoxification and fight inflammation. They're also rich in phytonutrients such as di-indolyl-methane and sulforaphane, which have been shown to help inhibit cancer cell growth and

kill cancer cells, especially with respect to breast, cervical, colon, prostate and ovarian cancer.

The presence of antioxidants like

DID YOU KNOW?

Collard greens are an excellent nondairy source of calcium, with one cup containing 83.5 milligrams of this important mineral.

vitamins A, C and E, as well as caffeic acid, ferulic acid, kaempferol and quercetin, help your body ward off oxidative stress, which has been associated with chronic disease and premature aging. They're also a great source of fiber, which helps support healthy digestion, as well as vitamin K, manganese, choline, iron, copper and vitamins B2 and B6.

Collards will either thrive or underperform depending on the companion plants you place around them. For best results:

Plant collards near:



Peppers



Southern peas



Tomatoes

Never plant collards near:



Celery



Potatoes



Yams

Pest & Disease Prevention

The tough leaves of collard greens afford some degree of protection against pests like aphids, cabbage loopers, cutworms, flea beetles and imported cabbage worms. Clear away all dead grass, leaves and weeds that provide hiding places for these pests.

Because collard diseases tend to build up in the soil, **do not plant them in the same spot every year**. As a general rule, it is best to rotate all cruciferous vegetables. If your collards have been prone to disease or pest problems during the growing season, you most definitely do not want to leave plants standing through the winter. Common diseases that plague collard plants include **cabbage yellows, black leg, black rot and clubroot**.



Harvesting Collard Greens

All green parts of collard plants are edible, and you are free to pick the leaves at any time during the growing season. Collards can grow up to 3 feet (almost 1 meter) tall, producing rosettes of large waxy leaves supported by sturdy stems. Below is everything you need to know about harvesting collard greens:

- ✓ The maturity of collards varies widely, but plan for around 60 to 80 days depending on whether you direct seed or use transplants
- ✓ Cut leaves on a cut-and-come-again schedule as soon as plants are about 1 foot tall
- ✓ Cut young, tender collard leaves starting at the bottom up; take care to harvest collards before the leaves get old and tough
- ✓ Harvest summer collard greens before bolting can occur
- ✓ Store your harvested collard greens in the refrigerator for up to a week; you can also can, dry or freeze collards

Even though frost lends collards a sweeter taste, you'll risk losing your plants if the temperatures stay below freezing for long periods. Unless you are overwintering, it's best to complete your fall/winter harvest before the first hard freeze.

That said, if you want to continue harvesting collards during cold weather, you'll need to protect the plants with a cold frame or hoop house. Because collards are a **biennial**, if you plan to save seeds, your plants will need to be overwintered.

How to Grow Horseradish

Best time to plant: 🌸 Spring

Harvest: 🍁 Fall to 🌸 spring

Horseradish (*Armoracia rusticana*) tolerates nearly every climate, but generally requires full sun or part shade. Starting with "crowns" or roots acquired either by a generous gardening friend, the supermarket or nursery, these are best planted in the spring for harvesting in fall, winter and the following spring. Although it can be grown from seed, horseradish is usually propagated from a small root piece.

Horseradish roots may look a little like skinny parsnips or pale carrots with their tough, leathery skin. But one nick of your hoe on their brown skin reveals not just cream-colored flesh inside, but a nasal-burning sensation that tells you there's something a little hotter going on.

Health Benefits of Horseradish

The unique essence of horseradish is a pleasant addition to kimchi, fermented mustard, flavorful summer rolls, sushi, and bread-and-butter pickles.

The key to the kick, it turns out, comes from powerful plant chemicals known as **isothiocyanates**. Derived from the hydrolysis of glucosinolates, the sulfur-containing compounds found in horseradish (including glucosinolate enzymes that are 10 times more powerful than those in broccoli), are especially effective in fighting lung and esophageal cancers. These gastrointestinal and respiratory tract cancers can be diminished by these phytochemicals, according to Physicians Committee for Responsible Medicine.



DID YOU KNOW?

Much of the "wasabi" sold in the U.S. is actually horseradish.



The Linus Pauling Institute asserts that cruciferous vegetables such as horseradish contain a variety of glucosinolates, each of which forms a different isothiocyanate when hydrolyzed. That hydrolysis is catalyzed by a class of enzymes known as **myrosinase** (or β -thioglucosidase) which forms several breakdown compounds, including indoles, thiocyanates and isothiocyanates.

As one study notes, isothiocyanates are effective against cancer in three different ways:

1. They prevent carcinogens from activating
2. They counteract the toxic effects of activated carcinogens
3. They fast-track their removal from your body

In addition, whether you eat them or are exposed to them in the environment, antioxidant sulforaphane increases enzymes in your liver that help destroy cancer-causing chemicals. It's even been called one of the **most powerful anticarcinogens** found in food. Other areas the compounds in horseradish have been known to be effective against include skin blemishes, gallbladder problems, respiratory problems, headaches, asthma, sciatic nerve pain and more.

Growing Horseradish

Without adding a lot of adjectives, you could simply say growing horseradish is easy. The root is not only what you eat; it's also what you plant, and they grow deep into the soil like a carrot. Here's one tip that helps explain just how easy:

In fact, it's so easy you may need to learn a few tricks to keep it from cropping up in flower beds next to it. Leaving a one-and-a-half-foot buffer zone between your horseradish and other plants may be wise; if the rhizomes start popping up in the buffer zone, dig them up and share them with heat-loving friends and neighbors, or start another plant bed.

While you can plant horseradish roots directly into the ground, to prevent the horseradish invasion and make harvesting easier as well, you can use large pots or half-size barrels that hold a minimum of 15 gallons.

Horseradish is very cold hardy; some sources say it grows best in gardening zones 4 through 7, which encompasses roughly the upper three-quarters of the U.S., but others maintain zones 3 and 9 work well, too.



If you don't harvest the entire root, you'll end up with another horseradish plant the following year, as it easily propagates on its own.

How to Grow Kale

Best time to plant: Six weeks after the first frost; 🌸 early spring or 🍁 fall

Harvest: 🌸 Late spring or ☀️ early summer



FUN FACT

Once mature, kale can be a reliable source of nutrition for your family. As little as three or four plants can supply enough greens each week for a family of four!

Kale (*Brassica oleracea* var. *sabellica*), a well-recognized "superfood," is rich in dietary fiber and antioxidants, and is one of the best sources of vitamin A, which promotes eye and skin health and may help strengthen your immune system. It's a well-rounded food, which is the reason for its positive reputation.

Unfortunately, conventionally-grown kale is frequently contaminated with high amounts of pesticides, making it important to buy organic variants of it. Better yet, grow your own kale! Many gardeners appreciate kale for their ornamental value as well. Growing your own will also give you better control over soil conditions.

Health Benefits of Kale

A 1-cup serving has almost as much vitamin C as an orange and as much calcium as a cup of milk. It's also an excellent source of lutein and zeaxanthin, which may help protect against macular degeneration. Other beneficial nutrients include indole-3-carbinol (thought to protect against colon cancer by aiding DNA repair), iron and chlorophyll.

One serving of kale also contains 0.61 grams of protein and, like meat, all nine essential amino acids needed to form proteins in your body. Studies suggest kale can help lower total cholesterol

and LDL cholesterol while raising HDL cholesterol, lowering your risk for heart disease. Kale has also been shown to provide "comprehensive support" for **detoxification** by regulating the process at the genetic level.



Growing Kale

As a general rule, kale tastes best when grown in **cooler temperatures**. Warm weather (or summer crops) produces more woody and bitter-tasting greens. Optimal soil temperature is in the 60- to 65-degree F (15.55 to 18.33 degrees C) range, but you can direct-seed into your garden as long as the soil temperature is at least 45 degrees F (7.2 degrees C).

To harvest before the worst summer heat has a chance to take its toll, start seeds indoors approximately six weeks before your last frost date. Transplanting seedlings into your garden can speed up the maturation process from an average of 55 to 75 days to as little as 30 or 40 days.


For a fall crop, plant seeds about eight weeks before your first frost date. Kale is **cold-tolerant**, and if you live in the north, you can harvest even after a light snowfall. Most can thrive in temperatures as low as 15 degrees F (-9.4 degrees C), giving you the option of cultivating a winter crop.

Sow seeds at a depth of about one-half inch. Keep moist but avoid overwatering as this may cause the seeds to rot. Germination typically takes about 10 days. Thin the plants once they're 3 to 4 inches tall, leaving only the healthiest ones. Once the seedlings are about 9 inches tall and four leaves have developed, they're ready to be transplanted into your garden.



General Tips for Growing Kale

- ✔ In the early spring and fall, plant your kale in full sun. If you're growing it during the summer, be sure the plants have partial shade. Use straw or mulch to preserve moisture and prevent the roots from excess heat. Just beware that kale will not generally thrive in the summer, and will be far more bitter than a fall crop grown in a cooler climate. Kale tends to become more attractive to pests during the summer as well
- ✔ Kale tends to prefer slightly acidic soil that is high in nitrogen. Make sure the soil drains well, but keep moist to avoid stunting the plant's growth. Lack of moisture will also render the leaves tough and bitter
- ✔ Dress with compost every six to eight weeks. Growth can be further boosted by adding a seaweed or fish emulsion once a month
- ✔ Give each kale plant 12 to 24 inches of space to allow sufficient airflow
- ✔ Kale grows very well planted next to beets, celery, cucumbers, herbs, onions, spinach, chard and potatoes. Avoid placing it next to beans, strawberries or tomatoes



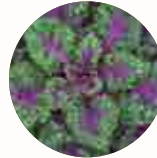
As a member of the cabbage family, kale is prone to diseases like **black rot**, **club rot** and **wirestem**, and while far more disease-resistant than many other vegetables, common pests include aphids, cabbage loopers, cabbageworms, cabbage root fly, cabbage whitefly, cutworms, flea beetles and slugs.

One of the easiest ways to protect young kale from many of these pests is to use a **featherweight row cover**. Once you remove the row covers, check your plants often for signs of pests and disease.

Kale Varieties You Can Try Planting

The oldest variety of kale is curly kale, which has ruffled leaves, a deep-green color and a bitter, pungent flavor. More recent varieties are ornamental kale, Russian and dinosaur kale, the latter of which has blue-green leaves and a more delicate taste than curly kale.

Ornamental kale, sometimes called salad savoy, was originally used as a decorative garden plant (it comes in green, white and purple colors), although it can also be eaten and has a mellow flavor and tender texture. As a general rule, kale with smaller leaves tends to be more tender and milder than larger-leaved varieties. While there are many options, some of the more popular varieties of kale include:



Red Russian

A frost-hardy, slug-resistant variety that is sweeter than most other kinds of kale



Dinosaur kale (*Tuscan kale or Lacinato*)

Another sweet-tasting variety with large, puckered blue-green leaves



Hanover Salad

A fast grower that produces an early harvest



Redbor

A magenta-colored, curly-edged variety with mild flavor and crisp texture



Vates

A dwarf kale with curly, blue-green leaves that can tolerate both heat and cold



Harvesting Kale

Your kale is ready for harvest once the leaves are about the **size of your hand**. Harvest by nipping the outer leaves off from the stem. Be sure to leave the center leaves to ensure continued growth. As a general rule, you can harvest **three or more leaves** from each plant every five days. Remove any yellowing or wilted leaves, as leaving them on the plant will encourage pests.

Kale has a relatively short life in terms of crispness, so it's best to use within a few days of harvesting, although the leaves can be blanched and frozen for long-term storage. Kale chips are another popular alternative that will lengthen their shelf life.



How to Grow Kohlrabi

Best time to plant: 🌸 Spring or 🍁 fall

Harvest: 45 to 60 days after planting

Kohlrabi (*Brassica oleracea*) looks like a pale green or purple turnip with multiple stalks of green leaves. Although the plant looks like a turnip, it's actually related to cabbage and broccoli. The bulb grows above ground and is not a root vegetable. With a swollen, bulb-like stem sprouting waxy leaf stalks, the plant has an out-of-the-world appearance and may take the crown for the most unusual-looking vegetable.

Also known as a "**space cabbage**" from its appearance, this down-to-earth vegetable offers some of the same health benefits as others in the Brassica family. But, unlike its relatives, the plant is easier to grow, matures quickly and is ideal for fall or early spring planting. Consider planting it in your garden this fall or next spring to enjoy its pleasing flavor and health benefits.

Health Benefits of Kohlrabi

Kohlrabi provides **sulfur-containing glucosinolates**, which enhance your body's antioxidant function and may also help to reduce your risk of cancer. Kantha Shelke, a principal food scientist at the food and science research firm, Corvus Blue LLC, told Time:

"Kohlrabi's chemopreventive effects make it particularly healthy. Kohlrabi contains isothiocyanates which are effective against cancer.

The chemopreventive compounds are more bioavailable from fresh — about three times as much as from cooked — kohlrabi; the higher bioavailability is associated with a higher chemopreventive activity, which might be the reason why raw kohlrabi is preferentially consumed by health-conscious people."



DID YOU KNOW?

Kohlrabi contains more vitamin C than oranges!

Interestingly, kohlrabi is exceptionally **high in vitamin C**, which is vital for maintaining healthy connective tissues, teeth and gums as well as supporting your immune health.

It also delivers vitamin A, calcium, iron and fiber. Plus, it contains copper, manganese, iron and potassium, and is rich in phytochemicals and carotenoids, which may help lower your risk of diabetes, heart disease, stroke and Alzheimer's disease. Some of the other ways kohlrabi may benefit your health include:

- ✔ Promotes healthy digestion
- ✔ Helps with weight management
- ✔ Maintains healthy blood pressure levels
- ✔ Maintains healthy metabolism
- ✔ Keeps nerves and muscle functioning optimally
- ✔ Boosts bone strength
- ✔ Promotes vision health



Growing Kohlrabi

Kohlrabi grows well in **gardens or containers**. The plants appreciate full sun but will adapt to dappled shade. They grow best in cooler temperatures, between 40 and 75 degrees F (4 and 24 degrees C). In warmer climates, consider planting in late fall for a winter harvest.

Allow **45 to 60 days** for plants sown from seed to reach maturity. Stephen Reiners, professor of horticulture at Cornell's School of Integrative Plant Science, advises:

“You can grow kohlrabi in almost any region if you grow it in the spring or fall. Good timing is key. You want to avoid having the bulbs form in hot weather, which can make them woody.”



How to Grow Radishes

Best time to plant: 🌸 Spring and 🍁 fall

Harvest: 30 to 45 days after sowing



Radishes (*Raphanus sativus*) are crisp, colorful and delicious. When served raw or added to salads, they add a burst of bold, peppery flavor. The beauty of planting radishes is twofold: They mature in about **25 days** and you can grow them in both **spring and fall**.

Health Benefits of Radishes

Radishes are surprisingly low in calories. Although it is unlikely you would eat 10 large, raw radishes in one sitting, which equates to roughly a 3.5-ounce serving, it would only amount to 16 calories. One serving of radishes provides 25% of your recommended dietary allowance (RDA) of vitamin C, as well as 5% of your RDA for potassium, 2.5% for magnesium and 2% each for both calcium and iron.

DID YOU KNOW?

The daikon radish has been noted as Japan's most popular vegetable, outpacing cabbage and onions in popularity.

Radishes have wonderfully beneficial antibacterial, antifungal, antioxidant, anti-inflammatory and detoxifying properties. They contain the powerful flavonoids beta carotene, lutein and zeaxanthin. According to The Guardian, radishes, similar to other vegetables in the brassica family, are good for you because:

"[R]adishes contain two natural compounds, *sulforaphane* and *indole-3*, which in animal and lab studies have shown an anti-cancer action. It is thought that these antioxidant substances may slow or stop the growth of several different types of cancer, possibly by prompting the body to make higher levels of detoxifying enzymes. Radishes also give you a significant amount of vitamin C to boost your defenses against disease."

Common Radish Growing Problems

While radishes are one of the fastest and easiest vegetables to grow, there are a few problems known to plague beginning or inexperienced gardeners. The Spruce shares the following advice related to the four most common problems associated with growing radishes:

1. **Radishes that are too hot** — The best way to control the intensity of the flavor of your radishes is to harvest them as soon as they mature. Radishes harvested in a timely manner tend to be smaller, crisp and sweet. Unlike beets and carrots, the sweetness of radishes does not improve when they are left in the ground longer. To the contrary, radishes become tougher and increasingly bitter the longer they are left in the ground.
2. **Radishes that crack open** — Consistent, even watering is the solution to maintaining good-quality radish bulbs. Cracking can be a sign you've been underwatering, or, you tried to make up for watering you missed by overwatering. Overwatering can cause your radish bulbs to absorb too much water, swell up quickly and split open. Though not always aesthetically pleasing, split radishes are still edible, so feel free to eat them whole or cut them up for salads.
3. **Radishes that are tough and woody** — Radishes flourish in cool weather with moist soil. If the temperature is too hot and water is scarce, radishes will become tough and woody.
4. **Radishes with beautiful tops but poorly formed bulbs** — If radishes are planted in the shade or are shaded by other larger garden plants, they will put all their energy into creating beautiful tops, while the bulbs will be poorly developed. Thinning is especially important, because radish bulbs will not develop well if you do not give them adequate room to grow.



Because it is a member of the cabbage family, radishes can be affected by **cabbage maggots**. Use row covers early in the season to prevent the cabbage root fly from laying its eggs near your plants. Fortunately, while cabbage maggots are attracted to radishes, they seldom ruin the whole crop.

Harvesting Radishes

You can harvest radishes as soon as their bulbs are fully formed above ground. Pull them as soon as they mature because oversized radishes will inevitably crack, at which point they will become tough, woody and less flavorful.

Once harvested, cut the tops off and store unwashed radishes in plastic bags in your refrigerator, where they will last for a week or two. Always wash radishes well before eating them. If you plan to use the radish greens, store them separately and eat them within three to four days.



How to Grow Swiss Chard

Best time to plant: 🌱 **Spring**, two weeks prior to last frost

Harvest: ☀️ **Early summer**

There is little doubt that minimally processed vegetables are one of the best ways to improve your health. Ideally, they should be locally grown to ensure freshness, and organic to avoid pesticides, with a majority consumed raw.

A simple way of boosting your vegetable intake is to juice your veggies, and tender, young **Swiss chard** makes a tasty addition to your juice that boosts your vitamin intake. Even better, Swiss chard can be grown without the need for an outdoor garden. This gives you the ultimate control over the quality of the plant, while eliminating chemical exposure.

Health Benefits of Swiss Chard

Swiss chard is packed with **phytonutrients**, easily recognized in the array of vibrant colors in the different varieties of the plant. Phytonutrients have antioxidant and anti-inflammatory properties in the human body that help protect your health. There are more than 25,000 phytonutrients found in plants, including carotenoids, flavonoids and resveratrol.

Swiss chard is an excellent source of vitamins C, K and A. Your body uses vitamin C as an essential cofactor in many enzyme reactions and in the synthesis of collagen, important to your skin and underlying structural components, such as tendons and ligaments.

Studies have indicated a higher intake of vitamin C is associated with a reduced risk of cardiovascular disease and stroke. Your body has a limited ability to store vitamin K, so including daily dietary sources is important.



FUN FACT

Despite its name, Swiss chard actually originated in Greece and Italy!

It is an essential cofactor for blood coagulation (clotting), bone metabolism and preventing mineralization of blood vessels, or hardening of the arteries. Vitamin A is involved in regulating growth, in the specialization of all body cells, and in your immune system and vision.

Large-scale human studies have not been undertaken on Swiss chard. However, based on the phytonutrients and vitamins found in it, they are a tasty way of helping improve your health.

Growing Swiss Chard

A spring crop of Swiss chard should be planted in your garden two weeks prior to your last frost date, or the seeds can be started indoors approximately three weeks before the last frost, and set out only after the chance of frost has passed.

For a strong fall crop, start seeds approximately 10 weeks before the first anticipated frost and set out the seedlings four weeks after starting them.


The soil should be well-fertilized with a balanced, organic fertilizer, and in an area that drains well. This will help protect the plant from disease and pests that thrive on compromised plants. If you are planting outside, plant seeds half an inch deep and 3 inches apart. When setting out seedlings you started indoors, plant 12 inches apart.

Swiss chard seed capsules may contain more than one seed. If they all germinate it can cause crowding and a poor crop. Instead of pulling plants that are too close together, cut them with cuticle scissors to protect the nearby plant's roots from being disturbed.

Swiss chard is a member of the chenopod family of vegetables, which includes spinach, beets and quinoa. These vegetables continue to demonstrate a number of unique health benefits to organs, such as your eyes.

Keep the strongest sprout and cut the weaker sprouts at the soil line. Gradually thin your crop until the plants are 6 inches apart for smaller varieties and 12 inches apart for larger varieties.

Water the plants evenly and often during dry spells. You can start harvesting when the plants are between 6 and 8 inches tall. If you allow them to grow more than 12 inches they begin to lose their flavor.

 You may use mulch in the beds to retain moisture, but choose your mulch carefully as it may carry pests or disease.



Mother Earth News offers **more tips** to help you harvest a bountiful crop of Swiss chard this summer:

✓ **Weed control**

Weed early and often as the young chard plants don't compete well with weeds and will quickly die out. As the plants grow taller they will do a reasonable job of shading out late-season weeds that need direct sun.

✓ **Visual enjoyment**

Chard is a colorful vegetable that improves the visual appeal of your vegetable garden. Consider trios of bright chard planted on mounds, or in highly visible areas of the garden. Contrast the thick chard leaves with fine-textured plants, such as dill, parsley or carrots.

✓ **Shade the plants**

Although chard grows in full sun, it affects the flavor of the vegetable. When possible, use the shade from taller plants, such as corn, tomatoes or sunflowers, to filter the intense summer sun. Plant your chard to the north or east of taller plants to take advantage of the early afternoon shade.



✓ **Mulching**

Be generous with your mulch to keep the soil moist and cool. The mulch also reduces the amount of soil that splashes on the leaves during rain and watering. Keep the plants watered as dry conditions tend to make the flavor of the vegetable harsh.

✓ **Soak the seeds**

Soak the seeds overnight before planting outside or starting indoors to encourage strong germination of your plants.

✓ **Rejuvenate plants in late summer**

Pull off old leaves and spread a bit of compost over the root area. Consider using a water-soluble organic fertilizer to feed the plant. The plants often respond by making a strong comeback so you may harvest until a couple weeks after your first fall frost.



Harvesting Swiss Chard

In the early summer it's possible to twist the leaves away from the plant without doing permanent damage.

However, later in the season, it's common for the plant to push out of the ground a little. Twisting the leaves at this time may mean no further harvest from that plant, so it's best to cut them off with a sharp knife.

Treat Pests and Diseases Naturally

The more common pests that affect Swiss chard are **aphids, slugs and leafminers**. Slugs may be controlled using natural methods that don't affect your plants. Slugs are attracted to the scent of yeast, so setting a beer trap in close proximity may be effective when set up properly. However, some slugs are just after a drink before heading off.

Diatomaceous earth is a simple, effective treatment that requires a few applications throughout the season. The product is made from powdered, fossilized sea organisms that essentially cause a slug to dehydrate and die. However, it becomes less effective when wet. Natural predators to the slug are ground beetles, which may be introduced. Slugs are also repelled by yucca, lavender, sage and rosemary plants.

Aphids are small pests that may start slow but reproduce quickly and can easily destroy your garden if not contained. Using **predator insects** to stop an aphid invasion eliminates the need for chemicals and won't kill off beneficial insects. Ladybugs, green lacewings and hoverflies all have an appetite for aphids. You can purchase ladybugs and lacewing eggs at a garden store, but must attract hoverflies by planting aromatic garlic, catnip or oregano.

How to Grow Turnips

Best time to plant:  Spring

Harvest:  Summer



FUN FACT

Summer turnips are said to be more tender than fall crops.



Turnips contain **beneficial nutrients** such as vitamins A and K — found in the leafy green tops — as well as calcium, copper, iron, manganese and potassium.



Turnip greens also contain a range of B vitamins, as well as antioxidant phytonutrients like hydroxycinnamic acid, kaempferol and quercetin, which help lower your risk of **oxidative stress**.



As an excellent source of fiber, turnips promote **healthy digestion and elimination**; a 100-gram serving of turnip root provides about 1.8 grams of fiber.



Turnips contain a type of phytonutrient known as **indoles**, which are known **cancer fighters**; one

Turnips (*Brassica rapa*) are members of the cruciferous family of vegetables. They are biennials grown as annuals and may go to seed in their first year if planted in early spring. Antioxidant-rich and nutrient-dense, turnips are doubly appreciated because both their roots and greens are edible. They also grow quickly, require minimal care and are prolific. For these and many other reasons, you won't regret adding turnips to your vegetable garden.

Health Benefits of Turnips

Turnips are a low-calorie vegetable that's loaded with immune-boosting vitamin C, providing 21 milligrams (mg) per 100 grams. Besides supporting your immune system, vitamin C protects your body against free-radical damage and helps your body form and maintain connective tissue such as blood vessels, bones and skin. Below are a few more of the health benefits of turnips:



specific indole called **brassinin** has been shown to inhibit the growth of human colon cancer cells.



Research involving cruciferous vegetables suggest the sulforaphane compound that gives vegetables like turnips their bitter taste plays a role in their **cancer-fighting abilities**.



Glucosinolates — the sulfur-containing compounds found in turnip sprouts — appear to have **antibacterial, anticancer, antifungal** and **antiparasitic properties**. A study published in the Journal of Agricultural and Food Chemistry suggests day eight of germination as the optimal time to consume turnip sprouts given the peak levels of glucosinolates available at that time.



Growing Turnips

Turnips do well when planted early in the spring for a summer crop. If you want to store them for use during the winter, it's best to plant them late in the summer and harvest them before the first frost. For fall crops, plant your seeds about 70 days before the first frost date in your area. Mulching your turnips will help prevent them from freezing, and the cold weather helps sweeten their flavor.

Below are **recommendations** from gardening experts to ensure a healthy crop of turnips:

Seeds

As a root vegetable, turnips are best planted from seed at a depth of about one-fourth to one-half inch (0.6 to 1 centimeters). Use your finger or a trowel to create a small trench and scatter about three to 20 seeds per foot. Space rows 12 to 24 inches (30 to 60 cm) apart. For a continuous harvest, plant additional seeds every 10 days throughout the growing season.

Thinning

Once your turnips are 3 to 4 inches (8 to 10 cm) tall, you can thin them to 2 to 4 inches (5 to 10 cm) apart to give the roots plenty of room to grow. If desired, you can eat the thinned-out plants as greens.

Soil

Turnips prefer a slightly acidic soil pH in the range of 6.0 to 6.5. Rich, well-draining soil will ensure your bulbs grow quickly and do not rot. Because turnips mature quickly, you won't need to fertilize your plants. The soil must be at least 40 degrees F (4 degrees C) for germination, which generally takes between seven and 14 days.

Water

Water your turnip seeds immediately after planting to encourage germination. Provide at least an inch of water per week to promote strong root development and quick growth.

Sun

If you are interested in eating both the turnip and turnip greens, you should choose a planting location that gets full sun. Turnips will tolerate partial shade, too.





Harvesting Turnips

Once you get the seeds in the ground and water them regularly, you can look forward to harvesting your turnips about 45 to 50 days later. When you plant in the fall, you can leave turnips in the ground to harvest in the winter if you'd like. In most cases, you'll want to remove them before the first frost. In milder areas you may be able to keep them in the ground during winter by covering them with a thick mulch. Here's everything you need to know about harvesting turnips:



- ✓ **Bulbs** — The best way to determine if your turnips are ready for harvesting is to pull one or two out of the ground to check its bulb size. Bulbs taste best when they are small and tender, so harvest them when they reach about 2 to 3 inches (5 to 8 cm) in diameter. Don't let them grow too long past their maturity date because older turnips, although still edible, can become tough or pithy.
- ✓ **Greens** — Turnip greens can be harvested as soon as they are about 4 inches (10 cm) tall. As long as you don't damage the top of the bulb, the greens will continually regenerate throughout the growing season.

Hardy fall varieties may last throughout the winter when stored in a cool dry place or your refrigerator. Remove the greens first by twisting them off and leaving a 1/2-inch (1 cm) stem, since they won't last long. Another reason to detach the greens is because they will continue to draw energy and nutrients from the bulbs. When storing turnips, be sure to **leave the soil on the roots** because it helps protect the bulbs during storage.



How to Grow Watercress

Best time to plant:  Spring

Harvest: 21 days after emerging

Watercress (*Nasturtium officinale*) is a leafy green member of the Brassicaceae family and a close cousin of mustard greens, cabbage and arugula. During the summer months, watercress produces tiny white flowers with edible seeds.

Health Benefits of Watercress

Folklore holds that King Xerxes ordered his soldiers to eat watercress for health reasons. Hippocrates is believed to have built his first hospital near water around 400 BC in order to harvest a plentiful supply of watercress for his patients.

During the Victorian era, the plant was transported over railways. In the 1930s, researchers concluded that watercress helps promote **children's growth**. By the end of the 20th century, however, cultivation had shrunk and watercress was relegated to the status of a garnish rather than a staple.

If the flavor seems familiar it's because it's a prime component of V8 vegetable juice. The plant offers generous amounts of vitamin C, vitamin A, calcium, iron and folic acid. But, more notably, 1 cup delivers 100% of the daily recommended amount of vitamin K.

In the kitchen, watercress is highly versatile and may be used as a salad green, steamed or added to soups and stews. Watercress health benefits are related to the high number of phytochemicals contained in the plant.



FUN FACT

There are three major types of cress: **watercress**, **upland cress** and **garden cress**.

The flavor is like a mustard plant and wasabi. In its raw state there is a unique peppery flavor that diminishes as it's cooked. The spicy essence of watercress adds a unique flavor to stews and soups.

As the plant becomes more mature, it may turn slightly bitter, so it's important to harvest watercress at its peak.



Growing Watercress

It's important to discover how to grow watercress in order to enjoy the benefits. It prefers cool, flowing water. If your garden includes a water feature, that's a great place to start the plant. However, it can become invasive and spread rapidly along the surface of the water, choking out native plants. When grown in a water feature with other plants, it may take aggressive pruning to keep it under control.

Watercress is a **perennial**. When you find it growing in the wild, it will likely be partially submerged in running water. However, if you don't have a water feature in your garden or a stream in your yard, you can still cultivate the plant in your yard or home under the right conditions.

Since the plants thrive in a **wet environment**, be sure to keep your garden, pot or indoor area moist at all times. Watercress grows best in just water, lending itself well to a hydroponic system in your home.

It takes about **seven to 14 days** for watercress seeds to germinate. The seeds are tiny and may be sown outside about three weeks before the last frost. This is because the plant enjoys cool, but not frigid conditions. Take care not to let the soil dry during this time because the seeds have to stay moist in order to germinate.

Planting Watercress in Your Garden

You can grow watercress outdoors either directly in the ground or in containers. While watercress can grow from seed, it's easily transplanted. It also can be started from cuttings. Nearly any part of the plant may be cut, placed into a container of water and then transplanted once the roots have formed.

Watercress grows **6 to 24 inches tall**. If you don't have a water feature where you plan to grow watercress, you'll want an area with rich, fertile soil in full sun. Watercress will tolerate some shade and grows best in hardiness zones 9A to 11. Although the plants can thrive in a wide range of pH, they prefer a pH between **6.5 and 7.5**.

To achieve the best moisture level when you plant in the ground, you may have to create a **small bog** on your property. This is easily

accomplished by digging a hole approximately 2 feet across and 1 foot deep. Line the area with plastic pond liner, leaving a lip at the top so the plastic doesn't slip under the soil.

Use a garden fork to punch a few holes on the sides for drainage and then fill it with one part each of garden soil, builder's sand, compost and mushroom compost. Add this mixture to the pool liner, mixing it thoroughly and stopping approximately 2 inches from the top.

Cover the remaining portion with soil and then fill it with water. You may then plant seeds or cuttings or transplant watercress that has already rooted into the bog. Since watercress requires a great deal of water, you may want to grow it in large containers to avoid having to build a bog.



Planting Watercress in Containers

Without a creek or water feature where the soil stays saturated, you may choose to build your own small water garden in a container. Be sure the container has large drainage holes at the base and add a layer of landscaper's cloth at the bottom to keep the soil from escaping as you water.

Place small stones on the bottom layer for good drainage. Place a larger tray underneath your planting container and fill it with pebbles to allow water to flow freely into the growing container.

Fill your container with a soilless mixture. This filling should contain **vermiculite or perlite** along with **peat**. Water it heavily and plant your seeds or transplant seedlings or cuttings into the container. Keep the drainage tray roughly half full of water and replace the drainage tray with fresh water every three to five days, making sure the tray never dries out.

Watercress can also be grown successfully indoors under grow lights. If using standard fluorescent lamps, keep them between 2 and 4 inches from the tops of the plants. However, high output fluorescent lighting should be kept 1 foot above the plants.

While growing indoors, use an **oscillating fan** near the plants approximately two hours each day to help simulate a natural habitat in which the watercress will grow shorter and sturdier. Your plants will have the same water requirements indoors as they do outside.



Harvesting Watercress

The flavor of your watercress is best before the plant flowers. In the hot summer months, when it has tiny white flowers, you'll find the leaves have a bitter flavor. You may start harvesting about three weeks after the watercress has begun growing.

By cutting the plants to 4 inches high you'll encourage thick growth and have greens for your salad. Once you have cut them from the plant, wash them thoroughly.

The best way to store watercress is in a glass jar filled with water with the stems submerged as you would cut flowers. As the plant's water content is high, it perishes easily. With the stems submerged, you may be able to store watercress for up to five days.

At the end of the season you might like to harvest the entire plant and store it with its roots, as this will keep it fresh for a longer period of time. If you are growing your plants indoors, you'll have access to a harvest as needed. But, when your garden is outside and you'd like to enjoy watercress after the first hard frost, consider pulling a few with the roots and keeping them in a glass of water.





HOW-TO-GROW
VEGETABLES
(Leafy and green)



How to Grow Artichokes

Best time to plant: ❄️ **Winter** (12 weeks before last frost date in your area)

Harvest: ☀️ **Mid- to late summer**



Artichokes (*Cynara scolymus*) are tasty when served fresh from the garden, and they can be successfully grown even in cooler climates. If you've never had the pleasure of dipping steamed artichoke leaves in melted raw, organic grass fed butter, and using your teeth to draw out the tender meat, you don't know what you're missing!

Health Benefits of Artichokes

Artichokes not only have a taste and texture that is wonderfully unique, but they also contain high amounts of fiber and a myriad of beneficial nutrients. A 3.5-ounce serving of artichokes contains 47 calories and 5 grams (g) of fiber, 3 g of protein and 1 g of sugar.

Among their many beneficial nutrients, artichokes contain high amounts of vitamins C, K and B9 (folate), as well as beneficial amounts of calcium, copper, iron, magnesium, manganese, phosphorus and potassium. Some of the health benefits of artichokes are as follows:

Boost heart health Artichoke leaves contain ingredients shown to optimize your low- to high-density lipoprotein cholesterol ratios

Ensure healthy elimination Due to high amounts of dietary fiber, artichokes add bulk to your stool that will decrease your susceptibility to diarrhea and constipation, while ensuring healthy, regular bowel movements

Prevent cancer Artichokes are extremely high in antioxidants, including vitamin C, quercetin and rutin. Artichokes also contain high levels of polyphenols, which have chemoprotective qualities designed to slow down and stop, or even reverse, the effects of cancer in your body

Promote liver health Artichokes have long been used as a liver tonic based on the presence of cynarin and silymarin,

antioxidants that reduce and eliminate liver toxins, and possibly contribute to the regrowth and repair of damaged liver cells

Regulate blood pressure Because they are a rich source of potassium, artichokes help regulate the effects of sodium on your body, which positively impacts your blood pressure

Support gallbladder function

Artichokes can soothe an inflamed gallbladder and promote healthy gallbladder function by stimulating the production and secretion of gastric juices, as well as bile

Growing Artichokes

Because artichokes take about six months to mature, you need to get a head start when planning to add artichokes to your vegetable garden. Below are three options to consider:

1 Direct seed

Start seedlings via direct seed in 4-inch pots about 12 weeks before the last expected frost in your area. Transplant seedlings eight to 10 weeks after seeding, and only after danger of a hard frost has passed and the soil has warmed. For best results, transplant your seedlings when they are about 8 to 10 inches tall, with stocky stems and two sets of true leaves. Due to their large size when mature, plant artichokes 2 to 4 feet apart



2 Shoots taken from existing plants


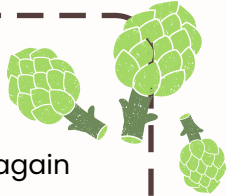
If you have access to a healthy artichoke plant in the early spring, you can use a knife and a spade to remove a rooted shoot; when planted correctly and given proper care, the transplanted shoot will grow into a healthy, full-sized plant

3 Dormant roots

You can buy dormant roots from your local nursery or return to the garden any roots you removed at the end of the last growing season; set the roots in the ground vertically, with the growth buds just above the soil surface

Artichokes thrive in full sun to partial shade. The soil should be moist and well-drained. Six to eight hours of sun a day is ideal. Because they grow new shoots every year, to encourage large, flavorful buds.

You should remove all but one or two of the strongest shoots. It will take at least two growing seasons before you can expect to see healthy, tasty artichokes, but it will be well worth the wait. Before you can even begin to think about planting artichokes, you must consider the condition of your soil. Because artichokes thrive in moist, slightly acidic conditions, you'll want to:

- 
- ✓ Strive for a **soil pH of around 5.5**
 - ✓ Loosen the soil to a **depth of 12 inches** to ensure proper root development
 - ✓ Work **a shovel of compost** or **aged manure** into the soil just before planting, and again annually; using a **granulated organic fertilizer** with a balanced nitrogen-phosphorus-potassium level is another option
 - ✓ Apply a **midseason dressing of aged manure**
 - ✓ Keep the soil **evenly moist** throughout the season; **mulch as needed** to retain moisture
- 



Harvesting Artichokes

Most plants will produce up to eight or nine artichokes. With so many buds drawing nutrients, only one or two of the artichokes will be large, and the rest will be small. If you want larger artichokes, you will need to cut off most of the buds as soon as they appear, retaining, at most, three to four of them.

Artichokes are ready to be harvested in mid- to late-summer after the stems have flowered and the artichoke buds are tight, firm and about 3 inches in diameter. To harvest, cut the artichoke stems at an angle about 2 inches below the head. Refrigerate unwashed artichokes in plastic bags, where they will keep for up to two weeks.

Wash them prior to cooking. Because **aphids (and sometimes ants)** can burrow into artichokes, if you notice these pests during harvesting, you will want to soak cut artichokes in a bowl of salted water to draw the pests out.

In most cases, after the first cutting, your plants will produce a second crop of smaller artichoke buds. If you allow the buds to open fully, the artichokes will no longer be edible but you will enjoy beautiful, ornamental flowers. After you have harvested all the buds on a stem, cut the stem down to or near ground level. After harvest, you have two options for keeping your artichokes going from one season to the next:

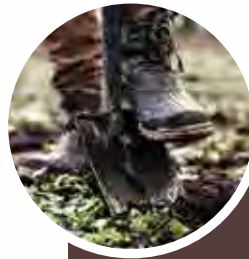
DID YOU KNOW?

Though they originated in the Mediterranean region as perennials, you can also grow artichokes as annuals in cooler temperatures.



1. Mulching

In U.S. plant hardiness zones 7 and warmer, you can easily protect artichokes during the offseason by cutting back all the foliage (at or just above ground level) and placing a thick mulch of leaves or straw around each plant.



2. Digging up roots

If you live in a colder region, you can dig up your artichoke roots, shake off most of the dirt and hang them in onion bags in your root cellar or another cool, dry place. In spring, these dormant roots will take off quickly when you replant them in the garden.

How to Grow Dandelion Greens

Best time to plant: 🌸 Early spring to 🌞 late summer or 🍁 early fall

Harvest: 🌞 Summer and 🍁 fall

Dandelion greens (*Taraxacum officinale*) are nutritious, delicious and versatile. They can be added to salads, soups and stews or sautéed and served as a side dish. What you may have only thought of as a pesky weed in your yard is actually a flowering herb with significant health benefits.

Health Benefits of Dandelions

Small birds eat the seeds of the dandelion; pigs, goats and rabbits eat the flowers and the nectar is food for the honey bee. But, beyond a food source for wildlife, the dandelion holds an amazing amount of health benefits for you as well. There are uses in your kitchen from the root to the flower, and health benefits to each part of the plant as well. Some studies have demonstrated the greens help produce **antibodies** to cancer.

Dandelion greens are high in calcium, iron and potassium. They are also rich in vitamins C, A, K, thiamine and riboflavin, and surprisingly rank ahead of both broccoli and spinach in nutritional value. A full cup of chopped greens is a low 24 calories, packing more nutrition in a serving than some of the vegetables you routinely grow in your garden each year.

The vitamins and minerals provided in your dandelion greens help prevent Alzheimer's disease, eye disorders, support your



DID YOU KNOW?

Dandelion has been used by Native Americans to help heartburn and upset stomach, while the Chinese have used it to improve breast milk flow and reduce inflammation in the breast during lactation.

immune system and the development of strong bones and teeth. Practitioners of folk medicine have been using dandelion root and leaves for centuries to prevent and treat several health conditions. The root of the plant increases the **flow of bile** that may help reduce gallstones, liver congestion and inflammation and jaundice.



The plant has a second name, "**pis-en-lit,**" (wet the bed) — a name that refers to the diuretic effect of its greens. When eaten before bed, they may require you make several trips to the bathroom during the night. Some find the leaves to have a mild **laxative effect** that aids in movement through your digestive tract. Traditionally, the root of the dandelion has been used in the treatment of **rheumatism**, as it has mild anti-inflammatory effects.

Time of harvest affects the properties of the root. Fall harvest has the greatest health benefits and produces an opaque extract with higher levels of inulin and levulin, starch-like substances that may help balance your blood sugar. Spring and summer harvest of the root produces a less bitter product, but with less potent health benefits.

Growing Dandelions

If you are planting your own dandelion crop, it is probably best to plant them furthest from your neighbor's yard and **remove the heads** before they seed. You can grow a full crop in your backyard using an inexpensive hot house that allows sun in and keeps the seeds from spreading. Even with such precautions, seed can still leave the hothouse on your clothing or on the sole of you shoes, so you'll still want to remove the heads before the seed ball forms.

When you are starting a crop, the first seeds can be sown outside approximately **four to six weeks** before the last frost. Once they have sprouted, which takes **seven to 10 days**, you'll want to thin them so they are 6 to 8 inches apart, allowing for full growth of the greens and plenty of room for the tap root.



You can choose from a variety of different dandelion plants to meet your particular needs. The Clio produces upright greens that are easy to harvest and the Amelioré is a French strain with broader leaves and a milder flavor.





The root of the dandelion routinely goes **18 inches deep** into the soil and is an excellent way of keeping the soil from compacting. The root is sturdy and often has little hairy rootlets that may remain in the ground when you harvest your plants and regrow a new plant. Although the plants are incredibly resilient to poor conditions, the quality of nutrition you receive from the greens will depend on the quality of the soil the herb grows in.

Dandelions thrive in full sun, but will grow in partial shade. Use soil that drains well and compost the soil in the fall to encourage a strong spring crop. Dandelions will grow **problem free**. You won't have to treat for pests or change planting location unless they are planted in full shade.

Dandelions may also be grown in container gardens, which makes covering them to blanch the leaves, or cutting the flower when they go to seed, much easier than if they are planted in your herb garden. Containers can also be set up high to reduce the potential for back pain as you are bending to care for the plants and prevent them from seeding your lawn or your neighbor's yard.



Harvesting Dandelions

You can harvest the leaves and flowers throughout the summer months. The roots are best harvested during frost-free fall months. Before harvesting the leaves, cover the plants with a **dark opaque cloth** so the leaves blanch, reducing the bitterness of the greens.

The blossoms should be harvested when they are young and tender, just as they have bloomed. Putting them in a **bowl of cold water** will prevent them from closing before you eat them.

Dandelions growing in the center of your yard can be harvested and eaten as long as your yard is **chemical free** and your neighbors don't spray. Even if your neighbors use chemical pellets to treat the yard, the chemicals migrate to the edges of your yard, so don't harvest and eat the dandelions within 10 feet of your neighbor's yard.

*You may end up with dandelions in your own yard in places where you don't want them growing. There are several ways to remove them without resorting to chemicals, such as by spraying a **mixture of white vinegar, water and salt** directly on the plant. This will kill the surrounding plants as well, so use a direct spray and be careful where you aim it.*

*Another option is to **pull the plants from the ground**, being careful to pull up the tap root from the end as any root you leave will produce another plant. Work in your yard when the ground is moist, such as after a deep watering or a long slow rain.*



How to Grow Endive

Best time to plant:  Early summer

Harvest: Around 85 to 100 days after sowing






While **endives** (*Cichorium endivia*) look deceptively similar to lettuce, with one bite you will realize they taste slightly bitter. Despite a fair amount of confusion in terms of distinguishing endive from other members of the chicory family, it is characterized by a large rosette with narrow, curly-edged, light-green center leaves surrounded by dark-green outer leaves.

If you enjoy stronger-tasting salad greens, I highly recommend endive especially when it's grown from your own garden. Here's all you need to know to successfully grow and enjoy endive.

Health Benefits of Endive

Endive is low in calories and fat, and has a high fiber content. Similar to its close cousin escarole, it's an excellent source of vitamins A, B, C and K, as well as calcium, copper, iron, manganese, potassium and zinc. A 3.5-ounce portion (100 grams) of endive, which contains just 17 calories, can already provide:

-  192% of your recommended dietary allowance (RDA) for vitamin K, which is important for balanced blood coagulation
-  72% of your RDA for vitamin A, which is necessary to maintain healthy mucous membranes and skin, and may help protect against lung cancer
-  36% of your RDA for folate (vitamin B9), which works together with endive's other B vitamins – thiamin (B1), niacin (B3), pantothenic acid (B5) and pyridoxine (B6) – to ensure the healthy metabolism of carbohydrates, fats and proteins to enable you to remain energized throughout the day

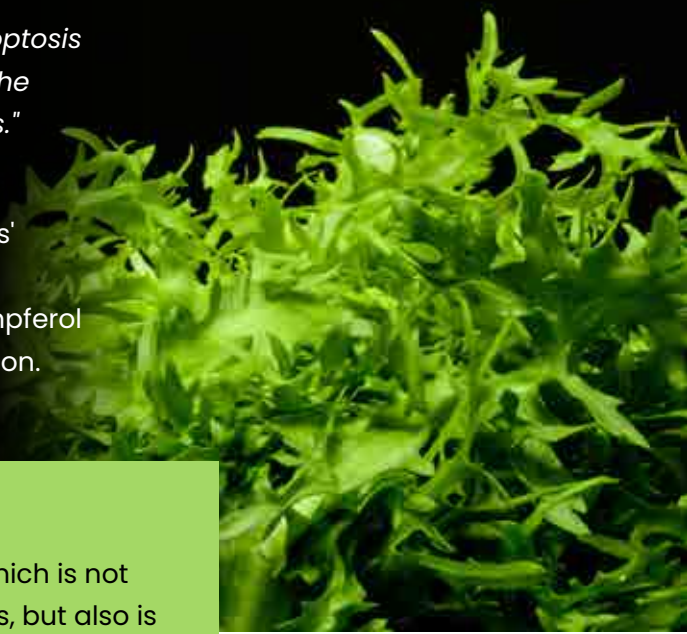
Kaempferol, a flavonoid found in many fruits and vegetables, including endive, has been shown to reduce your risk of ovarian cancer. Kaempferol naturally inhibits ovarian cancer cells. In fact, cancer cells die when they are exposed to kaempferol. It also has the ability to stop cancer from growing the new blood vessels needed to feed it – starving them through a process called **apoptosis**.

Authors of a 2011 study said: "[K]aempferol induces apoptosis in ovarian cancer cells ... and is a good candidate for the **chemoprevention of ovarian cancers** in humans."

In another study, scientists involved with a multiyear research involving 66,940 women enrolled in the Nurses' Health Study noted a **40% reduction in ovarian cancer** risk among women who had the highest kaempferol intake, compared to women with the lowest consumption.

DID YOU KNOW?

Endive contains a substance called **intybin**, which is not only responsible for the bitter taste of its leaves, but also is thought to be a mild appetite stimulant and digestive aid.



Growing Endive

As with any vegetable, choosing a type that grows well in your area and following recommended planting guidelines is the best way to ensure a bountiful crop. Below are some tips from gardening experts you may want to consider when planting endive:

Companion plants - Endive will thrive near radishes, parsnips and turnips. Do not plant them in the vicinity of pumpkins or squash.

Soil - Endive thrives in well-worked, well-drained soil that retains moisture. For best results, loosen the soil and add aged compost to your garden bed before planting. Side dress with more compost at midseason. The best soil pH for endive is 5.0 to 6.8.

Sun - Endive prefers full sun, but may need shade if the weather turns hot.

Transplanting - Transplant endive seedlings into your vegetable garden when they are about 4 to 5 inches tall and there is no longer danger of frost. Space them about 1 foot apart. Place them slightly deeper in the ground than they were in the flats.



Sowing - For an early summer harvest, sow seeds indoors in flats eight to 10 weeks before the last expected frost in your area; after plants appear, thin to 6 inches apart. For fall crops, direct seed about 90 days before the date of the first frost. If desired, you can seed every two weeks to ensure a continuous harvest.

Plan your endive crops so they come to harvest before temperatures average higher than 85 degrees F (29.4 degrees C), and keep in mind most endive varieties take 85 to 100 days to mature.

When direct seeding, water the ground thoroughly and place three seeds per inch, covering them with about one-third inch of compost, soil or sand. When seedlings appear, thin them to at least 1 foot apart. Space rows 18 to 24 inches apart. Proper spacing will help prevent the plants from going to seed (also known as bolting), and developing overlapping leaves, which can cause endive to rot.

Watering - Without sufficient water, endive leaves will become tough and bitter, so plan to give them about 1 inch of water a week. For best results, water the soil thoroughly, not the plants, because wet endive has a tendency to rot.

Common Varieties of Endive

If you like slightly bitter salad greens, you have several varieties of endive from which to choose, ensuring you will find one that suits your taste. Endive varieties (and their days to maturity) include:



Frisan
Outer leaves are dark green, well-filled, well-blanched centers (98 days)



Galia
Petite variety with finely cut leaves (45 to 60 days)



Green Curled Ruffec
Finely cut and frilly leaves (90 days)



President
Hardest in fall (80 days)



Salad King
Large frame, non-bolting in warm weather (98 days)



Tosca
Very fine "shoestring" leaves, narrower than other types, white blanched hearts (85 days)



Tres Fine Endive
Extra finely cut, lacy leaves and easy to grow (48 days)



Harvesting Endive

You can harvest individual endive leaves or entire plants as needed. Use a knife to cut the plants at ground level, leaving the root system intact. Doing so will encourage new growth in warm weather, giving you a steady supply of tasty salad greens.

Store the greens in a plastic bag in your refrigerator. Whole endive heads will last about a week. Cut endive leaves discolor quickly so be sure to use them right away when serving cut leaves in salads and other cooking methods, such as stir-frying them, grilling or sautéing them.



How to Grow Leafy Greens

Best time to plant: 🌸 Spring or 🍁 fall

Harvest: After 60 to 70 days

Beet, mustard and dandelion greens. Boston, bibb and butter lettuce. Romaine, collards, Swiss chard, arugula — you get the idea. The plethora of **leafy vegetables** available at virtually every grocery store and farmers market is enough to make your thumbs turn green.

Taking a look at one of the first steps toward incorporating more greens into your life — the garden — you'll find leafy greens to be one of the easiest veggies to grow. Lettuce comes in numerous varieties, including red and green leaf, buttercrunch and butterhead, iceberg, Romaine and mesclun, the so-called "fancy" lettuce.

Health Benefits of Leafy Greens

Leafy greens are high in fiber, which helps food move more smoothly through your colon. Vegetarian Nutrition says they're:

“Rich in folic acid, vitamin C, potassium and magnesium, as well as containing a host of phytochemicals, such as lutein, beta-cryptoxanthin, zeaxanthin and beta-carotene ...

Because of their high magnesium content and low glycemic index, green leafy vegetables are also valuable for persons with Type 2 diabetes.”



Further, did you know you can **ferment** your own leafy greens to make them even more nutritious and keep them for months at a time right on your counter? **Lacto-fermentation** is the process created by "good" bacteria called **Lactobacillus**, which is present on all plants, especially those closest to the ground, and can convert sugars into lactic acid. As Cultures for Health explains:

“Lactic acid is a natural preservative that inhibits the growth of harmful bacteria ... Beyond preservation advantages, lacto-fermentation also increases or preserves the vitamin and enzyme levels, as well as digestibility, of the fermented food. In addition, lactobacillus organisms are heavily researched for substances that may contribute to good health.”

Growing Leafy Greens

Organic dirt is good, but the best mixes contain lightweight organic matter and drain well. Planet Natural suggests a simple, even mix of peat moss or mature compost, plain topsoil and perlite. Keep in mind that plain garden dirt is often too heavy and hard, so plants can't thrive.

Generally speaking, most lettuce varieties are cool-weather crops, meaning they thrive on 60- to 65-degree F (15 to 18 degrees C) days. As for the soil, Heirloom Organics says:

A Word About Hardiness Zones

The United States Department of Agriculture (USDA) has divided the U.S. into color-coded zones separating regions of plant hardiness in average winter temperatures (or, gardeners can simply type in their ZIP codes).

If your plant hardiness zone is palest blue, for instance, you're in zone 5b, meaning the soil at its coldest will be -10 to -15 degrees F (-10 to -26 degrees C) below zero.

While young lettuce loves the sun, the paradox is that too much heat — say, 75 degrees F (23 degrees C)



DID YOU KNOW?

During fermentation, combinations of vegetables can introduce different levels of heat and flavor, such as fermenting cabbage with spicier greens like turnip or mustard greens .

“Lettuce is tolerant of a wide range of soils, but prefers well-drained, cool [and] loose soil with plentiful moisture and pH 6.2 to 6.8. Sensitive to low pH. Lime to at least 6.0. To encourage tender and tasty growth, make sure location is rich in organic compost matter. Amend prior to planting if needed.”

or warmer during the day — will encourage the plants to bolt or “go to seed,” meaning they jump-start to the end of the growing season by shooting upward and flowering. Bolted lettuce is bitter, slightly tough and often rusty.

To offset bolting, it helps to plant your organic lettuce seeds (or baby plants, called seedlings) in areas of your garden where it's shaded for part of the day.

Because they like cool weather, lettuce seeds can be planted directly into your garden as soon as you can get a hoe in the ground in early spring. In the fall, prepare the soil by working in some compost or manure and raking it evenly.

Essential Lettuce-Growing Tips

You can also start seeds indoors around six weeks before the last frost to give baby lettuce (and other veggies) an advance on the season, especially if yours is a short one. Warmer climates can squeeze in a late greens planting; just keep in mind that mature plants don't take frost as well as seedlings. Tips for growing lettuce include:

- ✓ Lettuce seeds have shallow roots, so they only need six or eight tablespoons of soil each, whether you put them in a shallow pan of soil or (clean) separate pots.
- ✓ Seeds need light to germinate, so sprinkle just a tiny amount of soil over them.
- ✓ They take up minimal space on a (warm) sunny window ledge or under a grow light.
- ✓ Water or spritz them lightly, and they'll begin popping up within a matter of days.
- ✓ If you get a "freak" cold snap, seeds will do okay under the ground; seedlings can be covered with plastic cups overnight. Don't forget to remove them in the morning so the plants can get the sunlight they need.

When they get two to three leaves each, "harden" the seedlings by reducing their water and placing them in a cool place for a few days. Then set the seedlings 12 to 18 inches apart (depending on the variety), thinning out the smaller ones.



Harvesting Leafy Greens

In 60 to 70 days, you can begin cutting off the outer leaves so the inner leaves can continue to grow and produce. "**Micro**" greens are simply smaller leaves. You can also harvest an entire plant, cutting them about an inch from the ground. Harvesting every other one allows those remaining to get larger.

Grown similarly to lettuce, arugula and watercress have a faster growing season, so harvesting can be done sooner and more often. Brassica veggies like cabbage can be planted from seed or transplanted in the spring 12 to 24 inches apart, with rows 18 to 36 inches apart. Growing them in the fall gets your pantry ready for hearty winter meals.



In the garden, they need consistent water with good drainage and lots of organic matter.

Floating row covers (fabric) help protect them from pests. Mature cabbage heads can split when there's rain after a dry period. Avoid this by choosing a **split-resistant variety**, spacing the plants close together, or twisting the heads to break some of the roots.

Also, mulch them to retain moisture, rotate the crop every third year, and control pests such as aphids and worms using natural methods.

How to Grow Lettuce

Best time to plant: 🌸 Spring or 🍂 fall

Harvest: 🌸 Spring or 🍂 fall



Lettuce (*Lactuca sativa*) of all kinds thrive in cool temperatures and consistently moist soil, so spring and fall are the best times to grow them.

Lettuce can also be grown in containers, or you can add them to your flower beds as edible greenery. Growing several different varieties and planting a new batch every week or two will provide you with fresh salad greens for several months out of the year.

Health Benefits of Lettuce

Rich in **water** and **fiber** while low in calories, lettuce is a good vegetable of choice if you're trying to lose weight. It's also a good source of **vitamin C**, **beta-carotene** and **anthocyanin compounds**, which may help fight oxidative damage. Aside from beta-carotene, another carotenoid found in lettuce is **zeaxanthin**, which may help protect the retina against UV damage and reduce the risk of age-related macular diseases.

FUN FACT

Lettuce is the most consumed leafy vegetable.





Growing Lettuce

The ideal soil temperature for growing lettuce is between 55 and 75 degrees F (12 and 24 degrees C), so it's ideal to plant them during spring or fall. Within this temperature range, seeds will sprout in two to eight days. If your seeds resist sprouting, they're probably too old. Lettuce seed should be replaced annually. Fresh seeds have a germination rate of about 80%, and a single standard seed packet will produce about 80 heads of lettuce. If you're planning to plant lettuce during spring, follow these guidelines:

1. Plant seeds in cold frames six weeks before your last spring frost date.
2. At the same time, start another batch of seeds indoors under growing lights. When the seedlings are 3 weeks old, place them outside for two to three days to adjust before transplanting them into your planting bed.

For the first few days, use a shade cover to protect the tender plants from excessive sun and wind exposure. Reducing watering and exposing the seedlings to lower temperatures for three days before transplanting them into your garden will toughen them up further.

3. Two weeks before your last spring frost date, direct seed another batch in your garden. If the weather threatens to warm up considerably, be sure to use more heat-tolerant varieties.

Be mindful of the fact that if the soil is too warm, germination may not occur. You can encourage germination by placing the seeds on wet blotting paper and refrigerating them for five days before planting them.

4. As the seedlings begin to grow, you'll need to thin the lettuce to allow adequate growing room. Begin thinning when the seedlings have four leaves.

Thin leaf lettuce so the plants are 4 to 6 inches (10 to 15 centimeters) apart. Butterheads should be 3 to 5 inches (8 to 13 cm) apart, romaine varieties need about 10 to 12 inches (25 to 30 cm), and head lettuce needs about 12 to 16 inches (30 to 41 cm). Rows should be about 18 inches (46 cm) apart.

5. Water daily. Lettuce has shallow roots, so the soil surface should be kept moist but not soggy. Adding a thick layer of mulch will help retain water and cool the soil. If the weather gets too hot, put up a shade cover.



For a fall crop, find the date of your first fall frost and start planting seeds eight weeks before the frost date. Direct seed batches every one to two weeks for a continuous fall crop. Once you're a month out from your first frost date, be sure to sow only cold-tolerant varieties or use a mixed seed packet, which can contain a dozen or more varieties. The hardiest ones will survive.

Tips on Planting and Disease Prevention

► If you're using a planting bed, loosen the top 10 inches (25 cm) of soil and mix in about an inch's worth of compost. Seeds should be planted at a depth of about one-fourth inch (0.6 cm), with 1 inch (2.5 cm) between seeds. If you want, you may simply scatter the seed across your planting bed, but be sure to thin and transplant the seedlings as they start to pop up.

Adding **compost or fish emulsion** once or twice during growing season will promote speedy growth. If the soil is too dry, the plants can start seeding early, at which point they tend to get really bitter. Pull and discard any plant that goes to seed.

While lettuce needs moist soil, poor drainage can lead to soggy soil that promotes bottom rot and gray mold.

As a general guide, only plant lettuce in the same spot once every three years. This will prevent many soilborne diseases. To avoid bottom rot, make sure the soil is moist but well drained. Planting your lettuce on ridges elevated about 4 inches (10 cm) can be helpful.

Also avoid wetting the leaves when watering. Gently fold the leaves off to the side with one hand and only water the soil. Gray mold produces grayish-green or dark brown spots on the leaves. Any infected plants should be pulled and discarded far from your garden to avoid spreading.



Harvesting Lettuce

If you need the whole head, simply cut the head off near the soil line. Alternatively, just cut some of the mature leaves from the outside with a pair of scissors, leaving the center in place. New leaves will continue to fill in. The best time to harvest is in the **morning**, after they've had time to plump up with water overnight. Rinse with cool water and pat dry before storing in the refrigerator.

Harvesting your lettuce while still **immature** is a simple way to get **more nutrition** out of your lettuce. After about two to three weeks, when the plants have reached a height of about 2 inches (5 cm), they're considered microgreens. At a height of about 4 inches (10 cm), they're known as "**baby greens**." Both microgreens and baby greens are packed with higher densities of nutrients than full-grown vegetables.

How to Grow Malabar Spinach

Best time to plant: One week after the last frost in spring

Harvest:  Summer to  fall

Malabar spinach is an interesting alternative to regular spinach. It grows like a perennial jungle vine, and thrives in the summer heat when most other greens tend to turn bitter and dry, easily reaching heights of 10 to 35 feet in a season. Trained on a trellis, with frequent pruning, you can turn it into a decorative edible hedge.

Also known under the names Indian, creeping, Asian, Vietnamese, Surinam, Ceylonese and Chinese spinach, Malabar spinach comes in two varieties:



Basella rubra, which has purple-red vines and pink flowers



Basella alba, which has white to pale green stems and white flowers

Health Benefits of Malabar Spinach

The red variety is more visually dramatic, but other than that, it grows and tastes nearly identical to its white counterpart. Full-grown leaves are about the size of your palm, with a slight crunchiness and a hint of lemon-pepper flavor that take on a more characteristic spinach flavor when cooked, although it's less bitter than regular spinach, thanks to it being **lower in oxalic acid**. Beware of overcooking, however, as heated leaves will eventually turn into unappetizing slime.



Young, immature leaves can also be harvested and used fresh in salads or added to a stir-fry. Toward the end of summer, the plant will bloom, at which time the taste of the leaves starts to degrade. So, be sure to harvest leaves continually before blooming.

When you break the leaves off, you may notice a gooey substance at the cut site. This is due to the high mucilage content of the leaves and stems. **Mucilage** is high in fiber, resembling apple pectin in that regard. Malabar spinach is also a good source of the following nutrients. The rubra (red) variety tends to be a bit higher in the antioxidants beta-carotene and lutein, courtesy of its red and purple colors.

Malabar spinach offers:

- ✔ Vitamin A
- ✔ Vitamin C
- ✔ Iron
- ✔ Calcium
- ✔ Protein
- ✔ Magnesium
- ✔ Phosphorus
- ✔ Potassium
- ✔ Beta-carotene
- ✔ Lutein



 **Growing Malabar Spinach**

Perhaps one of the most appealing characteristics of Malabar spinach is that it thrives in the high heat of summer. If you live at an elevation of 1,500 feet or higher, all the better still, as it prefers **higher elevations**. Another boon is the fact that few pests seem interested in Malabar spinach, so pest maintenance is minimal. A light spray of **neem oil** will usually be sufficient.

Since it's a **perennial** plant, you only need to plant it once. If you allow the seeds to drop toward the end of summer, the plant will regrow the following year. The exception is if you live in temperate climates. Here, you'll have to grow it as an annual as the cold will kill it.

FUN FACT

You can use Malabar spinach in the same way you use regular spinach — raw in salads, lightly steamed or cooked, or used in stews, soups and even stir-fries!



- ✓ To encourage germination, soak your seeds overnight, then plant in well-draining soil in full sunlight, and be sure to keep the soil moist until the seeds have germinated. Alternatively, start the seeds indoors **six to eight weeks** before your last frost date, then transplant into your garden once nighttime temperatures remain steadily above **50 degrees F** (10 degrees C).
- ✓ Add a generous amount of **organic soil conditioner** into your soil before planting, along with a slow-release 10-10-10 fertilizer.
- ✓ Sow your seeds at a **depth of one-fourth inch**, approximately 18 inches apart. If planting rows, you need at least a 9-inch row gap.
- ✓ Once the seeds have germinated, pour **liquid fertilizer** over the seedlings, thoroughly wetting the leaves. Add a layer of **straw or mulch** to retain moisture in the soil.
- ✓ The plant prefers high humidity, so if you live in a dry climate, you may need to invest in a **mister**, or keep it in a **greenhouse**. Since it grows like a vine, you'll also need some sort of **trellis** for it to climb on.



Harvesting Malabar Spinach

Harvesting is easy. Simply cut the stems of the leaves with a pair of scissors. Aggressive harvesting will encourage the plant to get bushier, so the more you eat, the more it will provide. Pruning the length of the vine will also encourage bushiness, so if you prefer a hedge-style bush rather than a long vine, just keep pruning it.

You can harvest leaves continuously through the summer and fall, until it starts to bloom. Many prefer young, tender leaves over more mature ones, as the flavor tends to be milder. Mature leaves are also higher in mucilage, the sliminess of which some might find unappetizing. The flowers are followed by purple berries that can be crushed and used as a natural food coloring.

How to Grow Moringa

Best time to plant: 🌸 Spring

Harvest: Leaves, when the tree is about 3 feet tall; Pods, after eight months



FUN FACT

Moringa can survive in harsh conditions, making it a great source of food for people living in areas plagued by drought!

The **moringa** (*Moringa oleifera*) is a nutrient-rich tree touted as a superfood due to its many health benefits. I tried cultivating my own moringa for about two years, and felt it to be more trouble than it was worth. Moringa does grow quickly, but I found the tiny leaves to be difficult to harvest and use. Your experience may be different, however.

I would like to provide you with all the information you need to grow moringa. Since there's no denying moringa is a powerhouse once it's harvested, you might just want to give it a try, and even be successful at it.

Health Benefits of Moringa

Moringa is rich in vitamins A, B, C, D and E, as well as minerals such as calcium, copper, iron, magnesium, phosphorus, potassium, iron and silica. It also contains **alpha-linolenic acid**, a plant-based omega-3 fat, and all of the essential amino acids your body needs to thrive. Aside from these nutrients, moringa may help:

Lower blood sugar levels In a study involving diabetic rats, moringa was shown to have antidiabetic effects, likely due to the beneficial plant compounds contained in its leaves, including isothiocyanates. In other research, women taking 7 grams of moringa leaf powder daily for three months reduced their fasting blood sugar levels by 13.5%.

Maintain healthy cholesterol levels In terms of cholesterol-lowering properties, an animal study involving hypercholesterol-fed rabbits found moringa to be effective in lowering cholesterol by 50%, while reducing atherosclerotic plaque formation by 86%. These effects were comparable to those of the cholesterol-lowering drug, simvastatin.

Provide a plethora of antioxidants Moringa leaves are rich in antioxidants such as beta-carotene, chlorogenic acid, quercetin and vitamin C. As noted in the Asian Pacific Journal of Cancer Prevention, "[Moringa] leaves exhibit strong antioxidant activity against free radicals, prevent oxidative damage to major biomolecules and give significant protection against oxidative damage."

Furthermore, authors of a study involving postmenopausal women who took moringa leaf powder daily for three months concluded: "[These] plants possess antioxidant properties and have therapeutic potential for the prevention of complications during post-menopause."

Maintain healthy cholesterol levels A 2017 study published in PLOS ONE comparing the anti-inflammatory effects of isothiocyanate-enriched moringa seed extract to those of a curcuminoid-enriched turmeric extract and curcumin-enriched material suggests moringa "displayed strong anti-inflammatory and antioxidant properties ... making them promising ... for the mitigation of inflammatory-mediated chronic disorders."

Growing Moringa

If you live in a cold climate, it's best to grow moringa in pots either **indoors or in a greenhouse**. Even if you live in a warm climate, it is best to cultivate moringa in pots for at least eight weeks before transplanting them into the ground. This method will afford you more control over the care of the young tree at a time when it is weak and vulnerable. Below are the main steps to follow:

1. Select a pot at least 18 inches deep and perhaps a bit larger if this is the final destination for your moringa plant
2. Choose a well-drained soil containing 5% to 10% sand and at least 5% organic matter such as organic compost (you can also add compost worms or earthworms if desired)
3. Plant moringa seeds at a depth of three-quarters of an inch, ensuring the leaf end of the plant is facing out
4. Maintain a moist soil, but do not overwater because the plant will not thrive if its roots are soaked for extended period
5. Place the pot in direct sun and maintain consistent heat



Transplanting Your Moringa Plant outdoors

If you live in a warm climate and are ready to transplant your moringa plant outdoors, here are some aspects to consider. First, keep in mind optimum plant growth occurs between 70 and 90 degrees F (21.1 and 32.2 degrees C). While moringa plants can handle a touch of frost, they will not survive if the outdoor temperature dips below 40 degrees F (4.4 degrees C).

Even though moringa is able to tolerate a wide range of soil conditions, it does best in a **neutral to slightly acidic environment**, with a pH ranging from 6.3 to 7.0. Well-drained **sandy or loamy soil** is ideal. The presence of a long taproot makes moringa resistant to periods of drought, but you will need to water it regularly.

Prior to transplanting moringa, loosen the soil in the planting bed by digging down about a foot and a half. This will help retain moisture in the root zone and enable the seedling's roots to get off to a good start. Mix **compost or aged manure** with the topsoil when filling in around the plant. Prepare your potted plant by using a knife to loosen the soil from the inside surface of the pot. Turn the pot upside down and gently shake out the entire plant. Take care to not disturb the root system.

Regardless of how you plant them, be sure to give your moringa trees a good supply of **plant food** and water to help them thrive. Options for plant food include a light liquid kelp emulsion, compost tea, worm tea and/or living compost addition about once every three weeks. You can mulch dried leaves or straw around your potted and transplanted moringa to help them retain moisture and warmth.

The Importance of Pruning Your Moringa Tree

From my personal experience, **pruning** seems to be a major factor in ensuring a successful moringa growing experience. For certain, applying proven strategies for effective pruning is a key to keeping

up with moringa's exceptionally fast growth. Moringa experts suggest **the more you cut it back, the better it produces**, so don't be afraid to use your pruning shears.

For best results, you may want to prune your young moringa trees when they reach a height of about 2 feet. Trim the terminal growing tip 4 inches from the top. About a week after you clip the terminal growing tip, you will notice secondary branches will begin to appear on the main stem below the cut. When these branches reach a length of about 8 inches, you'll want to cut them back to 4 inches. In doing so, tertiary branches will appear, which you can trim back in the same manner.



Harvesting Moringa

Assuming the growing conditions are favorable, you can expect healthy moringa trees to yield a bounty of fresh leaves, as well as about 400 to 600 pods annually during their first three years. Mature moringa trees may produce up to 1,600 pods a year.

When harvesting moringa pods, you will want to collect them when they are young — less than one-half inch in diameter — and still can be snapped easily. Pods will develop a tough exterior as they age, although the white seeds and flesh will remain edible until the ripening process begins. Pods used for oil extraction are generally left on the tree until they dry out and turn brown.

How to Grow Mustard Greens

Best time to plant: Three weeks before the first frost-free date in spring

Harvest: After four weeks (harvest before the hot weather arrives)

Mustard, also known as **mustard greens** (of which there are several popular varieties) is a relative of cabbage, broccoli and radishes. It's a cool-weather plant that is easy to grow, matures quickly and is self-seeding.

As noted by Grow Network, "Mustard can grow in almost any soil type, withstand drought conditions ... and self-seed to produce a continuous crop with almost no work on your part."

The Florida broadleaf and Green wave varieties take about 45 days to mature while the Southern giant curled variety takes about a week longer. When choosing a variety, consider your **palate**. Some varieties are milder, such as Osaka purple, while others are bolder and spicier in flavor. **Black and brown mustards** have a sharper, tangier flavor.



Health Benefits of Mustard Greens

Boiled mustard greens boast an impressive nutritional profile, with each 1-cup serving (140 grams) providing:

- ✔ **524% of your daily value (DV) for vitamin K**
- ✔ **177% of your DV for vitamin A**
- ✔ **59% of your DV for vitamin C**
- ✔ **26% of your DV for folate**

Due to its high vitamin K content, you may need to eat it sparingly if you're taking blood thinning medication such as Warfarin. Mustard also contains **oxalic acid**, which can be an issue if you're prone to kidney stones. That said,

mustard greens contain a number of valuable medicinal plant compounds that support good health, including:



Hydroxycinnamic acid - Shown to inhibit human lung adenocarcinoma cells and effectively combat multiple drug-resistant Mycobacterium tuberculosis. It also has antimalarial activity and much more



Quercetin - An important free radical fighter, immune booster and powerful antiviral shown to inhibit several strains of influenza, hepatitis B and C and other viruses



Isorhamnetin - Shown to induce apoptosis (cell death) in certain cancer cells. It may also have particular benefits for inflammatory skin conditions



FUN FACT

Sautéing, braising or steaming mustard leaves will cut some of the bitterness while adding a tasty kick to just about any dish.



Harvesting Mustard Greens

Once the plants have matured, simply clip off leaves as needed using scissors or a knife, leaving the remainder of the plant in place. This way, it will continue to grow even as you keep harvesting. For **salads**, choose young, tender leaves. More mature greens make for a tasty dish either **sautéed or steamed**.

Cut off and discard wilted, unhealthy-looking leaves. Heat makes the mustard greens bitter and tough, so once the heat of summer sets in, pull out all of the plants and use for compost, and then replant in the fall.

Should you end up with too-abundant a crop, consider harvesting and freezing the leaves. To properly preserve them, they must first be **blanched** as follows:

1. Wash the greens and trim off the stems. If you like, you can cut the leaves into smaller strips.
2. Bring a large pot of water to a rolling boil, and prepare an ice bath in a large container or sink.
3. Once the water is boiling, immerse the leaves and cover the pot with a tight-fitting lid.
4. Blanch for three minutes, then remove the greens from the water with a slotted spoon (or use a blanching basket if you have one), and place them into the ice water for five minutes.
5. Remove and drain on a paper towel. Once fully dry, pack the leaves into freezer containers. If using freezer bags, squeeze out as much air as possible before sealing. Label and date each bag. The mustard greens will be good for up to one year at 0 degrees F (-17 degrees C) or below.



How to Grow Okra

Best time to plant: 🌸 Spring or 🌻 early summer

Harvest: 60 days after planting



Okra (*Hibiscus esculentus*) is a unique, annual vegetable from the same family as the hollyhock. It is usually the color of fresh corn husks, has the shape of a spike and the texture of a grooved cucumber. When sliced, it may remind you of a tiny star fruit.

Although technically a fruit because its seeds are inside the plant, okra is usually referred to as a vegetable that is also called "lady fingers" in reference to its shape, and comes in more than one variety. It is a favorite in the South America and areas of Africa and the Mediterranean, where it is usually cooked.

Health Benefits of okra

Okra pods are rich in vitamins and minerals, including quercetin, catechin and epicatechin. They are also known to be high in vitamin C, vitamin K and folate. Moreover, the superior dietary fiber content in okra may help regulate digestion and maintain optimal blood sugar levels.

Okra extracts have been used to reduce oxidative stress and insulin resistance in research on pregnant rats induced with gestational diabetes. Scientists found the extract exerted potential antihyperglycemic and hypolipidemic effects and was also associated with reduced damage to pancreatic tissue.

FUN FACT

Okra is believed to have originated near Ethiopia, and then cultivated by the Egyptians.

In another study, researchers found okra may improve **glucose homeostasis** and reduce B-cell damage in diabetes. A 2018 study asserts okra could improve metabolic complications, and if it has a beneficial effect on the pancreas in rats, benefits may translate to humans as well.

One vital compound found in okra is **glutathione**. Foods containing glutathione fall into two categories: those **containing the glutathione molecule** and those **promoting glutathione production** and/or "upload" the activity of glutathione enzymes in your body.



However, the okra must remain uncooked as cooking glutathione foods diminishes the content. Storage methods can affect levels as well. One study shows dietary glutathione intake can lower your risk of **oral and pharyngeal cancer**.

An animal study observed that it protects against **diabetic nephropathy** (damage to kidneys due to diabetes) and **neuropathy** (damage to nerves and eventual renal failure).

Okra contains a number of valuable nutrients. Several of them must be obtained through food, and if you don't get enough of them, a deficiency can compromise your health. **Five of the most beneficial include:**



Potassium - A mineral as well as an electrolyte, as it conducts electrical impulses through your body, potassium helps normalize your muscle contractions, heart rhythm, blood pressure, digestion, pH balance and more. Since your body doesn't produce it, you must get an optimal amount from food, while making sure you balance it with your sodium intake.



Folate - One of several B vitamins, this one produces red blood cells, and makes and repairs your DNA. Deficiency can lead to anemia, depriving your cells of oxygen. One of its most crucial functions is for pregnant women as it's involved with preventing birth defects.

Note: Although many people interchange them, do not confuse folate, which occurs naturally in foods, with folic acid, which is a synthetic form of vitamin B9 used as a supplement and an additive to processed foods.



Calcium - Stored in your bones, calcium works with vitamin D to ensure you avoid brittle, prone-to-break bones. To keep calcium from settling in areas it shouldn't be and directing it to where it's needed, calcium also needs vitamin K2.



Vitamin K - A fat-soluble vitamin, it plays a critical role in protecting your heart, building your bones, optimizing your insulin levels and helping your blood to clot properly. Vitamin K may help lower the risk of heart disease, osteoporosis, diabetes, multiple types of cancer and even Alzheimer's disease.

Vitamin C - This powerful antioxidant lessens both the duration and severity of a cold and is necessary to produce collagen, the most abundant protein in mammals, which keeps your skin and tissues firm but flexible. Vitamin C deficiency weakens your immune system.

Growing Okra

The okra plant prefers dry soil with a pH of 5.5 to 6.0. Plants do well in fertile soil with added compost. Whether or not a nitrogen-based fertilizer is needed will depend on the amount of nitrogen already in your garden soil. Too much nitrogen may result in more leaves than vegetables.

Prepare the area with well-draining soil in full sun. Although they are not wide plants, they do grow tall so be sure to space out the rows **3 to 4 feet apart** to allow for plenty of sunshine to get to the lower leaves. The okra plant is a warm-weather plant so consider starting indoors **three to four weeks** before the last spring frost, in peat pots under full light.

Since the growing season is generally 50 to 60 days for okra, you can also start them directly in your garden after the last frost, or under a cold frame three to four weeks before the last frost. Without the cold frame, you must have stable warm weather, and the soil must be warmed to 65 to 70 degrees F (18.3 to 21.1 degrees C).

Plant the seeds three-fourths to 1 inch deep. Seeds may be **slow to germinate**, but you can speed the process by soaking the seeds overnight in water, or abrading them lightly with sandpaper to break the hard seed coat before planting.

If you are transplanting okra seedlings, be sure to space them 2 feet apart to provide ample room for growth, and the rows 3 to 4 feet apart. If you're sowing seeds outdoors, thin the seedlings to allow for similar spacing.

Once the plants have sprouted, **remove weeds and mulch** heavily to prevent weed growth. At this time, you might also side dress the plants with **aged manure or rich compost**.



Harvesting Okra

The first harvest from your planting should be ready about 60 days after planting, depending upon the variety you plant. Since the okra becomes hard and woody if left on the plant too long, you'll want to harvest when they are 2 to 3 inches long. This may be nearly every other day. The vegetables appear on the plant approximately four days after the flower.

Cut the stem of the okra just above the cap with a knife. Some varieties have been bred to snap off the plant when they're ready to harvest. If the stem is too hard to cut, the pod is likely too old and should be thrown out.



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*Remember to use gloves and wear long sleeves when you're harvesting or caring for your okra plants. Most varieties are covered with **tiny spines** that irritate the skin, unless you have planted a spineless variety. Interestingly, this irritation does not happen internally when you eat them.*

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How to Grow Radicchio

Best time to plant: 🌸 Spring and 🍁 fall

Harvest: 65 to 70 days after planting

If you'd like to add a pop of color to your meals using a vegetable packed with vitamins and health benefits, then reach for **radicchio** (*Cichorium intybus* var. *foliosum*). This quick-growing Mediterranean leafy vegetable resembles red lettuce or cabbage, but it's actually a member of the chicory family. The slightly bitter taste and wine-red leaves set this vegetable apart from other leafy veggies, and growing it in your own garden ensures you can enjoy it without chemical toxins.

Health Benefits of Radicchio

One of the most notable benefits of radicchio is its **high vitamin K** content, which acts as a cofactor for proteins involved in blood coagulation, bone metabolism and the prevention of vessel mineralization. Abnormal mineralization of blood vessels is a major risk factor in cardiovascular disease. Inadequate levels may precipitate the formation of calcium in blood vessels.

One cup of radicchio also has 3.2 milligrams of **vitamin C** (ascorbic acid), a powerful antioxidant and an essential water-soluble vitamin. It also plays a significant role in the formation of collagen, which is important to antiaging skin care, and functions as an essential cofactor in the number of enzymatic reactions, and has been found to:

- ✔ **Reduce the risk of cardiovascular disease**
- ✔ **Support the immune system**
- ✔ **Support the growth of beneficial gut bacteria**
- ✔ **Support neutralization of environmental toxins**



Also found in radicchio are:

Lactucopicrin Responsible for radicchio's bitter flavor, lactucopicrin may be an effective antimalarial agent, and possesses sedative and analgesic effects.

Zeaxanthin and lutein These carotenoids protect your eyes from age-related macular degeneration by filtering out harmful ultraviolet rays.

Inulin This prebiotic fiber may help stimulate the growth of beneficial gut bacteria like Lactobacilli and Bifidobacteria, which in turn helps prevent harmful bacteria growth. It may also help balance your body's blood sugar levels and reduce your risk for cardiovascular diseases.



FUN FACT

If you don't water radicchio frequently enough, its leaves will become more bitter.



Growing Radicchio

While radicchio grows best in cool weather, it's also **heat-tolerant**. However, in hotter climates, the plant does not form into tight heads like cabbage, but remains more open and loose-leafed. Cool weather sweetens the flavor of the plant, while warmer weather keeps the flavor bitter. Most varieties require between **60 and 70 days** to mature.

When planting through a mild winter, your garden may benefit from **plastic sheeting** around the radicchio plants to maintain growth. In regions where the winters are cold, plants are grown best in spring and early summer, but thrive in fall and winter in warmer weather regions.



The soil should be prepared to encourage good drainage, and organic compost added weeks before planting. Radicchio can be grown in raised beds or in containers where the soil is prepared in the same manner. During cooler weather, the plant grows best in full sun, but in summer months, it benefits from the afternoon shade.



Tips on Planting the Seeds

In the spring, start seeds indoors eight weeks before the last frost. Transplanting seedlings may work better than direct seeding to the soil. If you consider direct seeding, sow them in rows on raised beds and thin the plants 8 inches (20 centimeters) apart after leaves begin to form. When you transplant seedlings, leave 8 to 10 inches (20 to 25 cm) between plants and space rows 18 inches (46 cm) apart.

If this is your first season for planting radicchio, consider **transplanting seedlings every few weeks** to determine the best time in your region. Like heads of lettuce, the plant puts down shallow roots and will benefit from consistent soil moisture. However, too much water can result in **heart rot**. Therefore, it is crucial to plant in a well-drained area or use raised beds for a successful crop.

Once the plants are established, covering the area with **organic mulch**, such as a thick layer of untreated grass clippings, hay or straw, helps maintain moisture and prevent evaporation as well as reduce weed growth. The most important watering time occurs **seven to 10 days** before the heads mature.



Harvesting Radicchio

The leaves of the radicchio plant may be harvested at any time, but the compact head will not form until the latter part of the growing season. When the heads are firm to the touch, normally near **65 to 70 days**, they're ready for harvesting. To harvest the head, cut it close to the ground, just above the soil line. As the heads mature, they may develop a more bitter taste. Not all heads in your radicchio crop will form and mature at the same time.

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Interestingly, crops grown in the fall will form better heads than those grown in the spring.
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In some cases, if your region has a mild winter, you may get a second crop from the same plant in the spring. Radicchio keeps well in the refrigerator for approximately a week or two when the temperature is **below 46.4 degrees F** (8 degrees C).

How to Grow Spinach

Best time to plant: 🌸 Early spring or 🍂 fall

Harvest: After six weeks



Scholars are unable to pinpoint the exact origin of **spinach** (*Spinacia oleracea*). The ancient Chinese call it the "**Persian vegetable**" as it crossed from Persia (modern day Iran) into the surrounding countries. The first texts to mention spinach in the Mediterranean were written in the 10th century.

By the 1400s it had made its way through Asia, where it became the mainstay of many European menus. Today, spinach is found in everything from casseroles to soups and salads. Spinach is an annual edible flowering plant that may grow to 12 inches high with leaves up to 6 inches wide.

Health Benefits of Spinach

The health benefits of spinach include water-soluble vitamins, fat-soluble vitamins, minerals and a wide variety of phytonutrients. While a rich source of folate important to short-term memory, lowering cancer risk and reducing your risk of heart disease, nearly 25% of folate may be lost during cooking.

One cup of cooked spinach provides over 900% of your daily allowance for vitamin K, over 100% of vitamin A and high levels of manganese, magnesium, iron and copper; 100 grams has only 23 calories.

Although high in iron, it also contains **oxalate**, which reduces iron and calcium absorption from the spinach. Oxalic acid is broken down with heating. While cooking your spinach may help increase the absorption of calcium and iron, other vitamins and minerals are more bioavailable when it's consumed raw.

Spinach is also a rich source of **nitrate**. When used as a food additive, nitrate is concentrated in comparison to its natural occurring amount in plant foods. The nitrate content usually totals less than 1 milligram per 8 ounces and provides health benefits by helping to convert nitrate into nitrite and then nitric oxide.

Growing Spinach

Growing spinach in your garden is easy when you follow a few simple strategies. The plant enjoys long days with cooler temperatures so it may be easier for those living in northern states to get larger crops. Plant spinach outdoors as soon as the soil can be worked 6 inches deep. Seeds may take between **seven and 14 days** to germinate.

While you may find recommendations to space the plants 6 to 8 inches apart, this is not necessary as you'll get a larger harvest if you plant them closer together.

the soil to avoid a situation where the roots of your plant are growing in cool, damp soil in the spring months, which can promote the development of root rot. You'll be harvesting spinach **six weeks after sowing** your seeds.

If you're interested in large leaves, give the plants greater space to grow. If you are harvesting spinach leaves at a young age, spacing can be reduced to 2 inches.

There are three true varieties of spinach with leaves varying from those with deep crinkles to smooth and flat. As you consider how to grow spinach, remember the plant prefers well-draining soil with a neutral pH. Add some **sand** to

the soil to avoid a situation where the roots of your plant are growing in cool, damp soil in the spring months, which can promote the development of root rot. You'll be harvesting spinach **six weeks after sowing** your seeds.



Fertilizer and Temperature Considerations

Spinach is a fast grower and a heavy feeder. Amend the soil with organic fertilizer before planting seeds and add a side dressing once during the growing season. Draw a square foot in your garden and fertilize the area with organic matter over the top 1 to 2 inches of soil.

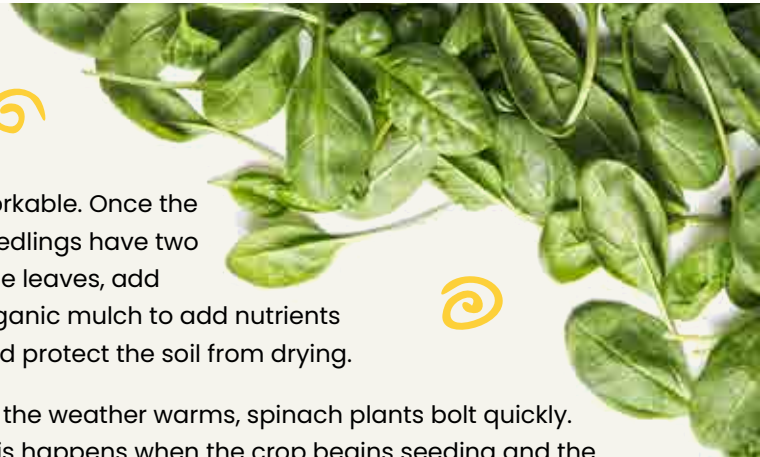
In this way, the seeds have access to the fertilizer while germinating and the fertilizer will leach further into the soil as it rains and you water your garden. Spread a teaspoon of seeds in the square foot and cover with a light layer of soil. Tap the soil lightly so the seeds have contact.

Consider jump-starting the season by starting your seeds indoors and transplanting once the soil is

workable. Once the seedlings have two true leaves, add organic mulch to add nutrients and protect the soil from drying.

As the weather warms, spinach plants bolt quickly. This happens when the crop begins seeding and the taste of the leaves become bitter. You may be able to extend your season slightly by planting in the shade of a taller plant and regularly watering.

Consider planting spinach again at the beginning of August for a fall harvest. Since the soil will be warm, keep the seedlings in the shade, watered and safe from the summer heat to enjoy a harvest by September.



Growing Spinach Indoors or in Containers

If you're short on space, consider growing your spinach in containers. Even a relatively small 12-inch-wide, 6-inch-deep pot or window box will be sufficient. Use the same considerations for soil and watering as you would in the garden, except you'll need to water more frequently since containers dry out more quickly.

Harvesting spinach in the fall may be easier if grown in containers as you can move the plants during the day to accommodate for lighting and shorter days. Growing spinach indoors is another option, especially through the winter months, as they don't require a lot of sunlight.



Use mulch, even in pots, to help retain moisture. You'll want to keep the plants away from windows radiating heat during sunlight hours and be careful to set the box back from direct contact with the window.

FUN FACT

If you live in warmer climates and would like to continue your spinach crop, consider Malabar spinach. Although not a true spinach, it is a tasty alternative!



Harvesting Spinach

Harvesting spinach is done by cutting the leaves with a pair of scissors. When harvesting traditional spinach, cut individual leaves on the outer edge of the plant with scissors, allowing younger inner leaves to continue growing for a later harvest. You can also cut down the whole plant about an inch above the crown and it may send out a new flush of leaves.

The primary idea to storing spinach so it doesn't get slimy is to **keep it as dry** as possible. Harvest when the leaves are dry and consider storing without washing until you're ready to eat them. You'll be most successful storing spinach in a **breathable container** that allows for air circulation. If you've harvested more than you think you'll be able to use in a week, consider **freezing**.

By **blanching** you retain the color and nutrients. Bring a pot of water to a boil, with a bowl of ice water on the side. Pop the leaves into boiling water for about 30 seconds, immediately drain and then dunk in ice water to stop the cooking process. Pat the leaves dry and place them in a freezer bag. Remove all the air and freeze.



HOW-TO-GROW
VEGETABLES
(Edible stems)



How to Grow Asparagus

Best time to plant: 🌸 Early spring

Harvest: 🌸 Early spring, three years after planting

Growing **asparagus** (*Asparagus officinalis*) takes patience — about three years to be exact, to ensure vigorous growth and plant maturity — but it's not as difficult as you may think. All the preparation and hard work you do will be richly rewarded when you harvest those first tender shoots.

Health Benefits of Asparagus

Dubbed as a "feel-good" vegetable because of its mood-boosting potential, asparagus is a superfood you may want to consider not only eating more often, but cultivating in your garden. It's a nutritionally balanced vegetable loaded with vitamins A, E and K. One cup (180 grams) of cooked asparagus contains just 40 calories.

Asparagus is also a good source of vitamins C and B, including folate. Folate helps synthesize dopamine, norepinephrine and serotonin, which is why asparagus is thought to support your mood. Additional claims that asparagus may protect against cancer are based on its high level of glutathione, a potent antioxidant. It also contains rutin, a bioflavonoid (plant pigment), which protects your small blood vessels from oxidative stress. It also may protect against the damaging effects of radiation (when combined with quercetin).

Asparagus boasts healthy levels of copper, iron, magnesium, selenium and zinc. It also supports your digestive health, thanks to the presence of inulin, a prebiotic that acts as food for the beneficial bacteria in your gut.



Finally, researchers have uncovered a natural angiotensin-converting enzyme (ACE) inhibitor in asparagus that appears useful for lowering your blood pressure.

A 2015 study revealed a new sulfur-containing metabolite known as asparaptine, found in asparagus spears, which, according to the authors, acts as a "new ACE inhibitor."

Growing Asparagus

When planning to grow asparagus, consider the following:

Height

Since asparagus plants grow quite tall — as high as 5 feet — make sure you plant them in a location where they will not overshadow smaller neighboring plants.

Location

Due to its perennial nature, asparagus will come back on its own year after year, possibly for 15 to 20 years — making it a somewhat permanent fixture in your garden.

Soil

Asparagus thrives in lighter, compost-rich soil that drains well; a soil pH in the neutral 6.0 to 7.0 range is ideal.



Space

Allow about 4 to 5 feet for each plant, although in the early years the plants won't spread out much; once established, however, you will be surprised at how much space they will fill.

Sun

While asparagus can tolerate some shade, you can help minimize disease and ensure more vigorous plants by placing them in direct sun; insufficient daily sunlight will result in thin spears and weak plants.

Planting Asparagus From Seeds

If you choose to grow asparagus from seeds, you will also be able to selectively discard female asparagus plants and cultivate an all-male bed. **Male plants generally produce higher yields than female plants.** Plants can be started from seed about four weeks before the last expected frost. In northern climates, you can start seedlings indoors in late February or early March. Sow single seeds in biodegradable pots and place them in a sunny window.

Early on, you may need to use **bottom heat to maintain the temperature of the pots at 77 degrees Fahrenheit (25 degrees Celsius)**. When the seeds sprout, you can lower the temperature by about 10 degrees. When the danger of frost has passed, plant the seedlings 2 to 3 inches deep in a nursery bed. Once tiny flowers appear, use a magnifying glass to weed out the female plants and transplant the males to their permanent location in the garden.

Growing Asparagus From Crowns

When selecting crowns, **choose ones that are fresh and firm**, not mushy or withered. Skip the 2-year-old crowns due to the transplant shock they've likely experienced. Besides, they generally do not produce any quicker than the 1-year variety. Purchase the crowns only when you are ready to plant them, and plant them immediately, if possible.

Digging a trench is the most common way to plant asparagus crowns. Your trench should measure about 8 to 10 inches deep and 18 to 20 inches wide. Place it at the center of the garden bed. This is the best time to work any available manure or compost material into the soil.



Rodale's Organic Life suggests soaking the crowns in compost tea for 20 minutes prior to planting for improved results.

Spread the roots out on the bottom of the trench. Be sure to space them 12 to 15 inches apart to ensure they will have room to grow. Cover each plant with 2 to 3 inches of soil, and water well. As the plants begin to grow – about two weeks later – add more dirt.

DID YOU KNOW?

Asparagus, one of only a few perennial vegetables you can grow in your garden, has the potential to provide a steady crop year after year.

Continue adding dirt on a regular basis to cover the asparagus until only a small portion of each shoot is exposed above ground and the trench has been filled completely.

The keys to a successful annual crop of asparagus hinges on how well you maintain your garden bed. The following tips will help increase your chances for a successful harvest:

- ✓ Weed rigorously around the plants, especially in the early years, to prevent weeds from choking out the shoots and reducing your yields
- ✓ Apply mulch around the plants to retain moisture, for winter protection and to help reduce the presence of weeds
- ✓ Water regularly during the first two years after planting; later on, when the plants have deeper roots, watering will be less critical
- ✓ Heap up soil or mulch over the bed before shoots emerge if you desire white asparagus
- ✓ Remove and destroy the fernlike foliage prior to the appearance of any new growth because it is known to harbor diseases and pest eggs, such as those from asparagus beetles
- ✓ Fertilize by top-dressing with a liquid fertilizer, such as compost tea, in both the spring and fall; some also suggest a dose of fertilizer in mid-spring due to the heavy-feeding needs of asparagus
- ✓ Cut plants to the ground each year, preferably in the fall, but most certainly before new growth starts



Harvesting Asparagus

During the first two years, because the plants need to put all their energy into establishing deep roots, gardening experts recommend you do not attempt a harvest. In the third year, you can harvest finger-sized spears that are about 8 inches long for a period of four weeks. In the fourth year, you can harvest spears for up to eight weeks. Harvest in early spring, every third day or so.

How to Grow Celery

Best time to plant: 🌸 Early spring or ☀️ mid/late summer | Harvest: ☀️ Summer to 🍁 fall



When you think about it, **celery** (*Apium graveolens*) is a rather odd vegetable, quite different from others. Growing organic produce like celery simply means without the use of harmful chemicals. Celery, unfortunately, is one crop that is **heavily sprayed** in commercial operations, so grow your own!

Health Benefits of Celery

Celery is a delicious, satisfying, crunchy snack with very few calories, and is also loaded with fiber. Eating a single cup of chopped celery provides 6% of your Daily Reference Intake (DRI), not to mention high amounts of vitamins A, C, K, folate, potassium and manganese.

Along with several other phytonutrients, celery contains a number of **flavonoids** such as lutein, zeaxanthin and beta-carotene, which studies indicate decreases inflammation along with your risk of heart disease. It also inhibits the growth of abnormal cancer-causing cells and enhances your overall immune system. Celery has many different types of uses. One is **juicing**, which helps add vital nutrients to your diet while ridding your body of toxins.

Eating **fermented** vegetables like celery is an excellent way to develop a healthy gut flora and avoid gastrointestinal disorders and infections that become more prevalent with age. Consuming one-half cup of fermented veggies daily helps maintain healthy microbiota in your intestines, and helps reduce heart disease, obesity and even cancer.



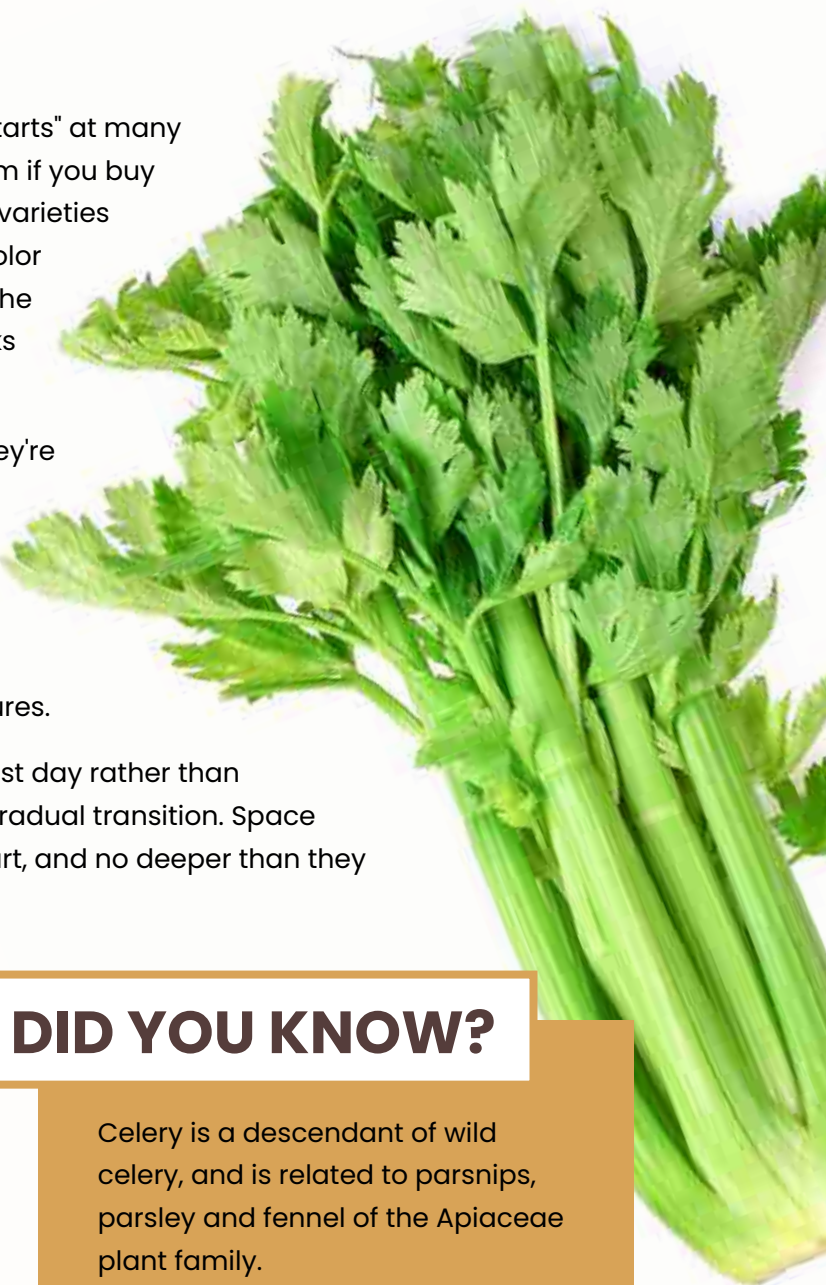
Growing Celery

While it's possible to pick up celery seedlings or "starts" at many nurseries, you'll have more varieties to choose from if you buy **seeds**, instead. Read the labels to find out which varieties work best in your zone, noting differences in the color (some have a red tinge), flavor and hardiness of the end product. Sow your seeds indoors 10 to 12 weeks before the last projected spring frost.

Water the plants liberally and often, make sure they're draining well and give them plenty of circulating air. Transplant them into individual pots when they're about 2 inches high. At 6 inches high (or about five leaves), take them to an in-between area like a porch for 10 days or so to "harden off" or get them used to higher temperatures.

Outside, it's best to plant your celery on an overcast day rather than one that's hot and sunny, because celery likes a gradual transition. Space them 6 to 8 inches apart, with rows 2 to 3 feet apart, and no deeper than they were when planted in the pots.

Once in the ground, add several inches of mulch at the base, give them 1 inch of water per week and use compost tea every 10 to 14 days. When temperatures fall below 55 degrees F (12 degrees C), you can use **cloches** — bottomless, clear, gallon-sized jugs will do — to protect them. Remove them during the day when it gets warmer.



DID YOU KNOW?

Celery is a descendant of wild celery, and is related to parsnips, parsley and fennel of the Apiaceae plant family.

Composting and Troubleshooting Problems

For the best results, your garden dirt should be rich with compost or other organic matter when you plant vegetables like celery. Adding mature compost with good bacteria once in a while helps speed up the heating process.

Diseases are another thing to watch for in your celery, as well as other vegetables.

Early blight

(fall blight affects ornamental plants) may be evidenced by black dots on the leaves. Both

pests and diseases can be controlled by using disease-free seed and seedlings, and applying **Trichoderma harzianum** (a type of fungus) to the soil before planting.

A good compost pile starts with a layer of straw (not hay) to discourage pests and weeds. Add garden and kitchen scraps such as coffee grounds and egg shells, along with horse stable bedding, garden plants (not weeds) and about one-third of the entire pile manure. A two-thirds ratio or so of leaves, grass or cornstalks allows for air flow.

Add 1 gallon of water, dissolve one-half teaspoon of castile soap in it and pour the mixture into a pump sprayer. Thoroughly spray your plants, inside and out, **every five to seven days.**

Pink rot may appear if the roots or bottoms of the plants sit in water for too long, and fungus and rusting disease may cause plants to wilt or turn yellow. Rotate your crops to help curb these diseases,

but if you see a plant or even just a stalk wilting, cut out the entire bad area and destroy any affected plant parts.



Harvesting Celery

As noted, celery is considered a summer crop in the North and a winter crop in the South. To get a fall crop (sometimes called a second harvest) sow your celery seed indoors in May or June for transplanting outside in June or July. In the regions where celery grows best, rich soil, lots of water and respite from blistering sun and high temperatures are the basics that make all the difference.

Harvest your celery by cutting it off just below the soil line, but did you know you can "regrow" celery from the base of the stalk? In fact, Mother Earth News notes:

"If you're growing celery in moist garden soil, stalk celery can be handled as a cut-and-come-again crop — just harvest a few outer stalks at a time."

How to Grow Rhubarb

Best time to plant: 🍁 Late fall

Harvest: 🌸 Spring

If you're looking for a hardy, problem-free perennial to add to your garden, consider **rhubarb** (*Rheum rhabarbarum*). Given the right soil and sun conditions, you can easily grow rhubarb from crowns or seeds. Once the plants are established, you can enjoy the red or green celery-like stalks of rhubarb as a springtime treat in jams, pies or smoothies.

For best results, choose a sunny, out-of-the-way corner of your garden that features compost-rich, well-drained soil. **Avoid eating foliage though; it's poisonous.** Here's all you need to know to grow rhubarb.

Health Benefits of Rhubarb

If there's one reason for you to consider growing rhubarb, the answer is its nutritional profile. Assuming you can resist the temptation to dose it with sugar, rhubarb is a low-calorie, nutrient-rich food. When baking or cooking with rhubarb, try using a **natural sweetener** such as stevia instead of sugar.

Raw rhubarb contains many health-boosting properties such as **polyphenolic flavonoids** like beta-carotene, lutein and zeaxanthin, which are known to protect your eyes and skin from the damaging effects of free radicals. In addition to being a good source of B vitamins, rhubarb contains compounds that act as a **potent antibacterial**.

For example, one study noted that rhubarb extract may help against *Staphylococcus aureus*, *Helicobacter pylori* and *Escherichia coli* strains. While rhubarb is fighting these disease-causing bacteria, researchers noted that it's also able to diversify the gut flora at the same time.



FUN FACT

While the tart-yet-sweet punch of rhubarb may lead you to think it's a fruit, it's actually a vegetable!

Growing Rhubarb

When it comes to growing rhubarb, your two biggest decisions are likely to involve **location and planting method**. Because it is a perennial, you'll want to select a location where the plant can grow undisturbed year after year. With respect to the planting method, cultivating rhubarb from seed takes more time than growing it from root divisions, which are also known as crowns.

Below are some **tips from garden experts** on how to grow this well-loved plant:

Planting

You can dig a trench or prepare individual holes for each plant that are at least 1.5 feet deep and 3 feet wide. When using crowns, place them every 3 to 4 feet in rows that are spaced about 3 feet apart. Crowded plants will be smaller and less productive. Set each crown about 2 inches below the soil surface and pat the soil gently.

Location

Given their perennial nature and the fact they are long-lived, you will want to choose a location for your rhubarb that is in a low-traffic, out-of-the-way area. A back corner of your garden or yard would be ideal.

Soil

Rhubarb will do best in well-drained, slightly acid soil with a pH of 6.0 to 6.8. Because it prefers soil with a lot of rich organic matter, you'll want to work bonemeal or compost into the area prior to planting. A side dressing of compost in midsummer and fall will ensure healthy, vigorous growth.

Sun

Rhubarb likes full sun. If you live in a warm climate, your plants will benefit from light shade, but keep in mind they may produce longer, thinner stems in warm weather.

Seeds

Because you'll have to wait about two years for your plants to mature when growing rhubarb from seed, you may want to start your plants from root divisions, also called crowns. You can purchase rhubarb crowns at your local garden center or nursery, or online.

Water

Water rhubarb crowns immediately after planting and provide enough water to keep the roots from drying out even when the plants are dormant. Mature plants are fairly drought-resistant.



Another reason you may prefer to use crowns over seeds is because rhubarb grown from seed can produce plants that are **not true to type**. For example, if you are interested in a specific rhubarb variety due to its color or stem characteristics, you may not achieve those effects using seeds. On the other hand, if you use crowns you will be more likely to retain the desired attributes of the parent plant.

As soon as your plants sprout, you'll want to apply a 2- to 3-inch layer of **mulch** to help keep the soil moist and suppress weeds. You'll also want to apply mulch in the fall after the foliage dies to protect the plant's roots from hard freezes during the offseason. As soon as they appear, be sure to **remove the flower stalks**, which are taller and thicker than leaf stalks. If allowed to mature and bloom, flower stalks will draw nutrients away from the leaf stalks, making them thinner.



Harvesting Rhubarb

Below is a summary of the collective wisdom about harvesting rhubarb, with the main goal being to allow the plant to mature fully and position itself for many years of bountiful harvests:

- ✔ Similar to asparagus and other garden perennials, you won't harvest any rhubarb the **first year**.
- ✔ During the **second year**, you can harvest it lightly and only early in the season.
- ✔ In the **third year**, your plants will be able to tolerate about a monthlong harvest.
- ✔ By **year four**, you can harvest a full eight to 10 weeks.

The only exception to the above guidelines relates to warm climates. If you are growing rhubarb as an **annual**, you can harvest all you want the first year because the plants will last only one year. For **perennials**, the main harvest season is spring. Weather permitting, you may be able to enjoy smaller harvests throughout the summer or fall, especially in cooler weather. For the tastiest, most tender stalks, remove them as soon as the leaf unfolds.

Limit your cuttings to only **one-third of the stalks** at a time and stop harvesting altogether whenever the plant is producing skinny stalks. Any decisions you make to allow your rhubarb plants to fully mature prior to harvesting will be more than rewarded. After all, it's common for one full-sized plant to yield 2 to 6 pounds of tasty stalks each season. As you'd expect, **weather** plays a role in the harvest: Cool, moist weather increases productivity and warm, dry conditions tend to decrease it.



The best time to harvest rhubarb is in the spring when the leaves are fully developed. Use a knife to cut stalks off at the base or snap them off by twisting them sharply.

Take care to avoid injuring underground buds. Due to their toxic nature, remove rhubarb leaves as you go. It is safe to compost the leaves because the oxalic acid crystals will dissipate in the soil long before they would ever be absorbed by other edible plants.



HOW-TO-GROW
VEGETABLES
(Root vegetables and tubers)



How to Grow Beets

Best time to plant: 🌸 Early spring

Harvest: Seven to eight weeks after they are planted



Beets (*Beta vulgaris*) are easy to grow in your garden or a pot, can be used in multiple ways in your food and are packed with vitamins and anti-inflammatory properties. In other words, it's a plant you might consider this summer as you're planning your garden.

Health Benefits of Beets

Beets and beet juice are packed with powerful nutrients that make an impressive impact on your health. The leaves of the plant are rich in **nitrites**, which your body processes into nitric oxide. This widens and relaxes your blood vessels, effectively lowering your blood pressure and affects how cells use oxygen.

DID YOU KNOW?

The phytonutrients that give beets their deep crimson color have powerful anticancer properties.

The overall effect of greater oxygenation on your health extends to athletic performance and cognitive function as well. There appears to be a dose-related response in your body to beet juice, peaking approximately

two to three hours after ingestion and reaching baseline approximately 12 hours later.

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Researchers have identified reductions in systolic and diastolic blood pressure that are dependent upon the dose taken. The more beet juice study participants drank, the greater the blood pressure response and the lower the amount of oxygen required to maintain a moderate amount of exercise.

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Beetroot extract has reduced multi-organ tumor formation and is under investigation for the treatment of pancreatic, breast and prostate cancers. The plant is also **a unique source of betaine**, a nutrient known to reduce inflammation, protect your organs and enhance your physical performance. The combination may also help prevent other chronic diseases, including heart, liver, vascular and cerebral diseases. **High in folate**, they may also lower your risk of stroke, and are an excellent food for pregnant women, essential to lowering the risk of birth defects.



Growing Beets

As soon as the ground dries and the weather starts to warm, it's time to plant your first crop of beets. Good soil organization is important as the growth of the plant enhanced by good aeration. The plant thrives in **well-drained sandy loam soil, high in organic matter, with a pH between 6.5 and 7.**

Although the plant has low fertility needs, it has specific pH needs. Once the pH of the soil drops to 5.8 the plant won't survive. Beets grow poorly in acidic soil and require consistent moisture throughout the growing season. Prepare the soil with well-rotted manure composted to an 8-inch depth and pulverize the soil, removing all stones, to allow good aeration and root growth.

Boron plays a key role in cell wall formation and movement of energy in the plant. **Plants suffer from too much or too little boron in the soil.** Deep watering will drive heavy soil concentrations away from the roots, but in good soil, won't create a boron insufficiency. Adding lime around plants will deplete boron. Sow the seeds in full sun to optimize harvest. If you don't have a sunny area in the garden, a shaded spot will still net you lots of greens. Alternatively, consider planting in a pot that can be moved to a sunny area.



The seed is actually a dried fruit of the plant that contains multiple seeds. So, properly spacing the seeds will still result in crowded seedlings. Once the plant has germinated, approximately five to eight days after planting, and true leaves have formed, thin the plants so they're 4 inches apart.

The beet plant uses boron from the soil inefficiently. Boron is a micronutrient that is critical to the growth of all plants.

Although they may germinate in cooler soil, they sprout best after soil temperatures have reached 50 degrees F (10 degrees C) and will germinate at temperatures as high as 85 degrees F (29 degrees C). Plant the seeds 1/2 inch deep, 1 to 2 inches apart in rows 12 to 18 inches apart. Plant your fall crop 10 to 12 weeks before you expect the first frost.

Keep the soil consistently moist for germination and throughout the growing season. The plants lose flavor and nutrition when grown in drought conditions. You may find soaking the seeds for 24 hours before planting encourages germination in low moisture soil.

Beware of Pests

Whether you plant in pots or in the ground, beet plants are susceptible to pests that may affect your harvest. Many of the infections or pests are best addressed by planting in a clean field where there has been no infection and areas where wild beets have not been found.



Cutworms that live in the soil may cut your plants off at the top before they have a chance to grow. To prevent this, place a 3-inch paper collar around the stem, sprinkle wood ash around the roots and keep the area free of weeds. Nematodes inhibit growth and are controlled by eliminating weeds and rotating crops in your garden.

Leafminers lay their eggs on the leaf, and when the larvae hatch, they feed on the leaves. Yellow or blue sticky traps will catch the adults, while squeezing the leaves will kill the larvae.



Rabbits

love your beet greens and **voles**

(rodents) attack the beet root from below, so you may need appropriate fencing to keep out the little critters.



Deers

also love the tops of red beets, and will graze on the plants until the leaves are destroyed. As you

plan fencing, consider the size of the animals in your local area.



Harvesting Beets

Your beets will be ready to harvest when they are **between the size of a golf ball and a tennis ball.**

The root system of the beet plant is relatively delicate, so it takes just a good twist, after grasping the base of the greens, to separate the bulb from the ground.

Once removed from the ground, snip or twist off the greens from the top of the beet. You might use them in your compost pile, or wash and refrigerate them for later use in a salad or steam in a side dish. If you live in a climate with mild winters, you may be able to leave your fall planting of beets in the ground and dig them up as you need them. If you do dig up the full planting in the fall, store them in an area where they will not be exposed to frost.

How to Grow Carrots

Best time to plant: 🌸 Spring and 🍁 fall, into ❄️ early winter

Harvest: 🌸 Spring to ☀️ summer or 🍁 fall to ❄️ winter

Carrots are a joy to grow in your garden, as they're delicious right out of the ground. If vegetables are unpopular with your kids, grow some carrots and watch them change their mind once they start pulling these sweet snacks out of the dirt.

Health Benefits of Carrots

Carrots (*Daucus carota*), while higher in sugar than many other vegetables and therefore best eaten in moderation, have a number of excellent health benefits, including:

- ✔️ **Healthy vision**
- ✔️ **Brain and nervous system health**
- ✔️ **Liver protection**
- ✔️ **Protection against heart disease and stroke**
- ✔️ **Promotion of healthy bones**

One serving of orange carrots (one medium carrot or one-half cup chopped) will provide about 210% of the average daily recommended allowance (RDA) of **vitamin A**. The high vitamin A content, for which carrots are best known, comes from **beta-carotene**, which is converted into vitamin A in your liver.

Your body cannot manufacture beta-carotene, so you have to get it from your diet, and carrots contain some of the highest levels of beta-carotene of any vegetable. A single serving will also



DID YOU KNOW?

Cooking carrots whole, skin intact, without chopping, slicing, grating, shredding or peeling them, is the best way to obtain the most nutrients.

give you 10% of the RDA of **vitamin K**, 6% of **vitamin C** and 2% of **calcium**. That said, different colored carrots will provide you with different sets of nutrients.



Red carrots will be higher in lycopene and beta-carotene pigment, linked to a lower risk of certain cancers, including prostate cancer



White or pale-yellow carrots tend to be milder, with high fiber content



Yellow carrots contain high amounts of xanthophyll and lutein, associated with cancer prevention and eye health



Purple carrots contain higher amounts of anthocyanin, beta- and alpha-carotenes, and have a sweeter and sometimes peppery flavor

Growing Carrots

Depending on the variety you sow, you can grow them in spring and fall, into early winter. The following carrot varieties tend to be popular among gardeners. You can also buy premixed blends that will give you a mixture of different colors. Examples include **Rainbow**, **Cosmic Color** and **Harlequin** blends, which will give you a mix of pale yellow to red carrots.

For a spring/summer crop, sow your seeds directly in your plant bed in a sunny area, about two weeks before the last frost date. For best germination, your soil should be between **60 and 70 degrees F** (16 and 21 degrees C). For a continuous crop, continue planting **every two to three weeks** until midsummer. If you live in hotter climates, your planting season will be shorter than if you live in a cooler climate.

For a fall/winter crop, sow your seeds about 12 weeks before your first frost date. Mother Earth News' [vegetable planner](#) can help you find your average first and last frost dates.



Check this out! →

For well-shaped carrots, you'll want to make sure your soil is nice and loose to a depth of at least 12 inches. Hard or stony soils will result in misshapen roots. Mix in a 1-inch layer of compost, or a half-inch layer of vermicompost, and plant your seeds a quarter-inch deep, 2 inches apart. If you're doing rows, space them about 10 inches apart.

Once the seedlings start to sprout, thin them so they're 2 to 6 inches apart, depending on the variety, to avoid crowding the roots. **Avoid fertilizers high in nitrogen**, as carrots need more phosphorus and potassium than nitrogen, and aim for a soil pH between 5.8 and 7.0 to optimize nutrient uptake. If your soil is too acidic, you can raise the pH by adding a bit of lime.

Once the seeds are planted, be sure to water consistently for the first 10 days. A **soaker hose** can be helpful for this. The soil should be kept moist but not soggy. Carrot seeds typically germinate slower than other veggies, so be patient. You can retain moisture by covering the soil with wood planks or a blanket for the first five or six days. As soon as the seeds show signs of life, remove the cover.

Weeds can be kept at a minimum and moisture can be retained with a layer of mulch once the seedlings have sprouted. Another way to reduce weeds is to **grow radishes** in with your carrots.



Pest and Disease Prevention

A number of wild critters will enjoy munching on carrots, so depending on where you live, you may have to contend with wild animals entering your garden, ripping up your beds. Fences and other physical barriers may need to be installed to keep them out.

In terms of insects, the most common carrot pest is the **aster leafhopper**, which can spread **aster yellow**, a bacterial disease that causes hairy and misshapen roots. Using row covers will help prevent leafhoppers. Growing your carrots in compost-enriched soil, and far away from nut trees, fruit trees and grapes will also help, as these plants serve as hosts to the bacteria.



Harvesting Carrots

Carrots are easily harvested simply by loosening the soil around the roots with a **digging fork** and then gently pulling them out by their tops. Fully matured carrots will have the best flavor. Once harvested, cut off the top to maintain moisture in the carrot, rinse off the dirt and store in a cool dry place.

A **root cellar** is ideal, but you may also store them in your refrigerator, where they will keep for a few months. **Pickling or fermenting** them will allow them to be stored even longer.



How to Grow Parsnips

Best time to plant: 🌸 Late spring to 🌞 early summer | Harvest: 120 days after planting



As a member of the Apiaceae family, **parsnips** (*Pastinaca sativa*) make their home among vegetables like carrots and celery, as well as aromatic herbs such as coriander, cumin, dill, fennel and parsley.

Given its unique earthy taste and beneficial levels of potassium and folate, you might want to try your hand at growing this pale carrot cousin in your vegetable garden this year.

Health Benefits of Parsnips

Parsnips are a low-calorie vegetable — a 3.5-ounce, or 100-gram (g), serving contains just 75 calories. While the leaves are most often discarded and considered by some to be inedible, the taproot portion is highly nutritious. Parsnip roots are particularly rich in **potassium**, with 375 milligrams (mg) per 100 grams, and 67 micrograms of **folate** (vitamin B9) per 100 gram serving. They also contain a good amount of vitamins C, E and K, as well as beneficial stores of calcium, iron, manganese, magnesium, phosphorus and zinc.

Both potassium and folate have been shown to boost your cardiovascular health. Vitamins C and E are important antioxidants that prevent cell damage caused by free radicals, whereas vitamin K and manganese promote bone health. You can retain more of the vitamins and minerals by lightly peeling your parsnips or cooking them whole. With 5 grams of fiber per serving, which includes both soluble and insoluble types, parsnips can help **prevent constipation** and **promote healthy blood cholesterol levels**.

The smell of parsnips is said to be reminiscent of fresh parsley. As a hardy, cool-season crop, parsnips are characterized by long taproots and cream-colored skin and flesh. They are similar to a carrot in size and shape. For maximum sweetness, it is best to wait to harvest them until after the first frost. If you live in an area with mild winters, you can provide a heavy layer of mulch around your plants and wait to harvest your parsnips after the ground thaws in the spring.

Growing Parsnips

Although parsnips are biennials, they are most commonly grown as **annuals**. If summers in your area are short and mild, it's best to plant parsnips in late spring, a week or two after the last frost. In all other areas, you'll want to delay planting until early summer. For best results, sow your seeds about four months before your first fall frost. Of the utmost importance for growing success, you must use fresh parsnip seeds every year. Do not save any leftover seeds because they will not germinate in subsequent years.

Below are **five easy steps** for growing parsnips:

Seeds

As a root vegetable, parsnips are best planted from seed and you can sow them as soon as soil temperatures are consistently in the 50 to 54 degrees F (10 to 12 degrees C) range.

Use your finger or a trowel to create a small trench and, because parsnips are poor germinators, you'll want to sow two seeds every inch at a depth of about one-half inch. Space your rows 18 to 24 inches apart.

Location

Parsnips prefer a well-draining soil with a pH in the slightly acidic to neutral range of 6.0 to 7.0. Loose, fertile soil that is free of hard clods and stones is best. Prior to planting, loosen the soil to a depth of 12 to 15 inches and mix in a 2- to 4-inch layer of compost. Never use fresh manure on root crops because it will cause the roots to fork and distort.



Thinning

Once your parsnips develop at least two true leaves, you can thin them to 3 to 6 inches apart to give their taproots plenty of room to grow. Parsnips mature in about 16 weeks so you'll need to exercise patience while you wait for the first green sprouts to appear above the soil line.

Water

Water the soil immediately after planting to encourage germination. Provide at least 1 inch of water per week early on to promote strong taproot development and quick growth. As the plants mature, water only during very dry periods to encourage the roots to grow deeper in search of moisture.

Sun

Parsnips will do best in full sun to partial shade.

You'll want to keep your garden bed free of weeds so they won't be competing with your parsnips for water and soil nutrients. When weeding around parsnip plants, take care you don't damage their roots, especially if you use a hoe. For that reason, regular **hand weeding** may be best. In terms of readying your seeds for planting, Mother Earth News suggests the following tips to speed the germination of parsnip seeds:

- ✓ About a week before planting, place your parsnip seeds on a wet paper towel and enclose them in an airtight container
- ✓ Maintain the seeds in the container for five days at room temperature
- ✓ On day six and beyond, check for the emergence of pale white sprouts indicating germination
- ✓ Plant the seeds as soon as the first seeds have begun to germinate

DID YOU KNOW?

Parsnip leaves release a skin-irritating sap when exposed to UV rays, so wear gloves when removing them.



Harvesting Parsnips

At maturity, most parsnip taproots will be 8 to 12 inches long, with a diameter of 1.5 to 2 inches. Be sure to mark down the date you planted them so you will know the general time frame during which they will be ready to harvest. As noted by Gardening Know How, you'll need to be patient when waiting to harvest parsnips because:

- ✔ Parsnips take, on average, **120 days** to mature
- ✔ Their unique taste emerges with **a touch of frost**
- ✔ Some gardeners like to leave parsnips **in the ground over winter**



Whenever you plan to harvest them, you'll need to do so carefully because the taproots can be easily broken or damaged during removal, which means they won't store well. Due to the depth of their roots, your best strategy for removing parsnips from the ground is to use a **small spade or garden fork**. Proceed cautiously so as to prevent damage to nearby roots.

For better sight lines while digging, some recommend **trimming the foliage down** to about 1 inch above the taproot.



HOW-TO-GROW
VEGETABLES
(Alliums)



How to Grow Chives

Best time to plant: 🌸 Early spring

Harvest: 🌸 Spring to 🌞 early summer

Chives (*Allium schoenoprasum*) are a member of the onion family native to Asia and Europe. These herbs are among the easiest to grow in the allium family as they are perennial, coming back year after year. With a bit of effort, you too, can stock up on your own inventory of chives and give your recipes a nice, flavorful kick.

Health Benefits of Chives

Allium vegetables contain organosulphur, flavonoids and a number of vitamins and minerals. These delicate herbs are nutrient dense, low in calories but high in antioxidants.

In a recent study, chives ranked 14th in nutrient density when compared to 47 other fruits and vegetables identified as powerhouse plants — those most closely associated with a reduced risk of chronic disease.

The researchers classified the plants in raw form as different methods of cooking may alter nutrient value.

The scores were weighted using data on bioavailability. The percent of recommended daily value was capped at 100 in order to reduce the potential one nutrient would artificially tip the scales in favor of a fruit or vegetable. Items in the cruciferous family were at the top of the list, while those that were yellow/orange, citrus or allium were toward the lower half of the group.

It's important to remember that only the fruits and vegetables considered nutrient dense were included in the group of 47 evaluated. The **chive blossom** also contains nutrients important to your health and wellness. Analysis of the chive blossom by scientists in Poland revealed they contained important fatty acids including palmitic acid, linoleic acid and stearic acid as well as vitamin E.

Other benefits of chives are related to the relatively high levels of organosulfur compounds, vitamin K, choline, folate and carotenes. Each of these nutrients play a vital role in your health and wellness. For instance, vitamin K is essential for strong bone health and promoting cognitive function.



FUN FACT

Chives were actively cultivated during the Middle Ages and used in China, prized for their delicate taste.



Growing Chives

There are several different varieties of chives that you may consider for different dishes you prepare, or as a light quick snack you can pluck from your garden:



Common Chives

These plants have a **mild onion-like flavor** that may be eaten raw or cooked and are popular in eggs, soups and stews. The plants grow 10 to 12 inches tall and have round, hollow leaves. Early in the summer, mature plants will flower with **lavender-colored globes** that are also edible. You can propagate these from seed, purchase plants that have been started or divide your own plants every two to three years to protect the health of the plant and increase your yield.



Garlic Chives

These **taste like onion and garlic**, often included in stir-fry and meat dishes for added flavor. These plants grow up to 2 feet tall and the leaves are flat and dense. **The flowers are white** and appear in late summer to early fall. Garlic chives self-seed easily. To keep the plant from taking over your garden, consider removing the flower heads before they dry and the seeds are dispersed.



Giant Siberian Chives

This plant has a **stronger flavor than the garlic or common chive**, rich in an onion-garlic taste. They look similar to the common chive but grow taller. They bloom a **rose-colored flower** in late summer that can be as much as 2 inches in diameter. The **sap** from the leaves can be used to deter moths and other insects.



Siberian Garlic Chives

This variety is commonly referred to as "**blue chives**," with a similar **onion-garlic flavor of the Giant Siberian Chive**. The leaves are **blue-green** in color and they flower midsummer with **pink blossoms**.

Chives are a **perennial** plant that thrives outdoors in temperature zones 3 through 9. The plant does best in soil that drains well, whether in your garden or in a container. If you are planting in the ground, add well-aged compost to amend the soil before planting seedlings, separated plants or seeds. If you're planting it in a container, take care to ensure the soil is not pre-fertilized with a nitrogen-based product that may encourage rapid growth but leave you with a plant that has little flavor.

Start your seeds indoors about **eight weeks** from the last expected frost, assuming they will germinate in two to three weeks. Once your seedlings are ready to be planted outdoors, take care to place them outside for **one to two hours a day** for several days to harden the plants. This process gets the plant ready for outdoor life and reduces the chance a young plant will die prematurely. You may also consider purchasing young plants at a nursery.

These can be separated at home into four bunches per pot before being planted in your outdoor garden. Take care to separate the plants gently so as not to damage the root system. Chives thrive in near neutral pH soil, between 6 and 7. If you live in southern climates, consider planting in partial shade to reduce heat stress on the plant. **Do not mulch** the plants to improve circulation at the roots, and weed diligently as they compete poorly with other plants.



Don't Let Aphids and Wildlife Ruin Your Chives

Most of the time, chives are resilient to pests, disease and deer. If you have problems with deer eating your garden plants, consider planting chives in bunches throughout to discourage foraging from four-legged wild animals.

Aphids more commonly appear in the spring months and respond well to a mild household detergent. The soap damages the insect's protective coat and causes them to dehydrate and die. The same can be used for mealybugs and thrips. Remember to spray the underside of leaves where eggs may hide.



Harvesting Chives

Use scissors to cut your chives approximately **2 inches above the soil**. Before the plant flowers, the leaves with most flavor will be on the outside edges of the clump. Once the plant has flowered consider harvesting the blooms for your salads and summer foods. Trim the flower, but remove the stem as it is not tasty. By midsummer your leaves may fall over and not be as flavorful.



Consider cutting back mature plants to 2 inches above the soil to encourage new growth. However, do not do this with plants that are less than a year old as it could damage their growth. Consider preserving your spring crop to use throughout the summer months by cutting and freezing, first on a cookie tray and then stored in a freezer bag.

You may want to harvest the seeds at the end of the summer for use the following year if your winters are particularly harsh and the plants do not come back. The seeds store well in Mason jars in the vegetable bin of your refrigerator for up to three years.

How to Grow Garlic

Best time to plant: 🍁 Fall

Harvest: ☀️ Summer



Garlic (*Allium sativum*) must be fresh to give you optimal health benefits. The fresh clove must be crushed or chopped to stimulate the release of an enzyme called **alliinase**, which in turn catalyzes the formation of **allicin**. In turn, **allicin**, which is destroyed an hour after the garlic is crushed, rapidly breaks down to form a number of different organosulfur compounds.

You also won't reap all the health benefits garlic has to offer if you use jarred, powdered or dried versions. For these reasons, growing your own garlic is a simple and inexpensive way to ensure you have a supply of medicinal garlic on hand – not to mention garlic is one of the most popular flavor additions to a wide array of dishes. In short, you really cannot go wrong growing garlic in your garden.

FUN FACT

You can activate garlic's medicinal properties by compressing a fresh clove with a spoon prior to swallowing it, or putting it through your juicer to add to your vegetable juice.

Health Benefits of Garlic

Garlic has long been hailed for its healing powers. Research confirms fresh garlic has potent immune-boosting, antibacterial, antiviral and antifungal effects. Historically, garlic has been widely used in medicine for circulatory and lung ailments, and modern research backs the wisdom of many of these historical claims – and more. For example, studies show that regular consumption of (primarily raw) garlic:

- ✔️ **May be effective against drug-resistant bacteria, including MRSA**
- ✔️ **Reduces risk for heart disease, including heart attack and stroke**
- ✔️ **Helps normalize your cholesterol and blood pressure**
- ✔️ **Helps protect against cancer, including brain, lung and prostate cancer**
- ✔️ **Reduces your risk of osteoarthritis**

Many of its therapeutic effects comes from **sulfur-containing compounds** such as allicin, which also give garlic its characteristic smell. As allicin is digested, it produces **sulfenic acid**, a compound that reacts with dangerous free radicals faster than any other known compound. Other health-promoting compounds include oligosaccharides, arginine-rich proteins, selenium and flavonoids.

Growing Garlic

For a successful crop, keep your local climate in mind. You might also try a couple of different varieties for different flavors. For example, elephant garlic has a milder flavor than you might be used to. Garlic can be divided into two main classes or types:

1 Softneck garlic is ideal if you live in an area where winters are mild. Softneck varieties are also best if you want to create garlic braids. Popular varieties include:

- Creole
- Artichoke
- Asian
- Elephant

2 Hardneck garlic are better in colder areas. Some of the most popular varieties include:

- Porcelain
- Purple stripe
- Rocambole

Garlic is planted in the fall and harvested the following summer. Here are some general **planting guidelines** to consider:

- ✔ For the biggest bulbs, plant your cloves in the fall after the first frost. If you don't mind smaller bulbs, you can also plant them in late winter, once the soil has thawed.
- ✔ Select a sunny spot in your garden and use well-draining fertile soil with a neutral pH (6.5 to 7.0 is best). Loosen the soil at least 1 foot, or about 30 centimeters (cm), deep and mix in a 1-inch (2.5 cm) layer of organic compost. If your soil is too acidic, add in a small amount of wood ash.
- ✔ Right before planting, select a fresh, healthy bulb and break free the individual cloves. With the papery skin still intact, soak the clove in water with a tablespoon of baking soda and a tablespoon of liquid seaweed for two hours. Soaking is optional, but it helps prevent fungal disease and encourages healthy growth.
- ✔ Poke a hole, about 3 to 4 inches (8 to 13 cm) deep, and place the clove in the hole, pointed end up. Space each clove about 6 to 8 inches (15 to 20 cm) apart and cover with soil.
- ✔ Cover the plantings with 3 to 8 inches (8 to 20 cm) of mulch or hay.



Pest and Disease Prevention

Garlic has few serious adversaries, but you still need to keep an eye out for potential threats that might ruin your crop, such as:



Onion thrips

These can be identified by the pale grooves they create in the plant's leaves. Fortunately, it has many natural predators.

Thrips thrive in weedy areas, so mowing and weeding around the garlic plants will also discourage them. Should you find them, place some **sticky traps** next to the plant. A more serious infestation can be treated using a biological pesticide containing **Spinosad**.



Onion root maggots

These can become a problem if you plant onion family crops in the same

place over multiple seasons, so it's best to rotate your plantings. **Diatomaceous earth** can be sprinkled around the plant in late spring, which is when the females lay most of their eggs.



Root rot diseases

To prevent these, make sure the **soil drains**

well and **use caution during weeding** to avoid damaging the roots of the plant.



Harvesting Garlic

In **four to six weeks**, you'll start seeing shoots poking through the mulch and your garlic will be ready for harvest in early to midsummer, once the soil is dry and one-third of the leaves have withered and turned pale. To harvest, carefully loosen the soil with a **digging fork**, then pull up the plant. The bulbs can bruise easily when first taken out of the ground, so treat them gently.

Place the entire plant, with bulbs attached, in a warm, dry, airy spot for about one week. At that point, brush off any stuck-on soil from the bulbs, but leave on the papery outer layer, and snip the roots, leaving about one-half inch. Wait one more week, then clip off the stems. If you planted a softneck variety, you can now go ahead and braid them together if you like.

Leaving the outer wrapping will inhibit sprouting and prevent rotting, allowing you to store the garlic longer. As a general rule, hardneck varieties will stay fresh for **four to six months** if stored in a cool, dry place. Softneck varieties can be stored for up to **eight months or longer**. For an even more extended storage, you can try dehydrating, freezing or pickling your garlic. Be sure to save some of the bulbs for next year's planting as well.



How to Grow Leeks

Best time to plant: 🌸 Spring, ☀️ late summer or 🍁 fall depending on location

Harvest: During the first year

If you've never tried **leeks** (*Allium ampeloprasum porrum*), you may be interested to include them in your fall garden this year. Actually, you can grow leeks year-round, but given their hardiness to cold, they make a great fall crop. If you live in an area with mild winters, you can even leave leeks in the ground during winter and harvest them in early spring.

Though they were once rarely seen outside of potato leek soup in the American food mainstream, leeks are growing in popularity. They have a long history of culinary use around the world, including northern Europe. Thought to originate in the Mediterranean and Central Asia, leeks were also cultivated by the ancient Egyptians and Greeks, and popularized by the Romans.



FUN FACT

Leeks are a close cousin to garlic and may possess similar health benefits as well!

Health Benefits of Leeks

Leeks are a good source of vitamins A, C and K, as well as calcium, iron and manganese. Due to the presence of folate, adequate intake of leeks during pregnancy may help prevent neural tube defects in newborns. In addition, the B vitamins in leeks may support heart health by keeping your levels of homocysteine in balance, which is important because elevated levels of homocysteine are associated with heart disease, blood clots and stroke.

Being a member of the allium family, leeks have other benefits that set them apart from other vegetables. Similar to garlic, the therapeutic

effects of leeks center around its sulfur-containing compounds like allicin.

Allicin is a well-known antifungal, antimicrobial and antioxidant agent. When digested, allicin produces **sulfenic acid**, a compound known for its fast action to neutralize free radicals. Leeks also contain **kaempferol**, a natural flavonoid found in broccoli, cabbage and kale.

Kaempferol has been shown to help your body resist cancer and other chronic diseases, as reported in Mini-Reviews in Medicinal Chemistry. It is also known to protect your blood vessel linings from damage, possibly by increasing production of nitric oxide, which helps your blood vessels to dilate and relax.



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In a meta-analysis of 19 studies involving 543,220 subjects, researchers found consuming large amounts of allium vegetables, including leeks, may significantly **reduce your risk of gastric cancer**. Another study suggested the consumption of allium vegetables like leeks can **protect against other types of cancer** too.

Growing Leeks

Mother Earth News suggests types of leeks you may want to try, based on your choice of growing season, as follows:



Summer leeks

Lincoln, Kalima, King Richard, Rikor or Titan



Fall and early winter varieties

Falltime, Imperial, Tadorna or Varna



Winter-hardy types

American Flag, Blue Solaise, Giant Musselburgh, Siegfried or Winter Giant

In most U.S. regions, the winter-hardy varieties will endure winter and resume growing in early spring when temperatures warm. If you plant winter-hardy leeks, be sure to mulch them well and harvest them in the spring before they flower and produce seed. If you wait to harvest them until late spring, chances are they will have turned woody. As such, to ensure the best flavor, harvest winter leeks between January and April.



When planning for leeks, be sure to plant them early in the growing season because most varieties take **120 to 150 days** to mature. If you want them ready sooner, seek out one of the modern cultivars that have been bred to be ready in about 90 days. Below are tips from gardening experts on how to grow leeks:

Planting

Leeks do well either direct-sown or as transplants. If you live in a cold climate, start seeds indoors, using a loose, well-aerated seed-starter mix, eight to 12 weeks before your last spring frost. Give them plenty of light. When outdoor temperatures remain above 40 degrees F (4.4 degrees C), you can harden the plants off slowly during a period of seven to 14 days and then transplant them in your garden.

In warmer climates, start seeds indoors three to four weeks prior to your last spring frost and then transplant your seedlings outdoors for an early summer harvest. Another option is to direct-sow seeds in your garden in late summer for a winter through early spring harvest.

To avoid damage from diseases and pests known to linger in the soil, choose a planting site where onions, garlic and other alliums have not grown for several years.

Soil

Although they will tolerate somewhat alkaline soil, leeks thrive in slightly acidic soil with a pH of 6.0 to 6.8. To fuel the growth of their long leaves, you'll want a loose, rich soil with lots of organic matter. If desired, you can add a balanced fertilizer during the transplanting process.

Fertilizer

Although leeks are not heavy feeders, due to their long maturity, you may want to apply a side dressing of composted manure or a high-nitrogen fertilizer midseason. Alternately, you can apply fish emulsion fertilizer occasionally throughout the growing season to keep your leeks growing strong.

Pests and problems

In terms of pests, watch out for onion maggots, thrips and slugs, which may nibble leaves and stunt growth. Leaf rot or leek rust can be a problem in the case of damp weather, wet soil or poor air circulation, so be sure to let the soil dry out between watering. Remove any infected plant material as soon as it appears.

Sun

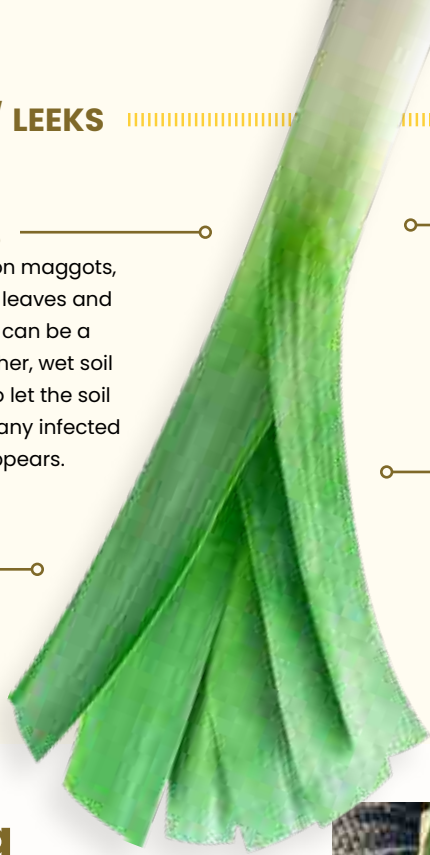
Leeks thrive in full sun.

Spacing

Because leek leaves grow in the same direction, you can set your transplants out as close as 2 to 6 inches apart as long as you allow room for the leaves to branch out into the spaces between rows.

Water

Provide about 1 inch of water weekly. If desired, you can mulch the plants to help retain water, cool the soil and prevent weeds. By the way, weed control is vital to the success of your leeks because they don't like to compete with weeds for water and nutrients.



Harvesting Leeks

Leeks are **biennial** and will grow a flower stalk in the second year. That said, you'll want to harvest them in the first year. Only allow leeks to bloom if you are interested in saving seed; otherwise, treat them as an **annual**.

Because leeks don't die back like onions, signaling their readiness, it's best to wait to harvest them until the base feels firm and solid and is **at least 1 inch in diameter**. The best way to harvest mature leeks is to dig them up with a gardening fork. When harvesting immature leeks, simply twist and pull them from the soil.



As mentioned, leeks are **frost-tolerant**. If you live in a mild climate you can leave them in the ground all winter long. Because leeks will store better in the ground than in your refrigerator, harvest them in small batches and use them within a day or two.

How to Grow Onions

Best time to plant:  Spring

Harvest:  Summer



If you ever find yourself in the kitchen wondering what to dream up for dinner, you know how often **onions** (*Allium cepa*) play at least a supporting role in the final presentation. Chopped in salads, sautéed with bell peppers or emanating their savory essence in soups and casseroles, the versatility of onions makes cooking less of a chore and more of an adventure.

But that could also be said of growing onions, whether you want to grow sweet onions, red onions, leeks, shallots, chives or scallions. If you love onions, it's great to know you need go no further than your own backyard garden to get some of the most powerful, cancer-killing foods on Earth.

Health Benefits of Onions

As an allium vegetable, one of the most important aspects of the phytonutrients in onions involves the effect they have on cancer. Some of the antioxidant and cancer-fighting compounds in onions include quercetin, anthocyanins and sulfur compounds like onionin A (ONA), S-allylcysteine (SAC) and S-methylcysteine (SMC), and diallyl disulfide (DDS), as well as other potent phenols and flavonoids.

DID YOU KNOW?

The more flavor onions have, the more effectively they may help combat cancer!

Quercetin, in particular, has been found to decrease cancerous tumor initiation and inhibit the proliferation of cultured ovarian, breast and colon cancer cells.

It's also associated with a decreased risk for brain and lung cancer. Meanwhile, **onionin A** has been found to be protective against epithelial ovarian cancer, the most common type of ovarian cancer, because it slows its growth.

Onions also contain glutathione, selenium compounds, and vitamins E and C, which also adversely affect cancer cells. Moreover, the powerful phytonutrients in onions have been linked to a decreased risk of diabetes and heart disease. They also have the distinction of being antiallergenic, antibacterial, antiviral and anti-inflammatory.



Growing Onions

Because they're a cool-weather crop, onions can be sown indoors in early spring or planted outdoors and covered with about a quarter inch of soil. When planting, select an area in full sun so your onions won't be shaded by other plants. The soil should be highly organic, well-drained and loose, because compacted soil restricts bulb development.

-
- *When you get your onion transplants, try to get them into the ground as quickly as possible. If you can't plant them yet, spread them out in a cool, dry area. Once planted, they shoot new roots almost immediately.*
-
- When planting sets, push the flatter side down into damp soil just until the pointed part of the top is showing, about 4 to 5 inches (10 to 13 centimeters) apart. Plant as soon as the ground can be worked, and try to make sure the temperature doesn't fall below 20 degrees F (-7 degrees C). Rows can be planted as close as 12 inches (30 cm) apart or as far apart as 18 inches (46 cm). Again, **planting too deep** keeps onions from forming large bulbs.

Always water immediately after planting, and keep them relatively damp as harvest time gets closer. In between, do careful **weeding** so that foreign plants that are stronger don't choke out what you're trying to grow, especially when plants are young. It may be extremely tempting to put dirt on top of forming onion bulbs, but don't. When you see onion bulbs that appear to be lying there lifeless, remember that their roots are still underground getting the nutrients they need.

The Right Onion Varieties for Your Location

There are a number of onion types that come in white, yellow and red. Size-wise, they can range from tiny pickling onions to large Spanish cultivars. They can be shaped like a globe, a top or a spindle. It's said that the sweetest varieties are flatter, or rather like an oval with the stem on top. Onions can also be categorized based on the length of day required for them to form bulbs:



Long-day onions - These form bulbs with 14 to 16 hours of daylight, usually in zone 6 and colder regions of the north, and are planted in late winter and early spring.



Intermediate-day onions - They form bulbs with 12 to 14 hours of sunlight and grow best in zones 5 and 6. They're also planted in the fall where winters are mild and early spring in northern regions.



Short-day onions - Ideal for zone 7 or warmer, these form bulbs within 10 or 12 hours of daylight, require mild winters and when planted in the fall, mature in late spring. In the north, bulbs are smaller.

Flavor and pungency are often what determine the type of onion to look for. Sweet, white onions are long-day varieties while strong-flavored yellow onions fall into the intermediate or short-day categories.



Harvesting Onions

If you plant the seeds close together, you can be harvesting and eating scallions for salads or even crunchy snacking within eight to 10 weeks. If your goal is to grow your onions as large as possible, they should be planted 2 to 3 inches (5 to 8 cm) apart. Pulling every other one works well; you get scallions sooner and larger onions later.

You'll know bulb onions are ready when their tops fall over. It's a natural indication that they're fully mature.

Pull them up, allow them to dry separately, clip the roots and cut all but about an inch off the tops. Keep them cool and dry for storage. More pungent onions store longer; sweeter onions need to be used up sooner.

You can also cut the tops of chives in season to encourage production, and dig up portion of the roots to keep indoors for winter harvest. If you want to use them for later, chop then freeze them, and they'll be almost as good as fresh.





HOW-TO-GROW
VEGETABLES
(Legumes)



How to Grow Green Beans

Best time to plant:  Spring

Harvest: 50 to 60 days after planting

Green beans (*Phaseolus vulgaris*) are easy to grow and can yield a large harvest from a limited space. They come in varieties that may need support (pole beans), or may grow on their own without support (bush beans).

Although growing green beans in your own vegetable garden may seem challenging, as long as you provide some of the basic requirements, you'll be reaping a bountiful reward whether your beans are planted indoors or out.

Health Benefits of Green Beans

Green beans are a rich source of manganese, folate, and vitamins A, C and K, as well as fiber, which helps regulate your digestive process. The combination of these nutrients makes green beans helpful in reducing your risk of heart disease and colon cancer, and boosting the immune system, which helps reduce your risk of colds.

These nutrients also contribute to better bone and eye health, and assist in controlling diabetes. Folate present in green beans is important during pregnancy as it helps lower the risk of birth defects and is needed for the healthy growth and development of the infant.



Growing Green Beans

Green beans are **annual** plants so you'll be planting new green beans each year. The plants enjoy a slightly acidic pH, near 6.0 to 6.2, and moderately rich soil. Prepare your soil before planting green beans seeds by adding organic compost. The seeds may be sown directly outside after the danger of frost is gone.

Plant the seeds about an inch deep, or about 2.5 centimeters (cm), and water immediately. Keep the soil moist by watering regularly. The most important factor for a good harvest is ensuring the soil is warm, as cool, damp soil will rot the plants.



VEGETABLES / LEGUMES / GREEN BEANS

Sow the seeds for pole beans close together and then thin to about 6 to 10 inches (15 to 25 cm) apart after germination. Bush beans may be thinned to 3 to 6 inches (8 to 15 cm) apart after germination. Both may be started indoors before the last frost; transplant 3-inch seedlings to your garden or container after the threat of frost has passed.

If you choose container gardening, the green beans will need at least an 8-inch (20 cm) pot. However, for best results, the container should be 12 inches (30 cm) or larger. The larger the container, the less they will need to be watered. However, the container should have good drainage soil and about an inch of gravel at the bottom to encourage drainage and reduce the potential for root rot.

Green beans enjoy full sun, so whether in the garden or in a container, they should be placed where they'll receive at least eight hours of direct sunlight each day. Bush beans planted in containers need more space around them than pole varieties for airflow and to reduce the potential for fungal growth.

On the other hand, pole beans require more vertical space and a stake or trellis to support their growth. Once the seedlings are 3 inches or taller, add mulch around the plants to retain moisture and discourage weeds.

Green beans are **not heavy feeders**. When grown in garden soil an initial addition of compost and a side dressing of organic fertilizer midway through the growing season is usually enough to produce a hearty harvest of beans. In containers, the vegetables may benefit from monthly organic fertilizer.



Green beans have **determinate** and **indeterminate** varieties. These are botanical terms identifying basic growth patterns. Pay close attention to the type of seeds you plant as it affects the type of pruning you may consider.

As shared by the Daily Garden, **indeterminate plants** (like pole beans) may be pruned of unwanted shoots, which then directs nutrients to the area of the plant you'd like it to go. On the other hand, **determinate plants** (such as bush beans) will perform better if they're not pruned excessively.



FUN FACT

There are approximately 150 varieties of green beans, with different shapes, colors and even names depending upon the geographical region, such as fine beans, snap beans, string beans or French beans.

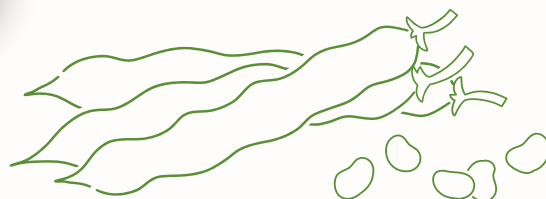
Growing Green Beans Indoors

When growing green beans indoors, the seeds may be planted any time of the year. However, remember that the plants continue to have certain environmental requirements, such as plenty of sunlight. Alternatively, consider using **grow lights** if you don't have a window receiving at least six hours of direct sunlight each day.

The plants are warm weather plants and enjoy a spot where the temperature will be at least **50 degrees F and up to 85 degrees F** (10 to 29 degrees C). However, excessive heat and humidity may trigger a variety of problems. Since they are an annual plant, you'll get the same number of harvests grown indoors as you would outside.

Fill your containers with the **same type of soil** as you would have used outdoors – enriched with compost, well-draining, with a pH of 6 to 6.2. **Avoid using soil rich in nitrogen.** When the seedlings begin to appear and are 3 inches tall, add mulch to retain moisture.

As with outdoor containers, a light feeding of organic fertilizer once a month may help your harvest. Whether grown indoors or out, most varieties will be fully grown and ready to begin harvesting within 50 to 60 days.



Harvesting Green Beans

Harvesting is an ongoing adventure in your garden and the more you pick, the more beans the plant will likely set. Most varieties are ready for harvest between **50 and 60 days**. Your green bean pods may be ready to harvest once they reach a length of 4 to 7 inches (10 to 18 cm) in diameter and are a little fatter than a pencil. Some gardeners prefer determining the time of harvest based on the texture of the green bean and not the size. They should be firm, crisp and show no visible signs of bulging in the bean.

Take care not to damage the plant as you're harvesting. Use two hands to pick them and keep from ripping the vine as you use a twist and snap motion to remove the bean. Once harvested, your green beans may be stored on the kitchen counter with the stems on. Once you remove the stems, they must be moved to the refrigerator. The stems usually snap easily and you may also be able to remove any fibrous strip running along the length of the pod at the same time.

Your green beans may also be stored in the freezer for up to a year. Prior to freezing, add them to boiling water for two minutes and then directly into an ice bath. This **blanching process** helps the beans retain their bright green color.

How to Grow Snow Peas

Best time to plant:  Early spring

Harvest: 60 to 70 days after planting



Snow peas (*Pisum sativum var. saccharatum*) are delicious in all kinds of stir-fries with other vegetables, a tasty addition to salads and a crunchy snack all on their own. You can buy snow peas in the refrigerated case of many grocery stores or at farmers markets, but imagine heading out onto your own patio garden or backyard plot to pick handfuls of super-fresh snow peas you planted yourself.

Snow peas are a favorite veggie for many gardeners to grow, not just for the fresh flavor and crunchy texture but because they're an early crop. They can tolerate cold weather, down to temperatures as low as **35 to 40 degrees F** (about 2 to 4 degrees C). Hence, the reference to snow in the name. You can plant the seeds directly into your garden in the earliest spring plantings.

DID YOU KNOW?

Snow peas are so hardy they can even handle a little frost after they've started sprouting.

Health Benefits of Snow Peas

Peas contain fiber and many valuable nutrients, including vitamins A and C, iron, potassium, folic acid, iron, magnesium and a small amount of healthy fats. Additionally, Organic Facts notes:

“There are a number of impressive health benefits of snow peas, including weight loss, cancer prevention, improved heart health, reduced constipation, stronger bones, optimized immunity and lower levels of inflammation, among other (benefits).”

Keep in mind, though, that snow peas contain lectins, which are carbohydrate-binding proteins that act as the plant's self-defense mechanism. Unfortunately, some lectins can be harmful to people who eat them in large amounts. In small amounts, lectins can provide such health benefits as immunity and inflammation modulation.

Certain lectins trigger inflammation and may increase your blood viscosity by binding to red blood cells, making them sticky, which can result in abnormal clotting. Lectins can interfere with gene expression and disrupt endocrine function, as well as promote leptin resistance and, in turn, increase your obesity risk. To reduce the lectin content of snow peas, soak them in water for several hours before cooking and cook on high heat for at least 15 minutes.

Growing Snow Peas

Peas, whatever the variety, are easy to grow, needing little beyond soil made up of an even mix of sand and clay and some mulch as a built-in food. The seeds are basically large, dried peas which are planted to a depth of about twice their diameter. According to Go Locavore:



“Push them into the ground to about 8 millimeters, cover them up, water them and while they're coming up as baby shoots ... I kept an eye on them, kept them watered and kept training them up the trellis. As they get taller and taller, you just want to make sure that the peas keep holding onto the trellis ... eventually they'll latch on.”

The cold weather tolerance of peas also means that the further south gardeners live in the U.S., the sooner they can plant snow pea seeds in the garden, and the sooner they can begin harvesting them. But the cold tolerance on one end of the weather spectrum is just the opposite when the temperature begins soaring upward.

Snow peas stop producing once daytime temperatures begin to exceed 75 degrees F (23 degrees C), so if you live in warmer climates, go with a faster-maturing variety like **'Dwarf White Sugar'** or **'Short N' Sweet'**. If you live in an area of the U.S. that tends toward dampness and cool temperatures much of the year, you may find that disease-resistant varieties, such as the OSP II, are the way to go when choosing snow pea seeds.

How to Increase Snow Pea Yields

When it comes to carrying more crunchy snow peas from your garden for dinner, you can “latch on” to certain tried-and-true methods proven by veteran gardeners. Here are three great ideas:

Spacing

Depending on the brand of the snow pea seeds you purchase for planting, you may find the recommendation for spacing to be 2 inches (5 centimeters) apart in single rows, but according to Oklahoma State University horticulturist and professor Brian Kahn, placing the seeds 4 inches (10 cm) apart in double rows can increase your yield by as much as 23% by gram weight, as it did in comparison test plantings.

Seed inoculation

In some soils, a naturally occurring bacteria stimulates the formation of nodes on the snow pea plant's roots that make it easier to extract nitrogen from the air. This means the plant virtually feeds itself in a phenomenon called “nitrogen fixing.” One simple way to do it is to shake the seeds in a plastic bag containing the powdered inoculant, which you can order from seed catalogs and pick up at garden centers.

Trellising

Snow peas are very lightweight, so a long length of string or twine running between frames of bamboo poles or sticks allows you to pack a lot of peas in a small amount of space. Once the plants are tall enough to reach the bottoms of the frame, gently lift the twining tendrils onto them to allow them to latch on.

When you grow double rows of snow peas, you can just set up one trellis between the rows, but another perk to trellising is that, rather than lying on the ground to become a snack for every passing slug and snail, the peas are much safer and more unavailable to critters.



Harvesting Snow Peas

Promptly picking your snow peas is one of the most basic ways to increase your yield simply because allowing the pods to languish for too long on the vine renders them slightly tough rather than tender and crisp. Another reason is a simple rule of the garden: **The more you pick, the more the plant can produce.**

Planting them in early spring will ensure germination even when the air temperature dips as low as 40 degrees Fahrenheit (4 degrees C), although their favorite sprouting temperature is somewhere between 50 and 60 degrees F (10 to 16 degrees C).

If you find yourself with a surplus of snow peas, you can store them in the freezer. Still Tasty says you can spread the raw pea pods flat on baking sheets, place them in the freezer and once they've frozen, quickly transfer them to resealable freezer bags or shallow airtight containers. Frozen snow peas keep for 10 or 12 months, and maybe longer.



HOW-TO-GROW VEGETABLES

(Fungi)



How to Grow Mushrooms

Best time to plant: 🌸 Early spring

Harvest: Before the veil tears and releases spores

Mushrooms (*Agaricus bisporus*) contain some of the most potent natural medicines on the planet. However, it's important to make sure your mushrooms have been **organically grown**, as they absorb and concentrate whatever they grow in, for better or worse. This is what gives mushrooms their potency. Mushrooms are known to concentrate heavy metals, as well as air and water pollutants, so healthy growing conditions is a critical factor.

Unfortunately, most conventional mushroom producers use pesticides. The ability to control your growing conditions is just one reason to consider cultivating your own mushrooms. While the growing of mushrooms is a bit different from growing other fruits and vegetables, just about anyone can do it.



FUN FACT

There are 140,000 species of mushroom-forming fungi, 3,000 of which are edible.

Health Benefits of Mushrooms

Aside from being excellent sources of antioxidative polyphenols, mushrooms contain antioxidants that are unique to them. One such antioxidant is **ergothioneine**, which scientists are now beginning to recognize as a master antioxidant. Although all mushrooms contain ergothioneine, those containing the highest amounts are shiitake, oyster, maitake and king oyster.

A study in the journal Nature discusses the importance of ergothioneine, describing it as "**an unusual sulfur-containing derivative of the amino acid histidine**," which appears to have a very specific role in protecting your DNA from oxidative damage. In 2013, FASEB Journal published nine studies on mushrooms, detailing a wide variety of health benefits, including:



Improved weight management - One study found substituting red meat with white button mushrooms enhanced weight loss and resulted in improvements in body composition, such as reduced waist circumference.



Increased vitamin D levels through diet - Consuming dried white button mushroom extract was found to be as effective as taking supplemental vitamin D2 or D3 for increasing vitamin D levels.



Improved immune function - Long-chain polysaccharides, particularly alpha- and beta-glucan molecules, are primarily responsible for the mushrooms' beneficial effect on your immune system. In one study, adding one or two servings of dried shiitake mushrooms was found to have a beneficial, modulating effect on immune system function. Another study done on mice found white button mushrooms enhanced the adaptive immunity response to salmonella.

Growing Mushrooms

To grow mushrooms, you'll need a few tools and supplies you may not already have, even if you're a seasoned gardener. These include:

1. Mushroom spores, available as plug spawn and sawdust spawn. The latter is a ball mycelium grown in moist sawdust. Plug spawn is mycelium that has grown into small pieces (plugs) of hardwood. Mycelium is the fungal equivalent of the root system of a plant, which you need to get the mushrooms started. While plug spawn is easier to use, requires no special tools and is less prone to drying out, sawdust spawn is less expensive and grows faster.

2. A spawn inoculation tool, if using sawdust spawn



3. Thermometer

4. Wax dauber

7. Fresh hardwood logs

Oak and maple are preferable, and the thicker the bark the better. For shiitake, red oak and white oak are preferable. Each log should be 3 to 4 feet (1 to 1.2 meters) long and about 3 to 8 inches (8 to 20 centimeters) in diameter.

6. Small melting pot

5. Cheese wax or beeswax

Most mushroom supply companies will sell everything you need, including logs. If you use your own logs, make sure they're fresh and moist. You don't want to use logs that have started to dry out. Make sure the bark is intact all the way around, to prevent unwanted fungi to contaminate your spawn.

Also check them to make sure there aren't any other organisms growing on them. Mother Earth News recommends cutting your logs about two weeks before you intend to inoculate them, to allow them to age but not dry out. Ideally, start inoculating your logs in early spring.

Basic Mushroom Growing Instructions

The logs will serve as host for your little mushroom farm. Once you have your supplies, drill 5/16-sized holes in the logs. Each hole should be about 1 inch (2.5 cm) deep, spaced 6 inches (15 cm) apart. Stagger the rows to create a **diamond pattern** around the entire perimeter of the log.

Next, fill each hole with your chosen mushroom spawn. Be sure to fill the holes as quickly as

possible once you've drilled them, to avoid contaminants. Melt the cheese wax or beeswax in an old pot to about **450 degrees F** (232 degrees C), and using a wax dauber, seal each hole to prevent bacteria from entering. This wax plug will also **seal in moisture**, allowing the mushroom to thrive. If the wax is too cool, you won't get a good seal, so get it as hot as possible without actually burning.





Once that's done, soak the logs with a garden hose and stack them in neat rows in a shaded area. Make sure the inoculated logs are lifted off the ground and protected from both wind and sun. Contrary to other plants, mushrooms thrive in shaded, damp areas.

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In order for your mushrooms to survive, you'll need to make sure the logs are kept damp at all times. If they dry out, your mushrooms will die.

If you want, you can cover the logs with a **fruiting blanket**, which will help keep the moisture level high and protect them from the elements.



Harvesting Mushrooms

Growing mushrooms will require some patience. Once inoculated, your logs will need to be kept in this moist, dark state for anywhere from **six to 18 months**, depending on the variety of mushroom you're growing and general environmental conditions.

As a general rule, a 3-foot (1 meter) log will produce up to 4 pounds (about 2 kilograms) of mushrooms, spread out over 12 crops or "flushes" per year. On average, each flush will produce between one-quarter to one-third of a pound of mushrooms, and a well-cared for mushroom log can continue fruiting for **two to eight years**.

Shiitake, which will typically fruit in about six months, can be forced to fruit earlier by submerging the logs in cool water for 24 hours, and then placing them in upright stacks to increase air circulation. Once the mushrooms have fruited, you can start harvesting them. You'll need to check their progress every day, as the mushrooms will mature to full size over the course of several days. If you're growing shiitake, you can start harvesting once the caps are 70% to 90% opened.

To harvest, either cut the stem or grab the mushroom by its stem and twist it off. Store your mushrooms in a well-ventilated container, such as a **brown paper bag** (leave the top open), or a **damp cloth bag**, in your refrigerator.

Avoid storing them in plastic bags or close-lidded containers, as the lack of air circulation will speed deterioration.





Gardening is one of life's simple pleasures.

Even if you don't have a green thumb,

digging in the dirt, planting and nurturing

plant life fills a void in many people's lives.

Some call it *spiritual* while others describe it

as *therapeutic* or *stress relieving*.



HOW-TO-GROW FRUITS (Berries)



How to Grow Avocado

Best time to plant: 🌸 Early spring to 🌻 early summer (March through June) | Harvest: September



Avocados (*Persea americana*) are one of the healthiest foods you can eat every day. Depending on where you buy, they can get pricy sometimes, but you can pick them up when on sale. But if you have a big enough garden, why not grow your own avocados? Done right, a small investment can give you an endless supply of avocados in the foreseeable future.

Health Benefits of Avocado

Avocados have many valuable antioxidants known to have powerful anti-cancer activity. They also contain:

Potassium About 2.5 avocados provide the daily recommended amount of about 4,700 milligrams (mg) of potassium a day. Potassium is a mineral and an electrolyte that conducts electricity in your body that plays an important role in **heart function, skeletal health, blood glucose control** and **muscular function**.

Importantly, consuming enough potassium-rich foods helps offset the hypertensive effects of sodium. Imbalance in your sodium-potassium ratio not only can lead to hypertension (high blood pressure) but may also contribute to heart disease and stroke.

Magnesium An average avocado contains about 40 mg of magnesium, which is about 10% of the recommended daily

intake. Magnesium is an essential mineral used as a cofactor for hundreds of enzymes.

Vitamins C and E Vitamins C and E are important antioxidants on their own, but put them together, the way they are in avocado, and the real magic happens. As reported in Critical Reviews in Food, Science and Nutrition,

"Avocados are one of the few foods that contain significant levels of both vitamins C and E."

Fiber Avocados are surprisingly high in fiber, with about 4.6 grams in half an avocado. Fiber plays an important role in your digestive health, and may **improve blood sugar control, weight management** and more. In fact, their fiber content appears to be one of the reasons why avocados are so good for weight management and blood sugar support.

According to research published in Nutrition Journal, eating just one-half of a fresh



FUN FACT

To preserve the area with the greatest concentration of antioxidants, peel the avocado with your hands, as you would a banana.

avocado with lunch may satiate you if you're overweight, which will help prevent unnecessary snacking later.

Low risk of chemical contamination

Avocados are rated as **one of the safest commercial crops** in terms of pesticide application, according to research conducted by the Environmental Working Group. Hence, there's no real need to spend extra money on organic avocados.

Growing Avocados

Avocado trees grow well in USDA zones 9b through 11. Your best bet, if you want to produce fruit, is to buy a grafted tree. Since avocado trees are shallow-rooted, their feeder roots being only about 6 inches below ground, make sure your soil is well aerated. Plant in spring once there's no longer any risk of frost and the soil has warmed.

Avoid planting your tree near lawn or other plantings that might compete for nitrogen uptake. Ideally, your soil should have a pH of 7 or below. If your soil is more alkaline, amend with organic matter before planting. **Sphagnum moss** is an ideal amendment. To lower soil pH by 1 unit, add 2.5 pounds of peat



moss per square yard of soil. Alkaline soils will also need some chelated iron. You can tell **your tree is deficient in iron** if new leaves have green veins and start to yellow around the edges.

Select a sunny spot, and as with other plantings, dig a hole as deep as the root ball and about 50% wider. Fill in with soil and add mulch to lessen water evaporation and weed growth. Using a weed barrier around the base will further minimize weed growth. Keep the mulch at least 6 inches away from the trunk of your tree.

Newly planted trees will need about 2 gallons of water at the time of planting. After that, water two to three times a week until established. The tree will flower in March or April, producing tiny fruit buds shortly thereafter. In the first year, apply fertilizer in March, June and September. **Compost and fish emulsion** are good organic options. You may also add a little **zinc** once a year.

Throughout the growing season, prune off any dead leaves and remove weeds growing near the trunk. **Insecticides are typically not required.** Should you notice insects, snails or slugs, sprinkle **diatomaceous earth** on the soil around the tree. It's a natural repellent against many crawling insects.



Harvesting Avocado

Avocados do not ripen on the tree. **They will only ripen after they're picked.** Refrigerated, they will ripen slowly, whereas left on the counter, they'll ripen and soften in a day or two. In warmer climates, you can leave the fruit on the tree well into December. Simply harvest what you need as you go along, picking the fruit a couple of days before you plan to eat it.

Interestingly, how you peel your fruit can have a bearing on the nutrients you get from it. According to the California Avocado Commission, the dark green flesh closest to the peel contains the greatest concentration of **carotenoids**. Here's how you can extract this portion properly:

1. Cut the avocado lengthwise, around the seed.
2. Holding each half, twist them in the opposite directions to separate them from the seed.
3. Remove the seed.
4. Cut each half, lengthwise.
5. Next, using your thumb and index finger, simply peel the skin off each piece.



FUN FACT

The flesh of an avocado turns brown once it's cut because of an enzyme that oxidizes when exposed to air. One way to prevent a halved avocado from browning is by brushing a thin layer of olive oil onto the top of the exposed avocado flesh.

How to Grow Blackberries

Best time to plant: 🌸 Spring

Harvest: ☀️ Summer

Blackberry (*Rubus*) plants are a member of the Rosaceae family, with over 237 known species worldwide, including dozens native to North America. The plants grow as either **trailing or erect bushes**, and come in **thornless and thorny** varieties. The fruit is generally in season from June until September, depending on the region and the plant grown. However, once picked, they perish within two to four days.

Blackberries grow wild throughout most of Europe and are found wild in the U.S. as well. They can easily be added to your backyard or container garden, as they're low maintenance. The erect varieties take up little space, making them perfect for small yards. Your plants can produce berries for up to 20 years when well cared for.

Health Benefits of Blackberries

Blackberries are richest source of **anthocyanins**, a subclass of flavonoids. Many of the biological effects of flavonoids appear to be related to their ability to modulate cell signaling, exhibiting anti-inflammatory, antidiabetic, anticancer and neuroprotective activities through different mechanisms of action.

There is a growing body of research claiming **berries may be among the most potent cancer-fighting fruits** as they're rich in substances with cancer protective properties such as ellagic acid, lignans, myricetin and cyanidin 3-glucoside. Moreover, anthocyanins



may help counter oxidants, making them efficient at fighting atherosclerosis. In one study, anthocyanins were found to improve cholesterol levels and fight oxidative stress.



Growing Blackberries

Blackberries do well in full sun but can tolerate some shade in warmer climates. Your new plants will do best in soil with good drainage, so avoid heavy clay or sandy areas. Add organic soil matter to improve aeration and mulch around the root areas to preserve moisture. Compost can help amend the soil, which should be between 5.5 and 7 pH for the best results.

Plant them far away from wild berries that may carry viruses, spacing semi-erect plants 5 to 6 feet (1.5 to 1.8 meters) apart and erect plants 3 feet (about 1 meter) apart. Plants started in a nursery can be transplanted during late fall in warmer climates, but should be delayed until early spring in cooler areas.

Blackberries will not produce fruits in the first year, but they still require a side dressing of fertilizer and consistent water. When fruiting, they require plenty of watering — at least 1 inch of water each week, whether from your hose or rain.

Blackberries need pruning to remove the old canes and let new ones take their place. They should also be topped to allow the plant to bush and produce more fruit. Erect plants produce canes from the crown and benefit from summer

FUN FACT

Blackberries are **not technically** a berry but rather an aggregate of individual drupes held by fine hairs.

pruning when they are about 4 feet (1.2 meter) tall. They may need to be pruned several times to avoid the cane from tipping.

The plants can also be tied to a trellis to keep them upright. If you have trailing blackberries, no pruning is necessary to prepare for the winter months. Just add some mulch for winter protection. Erect blackberries can be cut off just above the ground in late winter for the best fruit the next summer.

Once the berries start to ripen, they must be picked daily as the fruit matures to a deep black color. The berries will not continue to ripen after being picked. Harvest during the cooler part of the day and **refrigerate the berries as soon as possible**. Not fully ripe berries will taste sour and have less than half the anthocyanin found in ripe berries.



Tame the Wild Blackberry

Blackberries can become invasive when left alone. If you have wild blackberries, there are a few simple steps you can take to produce more berries that are easier to pick, while keeping the bushes contained and reducing the potential for snakes during the summer months.

Your best wild berries will grow away from the roadside, away from contaminants and pollutants. Before attacking your wild berry bushes, get dressed in thick pants, jacket and heavy gloves unlikely to be ripped by sharp thorns. Use pruning shears or loppers to prune back the tips of young canes in upright varieties to 3 to 4 feet (1 to 1.2 meters).

You will recognize **young canes as they may be green or reddish brown**, while **older canes are a dark woody brown**. Side dress your blackberries with balanced organic fertilizer over the roots and then blanket the ground with at least 6 inches of organic mulch. You'll also want to mulch the path you use when you harvest your crop.

Control the spread of the plants in the early spring by severing sprouts that come out of your established perimeter. Be sure you also eliminate weeds and mulch over the area. The canes typically die after two years. It's a good idea to prune them out to ground level to lower the risk of your blackberries acquiring disease and to make picking easier the following year.



Harvesting Blackberries

Some of the cultivated blackberry varieties produce larger fruit and may be cold-hardy, potentially adding two months to the harvest season in hardiness zones 6 to 9, or make harvesting blackberries possible where they are normally damaged by cold winter weather. Cultivated varieties may also be thornless, making it a lot safer to work with the plant and harvest fruits. Extended harvesting, longer growing season and thornless varieties make cultivated plants more enticing if you are adding blackberries to your garden.



How to Grow Blueberries

Best time to plant: 🍁 Fall or 🌸 spring | Harvest: ☀️ Summer



Blueberries (*Vaccinium sect. Cyanococcus*) are among my favorite foods, not only for their delicious taste, but also for their tremendous antioxidant and anti-inflammatory properties. They're a delicious treat particularly when plucked from a bush in your own backyard.

Health Benefits of Blueberries

Blueberries are an excellent source of vitamins C, B6 and K, manganese and fiber. They also contain vitamins B1 (thiamin), B2 (riboflavin) and E, as well as calcium, magnesium, phosphorus and potassium. The phytonutrients in blueberries also pack tremendous antioxidant power, which helps your body keep free radicals in check and fight inflammation. They're among the best dietary sources of bioactive compounds, such as anthocyanins, flavonols, ellagic acid and resveratrol. Studies indicate blueberries helps reduce your risk of:

- ✔️ **Cancer** — Blueberries have been shown to help reduce the risk for breast cancer, colon cancer, esophageal cancer and cancers of the small intestine, most likely due to their antioxidant and anti-inflammatory properties.
- ✔️ **Eye problems** — The antioxidants in blueberries are also known to help reduce the risk for age-related eye problems and vision loss, including cataracts, dryness, infections, macular degeneration and myopia.
- ✔️ **High blood sugar** — Studies show that consumption of specific whole fruits, such as blueberries, is significantly associated with a lower risk of Type 2 diabetes.
- ✔️ **Urinary tract infections** — Blueberries contain an antioxidant called epicatechin that inhibits the growth of bacteria in the lining of your bladder.
- ✔️ **Heart disease** — Anthocyanin helps reduce inflammation, enhance capillary strength, and inhibit platelet formation and plaque buildup in the arteries. It also increases nitric oxide levels, which in turn helps your blood vessels maintain their elasticity and dilates your blood vessels.
- ✔️ **Excessive aging** — Blueberries antioxidative properties may help reduce signs of aging, such as age spots, hair loss and wrinkles.

Growing Blueberries

Blueberries thrive in sandy loam, but will suffer in water-soaked or compacted soil such as clay. They need a well-drained soil to thrive, so choose a location with good water runoff and avoid swampy

areas. Planting your blueberries in an open area with full sun helps maximize production. If the offseason months are cold in your area, your blueberry bushes will benefit from a hedge for wind protection.

Since blueberries need **very acidic soil** (around or slightly below pH of 5.0), you'll need to know if your existing soil can support the plants, so contact your local cooperative extension office or order a soil test kit off the internet. If you need to lower the pH level, you need to **add sulfur** according to the needs of your soil.

DID YOU KNOW?

Birds love blueberries! Protect the fruits from these creatures by covering your bushes with a light netting a few weeks before they ripen.

The amount of sulfur to use depends on the results of the soil test. When blueberries are indicated, the testing service should be able to tell you the proper amount of sulfur to use. Use a 1-to-1 mix of soil from the planting bed (only after you've properly acidified it) and compost or peat moss.

How to Plant Them in the Ground

Blueberry bushes will produce bigger fruit, and more of it, when planted with at least one other variety. Planting bushes with varying maturity dates also allows you to extend your harvest, giving you a steady supply of berries throughout the entire growing season. You'll want to plant more than one type of these major varieties for cross-pollination:

- ✓ **Highbush** (*Vaccinium corymbosum*)
- ✓ **Lowbush** (*Vaccinium angustifolium*)
- ✓ **Half-high**
- ✓ **Rabbiteye** (*Vaccinium virgatum* or *Vaccinium ashei*)

Whether you are planting bare-root or young container-grown plants, keep in mind they will need time to grow roots before the hot weather comes. **Follow these steps as you begin the planting process:**

1. Set your plants about 5 to 6 feet (1.5 to 1.8 meters) apart.
2. If you are planting a large number of bushes at once, maintain row spacing of about 8 feet (2.4 meters).
3. Dig a hole large enough to allow you to set each bush slightly lower in the ground than they stood in their nursery row or pot; some recommend a hole about 2 feet, or 60 centimeters (cm), deep and 6 feet (1.8 meter) wide.
4. Mix in a 1-1 ratio of compost or wet peat moss to the ground soil prior to placing it around the bush.
5. Break up the root ball and lightly separate the roots prior to placing each bush into its hole.
6. Fill in around the plant with your soil blend, packing it down firmly around each plant; leave a slight depression around each plant so it can collect and retain water.
7. Give each plant a thorough watering; after the water soaks in, water generously a second time.
8. Layer on about 3 inches (7.62 cm) of organic mulch to keep the roots cool, aid in moisture retention and inhibit weed growth; never use sawdust from chemically treated wood.
9. Cut back to ground level all but the two most vigorous upright shoots.

Growing in Containers

Controlling the acidity of the soil is a lot easier when you grow your blueberries in a pot or container than in your garden or yard. Here's what you need to know to be successful with container-grown blueberries:

- ✔ **Use a large pot** — Start with a pot at least 18 inches deep. Because you'll be planting more than one plant for cross-pollination, you will need at least two to three large pots.
- ✔ **Choose a potting soil designed for acid-loving plants** — Buy a potting mix designed for acid-loving plants at your local garden store or nursery. You can also make your own blend at home by following the same instructions given earlier for in-ground plantings.
- ✔ **Protect them in winter** — Overwinter your blueberry containers against a building or fence to shield them from the wind. You can also mulch your plants with straw or wrap them in burlap. Water your blueberries a few times during the winter to ensure they do not completely dry out.



Pruning Your Blueberry Bushes

The best time to prune is at the end of the growing cycle, when plants have lost their leaves but before new flower buds begin to open. Below are some tips:

- ✔ Blueberries will **not need to be pruned** for the first three years.
- ✔ During the first year or two, **rub off the fruit buds** to enable the bush to mature and become well established prior to fruit bearing.
- ✔ In later years, **prune your bushes annually** in late winter to get rid of any old wood — this will help stimulate the growth of young, fruitful branches.
- ✔ Prune any **crowded, diseased or unproductive stems** annually.
- ✔ Make your pruning cuts **close to the ground**, and **cut at an angle** to encourage water runoff and disease prevention.



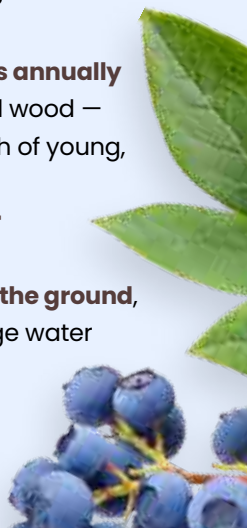
Harvesting Blueberries

Here's everything you need to know about harvesting blueberries:

- ✔ Blueberries reach their full flavor and aroma a few days **after they turn blue**
- ✔ Pick blueberries **at least twice a week** when they ripen
- ✔ **Berries that fall off in your hand** with a slight movement of the branches are the truly ripe ones
- ✔ **Blueberries eaten immediately after picking** are at their nutritional peak

Because the nutritional value diminishes with freezing, grow multiple varieties to extend your growing season so you can eat at least 1 cup a day fresh from the bush.

Store your unwashed blueberries in storage containers in the refrigerator, where they will keep for a week or more. Wash them before eating. You can freeze washed blueberries by spreading them out on a baking sheet and placing it into the freezer for a couple of hours. When the berries are individually frozen, place them in plastic bags and return them to the freezer where they will last throughout the winter season.



How to Grow Pomegranate

Best time to plant:  Spring

Harvest: August to December

Pomegranate (*Punica granatum*) has long been revered as a symbol of strength, abundance, hope, joy and fertility. Both the Talmud and Bible praise it, and it features heavily in mythologies from various regions, including Egypt, Greece and China. Bodhidharma, founder of Zen Buddhism, and Muhammad, founder of Islam, also venerated the fruit.

According to FoodReference.com, Muhammad “considered the pomegranate to be a precious fruit filled with nutrition, bringing both emotional and physical peace.” Today, we know pomegranates are indeed a rich source of health-promoting antioxidants.

Health Benefits of Pomegranate

According to a 2008 study, which compared the potency of 10 different polyphenol-rich beverages, pomegranate juice scored top billing as the healthiest. Overall, its antioxidant potency was found to be “at least 20% greater” than any of the other beverages.

Pomegranates also contain compounds that stimulate mitophagy. **Mitophagy** is the process of cleaning out your mitochondria, allowing them to function at their best, which is crucial for normal cellular functioning and homeostasis, and thus for health and longevity.

FUN FACT

The origin of pomegranate’s name is derived from the Latin words “pomum granatum,” which means apple of many grains or seeds.





Growing Pomegranate

Being drought-tolerant and self-pollinating, pomegranate is easy to grow either in a large pot (kept indoors or out) or permanently planted in your garden. While you could start it from seed, to ensure good fruit, it's best to start it from a cutting. While the plant typically grows into a bushy shrub if left to its own devices, you can train it into a small tree by some strategic pruning.



For container gardens, GardeningKnowHow.com recommends using a 10-gallon pot for your tree. Fill the container a quarter of the way full with potting soil. Wash off the top 1 inch of soil from the root ball to encourage the roots to establish, then place it into the center of the pot and fill with soil around the root ball. Keep your tree in a location that gets at least six hours of full sun and move it indoors if temperatures drop below 40 degrees F (4.4 degrees C).

If you're in climate zones 7b through 12, you can plant your pomegranate directly in your garden. Choose a **sunny location with plenty of space to grow**. A full-grown pomegranate shrub or tree may need upward of 20 feet diameter space. If you don't have that kind of space, keep it contained through pruning.

If you're planning on using it as a hedge, allow about 10 feet of space between each plant. Yet another alternative is to grow it as an espalier along a wall or fence. For tips on how to properly prune your pomegranate, based on the shape you're looking for, see this article from the Grow Organic.

Pomegranate prefers **loamy soil with good drainage**, but can adapt to most soil types. Water liberally once a week during the summer. Once established, you may only need to water once every three or four weeks.

During the first two years, fertilize with an organic balanced (10-10-10) fruit tree fertilizer in November, February and May, keeping the fertilizer a few inches away from the trunk. In the third year, you can cut feeding down to twice a year.



Pruning Pomegranate

GardeningKnowHow.com recommends pruning crossed branches once the tree is a year old, and cutting off shoots, leaving just three to five shoots per branch. If training it into a tree, leave five or six main scaffolding branches and cut the rest.

Dead wood is best pruned off during the winter. Should an unexpected frost damage or kill your pomegranate, consider leaving it for a while. Oftentimes, it will grow new suckers that can replace the dead trunk. Grow Organic also recommends:

“When doing maintenance pruning as the tree grows, prune lightly, and never trim all the branches in the same year. Pomegranates fruit on short new shoots that come from wood that is more than one year old, so pruning all new growth back at once can result in nothing to harvest the following seasons. You should also prune back any new suckers that you don’t want to grow into trunks.”



Harvesting Pomegranate

Pomegranates are in season from **August to December**, hence its moniker, “the jewel of autumn.” While most pomegranate trees will start bearing fruit as early as the second year, it may take five or six years before you start getting substantial harvests. In the beginning, many or most of the fruits may simply fall off before reaching maturity. You can tell the fruit is ripe by its heft and sound. According to the Pomegranate Council:

“A good, ripe pomegranate should feel heavy, as if it’s very full of juice (which it is!), and the skin should be firm and taut. The skin color varies from medium red to deep red with a fresh leather-like appearance. Surface abrasions do not affect the quality of the fruit.”

A mature fruit will also have a metallic sound when tapped. Fruit left to overripen on the tree will eventually split open. Excess water may also cause them to split. Split fruit are still edible, but cannot be stored whole for any length of time. To harvest, avoid ripping the fruit off the branch. Use pruning shears or scissors instead.



How to Grow Raspberries

Best time to plant: ☀️ Cool summers and ❄️ mild winters

Harvest: 🌸 Late spring to 🌞 mid-summer



Best tasting straight from the bush, **raspberries** are perfect for your home garden and a tasty addition to a salad or as a snack. Growing your own will ensure you enjoy berries not sprayed with pesticides and insecticides. Although red raspberries are the most common, you have a choice of several varieties. They come in different colors, which ripen at different times of the year, allowing you to spread out your harvest.

DID YOU KNOW?

Raspberries may be small, but they pack a nutritional punch. They're rich in antioxidants that may support optimal health.

Health Benefits of Raspberries

Raspberries are high in vitamin C, quercetin and gallic acid. The high antioxidant value is thought to contribute to their ability to fight heart disease, circulatory disease, age-related decline and cancer. Raspberry oil has a sun-protective factor and may protect against wrinkles.

Also high in **ellagic acid**, a chemoprotective agent with anti-inflammatory properties, raspberries may efficiently help stop damage to cell membranes. In combination with other flavonoid molecules found in raspberries, this unique blend of antioxidants also has some antimicrobial properties.



The high nutrient value of the berries is proficient in helping reinforce your immune system to fight against disease. When grown in fertile soil, they are an excellent source of **manganese and vitamin C** helping to protect against oxygen-related damage. The flavonoids and antioxidants in raspberries have demonstrated some memory improvement in animal studies and may protect against cognitive decline. The fiber and water content in the berries may also help lower the risk of constipation.

Growing Raspberries

Prior to planting, identify the variety best suited for your region. Most varieties love cool summers and mild winters, but several have adapted to hot, sunny climates. If you are growing your raspberries in a warmer climate, be sure they get afternoon shade. In cooler climates, they will grow best in full sun.

The bushes should be planted in well-draining soil, as standing water can rot the roots in a matter of days. If your yard does not have good drainage, consider installing raised beds and drainage pipes, or planting in containers. Growing in a container takes no more work than planting in the ground as the raspberries can be placed on a sunny patio and moved to the shade in the afternoon.

Use **a container at least 24 inches (60 centimeters) in diameter** to allow the plants to flourish. This also helps with cold hardiness. The pot should be filled with a soil-based compost and the plants well-watered when they are added to the pot. As with plants in the ground, never allow the soil to completely dry out.

The plants do best in soil with a **pH between 5.8 and 6.2**. Raise the pH level by amending it with lime, based on the results of a soil analysis. Your local university extension office is often able to provide this service. Raspberry plants can live up to 15 years or more, so early preparation of the bed will help ensure long plant life.

Although the root system of the plant may not be deep, **dig to a depth of at least 12 inches (30 cm)** to loosen soil and remove rocks, ensuring good drainage, a critical element of the success of your plants.



Add too much water and the root system will rot, but too little water and your plants won't produce fruit. Especially while fruiting, the plants require from **1 to 2 inches of water every week**. If the soil is always slightly moist to the touch, but not soggy, the plant is likely getting enough water. Overhead watering may help spread disease. Instead, use a **drip system or soaker hoses** to provide your raspberry bushes with enough moisture for a good harvest.

Raspberry Care and Pruning

Dormant canes can be set out four to six weeks before the last frost in your area, while plants grown in containers should be planted after the danger of frost has passed. The plants should be set in the ground 1 inch deeper than they grew in the nursery containers. Before planting in the ground, dig out all weeds and amend the soil with mature compost or other high-quality organic matter.

Work this into the soil, ideally at least two weeks before you plant your raspberry bushes. This is also a good time to use a light application of **lime or wood ash** to raise the soil pH, if testing indicated it was needed. Place each plant 2 feet apart in the row, and each row at least 8 feet apart, to allow the plants to grow while still giving you room to walk in-between without being scratched by thorns.

The plants will send out shoots. Any coming up 12 inches from the base of the cane into the path between rows should be trimmed away as this significantly reduces the width of the walking area. Once planted, it's time to give them 1 to 2 inches of water. Ensure the **root ball**

is not exposed as this will quickly dehydrate the plant. A thick layer of natural mulch will help improve drainage, retain moisture and reduce weeds.

All summer-bearing varieties should have weak canes removed at the ground level in early spring. Leave 10 to 12 of the healthiest canes and tip prune any suffering cold damage. Fall-bearing varieties can be pruned to produce one or two crops.

To get two crops, prune the plants as if they are summer-bearing; after the fall harvest, prune them to the ground. If you want one crop, there's no need to prune in the summer, but cut all canes to the ground in the spring.

When the cane finishes producing fruit, it will naturally die. Remove the old canes by clipping them at the ground and pulling them from the top to encourage good air circulation in the plants and sun penetration to the leaves. This small step also helps reduce potential for disease.



Harvesting Raspberry

Raspberries are ripe for the picking when they show good color and come off the stem easily. **It's best to harvest daily** as the sun can scald ripe berries and prolonged rains can rot them. Place your berries in shallow containers, stacking no more than three berries deep and refrigerate immediately. Harvesting the leaves for tea should be done in **midmorning**, before the plant blooms and just after dew evaporates. This is when the essential oils and flavor in the leaves are at their peak.

Wash and clean with cool water only just before preparing to eat or getting them ready to freeze. You can enjoy your raspberries through the winter months by freezing them on a shallow pan covered with wax paper. Once individually frozen for about an hour, transfer them to freezer-safe containers and use throughout the winter.

How to Grow Strawberries

Best time to plant: Between late April and the end of May

Harvest: June

A culinary favorite and summer staple among people of all ages, **strawberries** (*Fragaria × ananassa*) are best grown at home, seeing how commercial strawberries are heavily contaminated with pesticides and the fact that there's no guarantee that organic strawberries are truly organic when bought at the grocery store. Growing them at home will help you avoid toxic pesticides and other chemical exposures.

Health Benefits of Strawberries

Strawberries, a symbol of love, have a lot to offer those passionate about their health. High in immune-boosting nutrients such as vitamin C, anthocyanins, ellagitannins, flavonols, terpenoids, phenolic and ellagic acids, strawberries help fight infections. They're also packed with manganese and folate, potassium with its co-factoring enzyme, superoxide dismutase and minerals like copper for the healthy development of red blood cells.

Growing Strawberries

Strawberries are easy to grow either in a garden bed, or in pots as small as 10 inches in diameter. Hanging planters provide the added advantage of keeping slugs and other critters away from the precious berries. When using a planter, make sure the pot drains well. Loam potting mix is recommended to ensure good drainage, and Day neutrals tend to be the best for container growing.

DID YOU KNOW?

Strawberries can be grown in containers or in your garden bed, and can produce for up to five years if well-tended!

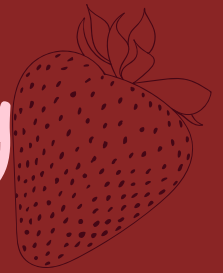


General Planting Guide: Matted Rows System

There are two different ways to plant strawberries in your garden: **matted rows and hills**. Regardless of the method you choose, amend the soil before you start by working 1 to 2 inches of compost into the soil. June bearing plants, with their profusion of runners, work best in matted rows, which is done as follows:

- ✔ **Create several 2-foot rows.** Place two plants in each row, spaced about 18 inches apart. Space rows at least 4 feet apart.
- ✔ **Apply a balanced organic fertilizer** (10-10-10) at the time of planting, and again after renovation (see below). Avoid adding fertilizer late in the season so as not to promote new growth that will be prone to frost damage.
- ✔ **Mulch between plants** to cool the soil, promote water retention and deter weed growth. Mulching will also prevent the berries from rotting when they touch the ground.
- ✔ Be sure to **give the plants 1 to 2 inches of water per week.**
- ✔ During the first year, **remove all flowers on June bearing varieties** to encourage vigorous growth and runners. While this means you will not get a harvest the first year, you'll get greater yield in the years to come.
- ✔ As the runners appear, **train them so that they start filling in the row**, making sure to space them about 6 to 9 inches apart. To do this, simply press the runner into the soil and either cover with a small amount of soil or a small rock to keep the runner in place until the roots form. Do not cut the runners from the mother plant. Eventually, all of these runners will form a mat that covers each row.
- ✔ In cooler climates, **add several inches of mulch** over the plants during winter if temperatures drop below 20 degrees F to protect the crowns. Straw is ideal.
- ✔ To ensure vigorous production for up to five years, **renovate the bed annually.** After you've harvested all the berries, cut the plants down to a height of about 3 inches and add a balanced organic fertilizer.

Strawberry Selections



The three basic varieties of strawberry plants you can choose from are:

June bearings



- **Allstar** (*late season and resistant to red stele and verticillium wilt*)
- **Annapolis** (*mid-season; resistant to red stele; grows well in mid-Atlantic area*)
- **Cornwallis** (*mid-season, resistant to red stele*)
- **Cavendish** (*mid-season, resistant to red stele and verticillium wilt*)
- **Northeast** (*early season with some resistance to red stele and verticillium wilt*)

Everbearings

- **Fort Laramie** and **Quinault**

Day neutrals

- **Seascape** (*continental U.S.*)
- **Selva** (*California and Florida*)
- **Tribute and Tristar** (*both suitable for cooler climates*)

As a general rule, strawberry plants need between eight and 10 hours of sunlight during the day and well-draining soil with a pH between 5.8 and 6.2. In cooler climates, strawberries are best planted in early spring, while fall plantings are better in warmer areas like California and Florida.

If you're rotating crops, which is a core strategy in organic gardening, avoid planting your strawberries in an area where you've previously grown raspberries, tomatoes, potatoes, peppers, eggplant — or previous batches of strawberries. This will cut down the risk of verticillium wilt.

Till the area between the rows. Narrow each row to 18 inches by removing the older plants growing on one side of the row. Thin plants in the remaining row so they're spaced about 6 to 9 inches apart.

By training the plant runners along one side, you can alternate the row sides during renovation, leaving the youngest plants to continue growing each year.

General Planting Guide: Hill System

The hill system is **best for Everbearing and Day neutral varieties** as they do not send out a lot of runners. Here's how:

1. Create a raised bed about 8 inches high and 2 feet wide. Staggering the plants, place them in double rows, spaced about 1 foot apart.
2. Apply a balanced organic fertilizer (10-10-10) at the time of planting, and again during the second harvest. Avoid adding fertilizer late in the season so as not to promote new growth that will be prone to frost damage.
3. Be sure to give the plants 1 to 2 inches of water per week.
4. Mulch between plants to cool the soil, promote water retention and deter weed growth. Mulching will also prevent the berries from rotting when they touch the ground.
5. Remove all runners and flowers that appear before July 1 in the first year.
6. While both Everbearing and Day neutral will produce berries for several years, plants should be replaced once their vigor slows — typically after three years or so.
7. In cooler climates, add several inches of mulch over the plants during winter if temperatures drop below 20 degrees F to protect the crowns. Straw is ideal.



Harvesting Strawberry

June bearings produce a single large spring crop per year. Most will bear fruit in early summer, around June, although there are also mid- and late season varieties. To extend the time of your harvest, plant a couple of each. Everbearings produce up to three harvests per year during spring, summer and fall, while Day neutrals produce smaller quantities of fruit throughout the growing season. The size of Day neutral berries is also smaller than the June bearing varieties.





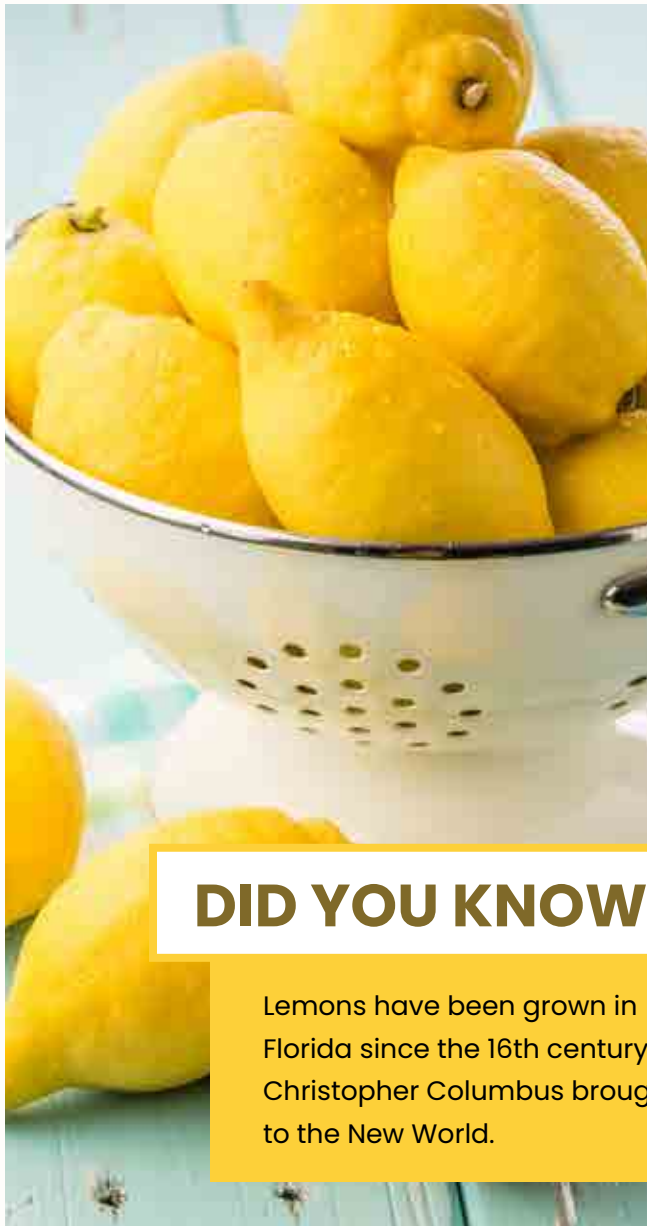
HOW-TO-GROW FRUITS (Citruses)



How to Grow Lemons

Best time to plant: 🌱 Early spring

Harvest: 🍂 Late fall to 🌱 early spring



Lemons (*Citrus x limon*) are rich in vitamin C your body uses to build collagen, protect against cancer and relieve symptoms of asthma. While usually grown outdoors in tropical climates, as you discover the benefits you may want to grow your own to enjoy the fresh-picked-off-the-tree goodness grown at home without pesticides and other chemicals.

Health Benefits of Lemons

Lemon juice has a protective effect on your liver, particularly on alcohol-induced liver injury in mice and may help support your gallbladder function and reduce the appearance of some types of gallstones. The phytochemicals and polyphenols may aid in digestion, metabolism and insulin sensitivity.

DID YOU KNOW?

Lemons have been grown in Florida since the 16th century, when Christopher Columbus brought them to the New World.

Rutin is a bioflavonoid, originally named vitamin P in the 1940s. While not a vitamin, it is found in lemons and helps vitamin C work more efficiently. One of the key benefits is to strengthen the lining of your blood vessels and reduce bleeding, helping to treat hemorrhoids and reduce the potential for stroke.

A study found those who consumed lemons on a daily basis had lower blood pressure than those who didn't. The risk of developing asthma also appears to be lower in people who eat a higher amount of nutrients, including vitamin C. Another study found vitamin C helps those diagnosed with asthma and bronchial type hypersensitivity when they were infected with the common cold virus.

Pairing foods high in vitamin C with **iron-rich foods** maximizes the body's ability to absorb iron. Foods high in vitamin C may help strengthen your immune system, and in one animal study, those who received lemon phenols with a high-fat diet for 12 weeks did not gain as much weight as those who did not receive the lemon peel phenols.

Lemons are also known as an **anionic food**, meaning they have a higher number of negative ions than positive ions. These types of foods mirror other bodily fluids, such as stomach acid, saliva and bile, and as such mimic the work of your digestive fluids.

Growing Lemons

Meyer lemons (*Citrus x meyeri*) are the easiest variety to grow, and are prized for a sweet flavor and don't carry the citrus virus decimating groves of citrus trees in Florida. The Meyer lemon tree grows in a natural shrub-like shape, but can be pruned into a tree form. When planted outside, they may grow up to 10 feet tall and 12 feet wide.

With proper care, a grafted Meyer lemon tree often produces fruit in as little as two years. The fruit is thin-skinned and grows readily under the right conditions. Since it is **self-pollinating**, you only need one tree in order to get fruit. Pot your lemon tree in a mixture of 1/3 peat moss, 1/3 potting soil and 1/3 perlite to fill the pot. Add the tree to the center of the pot and slowly add water, pulling the tree up slightly to remove air pockets.

For a 2- to 3-year-old tree, you'll want to use a 12- to 15-inch-tall, 5-gallon pot. Improved Meyer lemon dwarf trees like full sun and a large pot with good drainage. Place your tree near a south-facing window. If your tree won't get eight to 12 hours of light, add grow lights to make up for the time.

Your lemon tree will thrive in temperatures between **50 and 80 degrees F** (10 and 26 degrees C), but can survive to **32 degrees F** (0 degrees C). The trees also do not do well in strong wind when placed outside, or without sufficient sunlight.

Your tree will appreciate being outdoors during your summer months. The best time to move it is when the temperature outside is the same as it is indoors. Place the tree in the shade for the first two weeks outside to help it acclimate to outdoor weather.

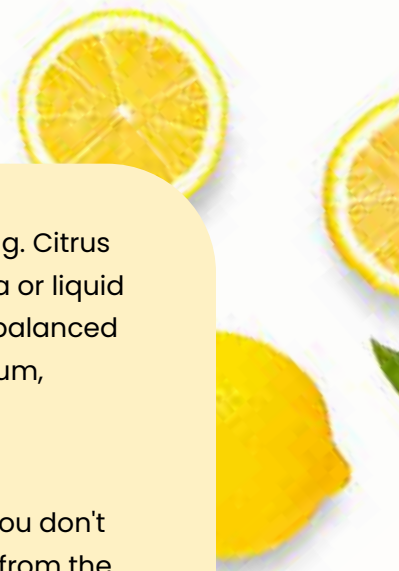


It's important to rotate your tree a quarter turn every week to ensure the entire tree receives enough light.

Food and Water Requirements

It is important to consistently water your tree, keeping the soil damp, although the tree doesn't like too much water as it will kill it. Every two weeks spray the foliage with clean water and every 1.5 to two years repot the tree to avoid the tree from getting root bound in the pot.





The growing season is spring to fall, during which your tree will require feeding. Citrus trees respond well to **foliar feeding with liquid fertilizer**, such as compost tea or liquid kelp of fish emulsion. All citrus plants benefit from a slightly nitrogen-rich or balanced fertilizer that include micronutrients specific to citrus trees, such as magnesium, manganese, iron, copper, zinc and boron.

Your citrus trees like to have somewhat acidic soil, so acidic fertilizer may be beneficial, but not required. Grass trimmings from your yard — as long as you don't use pesticides — may add nitrogen to your trees. Scrape away the mulch from the base and sprinkle clippings to the soil. Add compost at least 2 inches (5 centimeters) away from the tree and sprinkle bone meal to add phosphorus.

Once fertilizer is added, water the tree to prevent burn that may happen when added to dry soil. It's important to withhold fertilizer during the winter months to slow the growth of the tree. Lemon trees live in containers nearly as long as they do in the ground, which can be close to 50 years.



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Pruning Reduces Fungal Growth

The best time to prune your tree is **after the fall harvest** to give the tree time to recover prior to the next season's harvest. In a warmer climate you'll want to wait until the temperature drops in February through April. When pruning, use sharp, clean shears since as the wood is strong, the bark is thin and easily damaged.

Don't cut a branch flush with the trunk or larger branches as the goal is to preserve the branch collar — the area around the base of the link that may appear wrinkled or ridged. Cells in this area of the tree activate the formation of callus tissue, or wound wood. Don't prune more than one-third of the tree in a year and keep it under 10 feet to make it easier to harvest from and care for.

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Harvesting Lemons

Your tree needs to be pollinated in order to produce fruit. If your tree is outdoors while blooming, bees in your area will likely take care of this process for you. If your plant is blooming indoors you'll want to pollinate the blooms yourself by using a cotton swab to transfer pollen from one blossom to another.

If your tree is indoors year-round, it may take up to one year for the fruit to ripen. Citrus fruit only continues to ripen while still on the tree, so be sure to wait until the fruit is ripened until you pick it. When Meyer lemons are ripe they are **egg yolk yellow** and **slightly soft** to the touch. Most Meyer trees bloom and produce fruit twice yearly starting age 3 to 5 years.

You may prevent damage to the tree by harvesting the fruit with a knife or scissors. Pulling the fruit may pull more bark than you intend and open the tree up to infection.



HOW-TO-GROW FRUITS (Drupe)



How to Grow Cherries

Best time to plant: 🌸 Early spring or 🍁 late fall

Harvest: 🌸 Mid spring to ☀️ early summer

Cherries (*Prunus avium*) are a favorite summer treat with numerous valuable health benefits thanks to their antioxidants and powerful anti-inflammatory compounds. If the steep price and limited availability of commercial cherries leaves you wanting each season, consider growing your own. You'll find everything you need to get you started here.

Conventional cherries can be divided into two primary categories: **sweet** and **tart** (sour). A third option is the **Duke cherry**, which is a hybrid mix of both sweet and tart. Sweet varieties are typically eaten fresh, while tart cherries develop a fuller flavor when used in cooking, which is why they're often used in baked desserts. Both kinds can be grown in your home garden, depending on your hardiness zone.

Health Benefits of Cherries

Tart cherries contain two powerful compounds, **anthocyanins** and **bioflavonoids**, which help relieve arthritis and gout. Sweet cherries such as Bing are also useful against gout, as they lower both uric acid and C-reactive protein levels. In one study, gout patients who ate a one-half cup serving of cherries per day for two days had a 35% lower risk of a subsequent gout attack. Those who ate more cherries, up to three servings in two days, halved their risk.

Tart cherries may also be useful for general muscle soreness. A study involving long-distance runners found that tart cherry juice significantly reduced post-exertion pain. Other research has confirmed tart cherry juice is a valuable endurance sports drink.



Thanks to their high vitamin C content, both sweet and tart cherries may help stave off exercise-induced asthma, the symptoms of which include cough, wheezing and shortness of breath when exercising. A meta-analysis from Finland found vitamin C may reduce bronchoconstriction caused by exercise by nearly 50%.

Meanwhile, sweet cherries are a great source of **potassium**, which is important for maintaining normal blood pressure. It plays an important role in your fluid balance and helps offset the hypertensive effects of sodium. Sweet cherries also contain a number of antioxidants and plant compounds with medicinal benefits, including:

Beta-carotene Converts into vitamin A (retinol), important for healthy vision.

Anthocyanins Sweet cherries contain anthocyanins that may support health in numerous ways. In one study, anthocyanins have been shown to help modulate gut microbiota, as well as lowering the risk of oxidative-stress related diseases.

Vitamin C The “grandfather” of the traditional antioxidants, the health benefits of which have been clearly established. It’s a powerful antioxidant that helps neutralize cell-damaging free radicals.

Quercetin The most potent in terms of antioxidant activity and has been shown to be an effective in modulating inflammation.



**SWEET
CHERRIES**



**TART
CHERRIES**

DID YOU KNOW?

Some sweet cherry cultivars, such as Stella, Black Gold and North Star, are self-pollinating.

Growing Cherry Trees

Tart cherry trees

are self-pollinating, grow to about 20 feet in height and begin to bear fruit at an earlier age than sweet cherry. They can be grown in USDA plant hardiness zones 4 to 6, and require about 1,000 chill hours below 45 degrees Fahrenheit (7.2 Celsius) during winter months. They tend to grow better in moderately heavy soil, and should be spaced about 20 to 25 feet apart for optimal growth.



Sweet cherry

is suitable for USDA zones 5 through 9, and need about 150 to 300 chill hours during winter months. Sweet cherry trees can grow up to 35 feet, unless you buy a dwarf variety. The type of soil you have in your yard can help guide your choice. If you have heavy soil, Mazzard sweet cherry is a good choice, whereas Mahaleb sweet cherry grows better in lighter soils. Damil is a dwarf variety of sweet cherry that can tolerate wetter, heavier soils.

Excessive dryness will cause the fruit to shrivel, while water logging will cause the fruit to crack and split. Certain cultivars are better suited for wet conditions, so look for a cultivar that resists cracking if you live in an area prone to heavy rains in the summer.



Keep these basic considerations in mind when growing cherry trees

- ✓ **Ideal soil conditions** - Maintain the garden bed free of weeds and keep the soil loose.
- ✓ **Light requirements** - All cherry varieties need a minimum of six hours of full sun. Eight to 10 hours of full sun is better.
- ✓ **Fertilizer recommendations** - Fertilize your tree three times a year: in early spring, when the tree starts to set flowers, and again in the fall. Worm castings and compost tea are ideal for early spring and flowering in the first year. In the fall, use a phosphorus-rich fertilizer to encourage root growth that will get the tree ready for dormancy.
- ✓ **Water needs** - After planting your tree, give it 1 gallon of water per day for the first three weeks. For the next two weeks, cut back to 1 gallon every two days. Make sure it gets about 1 gallon of water per week. You can gauge the tree's water needs by keeping a close eye on the cherries as they begin to ripen.



Growing Cherry From Seed

If you have the patience, you can grow your cherry tree from seed. To do this, simply collect the pits from the cherries you eat — ideally bought from a local grower to make sure they're suitable for growing in your area. Commercial cherries also produce less reliable results due to the way they've been transported and stored.

Soak the pits in a bowl of warm water for five minutes, then lightly scrub off any remaining fruit flesh. Let the pits dry on a paper towel in a warm area for three to five days, then place them in a tight-lidded container and refrigerate for 10 weeks. The refrigeration mimics the winter chill period required to trigger germination.

Before planting, allow the seeds to thaw to room temperature. Place two to three seeds in a small pot and water them into the soil. Keep the soil moist until the seeds

begin to sprout. Once the seedlings reach a height of about 2 inches, remove the weakest plants so that only one plant per pot remains.

Continue keeping the seedling in a sunny window until the last frost has passed, at which point you can transplant it into your garden. If planting multiple trees, space them at least 20 feet apart. Add mulch to encourage water retention and slow down weed growth.



Harvesting Cherries

Cherry trees will grow about 1 foot per year, provided they get sufficient amounts of nutrients. They'll start producing fruit in two to four years and can produce anywhere from 150 to 300 pounds of cherries per tree per year once fully mature.

To keep birds from flying away with your harvest, cover the tree with netting as the fruit starts to form. **Planting mulberry trees nearby** can also help lure birds away from your cherry trees, but won't prevent them from eating your cherries.

How to Grow Figs

Best time to plant: ❄️ Late winter or 🌸 spring

Harvest: 🌸 Late spring to ☀️ early summer, or 🍁 fall

There's something about **figs** (*Ficus carica*) that make them feel rich and decadent. The fruit has deep colors, a distinctive shape and a gentle scent. Throughout history, the fig tree has also become a symbol of peace and prosperity. It has a shallow but spreading root system that can penetrate up to 20 feet in permeable soil. The spreading branches and large leaves offer ample shade.

Figs have been used to sweeten desserts and appear in popular holiday dishes. The fruit has multiple seeds, soft skin and may be eaten ripe or dried.

Health Benefits of Figs

While dried figs are nearly always available, the unique taste and texture of fresh figs is an experience you won't soon forget. One medium-sized fig is approximately 37 calories and provides 1.5 grams of fiber, in addition to vitamin B6, copper, pantothenic acid and folate.

Figs are a good source of **potassium**, which your body uses to control blood pressure and balance the sodium potassium ratio. As you might expect, the nutritional value increases by weight as the fruit is dried. For instance, 100 grams provide 35 milligrams of calcium when fresh but 162 milligrams of calcium when dry.

Since the food is **high in fiber**, it may act as a natural laxative. High-fiber foods provide a feeling of fullness and the fiber in figs acts as a natural prebiotic to support pre-existing beneficial bacteria in the gut.



DID YOU KNOW?

Figs can bear fruit without fertilization and are well-loved by gardeners.



Fig leaves may be as important nutritionally as the fruit itself as they have unique health benefits, including an ability to regulate blood sugar. In one study, patients given a decoction of fig leaves for one month were able to lower their average insulin dose by 12%.

An animal study evaluating hypertriglyceridemia in rats used an administration of fig leaf decoction. While total cholesterol levels were unaffected, the fig decoction had a clear positive effect on lipid molecule breakdown.

Another animal study evaluated the effects of figs, dates and pomegranates on neuroinflammation. They found daily administration of a supplement containing these three fruits decreased inflammatory cytokines and delayed formation of senile plaques. The researchers concluded the fruit mediated the reduction of cytokines and may be one mechanism that can help protect against neurodegenerative diseases.

✓ Potassium

✓ Fiber

✓ Vitamin B6

✓ Folate



Growing Figs

Although they have an exotic appearance and sweet rich flavor, figs are easy to grow. In colder climate zones below hardiness zone 6, they may be successfully grown in containers and sheltered during the winter months. In hardiness zones 6 and above, the trees may be planted directly in the ground and grown as large trees.

Figs will appreciate a sheltered area on the south or southwest side of your house. If they're grown in containers, you may shelter them on a covered porch or in the garage during the winter. Figs purchased from a nursery should be planted 1 or 2 inches (2 to 5 centimeters) lower than they were growing in the original pot.

This helps protect their shallow root system and reduces the risk of harming the plant. Propagating fig trees are also done by taking an 8- to 10-inch (20 to 25 cm) wood cutting in the early spring. Place this in a pot of good soil several inches below the surface, with one or two buds above the dirt line.

Keep the soil moist but well-drained. The tree will root in the pot and should remain in the container for at least one season before transplanting into the ground. **Fig trees are dormant in the springtime**, which is when they should be transplanted into the ground.



Figs Do Not Usually Require Pruning

The trees are fairly **drought-tolerant**, but you'll want to water them if the ground gets too dry. Most of the time, the trees do not require fertilization, but a side dressing of well-balanced organic fertilizer or compost in the spring may help jump-start leaf development. However, too much fertilizer encourages more leaves and less fruit.

When grown in the ground, you may wish to train it against the wall or fence. This makes it easier to harvest the fruit and when grown against the home, will protect the branches from the elements. If grown in a **container**, the plant should **not be pruned** during the first year.

During the second year, cut each branch by **about half** to keep the plant manageable in the pot. Ensure any cuts made are above a node in order to encourage the plant's lateral growth and greater fruit production. You may also want to remove an ill-placed branch and any dead wood.



Harvesting Figs

Under the right conditions, some species produce two crops in one year. The first ripens in late May or early June and the second is ready in late September to early November. The first crop is often a smaller harvest and the second season of fruit has thicker skins but a greater concentration of sweetness.

The fruit will be ready to harvest when the narrow area where the fruit connects to the plant begins to shrivel and the fruit begins to droop. The fruit will be soft to the touch and the skin may begin to split. Most varieties of fig will darken just before it's time to harvest.

If you pick the fruit and find a **milky liquid substance** draining from the stem, the fruit has not quite ripened. Wait a couple of days before trying to harvest again. Be aware, this milky substance **may irritate your skin**, so it is helpful to wear gloves while harvesting.

Once off the plant, figs do not continue to ripen. They also have a short shelf life and will last in the refrigerator for only **two to three days**. Many find drying figs helps extend their life and

makes them tasty. Before drying, the figs should be washed thoroughly and dried with a towel.

You may cut them in half or leave them whole on a wire rack across a baking sheet in a 140 degrees F (60 degrees C) oven for eight to 24 hours. You know they're done when the outside becomes leathery and you don't see any juices on the inside. However, they should still be slightly pliable. Dried fruit will last in the freezer in an airtight container for **18 to 24 months**.



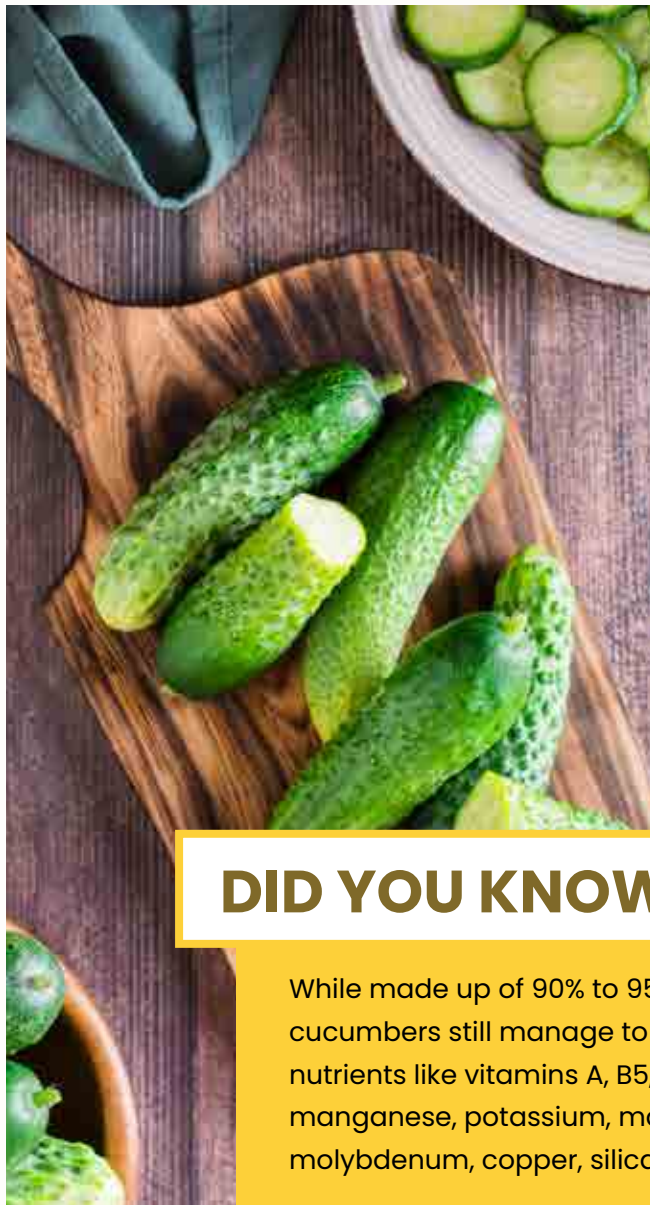
HOW-TO-GROW FRUITS (Marrow)



How to Grow Cucumbers

Best time to plant: 🌱 Late spring

Harvest: ☀️ Late summer to 🍁 early fall



Cucumbers (*Cucumis sativus*) are one of my most highly recommended vegetables. If you have a garden, you can easily grow cucumbers at home. Aside from being able to control pesticide and fertilizer use, you'll also avoid the wax applied to many commercially sold cucumbers.

Health Benefits of Cucumbers

Cucumbers exhibit **antioxidant** and **anti-inflammatory** properties, and contain **lignans** that bind with estrogen-related bacteria in the digestive tract, contributing to a reduced risk of several cancers, including breast, uterus, ovarian and prostate cancer. Another notable cancer-fighting phytonutrient in cucumber are **cucurbitacins**, which are also what gives cucumbers a bitter taste.

In traditional medicine, cucumbers are used to treat headaches. The seeds are diuretic, and the juice — thanks to caffeic acid and vitamin C — can be used as an acne treatment and a soothing remedy for tired, puffy eyes.

DID YOU KNOW?

While made up of 90% to 95% water, cucumbers still manage to provide nutrients like vitamins A, B5, C and K, manganese, potassium, magnesium, molybdenum, copper, silica and fiber.

🥄 Growing Cucumbers

Cucumbers generally need quite a bit of garden space, as they grow on **trailing vines**. However, there are also bushy varieties that only need minor staking, making them suitable for container gardens. One example is the Arkansas Little Leaf, which can produce fruit without pollination, making it an ideal choice for apartment dwellers and small container gardens.

To optimize your container-grown cucumber, plant it in equal parts of potting soil, compost, perlite and peat moss, and use a container that is at least 12 inches, or 30 centimeters (cm), in diameter

and 8 inches (20 cm) deep. The plants also need five to nine hours of full sun. The greater the sun exposure, the more productive the plant will be. An east-west directed trellis will optimize light exposure. That said, if temperatures are consistently in the mid-90s, provide the plants with filtered afternoon shade to avoid overheating.

Depending on the variety, your cucumbers will be ready for harvest in **50 to 105 days**. For earlier harvest, start the plants indoors, using a grow light, approximately four weeks before your last spring frost date. They're fast growers, though, so most gardeners will simply plant from seed directly in the garden.

For a late summer/early fall harvest, sow a second batch four to five weeks after the first. Cucumber plants are **highly vulnerable to frost**, so avoid planting seeds or seedlings in your garden until all danger of frost have passed, and the average soil temperature is at least 50 degrees F (10 degrees C).

Directions for Garden Planting

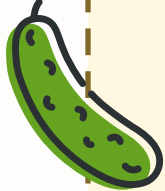
1. Plant seeds in rows, about one-half inch to 1 inch (about 1.25 to 2.5 cm) deep, anywhere from 1 to 6 inches (about 2.5 to 15 cm) apart. The plant will grow best in loose, well-draining soil. Mix in ample amounts of compost to encourage growth. Ideal pH is between 6 and 7.
2. Ideally, water heavily in the morning and allow it to lightly dry out to a depth of about 3 inches (around 8 cm) before soaking it again. This will help prevent stem rot and powdery mildew, as the plant has a shallow root system.

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Allowing the plant to dry out too much can make the fruit bitter, however. A layer of mulch will help maintain the moisture balance. Adequate moisture is particularly important during flowering and fruiting. Sandier soils will require more frequent watering.

3. Once the plants are about 4 inches tall, thin the rows so the plants are spaced about 12 to 24 inches apart, depending on the variety.
4. Four weeks after planting, side-dress with compost, aged manure or 1 tablespoon of 10-7-7 organic fertilizer. A 7-5-5 or 6-3-3 balance can also be used, just make sure it has a slightly higher nitrogen ratio to stimulate leaf growth and fruiting.

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That said, excessive nitrogen (and/or low boron or inadequate pollination) will result in cucumbers with hollow centers — a sign of excessively rapid growth, preventing the fruit from forming properly.

5. As the plant grows, train it upward on your trellis. Alternatively, grow them in a large pot, whiskey barrel or raised bed, where it can sprawl over the sides. Growing them vertically will produce straighter fruit, however, and protect the fruit from pests and rot.





Pest and Disease Prevention

The **striped cucumber beetle**, easily identified by its bright yellow body with black spots (resembling an elongated yellow lady bug), can be quite destructive, munching through the plant and spreading plant diseases such as **mosaic virus** and **bacterial wilt**, the latter of which causes the plant to wilt and die.

One of the most effective ways to control the cucumber beetle is to disrupt its lifecycle by covering young plants with **row covers** and rotating your crop each season. Keep the row covers on until the plant starts to flower. At that point, you want beneficial pollinators to have access to the plant.

A natural insecticide that can be used to ward off the cucumber beetle is **kaolin clay**. It needs to be applied preventatively, as it acts as a repellent. Common plant diseases include alternaria leaf blight, angular leaf spot and bacterial leaf spot – all of which can be reduced or prevented by selecting a disease-resistant variety.

Stem rot and powdery mildew can be prevented by following the watering schedule suggested in the top bullet above. Blossom end rot is discouraged by avoiding excessive drying of the soil between watering.

Misshapen fruit is often the result of **inadequate pollination**. Flowering plants such as lavender, thyme and dandelion will attract pollinators such as bees and butterflies into your garden. If you notice a lack of pollinators, you may need to hand pollinate your cucumbers to ensure a successful crop.



Harvesting Cucumbers

The cucumbers are ready for harvest when they're about **1 to 1.5 inches** (2.5 to 4 cm) in diameter, firm with round edges and a bright medium to dark green. Yellow, puffy, wrinkled or mushy water-logged fruits should be discarded. **Yellowing fruit** is a sign of over ripeness, the color resulting from a drop in chlorophyll – unless you're growing a yellow-fleshed cultivar like the Lemon cucumber.

The more frequently you pick the fruit, the more productive the plant will be, so harvest a few every couple of days. Harvesting in the morning will ensure maximum crispness. If you prefer less seedy cucumbers, pick them while they're on the skinnier side. The seeds will develop the



longer the fruit remains on the vine. With size, the cucumber will also develop bitterness.

To maintain their freshness longer, store your cucumbers at room temperature or in the refrigerator. Half-used cucumbers can be refrigerated in a sealed container to prevent them from drying out. Avoid storing cucumbers near bananas, melons and tomatoes, as these produce **ethylene**, a plant hormone that initiates the ripening process. For optimal quality, use up fresh cucumbers within two days.

How to Grow Squash

Best time to plant: 🌸 Early spring to ☀️ mid-summer | **Harvest:** ☀️ Summer to 🍁 fall

Squash (*Curcubita*) is a flowering plant in the gourd family. The seeds, blossoms and fruit may all be cooked and eaten. They're often categorized as either **summer** or **winter squash**, depending upon the length of time they may be stored, and not their growing season, as both are warm weather crops. **Summer squash** include zucchini, yellow crookneck squash and pattypan, while common **winter squash** includes butternut squash, acorn squash, spaghetti squash and giant pumpkins.

Health Benefits of Squash

Squash have a very rich nutritional profile containing a variety of nutrients, vitamins and minerals responsible for providing an impressive number of health benefits, including:

- ✓ Vitamin A
- ✓ Vitamin C
- ✓ Vitamin E
- ✓ Vitamin B6
- ✓ Niacin
- ✓ Pantothenic acid
- ✓ Folate
- ✓ Thiamin
- ✓ Potassium
- ✓ Magnesium
- ✓ Manganese
- ✓ Copper
- ✓ Phosphorus
- ✓ Calcium
- ✓ Iron
- ✓ Carotenoids

DID YOU KNOW?

Squash's rich orange color is a hint to the high amount of beta-carotene it contains.



The nutrients found in squash contribute their health benefits, such as helping to:

Improve eye health Vitamin A is an essential nutrient responsible for protecting your eyes from cellular damage.

Aid in wound healing and skin health High levels of vitamin C are important for collagen production, vital in wound healing and skin repair. Moreover, according to the Journal of Investigative Dermatology, vitamin A may help inhibit skin damage caused by ultraviolet light (photoaging).

Fight free radicals As a good source of antioxidants like beta-carotene and vitamin C, squash may protect you from oxidative stress and damage.

Prevent infection The seeds have antimicrobial and antifungal activity in the body.

Build strong bones A total of 33 milligrams of calcium are found in a cup of acorn squash, which may help build strong bones.

Protect heart health Magnesium and potassium in squash form an effective line of defense against cardiovascular disease, including helping to regulate blood pressure.

Protect digestive health A single-cup serving of acorn squash contains 1.5 grams of dietary fiber. This can help promote digestive health and regular waste elimination by adding bulk to your stools.

Regulate metabolism Squash is a good source of B vitamins essential in metabolic activity. Certain types of squash also contain high amounts of pectin, a dietary fiber helpful in regulating blood sugar.

Reduce inflammation Studies using squash have found a link to reducing gastric and duodenal ulcers, and to general anti-inflammatory effects in the cardiovascular system.



Growing Squash

Summer squash grow in a low bushy formation and work well in containers or in the ground, while **winter squash** grow along vines, working best when planted directly in the ground. If you live in an area with a short growing season, you can start the seeds indoors approximately two to three weeks before the date of your last frost.

Indoors, plants can be started in deep flats or large cell six-packs. Keep the seeds in a warm area until germination, usually occurring five to 10 days after planting. Don't allow the soil to dry out, but also avoid excessive watering as squash seeds will rot in cool wet soil.

Prepare garden soil to a depth of about 20 inches, or around 50 centimeters (cm). In the early spring or late fall, consider adding



FRUITS / MARROW / SQUASH

about 2 inches (5 cm) of composted manure, mixing it thoroughly with the soil. At the same time, you may also add organic fertilizers and soil amendments as the plants are heavy feeders. The soil pH should also be adjusted as squash grows best in a **pH of 6.1 to 6.5**, or a **slightly acidic soil**.

If you have started your plants indoors, don't use those that have already begun flowering, as they will not develop well and will reduce your yield. The best time to plant seedlings in the garden is after they've developed the first set of true leaves, but before the second set have appeared.

Take care not to disturb the roots as this increases the length of time it takes the plant to become established.

When planting directly in the ground, sow the seeds 1 inch (2.5 cm) deep and about 6 inches (15 cm) apart on hills spaced between 3 and 5 feet (1 to 1.5 meters) apart. At each hill, plant between **six and eight seeds**. As the seedlings germinate, remove all but the strongest two to three when the plants are approximately 4 inches (10 cm) tall. This will significantly improve your total yield.

Squash have an **extensive root system** that spreads broadly, but does not go deep. Mulching around your plants is critical, especially in hot climates, to keep the plants from drying out quickly.

If squash are grown in overcrowded conditions, it promotes the development of mildew and other diseases. The plants need plenty of air circulation to reduce fungal growth.



Harvesting Squash

Cut your summer and winter squash at an angle with the open area facing the ground. This helps reduce moisture buildup in the stem left on the plant and the potential for disease. Once harvested, **summer squash** should be used within a couple of days for the best taste, but can last up to a week in the refrigerator.

Winter squash can be stored and used much longer. After fall harvest you can keep the garden-fresh flavor by curing your squash and preparing it for long-term storage. During the curing process, winter squash is stored at a warm temperature with good circulation for approximately 10 to 14 days. This helps remove excess water, slows the fruits respiration rate and helps reduce the chance of rot.

Look for blemishes on the fruit. If the skin is broken or bruised the squash will not store well. Maintain 2- to 3-inch-long (5 to 7 cm) stems for the best results. **Keep your squash dry and don't handle or harvest wet fruit.**

The length of storage for the fruit will vary depending upon the type of squash you harvest. Acorn squash stores well for up to four weeks, spaghetti squash for up to five weeks and butternut squash for up to six months. You'll get the best results when the squash are stored in a cool dry area, between 50 and 55 degrees F (10 to 13 degrees C) with a relative humidity between 60% and 70%.

How to Grow Zucchini

Best time to plant: ☀️ Summer

Harvest: 🍁 Fall



Growing **zucchini** (*Cucurbita pepo*) in your garden is a simple way to enjoy its health benefits, knowing they're free from insecticides and pesticides. Zucchini easily flourishes in the ground or in containers, but requires plenty of water and full sun.

Zucchini is an amazingly prolific producer once the plants are established. The seeds germinate quickly and the plant matures rapidly, so you may even be able to plant seeds in August for a fall harvest. The plants grow as annuals in nearly every climate during the warm months of the year. It takes only one or two plants to produce enough squash for one family.

Health Benefits of Zucchini

There are numerous health benefits of zucchini and an appreciable number of ways to enjoy them in your meals. With only 17 calories per 100 grams, zucchini is high in **fiber**, have **no cholesterol** and are rich in **flavonoids antioxidants**, such as zeaxanthin, beta carotene and lutein. Each nutrient plays a significant role in slowing aging and preventing disease.

The antioxidants in zucchini help protect eye health by fighting free radicals and reducing the risk of developing age-related eye conditions such as glaucoma, macular degeneration and cataracts. You can also consider using zucchini to treat puffy eyes by placing raw slices over your eyelids for 30 minutes.



Growing Zucchini

If garden space is in short supply, consider growing zucchini in containers. You'll want to use a container with a diameter of at least 24 inches, about 60 centimeters (cm), and a depth of 12 inches (30 cm). Look for one with at least one good drainage hole at the bottom. You can even use a large plastic storage container in which you drill drainage holes.



Fill the container with lightweight, well-draining soil, but **avoid regular garden soil** that may contain pests and weed seeds. Zucchini can be planted in the ground or in the pot about two weeks after the last frost in your area. Place two or three seeds at a depth of about 1 inch (2.5 cm), allowing a couple of inches of space between each seed.

Fiber helps improve digestion and reduces the incidence of constipation and other digestive issues. It also helps to feed your beneficial bacteria in your gut. Zucchini is also a great source of **potassium**, a heart-healthy nutrient to help moderate blood pressure on counter the effects of too much sodium.

FUN FACT

Most of the antioxidants and fiber are in the skin of the zucchini, so it's best to keep it on when serving.

Once the seedlings are established, add mulch around the plants to keep the ground temperature stable and retain water. These two simple things will help your zucchini have an earlier and larger crop. Zucchini do well when planted on a **hill or a raised mound**. Plant two to three close together on a mound so the squash flowers are easily pollinated to provide you with plenty of produce.

If you're planting in containers you can move two containers close to each other for pollination. Each flower is open for one day so if it's not pollinated, you won't have zucchini. If you plant zucchini close to each other, you'll have flowers opening on any given day, which improves your chances of pollination and an abundant crop.



You need male and female flowers open at the same time for pollination as **only female flowers** will develop fruit. At first, the new plant will tend to bloom only male flowers. Once the plant really starts growing, flowers of both sexes will appear. Female flowers have tiny fruit directly behind the base of the flower. You can pollinate your own female flowers by removing the male flowers and dusting pollen into the female flowers.

Growing zucchini enjoy at least 2 inches (5 cm) of water a week, so if there isn't enough rainfall you'll need to supplement. If possible, use a **soaker hose** to water the plants below the leaves and reduce the chance for powdery mildew.



Harvesting Zucchini

Since they grow quickly, harvesting zucchini may happen just 40 days after planting. Harvest zucchini fruit when they are **6 to 8 inches** (15 to 20 cm) in length. If the fruit is misshapen, they may not have received enough water or fertilizer. Once you start harvesting, fertilize the plants occasionally to improve your yield.

Check your plants every day for new fruit, as they grow quickly. Use a sharp knife or pruning shears to cut the fruit off the vine rather than

breaking or pulling them off. If you miss one or two, **remove any overripe squash** as soon as possible to reduce the nutrient demand on the plant.

Once picked, you can store it in the refrigerator for up to 10 days. Keep the zucchini whole, dry and unwashed in a paper bag with one end open to encourage air circulation. If you'd like to store it for up to three months for use during the winter, consider freezing.



HOW-TO-GROW FRUITS (Melons)



How to Grow Melons

Best time to plant: 🌸 Spring

Harvest: 65 to 86 days after planting

Sweet, succulent and delicious, **melons** (*Cucumis melo*) are one of the largest fruits, offering a completely unique flavor among all other fruit offerings. Commercially grown melons are picked at a slightly unripe state to survive being shipped long distances. That explains why you've probably purchased what looks to be a perfectly ripe melon at the grocery store but found it rather bland once it was cut. If you want to enjoy melons at their peak ripeness, the solution is growing your own.

Health Benefits of Melons

Melons contain **fiber**, **vitamin B6** and **folate**, plus excellent amounts of **vitamin C** to fight infection and **vitamin A** for improved vision. In addition, **flavonoids** include beta-carotene, lutein and zeaxanthin, which is a carotenoid absorbed into the retina that may provide light-filtering functions to protect against age-related macular degeneration.

Potassium in melons helps control heart rate and blood pressure and protects against stroke and heart disease. **Manganese**, also found in melons, is a cofactor for the enzyme superoxide dismutase, a powerful antioxidant.





FUN FACT


The longer melons remain on the vine, the sweeter and more delicious they become!


Growing Melons


Sunshine and warmth are worth their weight in gold for optimal melon growth. The requirement of a good three to four months of warm weather, plus soil that contains plenty of nutrients, are not too much to ask for these beauties to thrive and taste wonderful on your table. Planting tips include:

 Planting seeds on **mounds or raised rows called hills**, around 6 to 8 inches high (15 to 20 centimeters), will lead to better drainage (they don't like to sit in water) and will help growing melon vines retain the heat of the sun longer.

 Seeds should be planted 1-inch-deep (2.5 cm), 18 inches (46 cm) apart in hills that are about 3 feet (8 cm) apart. Again, if space is limited, **fencing, trellises or other supports** can be used to force the crop to climb upward instead of outward.

 Keep the soil **evenly moist but not soaking**, as that sometimes causes the fruit to swell suddenly and become watery. Too much rain or watering after drying out for a period can cause waterlogging, as well as cracking in the ripening melons, so try to keep the soil at a consistent dampness.

 Before planting seedlings outdoors, harden them off by **setting them outdoors** in a sunny area during the day, then take them back in at night.

 Soil that's rich in organic matter is important to grow exceptional melons, so **adding compost** is wise. Maintaining a pH of 6.5 to 7.5 is about right for most garden plants.

Melons take up a lot of space. If space is at a premium where you live, there are bush varieties that grow upward on a fence or trellis rather than outward. If a developing melon is hanging rather than resting on the ground, it can get so heavy that the vine can snap about a week before the melon is actually ripe.

To prevent this, find a pair of sheer pantyhose that can be slipped over the melon and simply tie the legs to points higher on the trellis to better support the melon's weight. The tights will expand without impeding the melon's growth, allowing it to remain on the vine for as long as it takes to develop peak ripeness.



Growing Melons in Different Gardening Zones

If your garden happens to be in one of the warmer climates, you can plant straight into the soil after any threat of a cold snap is over. You can test the soil temperature; at least 65 degrees F (18 degrees C) is recommended to make sure germination takes place as it should — 70 to 75 degrees F (21 to 23 degrees C) is even better. However, seedlings grown indoors that develop either tendrils or more than four leaves may have trouble getting established once you transplant them.

Melons have a longer growing time than some other plants, so it's important to get the seeds into the soil as quickly as possible after the last frost in the spring. To warm up the soil (and keep it warm once the plants are in the ground), you can cover it with fabric or black paper mulch a few weeks before planting or transplanting.

Mother Earth News suggests anchoring row covers securely with bamboo poles or 2-by-2 lumber. You can also use plastic jugs with the bottoms cut out placed over young individual seedlings to keep them warm and protected from critters.

However, if you happen to live in one of the upper-U.S. planting zones (Zone 5B and lower), which denotes a shorter season, it's helpful to know that planting several seeds one-half inch (1 cm) deep in 4-inch (10 cm) peat pots in a south-facing window or grow lights indoors works well for melons. Thin 2-inch-tall (5 cm) seedlings to the strongest plant by cutting off smaller starts at the soil level.



Harvesting Melons

It's a good idea to record the day you planted your melons so you can roughly figure the time of harvest, which is generally **65 to 86 days**, according to Heirloom Organics.

You may wonder how to tell if your melons are "ready." One is to gently squeeze the melon, which will "give" slightly when it's ripe. Another clue is its fragrance, which should smell like the fruit inside.

Alternately, Specialty Produce notes that melons will feel heavy rather than hollow, and "should yield just slightly to finger pressure at its blossom end, which is opposite of its scarred end, where it was removed from the stem." It can be refrigerated for a few days if it's already ripe until you're ready to use it, or if it's not, stored at room temperature for few days until it is.





HOW-TO-GROW FRUITS (Nightshades)



How to Grow Bell and Chili Peppers

Best time to plant: 🌸 Spring

Harvest: ☀️ Summer



Bell peppers and **chili peppers** (*Capsicum annuum*) are common cooking ingredients that add flavor and color to your meals. They're also easy to grow, even in small spaces, making them an essential presence in your home garden. In this guide, you'll learn how to grow both, as well as tips on how to use them, so you can efficiently utilize these two amazing plants.

Health Benefits of Peppers

Sweet and mild-tasting bell peppers can be sautéed with onions or diced into salads, soups and casseroles; stuffed, grilled, placed on sandwiches or eaten raw for a fresh snack. Green, red and yellow bell peppers all contain phenolic compounds, ascorbic acid, carotenoids and free radical scavenging activity. Research also indicates that **green peppers** have the highest phenolic activity, but lower carotenoid content than the red and yellow varieties. On the other hand, **red peppers** have the highest ascorbic acid and a higher level of free radical-scavenging activity.

The active ingredient in hot chili peppers is **capsaicin**, which is what makes your mouth burn and gives the peppers their pungent odor. Interestingly, the endorphin rush capsaicin triggers makes this compound an effective remedy for pain and other medical conditions. Research also suggests it helps shrink fat tissue, inhibits the growth of breast cancer cells and may even improve managing the symptoms of Parkinson's disease.

FUN FACT

The smaller the pepper, the hotter it tends to be.





Growing Bell Peppers

Whether you're growing bell peppers from seed or using store-bought seedlings, begin by selecting and preparing the site. Peppers need lots of sun and grow best in deep, loamy, well-drained soil where peppers have not previously been grown, so move them around your garden if growing several years in a row.

Add about 1 inch of compost to the soil, but avoid adding too much nitrogen, as this can cause excessively rapid growth, making the plants larger and bushier but less productive and more prone to disease.

If growing from seed, start the seeds indoors eight to 10 weeks before your last frost date. You can find frost dates for your local area by checking **The Old Farmer's Almanac**, which is available online. Soak the seeds in lukewarm water for a few hours and keep the seed tray in a warm spot to encourage germination.

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Before you transplant your seedlings into your garden, gradually expose them to outdoor conditions. By reducing stress, the plants will become larger and more productive.

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Begin by placing them in an area sheltered from high wind and excessive sun exposure for a few hours a day for three or four days once daytime temperatures are consistently in the mid-60s. Over the following week, slowly increase the number of hours you leave them outdoors.

Pepper plants grow best in warm soil, so if the garden bed is still cool, warm the soil by placing a dark landscape paper over the area. Also make sure all threat of frost is over and nighttime temperatures are **above 60 degrees Fahrenheit** (18.3 degrees Celsius) before planting them in the ground.




Harvesting Bell Peppers

Space the plants **12 to 16 inches apart** and stake taller varieties to protect the stems from breaking as they grow. If planting several varieties, separate them by at least 500 feet to prevent cross-pollination. Also keep them separate from other plants in the nightshade family, such as tomatoes and eggplants.

Water frequently, giving the plants at least 1 inch of water per week, or up to 1 gallon per day during hot, dry weather. Adding mulch will help retain moisture and normalize the soil temperature. Just remember they do like warm soil, so if temperatures are on the low end, mulching can actually make the soil too cool, which will stunt growth.

If daytime temperatures are below the mid-80s (around 26 degrees Celsius) you may also want to consider a **covered dome** to retain heat. Should the weather get too hot, on the other hand, you may need to provide some shade to protect the fruit from sun scald. Staking up a piece of shade cloth should be sufficient.

Planting them 12 to 16 inches apart will also allow the leaves of the plants to touch, creating a natural canopy to protect the fruit from excessive sun exposure.

As the plant grows and begins to bloom, pinch off the first early blossoms. While this may sound counterintuitive at first, doing this will redirect the energy toward growth, allowing you to get more and larger fruits later. Leaving these early blossoms on will result in just a few small, early fruits.

Once the plant starts bearing fruit, side dress with organic fertilizer. **Phosphorus** is needed for fruit production while too much nitrogen will cause the plant to grow too fast and produce less fruit, so make sure your fertilizer has more phosphorus than nitrogen. Once the bell pepper has matured on the vine and is turning its designated color (whether yellow, red, green or purple), harvest your peppers by cutting them off with hand pruners.

Yanking them off by hand can damage the plant. While they can be harvested at an immature stage and allowed to ripen on your counter, allowing them to fully ripen on the vine will improve the flavor.

Growing and Harvesting Chili Peppers

Growing chili peppers takes about **six months** so you should plant them by May, although starting early is recommended so the plant will ripen just in time for summer. Here's a simple step-by-step guide for growing chilies:

1. Fill a multi-cell seed tray with rich organic soil. Gently tamp it down and moisten with water. Place a seed in each cell, then lightly cover with a thin layer of soil. Water gently using a fine mist spray, then cover with cling wrap and store in a warm area of your home. The soil should be moist but not soaked.
2. After two to four weeks, at the first sign of growth, move the seedlings to a warm, well-lit place, but out of direct sunlight. Water the plant from below to strengthen the roots, and check daily to ensure the surface is moist.
3. Once the seedlings sprout a second set of leaves, transplant into 2- or 3-inch pots with moist soil and use liquid tomato as a weekly feeding.
4. When the plants reach a height of 4 to 5 inches, transplant into larger pots, and stake the plants once they're 7 or 8 inches tall.
5. Once the plants are about 12 inches tall, pinch off the tips right above the fifth set of leaves to encourage bushiness. Transplant to a larger pot if needed and make sure to check the plant daily for aphids.
6. When flowers appear, gently dab a cotton swab into each flower to pollinate.
7. Cut off the first chilies while still green to encourage fruiting all season long (July to October).



How to Grow Eggplant

Best time to plant: 🌸 Spring

Harvest: ☀️ Late summer to 🍁 early fall

Growing **eggplant** shouldn't be intimidating when you're anticipating spring garden planting. Getting your seeds off to a good start, then tweaking them if needed, will help produce a harvest of nutritious fruit.

That's what eggplant is, by the way, although many people think eggplants are vegetables. There are many beautiful varieties: large, purple Globe; Rosita, the 8-inch pinkish-lavender heirloom variety; long, thin Japanese eggplants and yellow, green and white-hued varieties with slightly varying flavors.

Health Benefits of Eggplant

One reason to plant and grow eggplant at home is all the healthy nutrients. Besides vitamins, minerals, folate, potassium, manganese and vitamins C, K and B6, eggplant phytonutrients include:

- ✓ Phenolic compounds known as **anthocyanins**, which are flavonoids that help protect heart health
- ✓ **Chlorogenic acid**, a free radical scavenger with numerous beneficial properties
- ✓ **Nasunin**, shown to improve blood flow and protect brain cell membranes from damage
- ✓ **Antioxidant and antiproliferative activities** against colon and liver cancer cells

FUN FACT

Eggplant can be baked, roasted, grilled, stuffed or included in casseroles!





Growing Eggplant

Considered tropical perennials, eggplants can be grown as annuals in plant hardiness zones 5 through 12. They require full sun. Harvest times vary depending on the variety. Most require at least two months to mature. Some take 70 days or more, which is why **starting seeds indoors** helps get a jump on the season.



Growing Eggplant Indoors

Regarding materials, you'll need small pots, a seed-planting mix and seed packets. Always keep the packets as they often provide information about planting depth (which is deep), spacing, eggplant germination time and when to take the seedlings outside. This depends on your area's last frost date, which your area's planting zone will determine.

A sterile seed planting mix will give your eggplants the best chance of survival and allow you to blend ingredients to amend the medium you're working with, such as bark, a coconut fiber called **coir and vermiculite**. Avoid synthetic fertilizer. Organic gardening and natural growing hacks are far superior.

Using garden soil might prevent your seeds and seedlings from draining properly and may expose them to unwanted bacteria, disease spores, plant-eating insects and a fungal disease known as "damping off."



Start seeds inside about **eight to 12 weeks** before your last frost date. Watering from the bottom up allows you to see the moisture levels and keep them even. Eggplants require lots of light and heat to grow properly. If there's no natural sunlight from a south-facing window, artificial lighting is recommended.

Even if using a heat mat, make sure you provide light as soon as the seeds begin germinating, which usually takes seven to 14 days. The ideal soil temperature is **75 degrees Fahrenheit**. Indoor plants also need moving air; a fan at a low setting will help produce sturdier plants.



Growing Eggplant in the Garden

In eight or 10 weeks, you'll be able to transplant the seedlings into your garden. However, growing eggplant in containers is another option. According to The Spruce, soil pH of 6.5 to 6.8 (slightly acidic) is ideal, although the plants are not too particular.

Either way, it helps to stake eggplants or use coated tomato cages to avoid disturbing established roots when the fruits get large. Mulch, straw or wood chips covering the soil around the plant will help keep it moist.



Harvesting Eggplant

Eggplants are ready to harvest when they're glossy and "give" slightly when you press into the skin. Here are some key points you'll likely find useful:

- ✓ Plants can be **bushy** and reach **2 to 3 feet in height**, and their size and weight may cause stems to bend or break.
- ✓ Eggplant stems are **prickly**, so it's a good idea to wear gloves.
- ✓ Overripe eggplants may be **bitter and full of seeds**, although a little salt can help.
- ✓ Eggplant should be stored in the refrigerator and is best used within a couple of days but can be stored for **up to two weeks**.
- ✓ **Cut rather than pull** eggplants from their vines, but don't cut them until you're ready to prepare them, as the flesh discolors almost immediately when exposed to air.



How to Grow Tomatoes

Best time to plant: Last spring frost

Harvest: ☀️ Late summer



FUN FACT

Go easy when watering your tomatoes. Too much water can ruin your harvest!

Tomatoes (*Solanum lycopersicum*) are the most popular garden vegetable (technically tomatoes are a fruit, but they're used more like a vegetable) in the U.S., with 95% of home gardeners planting them in their backyards.

About 4 out of 5 people say that out of all homegrown foods, tomatoes are their favorite. Indeed, the flavor and texture of a supermarket tomato can't compare to that of a homegrown variety.

Health Benefits of Tomatoes

Rich in flavonoids and other phytochemicals, tomatoes have anti-carcinogenic and other healthy properties. They're also an excellent source of lutein, zeaxanthin and vitamin C (which is most concentrated in the jelly-like substance that surrounds the seeds) as well as vitamins A, E and B-complex vitamins, potassium, manganese and phosphorus. Other lesser-known phytonutrients found in tomatoes include:

✓ **Flavonols:** Rutin, kaempferol and quercetin

✓ **Flavonones:** Naringenin and chalconaringenin

✓ **Hydroxycinnamic acids:** Caffeic acid, ferulic acid and coumaric acid

✓ **Glycosides:** Esculeoside A

✓ **Fatty acid derivatives:** 9-oxo-octadecadienoic acid

Lycopene — a carotenoid antioxidant that gives fruits like watermelon a pink or red color — is another one of tomatoes' claims to fame. Lycopene's antioxidant activity has long been suggested to be more powerful than other carotenoids such as beta-carotene, and research has revealed it may significantly reduce your stroke risk and plays an important role in bone health.

In addition, lycopene from tomatoes (including unsweetened organic tomato sauce) has also been shown to be helpful against prostate cancer.

 **Growing Tomatoes**

Transplanted tomatoes do best, so either purchase transplants or start seeds indoors six to eight weeks before the last spring frost date. Tomatoes do best in full sun, so choose an area that gets plenty of daily sunlight.

The Old Farmer's Almanac recommends planting seedlings 2 feet apart and pinching off the lower branches prior to planting.

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"Plant the root ball deep enough so that the remaining lowest leaves are just above the surface of the soil, [then] water well to reduce shock to the roots."

You'll need to water the plants for the first few days and continue to give them about 2 inches per week throughout the summer (a rain barrel works well for this purpose). There are

many other variables that may influence the final outcome of your tomatoes, including most importantly, their taste.

A tomato's flavor is the result of an interplay between sugars, acids and other chemicals that give a tomato its scent. Researchers from the University of Florida have identified more than **3,000 aroma volatiles** involved in tomato flavor, including some that contribute to a tomato's perceived sweetness independent of sugar concentration.

Growing conditions and much more also contribute to tomato flavor. For instance, as noted by NPR, which spoke with tomato researcher Harry Klee at the University of Florida:



- ✔ The **more direct sunlight** your tomatoes get, the sweeter they'll taste
- ✔ **Too much water** can dilute tomatoes' flavor; ideally, water two to three times during hot summer months (adjusting for rainfall)
- ✔ Experiments suggest that so-called "**salt fertilization**," or dousing plants with a one-time dose of sea water (or water with natural sea salt) improves tomato flavor (although this must be done carefully, as it may burn foliage)
- ✔ Soil quality matters; in particular, soil with **plenty of organic matter or compost** is best

► How to Amend Soil for Best Tomato Flavor

Adding compost to soil is important for a number of reasons, one of which is that it's a good source of sulfur, a compound that's often missing from soil but is not measured by standard soil fertility tests.

"Sulfur is especially important because this nutrient forms organic compounds in the plant that gives flavor to vegetables," according to Joseph Heckman, Ph.D., extension specialist in soil fertility with the Rutgers New Jersey Agricultural Experiment Station.

When you apply compost and therefore add carbon back into the soil, the carbon feeds mycorrhizal fungi that eventually produce glomalin, which may be even better than humic acid at retaining water. This means you naturally limit your irrigation needs and make your garden more resilient during droughts.



Adding crushed eggshells to your soil is another simple trick. Rich in **calcium**, adding them as a supplement to the soil around tomato plants helps to provide nutrition and moderate soil acidity.

"Tomatoes that have a handful of eggshell meal worked into the planting site are not likely to develop blossom end rot," notes expert organic gardener Barbara Pleasant.

► How to Use a Tomato Slice to Grow New Tomatoes

If you happen to be at a loss for tomato seeds or transplants, it's possible to grow new plants from a **tomato slice** — a little-known but very handy fact. In a week or two, you'll see new tomato plants sprouting. Choose the largest seedlings and plant them in another container (about four seedlings to a pot). As they grow bigger, transplant the largest plants into your garden. Here's how:

1. Slice up an overripe tomato about 1/4-inch thick.
2. Place the slices in a container or garden bed and cover them with a thin layer of soil.
3. Water occasionally.

► Planting Tomatoes in Containers

If you're short on space or living in an area with depleted soil, growing your tomatoes in 18-gallon containers makes sense (be sure to put a small hole in the lower side of the container to allow for drainage). To start, add organic matter and crushed eggshells to the soil, then add your tomatoes (one indeterminate tomato that will produce fruit all season or two determinate tomatoes, smaller plants that will produce fruit and then die).

Plant the tomatoes, covering about one-third of the stem, and add mulch to the top of the soil. This helps retain moisture as well as reduces soil splashing onto the tomato leaves, which helps prevent disease. At this point, you can add in stakes or tomato cages, which help support the plants as they grow and keep the tomatoes off the ground. If you're really short on space, tomatoes can even be grown in hanging baskets.



Harvesting Tomatoes



Once your plants have reached the maturity stage (when they're green), it's time to harvest! Tomatoes are best picked around late summer. The reason for picking tomatoes **while they're green** is this allows them to ripen during transport to other locations. If you leave the fruit on the vine longer, you'll get more flavor. You can experiment and decide when is the best time for you to pick.

As for the actual harvesting, the entire affair is simple. When you see tomatoes with a bloom of red, the time for picking is at hand. Just grasp the tomatoes firmly, but gently, and pull from the plant while holding the stem.





HOW-TO-GROW FRUITS (Tropical)



How to Grow Dragon Fruit

Best time to plant: 🌸 Spring

Harvest: ☀️ Summer

Dragon fruit (*Selenicereus undatus*) is an exotic cactus that's just as impressive for its nutritional benefits as it is for its aesthetic appeal. While this heat-loving plant is native to Mexico and Central and South America, it's also grown in several Southeast Asian countries and can survive year-round in U.S. Department of Agriculture Hardiness Zones 10 and 11. In other southern areas of the U.S., including zone 9, dragon fruit can be grown in pots on a patio, but must be protected from cold temperatures.

Health Benefits of Dragon Fruit

Dragon fruit is an **antioxidant powerhouse**, high in vitamin C and containing antioxidants that could help prevent inflammatory diseases such as gout and arthritis. As for nutrients, it contains a wide range, including vitamins C, A, B1 and E, potassium, magnesium, zinc, phosphorus and calcium.

DID YOU KNOW?

Dragon fruit juice has been found to improve insulin resistance in obese mice.



While the peel of dragon fruit has higher flavonoid and polyphenol concentrations than the flesh, both have shown promise for antioxidant and even anticancer activities. Dragon fruit also contains lycopene, a powerful antioxidant that gives the fruit its red color and decreases your risk of cancer and heart disease. Some research suggests dragon fruit also has an **antidiabetic effect**, and may have a favorable effect on blood sugar control in prediabetes and Type 2 diabetes.

What's more, dragon fruit is not only high in fiber but also contains **oligosaccharides**, which act as prebiotics. Prebiotics help to nourish beneficial bacteria in your gut and the oligosaccharides in dragon fruit may improve gut health by "selectively stimulating" the microbiota in your colon.

Dragon fruit may have heart benefits as well, as it's been shown to decrease aortic stiffness in animal studies, including in diabetic rats. Arteries tend to stiffen as people age, leading to an increased heart disease risk, but for people who are obese or have Type 2 diabetes, the process starts sooner and the consequences are often worse.

Adding more whole foods like dragon fruit to your diet is one way to provide your body with nutrients that can ward off many chronic diseases and slow down age-related changes.



Growing Dragon Fruit

The growing season for this tempting fruit peaks in the summer but the season extends through early autumn. Be aware that ripeness can affect the fruit's flavor; **the riper the fruit, the sweeter it will typically be.**

The easiest way to ensure your dragon fruit plant bears fruit is to choose a self-pollinating variety, which requires no human intervention. While it's possible to grow dragon fruit from seed, it will take a few years before it grows fruit, which is why starting from a cutting is recommended. There are three types of dragon fruit:



Hylocereus costaricensis

This type has both red flesh and red skin. The red flesh is said to have a somewhat more intense flavor than the white-fleshed varieties.



Hylocereus megalanthus

This type has white fruit flesh and yellow skin.



Hylocereus undatus

This type has white flesh and red skin.

Dragon fruit is a **climbing cactus**, which means it will need a trellis or other form of support to cling to, and if you live in an area that gets cooler temperatures, you may want to consider planting it in a pot that can be taken inside during cold weather.

Dragon fruits like sunny spots with soil that drains easily. Too much water can rot the roots, which is why clay soils are not ideal for these plants; **sandy soil** is preferred. Once the flowers set fruit, keep soil moisture even, as cycling between dry and wet soils may cause the fruit to split open.



One way to keep soil well drained is to plant it in a raised mound, about a foot high and composed of soil and compost. You'll want to add mulch once planted, which will help to protect the plant's shallow roots, but be sure to keep it away from the base of the plant to avoid fungus growth and rot.

If planting in a container, choose a pot that's about 5 or 10 gallons in size with drain holes; a mature dragon fruit plant will need a larger, 25 to 30-gallon pot. Use a sandy soil made for cactus plants. As the plant grows, it will produce aerial roots from its branches that will climb, so it will need to be trained, similar to grape vines, although it can also be trained to grow up a wall, trellis or arbor.

You'll need to prune the plant by removing decaying, overcrowded or dead stems; left to its own devices, dragon fruits can become quite large, reaching up to 20 feet tall.



Pests and diseases (aside from fungal diseases due to overwatering) are not especially problematic for dragon fruit plants, but **aphids** sometimes feed on young shoots and flower buds. Also keep a close eye on fruits, which are sometimes enjoyed by **ants**.

What Temperatures Are Best for Dragon Fruit?



Temperature wise, dragon fruits do best between **65 and 85 degrees F** (about 18 to 29 degrees C). If it's significantly warmer than this, your dragon fruit may require some shade in order to tolerate the heat, but generally speaking they require six to eight hours of sun daily. Too much shade can interfere with proper fruit growth.

As for freezing temperatures, these will kill a dragon fruit plant (anything below 32 degrees F (0 degrees C) should be considered potentially fatal), although they can tolerate brief cold snaps. If you live in a region with temperatures that drop below freezing, be prepared to bring the plant indoors during the winter.

When well cared for, a dragon fruit plant will continue producing fruit for two or three decades, so your work will pay off in a bountiful and long-lasting harvest.



Harvesting Dragon Fruit

When picking dragon fruit from your garden, it can take about 30 days to become fully ripe. Dragon fruits are green in color while they grow, but their skin will turn a bright pink or yellow color when it's ready to be picked.



How to Grow Jackfruit

Best time to plant: 🌸 Spring

Harvest: 🌸 Spring to ☀️ Summer



Jackfruit (*Artocarpus heterophyllus*) is a unique tropical fruit with a distinct musky smell and deliciously sweet taste. Jackfruit can grow to enormous sizes with specimens measuring between 4 and 24 inches (10 to 60 centimeters) in length and 10 to 30 inches (25 to 76 cm) in diameter.



Jackfruit starts out green, turning light brown and spreading a strong fragrant, fruity scent once it ripens. The fruit is round or oblong-shaped, and has an outer surface covered with blunt thorn-like projections that soften as the fruit ripens. Inside each fruit are hundreds of small, succulent yellow lobes.



Jackfruit trees can bear as many as **250 fruits per season**. Being a tropical fruit tree, it cannot tolerate frost, cold weather or drought. If you live in an area with a year-round humid, tropical climate, such as southern Florida, Mexico or Hawaii for example, you could grow it outdoors. If you're above growth zone 10, you'll need to grow your jackfruit tree indoors.

Alternatively, you could grow it in a large pot kept outdoors in the summer and indoors in the winter. Unfortunately, a potted tree might never

produce fruit, as the trees normally grow up to 70 to 80 feet in height when grown outdoors.

FUN FACT

Weighing between 10 and 100 pounds, jackfruit is the largest tree-borne fruit in the world.



Health Benefits of Jackfruit

A hundred grams (3.5 ounces) of jackfruit contain 23.25 grams of carbs, 1.5 grams of which are fiber, and 95 calories, along with 110 IUs of vitamin A, 13.7 milligrams of vitamin C and 24 micrograms of folate. The fruit also contains several important minerals, including calcium, iron, magnesium, phosphorus and potassium.

It's also a good source of flavonoid pigments such as beta-carotene, xanthin, lutein and beta-cryptoxanthin, offering antioxidant and vision support.

A study published in the journal *Plant Foods for Human Nutrition* indicated the pulp of jackfruit is a natural source of antioxidants that protect cells from free radical damage and assist in repairing damaged molecules, like DNA.

Animal research published in 2015 found diets rich in jackfruit seeds resulted in higher levels of beneficial high-density lipoprotein (HDL) cholesterol and lower levels of the more harmful low-density lipoprotein (LDL) cholesterol, very-low-density lipoprotein (VLDL) cholesterol and triglycerides.

According to the authors, "*Artocarpus heterophyllus* seeds could be beneficial to health because of its ability to increase plasma HDL and reduce plasma LDL, VLDL, cholesterol, triglycerides and atherogenic indices at higher diet concentration."

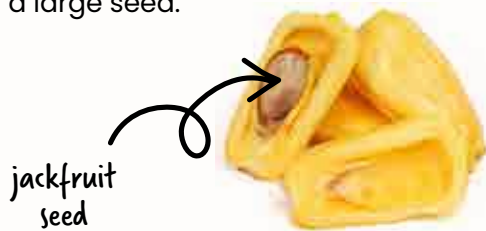
Being a good source of **potassium**, jackfruit may also be beneficial if you're struggling with high blood pressure, which is commonly the result of an imbalance between sodium and potassium intake, opposed to simply excessive amounts of salt.

Jackfruit also contains **lignans** and **saponins**, beneficial phytonutrients with anticancer properties. Lignans help block the effects of the hormone estrogen, which may decrease risk of hormone-associated cancers such as uterine, ovarian, breast and prostate cancer. Saponins, meanwhile, are known to optimize immune function and reduce risk of heart disease.

Interestingly, **jackfruit peel** — considered an agricultural waste product — has been studied for its ability to remove the heavy metal cadmium, a known carcinogen that harms DNA and disrupts the DNA repair system.

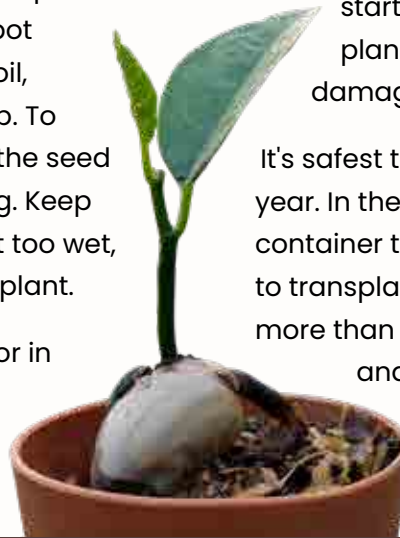
Growing Jackfruit

To access the seed, cut the jackfruit open. The edible lobes are lined with fibrous material that you'll want to remove (it's safe to eat but doesn't taste like much and is tough to chew as it's very fibrous). Remove one of the lobes and crack it open with your fingers. Inside each lobe, you'll find a large seed.



Once removed from the lobe, the seed will remain viable for up to a month. To plant the seed, simply place it in a starter pot filled with fast-draining potting soil, adding a thin layer of soil over top. To boost odds of germination, soak the seed in water overnight before planting. Keep the soil consistently moist but not too wet, as excessive wetness can kill the plant.

Place the pot in a sunny window or in a sunny spot outdoors. Jackfruit has **no dormancy period**,



so it needs to be kept warm throughout the year. A **weak fertilizer** can be used weekly on seedlings and young plants.

Gardening Know How recommends fertilizing with an **8:4:2:1 mix of nitrogen, phosphorus, potassium and magnesium**, adding 30 grams of the fertilizer at six months and then doubling that amount every six months until the tree is 2 years old. After that, they recommend applying 1 kilo (2.2 pounds) of fertilizer per tree, twice a year — before and after the wet season — at a ratio of 4:2:4:1.

Seeds will germinate in **three to eight weeks**. Ideally, use a slightly oversized pot right from the start to avoid early transplantation, as the plant has a delicate taproot that is easily damaged.

It's safest to leave it undisturbed for the first year. In the second year, you can repot it into a container that is two sizes larger. If you do need to transplant early, the seedling should have no more than four leaves on it. After that, the long and delicate taproot will make it very risky to transplant.

Harvesting Jackfruit

It can take up to **14 years** before the tree starts producing. Still, you could try it as a novelty, and who knows, if you're both patient and lucky you could perhaps get some fruit.

Jackfruit trees can bear as many as **250 fruits per season**. Although still considered an exotic tropical fruit in the U.S., it has gained popularity among vegans and vegetarians as a meat substitute. After about an hour of cooking, unripened jackfruit starts to resemble the flavor and mouth-feel of pulled pork.



How to Grow Lychee

Best time to plant: 🌸 Late spring

Harvest: Between April and May

Lychee (*Litchi chinensis*) is an exotic evergreen tree that produces red ovoid fruits with white flesh, a single large seed and a tough, "bumpy," easily peeled skin. As noted by The Spruce,

"The fruit has a light, perfume-like flavor. It is usually eaten fresh or frozen and can be made into sauces, jam, puree or preserves."

The first mention of lychee is found in Chinese literature dated 1059 A.D. Lychee production took root in Burma in the 1600s and India a century later; the West Indies in 1775, and in French and English greenhouses by the 19th century. Today, lychee is grown in subtropical and tropical areas around the world.

FUN FACT

Plan ahead when you're growing lychee trees. A mature tree can reach heights of up to 40 feet!



Health Benefits of Lychee

One of this fruit's most plentiful and unique nutrients is **oligonol**, which contains a number of valuable antioxidants with the ability to fight flu viruses and protect the skin from UV ray damage. The fruit is loaded with **vitamin C**, which also helps protect you against the common cold and other infections, and quenches inflammation. Other nutrients include:

- ✔ **B vitamins**, including vitamin B6
- ✔ **Potassium** (helps control heart rate and blood pressure and stave off strokes and heart disease)
- ✔ **Thiamin**
- ✔ **Niacin**
- ✔ **Folate**
- ✔ **Copper** (helps produce red blood cells, maintains healthy bones, prevents thyroid problems and anemia)

For all their benefits, lychee fruits are best consumed in moderation as they also contain **fructose** (along with glucose and sucrose), which may be harmful to your health in excessive amounts. A single fruit already contains 1.46 grams of sugar.

A study published in 2012 found lychee seed extract, rich in polyphenols, *“significantly induced apoptotic cell death in a dose-dependent manner and arrested cell cycle in ... colorectal carcinoma cells.”*



A study published in the journal Cancer Letters in 2006 found lychee fruit pericarp (skin) extract inhibited hepatocellular carcinoma, a type of liver cancer, both in vitro and in vivo, altering proliferation and inducing cell death in this cancer type.

Growing Lychee

If you're in hardiness zones 10 or 11, you can grow lychee outdoors in your garden. Lychee grown indoors will rarely produce fruit due to the lack of sunlight. Here's how you can propagate lychee from seed:

1. Select one or more large seeds and rinse off any remaining pulp.
2. Fill a pot with sandy soil and dampen with water. Press the seeds, "eye" up, into the sand, just low enough to cover them with a light layer of soil. Make sure the pot has good drainage. Place in a warm, shady location. To speed sprouting, enclose the pot in a clear plastic bag. Sprouting will occur in approximately two weeks.
3. Once sprouted, remove the bag from the pot and move it to a more brightly lit – but not directly sunlit – area.
4. Once the seedling has sprouted four leaves, transplant it into its own pot (if you sprouted several together). According to the University of Florida (UF), lychee grows best *“in acid sands with moderate organic matter content.”* SF Gate suggests repotting using African violet potting soil. Soil should be kept damp but not soggy.
5. After about one month's growth, gradually increase the amount of sunlight the seedling is exposed to.



Outdoor Planting Guidelines for Lychee

Its permanent location should receive full sun for most of the day. If kept potted indoors, place it near a south-facing window. Outdoors, plant it at least 25 to 30 feet from buildings and other trees, as shading will diminish fruit

production. **Well-cured compost** is recommended from the drip-line to within 6 inches (15 centimeters) of the trunk, and mulch will help retain soil moisture and reduce weed growth.

Trees younger than 4 years will need 0.25 to 0.5 pounds of complete fertilizer every eight weeks. UF recommends using a mixture containing 6% to 8% nitrogen, 2% to 4% phosphorus, 6% to 8% potash, and 3% to 4% magnesium.

If your soil has either acid or neutral pH, consider adding dry applications of manganese, zinc and iron two to four times during growing season, March through November. If your soil has a high pH, use a foliar application of manganese and zinc. Additional specifics can be found in UF's Lychee-growing guide.

Avoid fertilizing during fall and winter.

To bloom, the tree will require at least 100 chill hours (between 32 and 45 degrees F; 0 and 7.2 degrees C) during the winter. Lychee will bloom in early spring and fruit in late spring/early summer, although most trees will not bloom or produce fruit until they're about five years old.



Harvesting Lychee

The fruits are ripe once they've turned from deep green to pink-red or plum (depending on your variety), and the skin gives way a bit but not all the way when squeezed lightly between the fingers. Fresh lychees also exude a distinct lush, sweet fragrance.

To pick it, either twist to break the stem right at the natural abscission zone or, using shears, cut the fruit off, leaving a short stem. Using either a dull knife or even a fingernail, punch through the skin and peel off.

Browning of the skin is an indication of water loss, but in its early stages, this is more cosmetic than anything. The flesh inside will still be juicy. Over time, however, the flesh will also begin to dry out. After picking, the skin starts to turn brown within a day or so, so they need to be consumed rather quickly.

The seed is poisonous and should not be eaten. A chemical in the seed causes low blood sugar, which is why outbreaks of severe illness (and even deaths) among malnourished children during harvest time are common in areas like India. Discard seeds safely to make sure they won't accidentally be eaten by children or pets.

While well-established lychees are moderately drought-resistant, new lychee trees need to have a regular water supply. Flooding may adversely affect growth and fruit yield, however. Planting them on mounds or elevated beds is recommended if the region is prone to flooding. Once fully established, the tree will typically thrive without supplemental irrigation.

Areas with strong winds may be a challenging location for lychee tree growth as it may cause tattered leaves and stunted growth. It's best that lychee trees are planted in wind-protected areas or placed where they would be covered by surrounding trees.





HOW-TO-GROW HERBS

(Medicinal)



How to Grow **Aloe vera**

Best time to plant: 🌸 Spring and ☀️ Summer

Harvest: 6 months after planting

Aloe vera — of which there are about 450 species — is a succulent plant that thrives in tropical areas of the world and is well-known for its soothing qualities, especially for skin conditions such as burns, rashes, cuts and scrapes, but also for more serious skin conditions such as psoriasis.

Health Benefits of Aloe Vera

Aloe vera's wound healing abilities stem from the gel's disinfectant, antimicrobial, antiviral, antifungal, antibiotic and antibacterial properties. It provides campesterol, β -sisosterol and lupeol, and the hormones auxins and gibberellins that help in wound healing and have anti-inflammatory action.

The pulp contains most of the healing compounds, including polysaccharides, polyphenol antioxidants, sterols, and vitamins and minerals, including vitamins A, C and E, B vitamins, selenium, zinc, calcium, iron, copper, manganese, potassium, magnesium and chromium.

DID YOU KNOW?

Aloe vera contains roughly 75 potentially active compounds, including lignin, saponins, salicylic acids and 12 anthraquinones (phenolic compounds traditionally known as laxatives).



A 2015 review of several studies found aloe vera can help heal psoriasis, a painful skin condition, and provide others benefits as well. Among them:

Reduce inflammation

A 2008 study showed aloe vera gel was more effective than a placebo in treating skin conditions, including UV-induced erythema or skin reddening due to the dilation of blood vessels.

Skin hydration

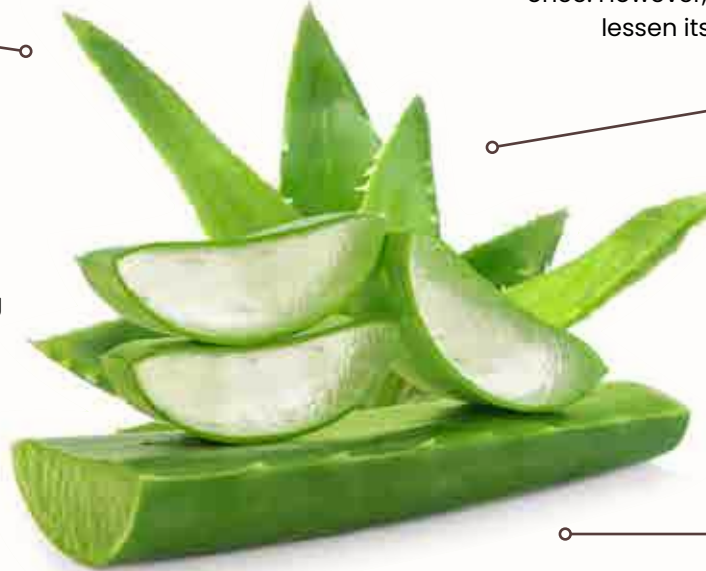
Keeping skin irritations moist and hydrated always feels better, and aloe vera gel does that. One study showed it to be effective even when applying it only once. However, continuous use tends to lessen its hydrating effects.

Wound healing

Properties related to a compound called glucomannan help accelerate wound healing and skin cell growth.

Collagen production

Studies show aloe vera helps your skin stay firm and elastic by promoting the production of collagen.



While fresh aloe vera is very safe, you should not use it internally or externally if you're allergic. If you're unsure, perform a patch test on a small area and wait to make sure no signs of allergic reactions occur.

 **Growing Aloe Vera**

While you can purchase aloe vera gel at most health food stores and pharmacies, if you grow your own, you'll always have fresh aloe on hand when cuts, scrapes or even psoriasis flare-ups occur.

The plant is easy to grow and care for, and thrives outdoors in grow zones 9 through 11. Indoors, it can be grown year-round in all areas, provided it gets enough sunlight. For medicinal use, be sure to select an aloe species with thick, "meaty" leaves. A good choice, and one of the most popular, is **Aloe Barbadosis Miller**. Many varieties are very thin and long, making them more difficult to use. Here are some quick basics for growing aloe vera:



Ideal soil conditions

Aloe vera prefers dry, sandy soil. If planting in a pot, cactus potting mix is a good choice. If planting in the ground, adding a thick layer of wood chips will help improve the soil quality over time by increasing the soil microbiology, which will provide needed nutrients to the plant. Aloe vera typically does not require fertilizer.



Sunlight

The plant needs plenty of sun. If using a planter, rotate the pot now and then to promote even, upright growth, since the plant will grow toward the sun. Droopy leaves, or leaves that lie flat on the ground, are an indication that it needs more sunlight.



Planter specs

If using a planter, select a medium or large pot with good drainage.



Spacing

Each plant will multiply, so leave several inches of space between the aloe vera buds if planting more than one. Once pups begin to grow, you can gently dig them up and replant elsewhere, or in another pot.



Water requirements

Water cautiously. Soil should be kept dry to damp, not soaked, as excessive wetness will promote fungal growth. If the leaves feel cool, plump and moist, the plant is getting sufficient amounts of water.

Should the leaves start to turn dry and brittle, or if they're growing in thin and curled, the plant needs more water. Just allow the soil to dry completely between waterings.



Harvesting Aloe Vera

Once your plant matures, begin harvesting the outermost, most mature leaves first. Using a sharp knife, cut the leaf as close to the base as possible, being mindful not to cut the roots. Remove the spines by cutting along each side.



For topical use

Simply cut a 2-inch piece off, then slice it down the middle, revealing the gel, and apply it directly to your skin. Aside from soothing

burns, including sunburn, or cuts and scrapes, it also works great as an aftershave for men. For sunburn, fresh aloe gel is the most effective remedy I know of, beside prevention.



For internal use

If you're going to ingest it, you can use a potato peeler to peel off the outer rind, then scrape off the gel and place it in a small glass

container. I like mixing mine with some lime juice. Simply blend together with a handheld blender for a delicious immune-boosting aloe shot.

How to Grow American Skullcap

Best time to plant:  Spring

Harvest:  Fall



American skullcap (*Scutellaria lateriflora*) is an herbal plant native to North America that's a member of the mint family. Named for the close-fitting metal skull caps worn during medieval periods, which resembled the plant's flowers, this calming herb has continued to receive praise for its stress- and anxiety-relieving effects, which it's said to exert without some of the side effects, like drowsiness, that other relaxing herbs may cause.

Health Benefits of Skullcap

Known as a nervine herb, which is one that acts on the nervous system, skullcap has such strong relaxant effects that it's sometimes used to treat barbiturate and tranquilizer withdrawal symptoms.

It may also have anti-allergy potential, including helping to alleviate food allergy symptoms by regulating systemic immune responses of T helper (TH) cells.

Another compound in skullcap, scutellarein, may have anticancer potential. In fact, the compound was even found to stop the development and spread of fibrosarcoma, an aggressive cancer of connective tissue.



Growing Skullcap

American skullcap is a perennial herb, which means if you plant it right, it will keep coming back year after year (be sure to plant in a spot where you don't mind it spreading, which skullcap is known to do, rapidly). Skullcap should be planted in an area with moist soil and full to partial sun (partial sun especially if you live in a hot and dry area).

Keep in mind that many skullcap varieties require stratifying seeds before you put them in the ground. To do so, put the seeds in a sealed plastic bag with moistened sand (about three times as much sand as seeds) or a damp paper

towel, then place them in the refrigerator for at least a week. The seeds can then be started indoors (germination will take about two weeks) and moved outdoors as seedlings, after the threat of frost has disappeared.

Seedlings can be planted 1-inch deep into compost-amended soil. Keep them well-watered and continue after the plant grows larger; they do best in moist soil. Skullcap can also be grown from cuttings or divided roots, which can be taken from a healthy, mature plant. Mature skullcap can grow to reach 1 to 3 feet tall.



DID YOU KNOW?

Skullcap has a long history of medicinal use, primarily as a mild nerve sedative or nerve tonic.



Harvesting Skullcap

Once the plant blooms, it's ready to harvest for use in teas or tinctures, and can be used fresh or dried. Use a pair of scissors or shears to harvest aerial parts like flowers and leaves. Ensure that there are still plant parts at least 3 inches above the ground.

Skullcap can be used in tincture, tea or essential oil form. As a **massage oil**, which can be used for muscle relaxation, try the following recipe from the book, *"Healing Plants of the Rocky Mountains,"* by Darcy Williamson:

Skullcap Massage Oil

Ingredients

- 1 1/2 cups flowering skullcap tops
- 2 tablespoons dried cottonwood buds
- 1/2 cup fresh tall sagebrush leaves
- 1/2 cup jojoba oil
- 1/2 cup sweet almond oil

Procedure

1. Combine ingredients in a quart jar and cover loosely with several layers of cheesecloth.
2. Allow mixture to stand in a warm place for three weeks.
3. Heat jar in a pan of warm water for 15 minutes to liquefy oil, and then strain.

To make a **calming tea**, which you can enjoy before bedtime or when you need to soothe your nerves, infuse 5 grams of skullcap into 8 ounces of water for 15 minutes. You can also try adding half an ounce of dried skullcap to one-half pint of boiling water to make an infusion.



How to Grow **Astragalus**

Best time to plant: ❄️ **Late winter**

Harvest: Two to three years after planting

Astragalus (*Astragalus membranaceus*), a member of the pea family, is an adaptogenic herb with a long history of use in Traditional Chinese Medicine as an immune-strengthening tonic, where it goes by the name of **Huang Qi** and **Hwanggi**. Another English name for this shrub is **milkvetch**.

Health Benefits of Astragalus

Research has shown that astragalus has therapeutic uses. Taken internally, it helps boost your immune response by promoting the production of antibodies. Astragalus also helps maintain your digestive health and can help alleviate ulcers thanks to its inherent nutrients that work together to alter biological processes related to ulcer formation. The most important part of the plant is its **root**, which has a distinct yellow color. For medical use, the root is made into powder, herbal decoctions, tea, capsules and ointments.

As most adaptogens, astragalus has a rather long list of potential uses. Research regarding therapeutic astragalus have been shown to be effective in treating fatigue, calcium overload-induced myocardial damage, nephritis, urinary tract infections and allergies. To take full advantage of this medicinal plant, why not consider growing some in your backyard?





Growing Astragalus

Astragalus is a **perennial plant** with hairy stems that can grow up to 4 feet tall, producing small yellow flowers that eventually turn into egg-shaped beans. Flowering season runs from midsummer through late fall. It grows well in zones 6 through 11. Seeds will germinate in three to 10 days following a three-week-long cold period. However, seed germination rate tends to be low, and should you store seeds, be sure to use them within two years. After that, they may no longer germinate at all.

Once your seeds have been cold stratified, rub the seed on fine sandpaper to rough up the outer shell. Just don't rub too hard, as you don't want to damage the inside.

This procedure may seem onerous, but will help accelerate and improve germination.

Next, soak the seeds in water for a few hours or overnight. Now, the seeds are ready for planting. Start out by planting the seeds in a small pot or starter tray, using high quality seed starting mix.

Press the seeds about one-quarter inch to 1 inch into the soil and cover. Keep soil moist but not soggy until seeds start to sprout. Keep the pots on a window sill or in an area that receives morning sun. Once the seedlings have grown a few inches tall, transfer them to larger pots or straight into your garden, provided there's no risk of frost.

Contrary to many other plants, astragalus prefers **dry, sandy soil**, and needs **partial shade to full sun**. Ideal pH is around 7. If you plant more than one, space them at least 15 inches apart. Since sandy soils tend to dry out

DID YOU KNOW?

Adaptogenic herbs help your body adapt to physical, emotional or mental stress. The immune-boosting, anti-inflammatory and antibacterial properties of astragalus may also help lower your risk for infections and other diseases.



quickly, you may need to water more regularly than other plants until it's established.

Whether you're growing it in a pot or in the ground, make sure the root ball stays moist. This is particularly important during the summer. Mulching around it will help retain water by slowing down evaporation. Every few months, apply compost or rotted manure around the plant.

Avoid all synthetic, inorganic fertilizers and pesticides if you intend to use the root medicinally.

Keep in mind that astragalus has a tendency to get invasive if it's in an ideal spot, so prune annually to maintain the desired shape and size.



Harvesting Astragalus

The medicinal root can be harvested after two to three years. Two years is generally considered the minimum, or else the rootstock will not be adequately large to make something out of. To harvest the root, use a garden fork or needle-nose spade to loosen the soil around the plant to where you can pull up the taproot.

How to Grow Chamomile

Best time to plant: 🌸 Late spring

Harvest: ☀️ Late summer or 🍂 early fall



Chamomile (*Matricaria chamomilla*) is one of the most beneficial herbs and it has a long history of use dating back to ancient Egypt. Best known as a soothing tea widely embraced for its **antioxidant and anti-inflammatory properties**, chamomile produces lovely daisy-like plants that are drought- and pest-resistant. Given its many medicinal uses, you may want to consider growing chamomile in your garden this year.

Health Benefits of Chamomile

Due to its pleasant taste as a tea and the ready availability of its flowers, chamomile has been praised for millennia for its many health benefits. The presence of numerous antioxidants contributes to chamomile's positive effects on your body. Among its many health benefits, chamomile:



Acts as a mild sedative and sleep inducer

Chamomile has long been used to treat insomnia and is highly regarded for its ability to induce daytime calmness and relaxation. Its sedative effects are likely due to the flavonoid apigenin, which binds to benzodiazepine receptors in your brain.

DID YOU KNOW?

Chamomile can also be useful as a bath, cream, essential oil, gargle, inhalation, poultice and tincture.

While there is an absence of clinical trials to validate the effects of chamomile on sleep,

10 cardiac patients who drank chamomile tea were reported to have quickly fallen into a deep sleep lasting 90 minutes.

Authors of a study involving the effects of chamomile extracts on sleep-disturbed rats concluded chamomile extracts exhibit "benzodiazepine-like hypnotic activity."



Calms gum inflammation and other oral conditions

Chamomile has been shown to be effective in the treatment of gum inflammation (gingivitis), canker sores and laryngitis.



Reduces menstrual cramps and pain

A 2010 study published in the Iranian Journal of Obstetrics, Gynecology and Infertility indicated that consuming chamomile tea for a month appears to reduce menstrual pain and cramps, as well as the anxiety and distress that often accompany it.



Relieves gastrointestinal complaints and bowel problems

Though most of the evidence is anecdotal, chamomile is believed to help reduce smooth muscle spasms associated with gastrointestinal inflammatory disorders.

Chamomile is particularly helpful in dispelling gas, soothing heartburn and relaxing muscles that move food through your intestines. It also inhibits **Helicobacter pylori**, a bacterium linked to stomach ulcers.



Treats eye infections and inflammation

Due to its calming and soothing properties, chamomile has been shown to reduce eye irritation and redness. Add two chamomile teabags to 3 cups of boiling water. Allow to steep until the tea has cooled, then discard the teabags. Dip a clean washcloth into the cooled tea and apply to your eye as a compress for 15 minutes, three to four times a day.



Growing Chamomile

In terms of growing conditions, below are important foundational tips to help you create the right environment for chamomile plants:

Seeds: You can start seeds indoors about six weeks before the last expected frost in your area. Because the seeds require light to germinate, you'll want to simply scatter the seeds and scratch them into the soil. To promote faster germination, do not cover the seeds with soil. It takes about seven to 14 days for chamomile seeds to germinate.

Soil: For best results, choose an organic soil that is not too rich. Chamomile prefers a neutral pH in the range of 5.6 to 7.5. While the plants will survive in poorer soils, they will produce even floppier stems.

Spacing: When transplanting seedlings, be sure to harden them off first and then space them about 8 to 10 inches apart in the garden bed.

Sun: German chamomile will bloom best in full sun. If you live in a hot climate, however, partial shade is a better choice to ensure your plants will have some protection from the heat.

Water: Prior to planting, mist your starter soil and then add your seeds. Keep the starter mix moist until they germinate. Once your plants are established outdoors, regular watering will encourage more blooms. That said, chamomile is a hardy, drought-tolerant plant and can go without water if necessary.

German chamomile is the variety commonly associated with the plant's health benefits, so this is the one you should be growing. On average, they can reach 8 to 24 inches high. Fortunately, they attract very few pests. If you grow cucumbers, you'll be happy to know chamomile is used as a cucumber pest deterrent. German chamomile plants typically begin to flower in late spring unless you are pruning them or harvesting leaves right away, in which case bloom growth will be delayed.

Given its unimposing nature, chamomile is a good candidate for underplanting when paired with taller garden plants. Another option is to grow your chamomile plants in containers.

Harvesting Chamomile

The secret to making great-tasting chamomile tea is using high-quality, pesticide-free flowers, preferably from your own garden. Under ideal conditions, your plants will bloom a few weeks after transplanting and will continue to produce flowers throughout the summer. To dry chamomile, you can snap off individual flowers or cut a group of the stems to form a bouquet that can be dried upside down.

Place individual flowers on a tray and maintain them in a warm, dry area (but not in direct sunlight) until they are crispy. When stored in a sealed glass container, dried chamomile flowers can last up to a year. To make tea, you can use fresh blooms or dried blooms. You'll want to use 2 tablespoons of fresh chamomile flowers or 1 tablespoon of dried blooms for each cup of tea. Feel free to adjust the quantities to suit your taste.

How to Grow Fenugreek

Best time to plant: 🌸 Late spring to ☀️ late summer | Harvest: ☀️ Summer to 🍁 fall

Not everyone is familiar with **fenugreek** (*Trigonella foenum-graecum*), but like many herbs, it has both medicinal and nutritional value. This annual herb, though, is also a legume from the Fabaceae family. Its East Indian name is "**methi.**" Other nations may refer to it as Greek clover, Greek hay, goat's horn or bird's foot.

Fenugreek can grow 1 to 2 feet high and bear white or yellow flower clusters and small, rounded rhomboid or slightly elongated triangle-shaped leaves, depending on the variety. It also has a long, ancient history of usage, but the great thing about it is that it's still grown today. Cultivating your own patch of fresh fenugreek will show you why the plant has stood the test of time.



FUN FACT

Fenugreek seeds, which grow inside long seed pods, can be toasted to give them a milder, aromatic quality or ground into a powder to make pastes or sauces for a number of dishes.

Health Benefits of Fenugreek

One tablespoon of fenugreek has 2.5 grams of protein. It's also loaded with vitamins such as thiamin, folic acid, riboflavin, pyridoxine (vitamin B6), niacin, vitamins A and C, and minerals such as iron that contribute to an array of healing properties. Traditional uses for fenugreek across the ages involved treatments for:

- ✓ Soothing digestive problems, including ulcers
- ✓ Improving breast milk production for breastfeeding mothers, thanks to a compound called **diosgenin**
- ✓ Lowering your colon cancer risk by both inhibiting cell growth and inducing apoptosis
- ✓ Chelating cadmium and aluminum toxicity
- ✓ Slowing mental aging and augmenting your thinking processes due to the choline content

The seeds contain high amounts of soluble fiber, and a significant amount of it is non-starch polysaccharides (NSPs). Prominent NSPs include mucilage, saponins, tannins, hemicellulose and pectin, which help optimize your LDL cholesterol by helping reduce the risk of bile salts from reabsorbing into your colon. NSPs further increase bulk in your colon to promote digestion as well as bowel action so waste doesn't build up in your colon.

The result helps manage constipation and may help lower the risk of colon cancer, as food is encouraged to move smoothly through without hanging around too long. Studies indicate that the amino acid 4-hydroxyisoleucine in fenugreek seeds helps facilitate insulin secretion, which makes them good for people with diabetes. The fiber helps slow down the rate of glucose absorption in your gut, which helps regulate blood sugar levels. According to Nutrition and You:



.....
"Fenugreek (seeds) may help ... [optimize] cholesterol, triglyceride as well as high blood sugar (glycemic) levels in people with diabetes ... (and) are therefore one of the recommended food ingredients in the diabetic diet."

In addition, fenugreek contains high amounts of powerful antioxidants and choline, which studies show may not only help slow mental aging but also may be useful for upper respiratory therapies, coinciding with present-day clinical studies.

Growing Fenugreek

Fenugreek seeds can be purchased in larger nurseries or horticultural centers, in Indian grocery stores or online. You can sow the seeds directly in the ground or in flat trays or pots of nearly any size indoors, which doesn't take up a lot of space. Grow lights are another option, although some gardeners suggest it's a little finicky about being transplanted, so make sure your seedlings are vigorous before moving outside; biodegradable pots will help.

Fenugreek should be grown in full sun to part shade or filtered sunlight. Also, when you transplant your fenugreek seedlings outdoors, do it on an overcast day and wait until after the final frost of the season. Make sure your pot or soil bed drains easily. Pots with good drainage are perfect for a single-drip irrigation system. In three or four weeks, your fenugreek greens are ready to harvest.



Some gardeners are very specific about soil depth and spacing when sowing; others are much freer in their seed casting but suggest casting them evenly. Fenugreek grows easily, either way. Cover the seeds with a half-inch of soil or so, then moisten it well so the seeds can begin the germinating process. This can be tricky to determine, but if you move your seedlings outside and frost is imminent, simply cover them with seedling cloches overnight and remove them in the morning.

To perpetuate the seeds, wait for the plants to flower, after which they produce thin seed pods. When these ripen and turn yellow, that's when the seeds are ready to harvest — before the pods pop open. According to The Spruce, nitrogen-fixing plants are identified as those with roots colonized by nitrogen-bearing bacteria. In other words, the roots extract nitrogen from the air and convert or "fix" it so that it perpetuates the plant's growth. Garden Organic explains:

"Although fenugreek is a legume, it doesn't always fix nitrogen. For this to happen, the right bacteria (*Rhizobium meliloti*) need to be present in the soil.

These are more likely to be present, if fenugreek has been grown on the site before. To see if the plants are fixing nitrogen, carefully dig (don't pull!) up a plant and look for pink (colored) nodules (2 [millimeters] diameter) on the roots.

Plants that are fixing nitrogen should be able to produce lush green growth on a low-fertility soil with few problems, whereas those that can't tend to develop pale (colored) leaves and smaller plants. Poor soil nutrient status can affect the (flavor) of the crop."



Harvesting Fenugreek

You'll notice newly sown fenugreek seeds beginning to sprout **as early as five days** out, and the young fenugreek seedlings grow rapidly. Tender young fenugreek leaves are ready for harvest in about six weeks after sowing, depending on the weather, and **the younger the plants, the more nutritional value they have**. At the same time, after four weeks fenugreek plants may begin yellowing or be attacked by diseases, so vigilance is wise.

As is true with many herbs, once flower buds emerge, the leaves become smaller and the stems "leggier," so it's best to harvest at regular intervals before then. If you're growing fenugreek in pots and need some to use in the kitchen, cut the stem above the base when the plants are around 10 inches tall. You can also pull whole plants along with the roots when what you see above ground is around 4 inches high.

Try Planting Heirloom Fenugreek Seeds

If possible, look for **fenugreek heirloom seeds**, as they are better than conventional varieties. Mother Earth News lists several reasons why heirloom seeds are better than hybrid seeds, which are created by crossing two seed varieties:

- ✓ Heirloom seeds are **more flavorful**
- ✓ They're **more nutritious**, because high-yield seeds and farming techniques weaken amino acids, proteins, minerals and other phytonutrients
- ✓ Because heirloom seeds are **seed saving**, as opposed to open-pollinated, you can save your seeds to replant every year
- ✓ Being **less "uniform,"** heirloom varieties may not ripen all at once, which promotes use of the plant-based food over a longer period

How to Grow Milk Thistle

Best time to plant: Right after the last frost

Harvest: When seeds turn brown for maximum health benefits

Milk thistle (*Silybum marianum*) is a tall, thorny herb with spiky flowers that's been prized for centuries for its anti-inflammatory, antioxidant and antiviral properties. It is also highly regarded as a **liver tonic** due to high amounts of a chemical compound known as silymarin.

Most people consider milk thistle a pesky weed, as it can be quite invasive. A single plant produces thousands of seeds that spread very easily, so you'd be wise to check with your local cooperative extension office to find out if milk thistle is considered an invasive species in your area. If it is, you may be banned from growing it. That being said, don't be so quick to discard milk thistle right away. It may actually end up being your favorite plant in your garden.



Health Benefits of Milk Thistle

Silymarin is a group of flavonoids (silibinin, silidianin and silicristin) known to help repair your liver cells when they've been damaged by

toxic substances. These flavonoids also protect new liver cells from being destroyed by toxins. As such, milk thistle greatly improves the overall functioning of your liver.

In case you are wondering how milk thistle benefit you, check out these ways it can support your health:

- ✔ **Supports your liver, kidneys and gallbladder** - Silymarin helps your liver grow new cells by boosting protein synthesis, and it has been effective in addressing toxin-induced liver ailments, including the treatment of liver diseases and liver cancer. It protects your kidneys against inflammation, free radical damage and toxins. Silymarin has also been shown to prevent the formation of gallstones.
- ✔ **Assists with antioxidant activity** - Milk thistle seeds contain a potent antioxidant called silymarin, which helps your body fight free radicals and reduce inflammation.
- ✔ **Boosts prostate health** - Silymarin and a related milk thistle compound called isosilybin B not only have been shown to support prostate health through normal cell development, but also to be effective in the treatment of prostate cancer.
- ✔ **Counteracts mushroom poisoning** - Intravenous administration of silymarin is the only known remedy used to stabilize cell membranes and inhibit absorption of toxins from *Amanita phalloides*. This deadly mushroom, known as the death cap, is commonly mistaken for edible varieties.
- ✔ **Encourages healthy skin** - Due to its antioxidant properties, silymarin is believed to have protective effects on your skin. In lab research, it has exhibited preventive and anticancer effects against skin cancer.

- ✓ **Improves lipid profiles** – Most likely due to the presences of silymarin, along with other flavonoids, milk thistle is thought to encourage proper lipid absorption and synthesis in your body. A 2012 study showed silymarin was effective to significantly reduced LDL (“bad”) cholesterol and triglyceride levels, while significantly elevating HDL (“good”) levels.
- ✓ **Promotes normal blood sugar levels** – Research suggests silymarin decreases fasting blood sugar levels. Authors of one such study said: “[S]ilymarin treatment in Type 2 diabetic patients ... has a beneficial effect on improving the glycemic profile.”



DID YOU KNOW?

While all parts of the milk thistle plant are edible, silymarin is contained in the seeds only.



Growing Milk Thistle

Milk thistle will tolerate any soil, and can get by even in drought conditions. Basically, you can plant them and leave them and they will still thrive.

Below are steps you can take to plant milk thistle in your garden or yard:

1. Choose a sunny or lightly shaded area.
2. Direct sow milk thistle seeds in the spring after the last expected frost.
3. Place seeds shallowly — at a depth of about a quarter of an inch — in groups of three to four seeds each.
4. Space seed groupings about 30 to 36 inches apart.
5. Water well to encourage growth (alternately, you can soak the seeds in water for 24 hours prior to planting them).
6. After seedlings appear, thin each group to the one strongest plant.
7. Seeds will germinate in about three weeks in temperatures around 54 to 59 degrees F (12.2 to 15 degrees C).

When starting seedlings indoors, plant seeds about two months before the last frost. Fill starter pots with peat moss and follow the planting instructions above. Milk thistle seeds sown directly outdoors produce biennial plants in most climates, which means they will flower their second season. Plants started indoors are grown as annuals and will flower in the first year.

Milk thistle flowers attract pollinators such as bees and butterflies. In addition, many species of birds seek out the seeds for food. During late summer when the flowers dry out, it's common to see birds clinging to the spiny stalks of milk thistle and swaying in the wind as they chomp away on the seeds.



Considerations Before Growing Milk Thistle at Home

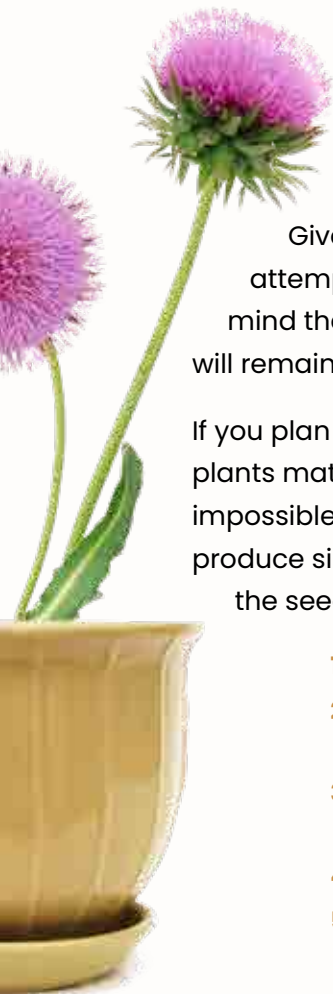


Before you think about planting milk thistle in your garden or yard, be sure to **check with your local cooperative extension** to ensure it is not banned.

Washington state recognizes the plant as a "Class A Noxious Weed" that must be eradicated when found. Although occasionally found in gardens, it is illegal to buy or sell milk thistle in Washington state.

Arkansas and Oregon also have restrictions. Even if you live elsewhere and are permitted to plant it, be forewarned: Milk thistle is a **highly invasive weed** that can quickly spread all over your yard, and neighboring yards as well. It spreads quickly based on the reality a single flower head contains **nearly 200 seeds**.

Because these seeds germinate in temperatures ranging anywhere from 32 to 86 degrees F (0 to 30 degrees C), this hardy plant can remain viable for nearly a decade. Once it is established and its seeds are allowed to spread, you will find it difficult, if not impossible, to stop it. Because milk thistle is also **toxic to livestock**, you will want to take care in planting it outdoors if you live on a farm or maintain farm animals of any kind.



Harvesting Milk Thistle

Given their many thorns, it is best to put on a pair of thick gardening gloves before attempting to touch milk thistle, especially when harvesting their flowers for seeds. Keep in mind the average milk thistle plant may possess upward of **6,000 seeds**! About 90% of them will remain viable after harvest.

If you plan to collect seeds, you will want to harvest them before the plants fully mature. If the plants mature unattended, the seed heads will break on their own, making seed harvesting impossible. This is because when milk thistle flowers begin to dry out (usually in the fall), they produce silvery-white, tufted seed heads known as **pappus** (similar to dandelions). To extract the seeds from the flower heads you will need to:

1. Cut dried blossoms off the plant from the base of the flower head.
2. Place the flower heads in a paper bag and keep the bag in a warm location for about a week to allow them to dry completely.
3. Put the dried flower heads into a burlap sack, shake the bag well and then use your hands to coax the remaining seeds from the heads.
4. Dump the seeds into a bucket and separate out the unwanted chaff.
5. Once all the chaff is removed, store your milk thistle seeds in an airtight container in a cool, dark place until you're ready to use them.

How to Grow Oregano

Best time to plant: 🌸 Spring

Harvest: 🌸 Spring to 🌞 early summer



Oregano (*Origanum vulgare*) is an ancient, perennial herb, being an integral cooking ingredient in what is now known as Eurasia for thousands of years. The entire Mediterranean is well acquainted with this food-enhancing spice, but it's probably no surprise that Greece and Italy are noted as the regions where it most likely originated.

Because it's related to **mint**, which is from the menthe family of plants, you may detect a similarly cool but distinctive essence when you crush a leaf from the oregano plant between your fingers. Oregano has many of the same therapeutic qualities as mint, and the scent may also remind you of thyme.

Strolling through a garden that includes oregano, you may not be overwhelmed by the scent and aroma nearly as much as when the herb is dried. **Greek oregano**, or *Origanum heracleoticum*, is the variety recommended for your culinary endeavors.

Health Benefits of oregano

As an herb, it makes sense that oregano provides health benefits. You might be surprised how many there are, though, and that the

powerful properties extend throughout your whole body. Organic farm Floral Encounters offers a succinct account of the traditional uses for oregano:

DID YOU KNOW?

Carnosol, a phytochemical found in oregano, was "evaluated for anticancer property in prostate, breast, skin, leukemia, and colon cancers with promising results."



Growing Oregano

Here's some good information about how to include this easy-to-grow, must-have herb in your own garden. As always, organic seeds or seedlings from a reputable source are preferred to ensure they're not tainted by harmful chemicals.

Cooks all over the world happily report how easy it is to cultivate this herb in their gardens, patio containers and inside on window sills. It's bushy, low-growing and attractive, with tender, oval leaves and woody stems. Oregano loves sunshine and is easily grown from seed or propagated from cuttings placed in water in a sunny spot.

It's the "sun-lover" aspect of oregano that makes it grow best when it's warm. Many gardeners wait until the soil is 70 degrees F (21 degrees C) before planting the seed and do so in well-drained soil as opposed to clay that's tightly packed.

Similar to basil, oregano plants grow more dense when their branches are snipped or pinched back after they've reached about 4 inches in length.

This also prevents a tendency toward undesirable "legginess," which could eventually threaten the health of the plant.

Additionally, it's best to thin seedlings to about 8 inches apart, and trim occasionally so they don't begin to flower, which can weaken the strong essence of the leaves. Heirloom Organics advises:

“Trim plants back before flowering (approximately [five] to [six] weeks after planting) to stimulate a dense growth habit. If you allow some of the flowers to produce and drop their seed, you can keep your oregano patch fresh and vigorous. Remove 3- to 4-year-old plants to keep the bed quality high.”

Every four years or so and in early spring, thin out oregano plants for optimal hardiness. They're lovely for landscaping, especially with their tiny lavender blossoms. According to Farmer's Almanac, water your oregano plants well, but maybe not as often as some other herbs.



Harvesting Oregano

To dry, cut the stems before the buds open and hang or lay them flat on wire racks. When the leaves are completely dry (as damp leaves will almost certainly mold) harvest them, place them in a tightly sealed glass jar and don't forget to label them. Saved seed heads placed in a paper bag will keep for around five years.



How to Grow Turmeric

Best time to plant: ❄️ Late winter to 🌸 early spring

Harvest: Eight to 10 months after planting

Turmeric (*Curcuma longa*) is part of the ginger family, which is why it exudes a pleasant little zing on your tongue. But unlike ginger, turmeric is both bitter and peppery. It's not meant to be a flavor on its own but as a seasoning to complement other foods. Besides lending dishes a unique and signature flavor, turmeric's health benefits make it a natural healing substance that you'd want to have at the ready.

Even though turmeric is available in many large supermarkets, it's usually quite expensive and is somewhat limited depending on the time of year. Grow it in your garden to guarantee a supply of fresh, organically grown turmeric whenever you need it.

Health Benefits of Turmeric

The single-most exceptional beneficial and disease-preventive compound in turmeric is **curcumin**. One study notes that the curcuminoids and volatile oils in this rugged rhizome exhibit anti-inflammatory, antioxidant, antimicrobial, immunostimulant, antiseptic, analgesic and anticarcinogenic.

Curcumin is also **hepatoprotective**, notably against the toxins tetrachloride (CCl₄), galactosamine, acetaminophen (paracetamol) and Aspergillus aflatoxin, mainly due to its antioxidant properties, as well as its ability to inhibit pro-inflammatory cytokines from forming, and evidence shows it may help treat gallstones.

FUN FACT

Although the turmeric plant is widely known for its roots, you can also consume its leaves and flowers.



Further, the phytochemicals in curcumin prevent the clumping together of platelets, which improves circulation. Studies on the astonishing potency of curcumin against cancer are numerous. In vitro, for instance, it was found to resist oxidative damage in aortic endothelial cells. Animal studies have also indicated three stages in which curcumin helps inhibit cancer: tumor promotion, angiogenesis and tumor growth, particularly in colon and prostate cancers.

Keep in mind that curcumin may interact with a variety of prescription and nonprescription drugs, including some diabetic medications, aspirin and other painkillers. Overall, however, studies and reviews have tested turmeric's

effectiveness against disease extensively.

A study published in the Annals of the New York Academy of Sciences concludes that the "efficacy, pharmacologic safety, and cost effectiveness of curcuminoids prompt us to 'get back to our roots.'" According to the researchers:

“Because it can modulate the expression of [several important molecular] targets, curcumin is now being used to treat cancer, arthritis, diabetes, Crohn's disease, cardiovascular diseases, osteoporosis, Alzheimer's disease, psoriasis, and other pathologies.”

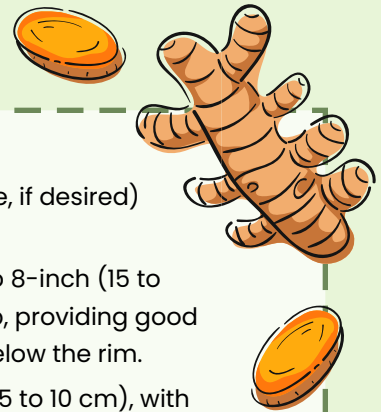


Growing Turmeric

Growing turmeric, both indoors and out, starts with a firm, healthy root, which you can usually find at a health food store or supermarket. Root cuttings have little "growing buds," which look like nodules or "fingers" extending outward, generally in the same direction. When planted, rule one is that the **buds must be facing upward**, not downward, in the soil. Here's the drill:

Instructions

1. Break or cut a large turmeric rhizome into a small piece (or more, if desired) that has two or three buds.
2. Fill 14- to 18-inch-wide pots (36 to 46 centimeters) for each 6- to 8-inch (15 to 20 cm) root. The posts should be at least 12 inches (20 cm) deep, providing good drainage with rich, moist, organic soil 1 or 2 inches (3 to 5 cm) below the rim.
3. Place the rhizome below the surface of the soil by 2 to 4 inches (5 to 10 cm), with the buds are facing upward.
4. Whether planting outdoors or in pots inside, these plants thrive in heat — 86 to 95 degrees F (30 to 35 degrees C) works well — as cooler temperatures will produce much slower growth. However, part shade is fine.
5. Water the plantings and keep the soil moist, especially in dry, hot climates; less frequently in cooler temperatures. Watering every other day is a good rule of thumb, but don't let them sit in soggy soil. You can also mist the soil with a spray bottle, which tropical plants appreciate.



Areas that don't have the high temperatures that turmeric thrives in must produce it other ways. That's where grow lights and heat mats come in handy, either full time in early spring or late fall, or during the night when available light isn't around 80 degrees F (27 degrees C). It can take **eight or 10 months** for turmeric to mature enough to be edible, so determine your planting time, method and location accordingly, and be patient!



Harvesting Turmeric

Your turmeric is likely ready for harvest when the plant above ground begins turning dry and brown. Gently remove the roots and shake off loose soil. If in pots, tip the whole thing to get to the root. Cut the stems off about an inch above the rhizome root mass and wash them well. Make sure to wear gloves when handling turmeric, as it leaves a bright orange tint on the skin.



It's best to harvest turmeric rhizomes all at the same time, but when you dig them up, you can save one or two for future plantings so that in every sense, the potential health of each root is propagated. Fresh turmeric can be used in similar ways to ginger. Store fresh turmeric rhizomes in a baggie or other airtight container for up to a week, or freeze them.

How to Care for Your Turmeric Plant

Once the plants reach 2 inches (5 cm) in height, transplant them if necessary, making sure there's at least 16 inches (41 cm) between them. **Compost tea** is a good thing to implement to ensure optimal growth. Outside, only garden zones 8 or 9 and above will sustain the growth of a turmeric plant, although summers in colder zones will also work if you dig up the plant and move it inside before it starts getting too cool. Turmeric plants don't do as well when it dips below about 65 degrees F (18 degrees C).

You should also know that turmeric outdoors will go dormant in winter, but in the warmest climates (7b garden zones and above, generally) it can be left in the ground to sprout new, greenish-white and sometimes pinkish-white flowers the following spring. **The roots will survive as long as they don't freeze.** Mulching them with a couple inches of organic matter will also help protect them from an unexpected frost.



HOW-TO-GROW HERBS (ornamental)



How to Grow Bergamot

Best time to plant: ❄️ Mid-winter

Harvest: ☀️ Early summer to 🍁 early fall



If you're not familiar with **bergamot** (*Monarda fistulosa* and *Monarda didyma*), you may recognize its more common name: **bee balm**. The tall plants with eye-catching blossoms on top look like an exploding firecracker and come in a rich lilac, pale pink or bright red hue, depending on the variety.

Bergamot is a perennial that grows easily and has a variety of uses. The plant has large leaves, the lavender version of which have a red or purple cast. In some areas, bergamot grows wild; generally in the northeastern portion of the Midwest and on the East Coast down through Georgia.

DID YOU KNOW?

Bergamot is famous for attracting beneficial butterflies, hummingbirds and bees. The leaves repel mosquitoes and gnats, and it's a good companion plant for tomatoes.

Modern and Traditional Uses for Health Benefits of Bergamot

Bergamot has a unique flavor when made into tea. For this purpose, you can strip off the leaves and pluck the flowers to dry in the shade for a few days; however, longer than that may either burn the leaves or cause them to absorb moisture, so oven-drying them is recommended. They should then be stored in an airtight, glass jar. According to Medicinal Herb Info, bergamot tea has **three main uses**:

**Carminative**

A preparation to help to reduce flatulence and bloating

**Rubefacient**

Where applied on the skin, increases blood flow, which may relieve pain, as in arthritis

**Stimulant**

Some herbalists keep it on hand to use as a mild pick-me-up for melancholy

Native American tribes used the leaves for these purposes and also to make tea to remedy fever, nosebleeds, insomnia, heart trouble, colic, measles and to induce sweat. Poultices were also made to relieve headaches, and early physicians used it to expel parasites. The Shakers along the upper East Coast in the U.S. used the tea to remedy colds and sore throats, and it's often used in the same way today. In addition, one study observed:

“*Monarda fistulosa* essential oil characterized by pronounced therapeutic effects is proposed for the treatment of **seborrhea** [a rash, often on the scalp]. Studies of its antibacterial, antimycotic, and antiinflammatory activities showed that it inhibits microorganism growth and is superior to hydrocortisone in combination with vitamin B6 by its anti-inflammatory activity.”



Naturopath Dr. Jackie Johnson writes that it's the high thymol content in bergamot (which, like thyme, is a strong antiseptic) that explains its use as an infusion for the aforementioned ailments, as well as for upper respiratory problems and whooping cough, and topically for skin problems and wounds. She notes:

“I work as an auditor for the Oneida Nation who came to Wisconsin in the early 1800s. *Monarda* was common in their original homeland in New York. *Monarda fistulosa* is currently referred to by the Oneida as 'No. 6' and is available at my local health food store without cost for those who need it for an upper respiratory tea. Right now the *Monarda fistulosa* is in full bloom and we're all busy harvesting.”



Growing Bergamot

If growing bergamot from seed, you can start them indoors six to eight weeks beforehand. Place seeds about one-fourth inch deep and 12 inches apart in rich, fertile soil, then transplant once all threat of frost has passed.

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Related to mint, bergamot also has opposite leaves and "square" stems. It's easy to grow, does well with a mix of sun and shade, and enjoys plenty of water.

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It's also an herb that can be cut back after the first bloom to increase its chances of blooming again later in the same growing season. The Herbal Academy has a number of interesting hints and tips regarding the successful growing of this attractive, bee-attracting plant, such as:

*"Seed is readily available and takes between **10 and 40 days** to germinate. Each flower has four nut-like seeds in each; stratify the seeds prior to planting ... keep them in the refrigerator over winter and plant in the spring ... These will self-sow but unlike other mints, will not get too invasive."*



While bergamot can be grown from seed, hurrying the process can be done by dividing the roots nearly any time. Root cuttings can be taken during its peak growing season, which is generally between **June and September** (depending on your growing zone) clear through late fall. Gently break apart woody or black bits from the roots and place them 18 inches apart. It's best to repeat this process every third year or so to ensure the plants remain hardy.



Harvesting Bergamot

You can expect germination in 10 to 14 days if the temperature has reached about 70 degrees, with harvest in around 60 days. Powdery mildew in areas of high humidity is something to watch for.

How to Grow Sage

Best time to plant: 🌸 Spring or 🍁 fall

Harvest: 🌸 Spring

Known for its woolly oblong leaves and musky smell, **sage** (*Salvia officinalis*) is one of the easiest herbs to grow. While its ornamental varieties are also popular, sage is best known in its culinary form as a complement to poultry and other meat dishes.

Health Benefits of Sage

Originating from the Mediterranean region, sage has been used as a medicine for thousands of years. A rich source of polyphenol compounds, sage contains more than 160 identified polyphenols, comprising an array of flavonoids and phenolic acids, including caffeic acid and its derivatives, lithospermic acid, rosmarinic acid, sagecoumarin, sagernic acid, salvianolic acids and yunnaneic acids. Sage boasts the following health benefits:



FUN FACT

Common sage is known to be a bit hardier than the more ornamental varieties like golden, purple and tricolor sage.

- ✔ **Aids digestion** — The rosmarinic acid found in sage acts as an anti-inflammatory agent, soothing your stomach and preventing gastric spasms. Sage can help reduce the incidence of diarrhea and gastritis.
- ✔ **Boosts cognitive function** — In vitro and animal studies have confirmed several sage species contain active compounds shown to enhance cognitive activity and protect against neurodegenerative diseases such as Alzheimer's and other types of dementia.
- ✔ **Improves bone health** — Sage contains a superior level of vitamin K, which along with its high calcium content supports strong bones and teeth. One tablespoon of sage contains roughly 43% of your recommended dietary allowance of vitamin K.
- ✔ **Aids diabetes management** — Sage possesses compounds known to mimic the drugs typically prescribed for managing diabetes. As such, it appears to regulate and inhibit the release of stored glucose in your liver, which balances your blood sugar, helping to prevent Type 2 diabetes or assist in managing the condition if already present.
- ✔ **Strengthens immunity** — Sage contains antimicrobial properties researchers suggest, when applied in the form of an essential oil, is effective in inhibiting the growth of bacteria such as *Staphylococcus aureus*. In addition, sage is a natural expectorant and useful to clear mucus and reduce coughs. Consider adding a drop of sage essential oil to a cup of tea or hot water the next time you have a cold.

Growing Sage

Starting sage plants couldn't be easier, and you have three options:

Seed

Sage seed must be sown while fresh. Not only does it not store well, but also, even when the seed is fresh, sage is a relatively slow and poor germinator. When planting indoors, place three seeds in a cell to ensure you get a decent amount of viable seedlings.

Transplants

If you want to get a head start on the growing season, plant sage seeds in a starter soil mix and maintain them under grow lights for six to eight weeks before the last frost in your area. The seeds will take about three weeks to germinate. Another option is to purchase established transplants from your local garden center or nursery.



Root cuttings

You can grow another sage plant by clipping a 3-inch portion from the very tip of an existing mature stem and placing it in moist potting mix or vermiculite. In about six weeks, roots will emerge. Another option is layering which involves securing a bendable stem from an existing plant to the ground using a piece of wire or rocks.

Before covering it with dirt, make a small nick in the bent stem where you want the roots to grow. You can wait a couple of months or a whole season before separating the new plant from the original.

Transplant the strongest seedlings outdoors after all danger of frost has passed or, if you have an indoor area receiving direct sunshine, you can maintain your plants in pots indoors.

How to Cultivate Sage

Sage plants, both the culinary (common) and ornamental varieties, will be perennial if you live in U.S. Department of Agriculture (USDA) hardiness zones 5 to 9. While it's difficult to make mistakes with such a hardy, easy-to-grow herb like sage, below are some planting tips to ensure your success:



SOIL - Sage will do best in loamy, sandy, well-drained soil. It prefers a pH between 6.0 and 7.0. While fertilizer will accelerate plant growth, too much will diminish the herb's naturally intense flavor. To enhance growth, consider side dressing your plants with organic compost in the spring.



SPACING - Because sage grows in a round, bush-like fashion — mature plants can reach 1 to 2 feet tall and 2 to 3 feet wide — space plants about 24 to 36 inches apart.



SUN - For healthy plants, give sage full sun. In hot zones, USDA zone 8 or higher, some afternoon shade is OK, but plants need sun or a breeze to keep the leaves dry and prevent rotting. When growing sage indoors, place pots near a sunny window.



WATER - Sage is a decently drought-tolerant herb and needs water only occasionally, when the soil is dry. Leaves will mildew if allowed to sit damp, so resist the temptation to overwater.

More Tips About Growing Sage

Sage is hardy and can survive cool weather and even a bit of frost. When transplanting sage into your garden, keep in mind it will thrive near cabbage, carrots, strawberries and tomatoes. Below are some additional tips to consider when growing sage:

- ✓ To attract pollinators like bees and butterflies, it's best to grow **more than one sage plant** and to allow a couple of them to flower.
- ✓ During the first year, depending on growing conditions and plant size, sage may or may not bloom. If it does bloom, spikes of **purple/blue flowers** will appear in midsummer.
- ✓ To help the plant become established, **do not harvest** any leaves the first year. In the second year and beyond, you can harvest the leaves at any time. Some suggest the best flavor is found in leaves harvested before or just after the plant blooms.
- ✓ Prune your sage plants **after they flower** to keep the plants shapely and to prevent them from getting too leggy and woody.



Harvesting Sage

Similar to other herbs, the flavor of sage depends on the variety you choose to plant and the maturity of the leaves at the time of harvest.

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 According to Mother Earth News, the best time to harvest fresh sage leaves is in the spring, when they are young and release a lively — almost lemony — flavor.

Its unique springtime flavor combines well with mint and is further embodied by the addition of fresh lemon juice.

Sage leaves plucked in summer are characterized by a more robust flavor known to enliven herbal blends. Marjoram, parsley, oregano, rosemary and thyme are a few of the herbs well suited to sage. The **fall season** may be a high point for sage given the savory aroma it brings to meats, stuffing and squash dishes.



Sage complements well with lamb, pork and poultry.

Due to its strong flavor, sage (similar to rosemary) can easily become overpowering. As a result, use sage sparingly in herbal blends. Start with a small amount and gradually increase it to achieve your desired taste. Near the end of the growing season, sage leaves can become rough and chewy, so be sure to mince them finely. You can receive all the flavor of sage without serving it in the final dish by adding sprigs of it during the cooking process and removing them prior to serving.



HOW-TO-GROW HERBS

(Aromatic)



How to Grow Caraway

Best time to plant: 🌸 Spring or 🍂 fall

Harvest: 🌸 Spring onwards



Caraway (*Carum carvi*) is an aromatic herbaceous plant, but is better known for their seeds. The origins of the name come from the Arabic "al-karwiya" seeds. Others believe the origin of the name is Latin from the word *carvi*, originating from Caria where the caraway plant may have first been used.

Growing caraway requires some patience as the plant is **biennial**. This means the plant has a two-year biological cycle. In the first year, it produces a root structure, stems and leaves. During the second growing season, the plant completes the formation of flowers, fruit or seeds. Following the second season, many will reseed and then the plant usually dies. Most biennials are vegetables.

Caraway is usually grown for its intensely scented seeds or as a parsnip-like root vegetable. It is hardy, growing to about 8 inches in the first year with finely divided leaves and a long taproot. By the second year, the stalks grow up to 36 inches and develop white or pink flowers appearing between May and August.

Health Benefits of Caraway

Caraway is easy to grow, care for and harvest in your own garden, giving you easy access to an excellent source of potassium and calcium. Caraway also contains powerful antioxidant phytochemicals, the most prevalent of which are the carotenoids lutein and zeaxanthin, which help neutralize and remove free radicals and prevent degenerative diseases.

Caraway is also high in fiber and contains vitamins C, A, E and B complex. Adding the leaves, seeds and root and to your regular diet can be beneficial to your health in a number of ways. For instance caraway may help:

Promote digestive health A 100-gram serving of caraway seeds provides 38 grams of fiber, a dietary component that helps maintain proper digestive health promoting regularity and helps reduce your risk of stomach and intestinal diseases.

Fight microbes Caraway essential oil has antibacterial properties, and has been found to help inhibit harmful organisms like salmonella.

Manage inflammation According to Organic Facts, taking caraway oil with raw honey or warm water may help loosen up mucus in the respiratory system as well as control the inflammation in the airways. Even smelling the powerful oil may help break up congestion from coughs and colds and provide relief for those with bronchitis.

Improve sleep quality Magnesium, a mineral found in caraway seeds, may help enhance the duration, quality and tranquility of sleep, leaving you feeling better for the next day.



DID YOU KNOW?

Caraway seeds are often added to breads, cakes, soups and cabbage dishes to add a pungent flavor.



Growing Caraway

The caraway plant is a cool-season biennial, doing best in sun or partial shade in zones 4 through 10. In cooler zones, the plant appreciates full sun, while in warmer zones it needs partial shade during the heat of the afternoon sun.

Since the caraway plant has a long tap root, it doesn't do well in small containers. If a container

How to Grow Dill

Best time to plant: 🌸 Mid-spring to 🌞 mid-summer | **Harvest:** 🌸 Spring to 🌞 summer

Dill (*Anethum graveolens*) is an uncommonly versatile perennial herb. If you enjoy growing dill and using it in your recipes, you already know that, but many people, upon tasting the deliciously light, savory flavor in salads, sandwiches or soups, wonder what it is and want more. Of course, many identify dill with the hamburger pickles of the same name. That's how famous dill is; a pickle is even named after the herb that made it famous!

While it's possible to purchase fragrant dill fronds or "starts" from farmers markets and grocery stores, the freshest dill will always come from your own garden. Even if you're not a garden enthusiast, this herb is so easy to grow, care for and harvest, the hardest part may be deciding which recipe to try it in first.

Health Benefits of Dill

One of the most popular ways to take advantage of dill's benefits is transforming it into an herbal oil.

Dill oil can come from the seeds as well as from the graceful-looking leaves and each has a different smell. Oil from the seeds may remind you of caraway seeds due to its high carvone content.

Used in aromatherapy, it has a fresh, spicy, grassy aroma. The carvone in dill seeds is identified as antimicrobial. Mixed with lotions or creams, dill oil is used for wound healing. It's also known as an **antispasmodic** because of its ability to calm, ease tension and have a sedative effect.



FUN FACT

Dill oil has been used since the time of the Roman gladiators, who purportedly used it to quell nervousness and stress. It was also rumored to be an effective love potion.

Dill oil is noted as aiding digestive issues such as constipation and upset stomach, and helps keep gas from forming (carminative). There's evidence that it may have other diverse uses as reducing mouth and throat inflammation and treating urinary tract infections (UTIs).



Growing Dill

There are several dill varieties. **Bouquet dill** is smaller and has fewer blossoms and seeds. Hardy varieties like **Delikat**, which is dense, and **Fernleaf**, a dwarf type, do well even in areas with fewer than six hours of sun per day.

You may not hear very often how beautiful dill is growing in your garden — both when it's fresh, feathery and bountiful, like the tops of a carrot (which is a relative) and when it produces the spiny flowers that look like yellow Queen Anne's Lace.

From the outset you should know that dill doesn't necessarily like to be moved, especially when it's small. Further, seedlings emerge in about 10 days, germination takes from 21 to 25 days and harvest can usually take place within 57 to 70 days. Soil quality doesn't (necessarily) hamper how well it grows, but compost will certainly give it a boost.

Gardening Know How notes that growing dill directly from seeds rather than from a transplant is better and can be done by simply scattering the seeds in the desired location after the last frost, and then lightly covering the seeds with soil. Make sure to water the area thoroughly.

Finding a spot in the back of your garden is also a good idea as its height can conceal things you've planted around it. Another idea is to sow dill seeds **close to a wall or fence** because dill gets so tall, a brisk wind can break the slender stalks. It may not kill the plant, but it could prevent them from standing upright.

You can remedy this by using **slender stakes** to loosely anchor the plants once they've reached a few feet in height. Until the tiny, feathery fronds begin emerging above the soil surface, you may want to keep the ground slightly moist, especially in dry weather. You don't need to thin dill sprouts, as they like having the mutual support of the other seedlings to keep them standing.



Growing Potted Dill Indoors

Do It Yourself maintains that the best times to plant dill indoors is between **October and early spring**, with harvesting dill from your own kitchen windowsill in six to eight weeks a very real possibility using five easy steps:

1. Fill 6- to 8-inch pots with drainage holes at the bottom to just over three-quarters full of compost-rich, easily drained soil. Plant seeds about 9 inches apart.
2. Dill loves sunlight, so if light doesn't reach your pots for at least six hours a day, use grow lights for 12 hours a day. Fluorescent grow lights should be placed about 8 inches above the plants, while high-intensity lights like sodium lights should be several feet higher than your herbs.
3. Dill should be fertilized every six weeks with a natural half-strength liquid or fish fertilizer. While dill is somewhat drought-resistant, it grows better inside when watered regularly. Water until the soil is moist, then let the soil dry in between.
4. Dill tends to grow tall, so unless it's a dwarf variety, use a slender stake fastened loosely for future adjustment if the plant wants to begin listing sideways.
5. Once flower buds form, leaf production will cease, so keep harvesting your dill, even it's just to slow flower formation. If you want the herb, not the seeds, cut the plant down to a few inches and your dill should grow back in about eight weeks.



Harvesting Dill

As for snipping dill weed to dry and have it at the ready in your kitchen, you can dry it to store in an airtight container for several months or even a few years, although in time it will lose its amazing pungency. To dry dill weed, spread the stems on a screen in a cool, dark place. Once dried, you can also use plastic bags to freeze the herbs, but be sure to press all the air out to retain the most flavor.




Letting Dill Flower for Seed Production

If you want your dill to flower for the express purpose of harvesting the seeds, Garden Know How notes that the best thing to do, basically, is nothing:

“Allow the plant to grow without trimming until it goes into bloom. Once dill weed plants go into bloom, they'll stop growing leaves, so make sure that you don't harvest any leaves from that plant. The dill flower will fade and will develop the seed pods. When the seed pods have turned brown, cut the whole flower head off and place in a paper bag. Gently shake the bag. The seeds will fall out of the flower head and seed pods and you'll be able to separate the seeds from the waste.”

You can also snip off the flower-bearing stems before they've dried completely and hang them upside down in a warm, dry location. Once you've collected the seeds, store them in a tightly closed glass jar in a cool, dark place.



How to Grow **Eucalyptus**

Best time to plant:  Summer

Harvest: Between two and 12 months



Eucalyptus (from the Myrtaceae family), an evergreen tree native to Australia, is perhaps best known as a favorite food for koalas. In Australia, the fast-growing trees may reach massive heights of 300 feet with a hefty circumference of more than 24 feet. Other varieties take the form of short, bushy plants, all of them with a characteristic pungent aroma.

What's interesting about eucalyptus is that it grows well in containers, which means even if you live in a cooler climate, you can have your own eucalyptus tree as long as you bring it indoors for the winter. In fact, some people even prefer to grow eucalyptus as an indoor plant, and because it's so fast-growing, you can also use it as an annual.

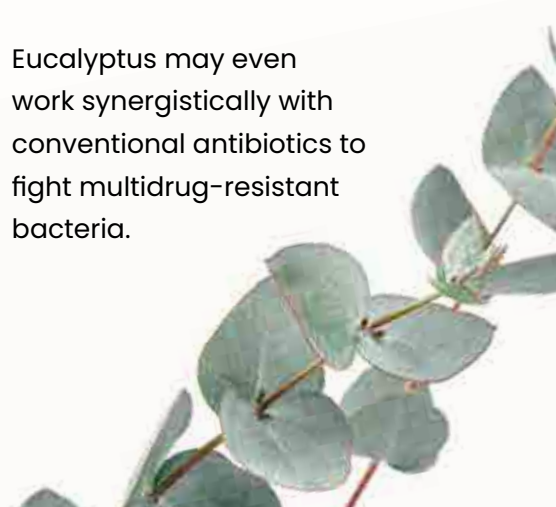
Health Benefits of Eucalyptus

You may be interested to know that eucalyptus is a common plant used in complementary medicine, in part because it has strong antimicrobial properties. For instance, eucalyptus leaf extract has been shown to possess antibacterial effects against pathogens commonly involved in respiratory tract infections.

DID YOU KNOW?

Eucalyptus is a favorite among crafters, with its decorative foliage creating a perfect addition to centerpieces and arrangements.

Eucalyptus may even work synergistically with conventional antibiotics to fight multidrug-resistant bacteria.





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In a study published in the *Asian Pacific Journal of Tropical Biomedicine*, researchers discovered that essential oil extracted from eucalyptus globulus leaves is particularly effective against common strains of bacteria, such as *E. coli* and *Staphylococcus aureus*.
.....

Herbal infusions of eucalyptus can be used as a chest rub, skin antiseptic or as a steam inhalation. The vapor from eucalyptus oil is often recommended for use as a **decongestant** for colds and bronchitis. Eucalyptus oil can also be added to a diffuser for **air freshening** or **congestion relief**. It's also an effective insect repellent.



Eucalyptus oil can be added to **bathwater** and is said to help ease pain and inflammation. The essential oil extract is also immune-boosting, with researchers suggesting it could "drive development of a possible new family of immunoregulatory agents, useful as adjuvant in immunosuppressive pathologies, in infectious disease and after tumor chemotherapy."

When added to oral-care products, eucalyptus may be effective against bacteria that

contribute to tooth decay. One study even looked into the effects of eucalyptus extract chewing gum, which was found to promote **periodontal health** and significantly reduce **plaque accumulation** and other measures of dental health.

For congestion relief, you can (carefully to avoid burning) also place a towel loosely over your head to create a tent and inhale the steam. With the many varied uses, from aesthetic to medicinal, and the ease of growing, eucalyptus is one plant you'll likely find yourself coming back to for years to come.

Growing Eucalyptus

If you're planning to grow eucalyptus outdoors, be aware that these hardy, fast-growers are sometimes considered invasive. There's even speculation that they may release a chemical into the soil that stops competing plants from growing. The trees also have exfoliating bark that, while showy and quite impressive, can accumulate on the ground, which might not be desirable in some locations.



Eucalyptus trees are considered to be **fire hazards** in some locales, as their high oil content makes them prone to burning quickly.

Outdoors, they will need a sunny spot protected from drafts along with regular watering. When grown in their ideal conditions, eucalyptus trees will also produce blossoms that are a favorite among bees.

Many home gardeners will prefer to grow eucalyptus in a container or as a houseplant. Some varieties that thrive in container gardens include lemon-scented gum (*Eucalyptus citriodora*), argyle-apple (*Eucalyptus cinerea*), silver-dollar gum (*Eucalyptus perriniana*) and mountain gum (*Eucalyptus dalrympleana*).



*Eucalyptus
citriodora*



*Eucalyptus
cinerea*



*Eucalyptus
perriniana*



*Eucalyptus
dalrympleana*

You can leave potted eucalypti plants outdoors in the summer, but be prepared to bring them inside when the weather gets cool, and definitely **before the first frost**. The plants can be cut back and stored in a cool area (such as a basement) to overwinter. If temperatures are below about 46 degrees F (7.2 degrees C), you only need to water the plants sparingly.

If you prefer, and your home is warm with access to a bright (preferably south-facing) window, **eucalyptus trees** can continue to grow over the winter, with higher temperatures leading to faster growth. You'll need to water it regularly in this case.

Be aware that your eucalyptus plant will probably outgrow its container at some point, so you'll need to either plant it outdoors at that point or move it to a larger container (do this in the spring). The alternative is to regard eucalyptus as strictly an annual that you start new each season.

You may purchase a eucalyptus plant that's already established, but it can also be grown quite readily from **seed**. Sow them shallowly in the spring or late spring into the container in which you plan to keep the plant. Cover the potting mixture with **sphagnum moss** and keep the seeds in a warm spot (at least 60 degrees Fahrenheit or 15.5 degrees Celsius).

You'll need to mist the seeds regularly to keep them damp. Once the seedlings have established themselves as young trees, they can be moved outdoors (provided it's summer).



Harvesting Eucalyptus

If you grow eucalyptus, you'll probably be very interested in what to do with all of those beautiful leaves and branches once they reach maturity. Most simply, snip some stalks from the plant, place them in a vase and use them as a centerpiece or mantle decoration.

You can also add eucalyptus leaves to a bowl or sachet and use them around your home to repel insects or act as an air freshener. You can also boil water and add eucalyptus leaves to the pot. The steam that's released will add a pleasant aroma to your home.



How to Grow Fennel

Best time to plant: 🍁 Early fall

Harvest: About 90 days

Fennel (*Foeniculum vulgare*) is a herb with a mild but distinctive licorice flavor, popularly used in Southern Europe and the Mediterranean region. Every part of the plant can be eaten, including the seeds, once the plant has flowered. Part of the carrot family, the plant is a **perennial**.

Although classified as an herb, many chefs use the lower part of the plant, or the **bulb**, as a vegetable, adding it to salads, soups and stews. Although the bulb is layered, the stems of the plant are hollow. Fennel is cultivated in many parts of the world, but it also grows wild along roadsides and open pastures.

Health Benefits of Fennel

Although the taste and scent may remind you of anise or licorice, the plant is actually related to caraway. Its aromatic scent may help repel fleas from your dog. An old gardening expression suggests planting "**a fennel near your kennel**" to protect your dog from fleas.

Crunchy and sweet, fennel is often associated with Mediterranean meals. Like most spices, it has a unique combination of phytonutrients with potent antioxidant activity. The primary component of the volatile fennel oil is **anethole**, shown to reduce inflammation and help lower the risk of cancer. Researchers propose the anti-cancer properties are related to shutting down tumor necrosis factor mediated signaling.



DID YOU KNOW?

The first record of fennel being used medicinally was in 50 A.D.



Growing Fennel

Fennel seeds are most viable when fresh, but some have germinated when they are 4 years old. The seeds can be started indoors or planted directly outdoors.

However, as the plant may be invasive and will seed the surrounding area, it may be prudent to plant where there are natural borders or in a pot. Plants may also cross-pollinate, so you want to keep your fennel to the back of the garden.

In warmer climates, it is possible to sow seeds in the early fall to reap an early spring harvest. The plants need full sun exposure and well-draining soil. As you choose where to plant your fennel, remember it grows between **5 and 6 feet tall**, with a core like celery and a base shaped like an onion.

As with all plants, the soil you start with will be a large factor in determining the health of your harvest. If you're planting in a pot, it's easier to control the soil and organic material you use.

Choose an area of your yard where you can add organic fertilizer and a place that drains well. This protects your plants from disease and pests that flourish on weakened plants.



The fennel bulb is also a good source of **vitamin C, potassium, folate and fiber**. Your body utilizes vitamin C as a cofactor in numerous enzymatic reactions and in the production of collagen, important to your skin, tendons and ligaments. Studies have demonstrated a higher intake of **vitamin C** is associated with a reduced risk of heart disease and stroke.

Potassium is an essential mineral and electrolyte your body uses to reduce the risk of disease, regulate your heart beat and muscle activity, and regulate bone cell generation. It also may help lower high blood pressure. **Folate** is a water-soluble vitamin used in the metabolism of several amino acids and is critical to the production of nucleic acid. Low folate levels may increase your risk of cardiovascular disease and cancer, and may result in birth defects.

Fennel may also help counteract **postmenopausal bone loss**. In a study evaluating osteoclast differentiation and bone resorption in postmenopausal women, researchers found that fennel decreases bone turnover markers and offers a protective effect in helping reduce the risk of bone loss.



Container gardening has several other advantages, not the least of which is being able to grow a garden on an apartment balcony or your back porch.

You can move the containers as the needs of the plants change through the season, and you can separate plants if they become diseased while you're treating them so the disease doesn't spread.

One of the more important factors in growing fennel is **well-draining soil**. Well-fertilized soil may help reduce the taste and aromatic oils of the plant. After sowing seeds 12 inches apart in the ground or 3- to 5-gallon pot, cover with a quarter inch of soil and water daily with a light spray nozzle until the shoots appear.

Once shoots are up, you may water **once or twice weekly** if they are in the ground and possibly more frequently if the soil in your pots dries quickly.

As the plants grow, they may need staking after they reach 18 inches, especially if they are planted in a windy location. The plants are very hardy and may even continue to grow in mild winters.



Harvesting Fennel

If you don't want to harvest seed, or want the plant to reseed, it's best to cut the flowers from the plants as soon as they appear. To expand your crop you may cut some of the side roots from the long tap root and plant them separately for a new plant the following growing season.

Harvesting a bountiful crop of fennel doesn't require much work as the plants are hardy, resist disease and pests and often continue to grow in your garden after removing all visible signs of the plant and roots.

The leaves are best harvested just before the plant blooms. Fennel does appreciate weeding, especially around young plants as they become established. If your winter months are especially cold and reach below freezing, the plants will survive best if they have several layers of mulch covering them.

Fennel doesn't play well with other herbs in your garden, another reason container gardening works well for this herb. Although some have planted dill close to fennel, it may cross pollinate and destroy the flavor of both plants.

Make the Most out of Your Harvest



Harvesting and drying fennel seeds requires some care as the seeds easily fall to the ground and quickly seed the area with new growth. The seeds should be harvested as they turn from green to brown on the stalk of the plant.

If you wait too long, the seeds will drop from the plant and, spread by the wind, seed your garden and lawn. Carefully cut the seed head, or umbel, off the plant without losing seed. You may also bend the plant over white muslin to catch any seed that breaks free of the plant as you are cutting.

Place the seed head in a paper bag and give it a few good shakes to free the seeds. Or, you may have to let the seed heads dry in a paper bag for a few days to a week so the seeds easily come free.

The seeds should be dried before eating, on a screen in a well-ventilated area, for a couple of days. Store them in a dark container in a cool, dark place to ensure they retain their flavor.

How to Grow Lemongrass

Best time to plant:  Early spring

Harvest: Anytime throughout the growing season



Lemongrass (*Cymbopogon citratus*) is an herb noted for its distinctive grassy citrus flavor and aroma. It's native to tropical countries such as India, China and Thailand, where it is a favorite flavoring in foods, drinks and desserts. The plant has also been used traditionally for medicinal and cosmetic purposes. You can take advantage of the many health benefits associated with this flavorful plant by including it in your garden.

Health Benefits of Lemongrass

As with many herbs, there are a significant number of health benefits to using lemongrass. Traditionally, lemongrass has been used to treat stomach aches, high blood pressure, common cold, convulsions, pain and vomiting. The refreshing scent also makes lemongrass a valuable **aromatherapy oil** for helping relieve stress, anxiety, irritability and insomnia.

Lemongrass essential oil is made using steam distillation, but if you have lemongrass growing in your backyard, you can make an oil infusion using another carrier oil. It can help relax and tone your muscles as well as relieve muscle pain, period cramps and headaches.

Other benefits of lemongrass oil include:



Energizing foot massage or soak – Perk up tired feet with a foot soak using two drops of lemongrass essential oil with 2 tablespoons of Epsom salt in a bowl of warm water.



Antibacterial – Lemongrass essential oil has anti-biofilm properties against *Staphylococcus aureus* and interrupts the growth of bacteria in the body.



Energizing foot massage or soak – Lemongrass has demonstrated effects against *E. coli* and *H. pylori*, the latter of which is responsible for the formation of stomach ulcers. It has also demonstrated effectiveness in helping stimulate digestion and regulate bowel function.



Sleep - Sedative and hypnotic properties of the plant may help increase duration of your sleep. Consider a cup of lemongrass tea before bed.



Analgesic - The pain-killing properties of the essential oil and tea make them useful in the treatment of headaches, muscle and joint pain, muscle spasms and sprains.



Blood glucose - The citral present in lemongrass has demonstrated ability to help regulate blood glucose and improve insulin sensitivity.



Hair health - If you're struggling with oily hair, but would still like your hair shiny and manageable, try adding a few drops of diluted essential oil to your scalp and rinse.

Body odor - Lemongrass has natural antifungal and antibacterial properties, making a diluted form of the essential oil a natural deodorant.

DID YOU KNOW?

Lemongrass contains **citronella oil**, which can repel pests naturally.



Growing Lemongrass

Lemongrass may be grown as a **perennial** in zones 10 to 11, where the lowest temperatures reach approximately 30 degrees F (-1 degrees C) in the winter. In cooler areas lemongrass is grown as an annual, but may be planted in a pot and brought indoors in the winter months.

Although you can purchase the plants at your local gardening shop, it's also easy to start your own from lemongrass purchased at the grocery store. The plant does best when started in early spring.

Locate the lower half of the plant and trim approximately 6 inches above this point, or about 15 centimeters (cm). The top half can be used dried in tea or in your compost pile, while the bottom half is placed in approximately 3 inches (8 cm) of water.

Once you've trimmed the number of stalks you wish to start, add just a **dash of cinnamon** as a root starter and place the cup in a sunny window. Change the water every couple of days to prevent the growth of fungus and wait patiently for the roots and leaves to start growing. It may take between three and four weeks before the plant will be ready to be anchored in the ground or planted in a pot.



Sunlight, Soil and Water Needs

Lemongrass prefers full sun and appreciates rich and loamy soil. The plant requires regular watering depending upon the type of soil in your garden. Looser soils will require more frequent watering but loam soil will retain moisture longer and won't need to be irrigated as frequently. By sticking your finger in the soil you'll be able to tell how dry it is and how often you might need to water.

Adding a thick layer of **organic mulch** will enhance water retention and slowly add nutrients into the soil as the mulch degrades. When your plants have plenty of sun, water and fertilizer, they may grow as high as 6 feet (1.8 meters) and 4 feet (1.2 meters) wide, depending on the variety.

As the name implies, lemongrass is a member of the grass family, and as such grows quickly each successive year. It's a good idea to **keep them pruned** at a manageable size to encourage new growth and to allow all the leaves to receive sunlight. The best time to trim is **early spring**, but as the plant is very forgiving, it may be pruned during the summer months if growth has gotten out of control.

If your lemongrass is a perennial plant in your garden, wait until spring before pruning, as the plant is dormant in the winter. Although it may look extreme to cut off all the brown leaves with the initial pruning, it won't be long before fresh green growth takes its place.

Don't Let Fungus Claim Your Plants

Fungus is the most common disease found in lemongrass. Make sure to remove debris from around your plants and cover well with organic mulch before winter to avoid fungal disease. You can also promote vigorous growth by using mulches and organic fertilizers, while pruning out diseased areas.

If your plant has already been infected, avoid overhead irrigation to prevent the fungus from spreading. The most common times the disease is spread is during high rainfall, high humidity and warm temperatures.



Harvesting Lemongrass

Harvesting lemongrass is simple and can pretty much be done anytime throughout the growing season. The edible part of the plant is **nearest the bottom of the stalk**, which is where you'll want to snap or cut the lemongrass. Look for stalks between a quarter-inch and half-inch thick and cut as close to the root as possible.

After harvest, remove and throw out the woody portion of the stalk. Harvest as much of the plant as possible prior to winter. Fresh lemongrass will last in the refrigerator for up to **two weeks** when it's wrapped in a damp paper towel. Consider freezing what you don't use immediately. Wash, trim and then chop up the lemongrass before freezing the chopped pieces in a small amount of water in ice cube trays.

How to Grow Mint

Best time to plant: 🌸 Spring

Harvest: 🌸 Late spring to 🍁 mid-autumn

Mint (*mentha*) is a popular herb that's hardy and available nearly year-round. There are over **two dozen distinct species** of mint, the most common of which include peppermint, spearmint, lemon balm and catnip, also known as catmint. It can be easily grown in an enclosed garden, in containers or even indoors, providing you with fresh, organically grown leaves whenever you need them.

Health Benefits of Mint

The high antioxidant content in mint makes it beneficial to your health. The herb contains vitamins A and C, as well as minerals like zinc, calcium, copper and magnesium. The menthol on the leaves of the plant has analgesic and local anesthetic properties. Mint can also be used to help:

Relieve allergy symptoms Rosmarinic acid, an antioxidant and anti-inflammatory agent in mint, has been studied for its potential in helping to relieve seasonal allergy and asthma symptoms. This antioxidant works by inhibiting COX-1 and COX-2 enzymes, reducing the levels of inflammatory molecules and eosinophils or allergy-related white blood cells, leading to significantly decreased symptoms.

Ease digestive problems Mint helps increase bile secretion and encourages bile flow. Peppermint, in particular, has been found to relieve pain and discomfort caused by gas and bloating. It may also help alleviate gastric ulcers and irritable bowel syndrome.



Relieve nausea and headache The refreshing scent of mint provides quick relief for nausea and has been added to soothing balms intended for nausea. Simply crushing and inhaling fresh mint leaves may provide the same effect.

Help clear congestion Mint cools and soothes the throat, nose and other parts of the respiratory system, and helps alleviate congestion brought on by coughs and colds.

Promote relief from pain and fatigue If you are feeling depressed, stressed, anxious, sluggish or exhausted, mint may be useful. It was also found to help increase pain threshold in humans.

Help relieve discomfort for first-time mothers who are breastfeeding

Peppermint water may help prevent nipple cracks and pain in first-time mothers who are breastfeeding.

Calm skin irritations When applied topically, mint lotion may help soothe irritation associated with insect bites.



Growing Mint

Mint can be started from **seed**, from **cuttings** or from a **runner**. A runner is a long stem growing away from the main plant, which often extends new roots into the soil. These rooted stems can be used if you carefully dig them up.

Most types of mint require similar care. And, as true mint varieties are known to **cross pollinate**, it's wise to plant different mint types away from each other.

Before choosing the type of mint you like in your garden, be sure it's well suited for your growing region and for your intended use.

Some varieties are very difficult to start from a seed, so consider using a transplant or cutting.

To prepare your soil, mix 25% vermicompost, 25% coco peat, 25% fine sand and 25% garden soil. Ideally, use a clay pot with a drainage hole for adequate soil drainage. Prior to adding the soil, cover the hole with a small stone to assist with drainage.





How to Plant Mint Cuttings

If you're using a cutting from a healthy plant, use scissors to cut the plant cleanly **4 to 5 inches long** (10 to 13 centimeters) and just below a node. The node is the point on the stem where the leaves emerge on both sides. Prior to planting your cuttings, remove the leaves from the bottom of the stem. Plant them in the soil one-half to 1 inch (1 to 3 cm) deep.

You can make a hole with a pencil or with your finger, gently placing the end of the cutting into the soil and tamping the soil gently down. Once all the cuttings have been planted, gently water the soil until it's damp but not thoroughly wet. For the first eight to 12 days, the plants will appreciate a bright location but not direct sunlight. It's best to water them daily in the **morning hours** until the soil is moist but not wet. You will see new growth from your cuttings within the first two weeks.

Another option is to start your cuttings in **water indoors** during spring. Place the plants in a well-lit location and make sure the water does not reach the remaining leaves on the stem. Usually, after just one week, your plant should show small white roots. One week later, the cutting will be ready to be planted in soil.

Once the plants are well-rooted they will appreciate being in an area with plenty of sunlight. Keep new plants well-watered throughout the first year. Consider **mulching** around your plants as it helps to keep the soil from drying out, prevents the mint from spreading too far out of control and helps to insulate the plants in the winter months so they better withstand freezing temperatures.



Harvesting Mint

Harvesting and pruning serves the same purpose to keep your bed of mint healthy. Your goals are to **keep the plant from flowering and going to seed**, to prevent the stems from becoming too woody and to provide good air circulation throughout the plants. Use a sharp pair of scissors to cut the stems, as they are strong and pulling may rip out an entire plant.

When the plants are allowed to flower it reduces the quality and potency of the flavor of the leaves. Anytime you need a couple of sprigs, never be afraid to harvest. However, if you think you'll need a large quantity, consider waiting until pruning time. Plants can be pruned when they reach 8 to 12 inches (20 to 30 cm) in height.



When harvesting your mint, it's best to pick early in the morning as the leaves tend to be more potent.



There are several ways to store your fresh herbs if you aren't going to use them in the first day or two. You can freeze them by washing them first and patting them dry, then spread them on a single layer on a pan and place the pan in the freezer. These herbs can also be air-dried by tying a bunch together with a rubber band and hanging them upside down for several days in a dark dry room. Once they're frozen or completely dry, store them in an airtight container.

DID YOU KNOW?

The more you pick mint, the faster it tends to grow!





HOW-TO-GROW HERBS

(Culinary)



How to Grow Chia Seeds

Best time to plant: 🌸 Early spring

Harvest: 🌸 Late spring to 🌞 early summer



DID YOU KNOW?

You should avoid chia if you have a known allergy to nuts, seeds, mint or other members of the mint family.

Chia seeds are harvested from the plant **Salvia hispanica**, a flowering plant that is a member of the mint (*Lamiaceae*) family. Chia is native to central and southern Mexico and parts of Central America. Due to its popularity, it is now grown commercially in several countries around the world, including Argentina, Australia, Bolivia and the U.S.

Regarded as a **superfood**, you may want to consider growing some chia plants in your backyard. As you'll learn later, the potential health benefits chia seeds bring is too hard to ignore.

Health Benefits of Chia Seeds

While you may be aware that chia seeds are nutritious, you may not know about the specific attributes known to make them so beneficial. For starters, a 1-ounce serving (about 2 tablespoons) of chia seeds contains 138 calories, 5 grams of protein, 10 grams of fiber and 9 grams of fat. Chia seeds are good for you because they:

- ✔ **Boast very high levels of antioxidants**
- ✔ **Contain ample amounts of vitamins A, B, C and E**
- ✔ **Are rich in omega-3 fatty acids — even more so than flaxseed — and unlike flaxseed, chia can be stored long-term without fear of rancidity**
- ✔ **Are a good source of iron, magnesium, phosphorus, potassium and zinc**

Similar to all grains and seeds, chia seeds contain **phytates**, also known as phytic acid, which are considered anti-nutrients. These compounds are known to block the absorption of certain minerals and other nutrients, which is why you'll want to limit your consumption. Also, to reduce phytates, consider soaking chia seeds prior to eating them.

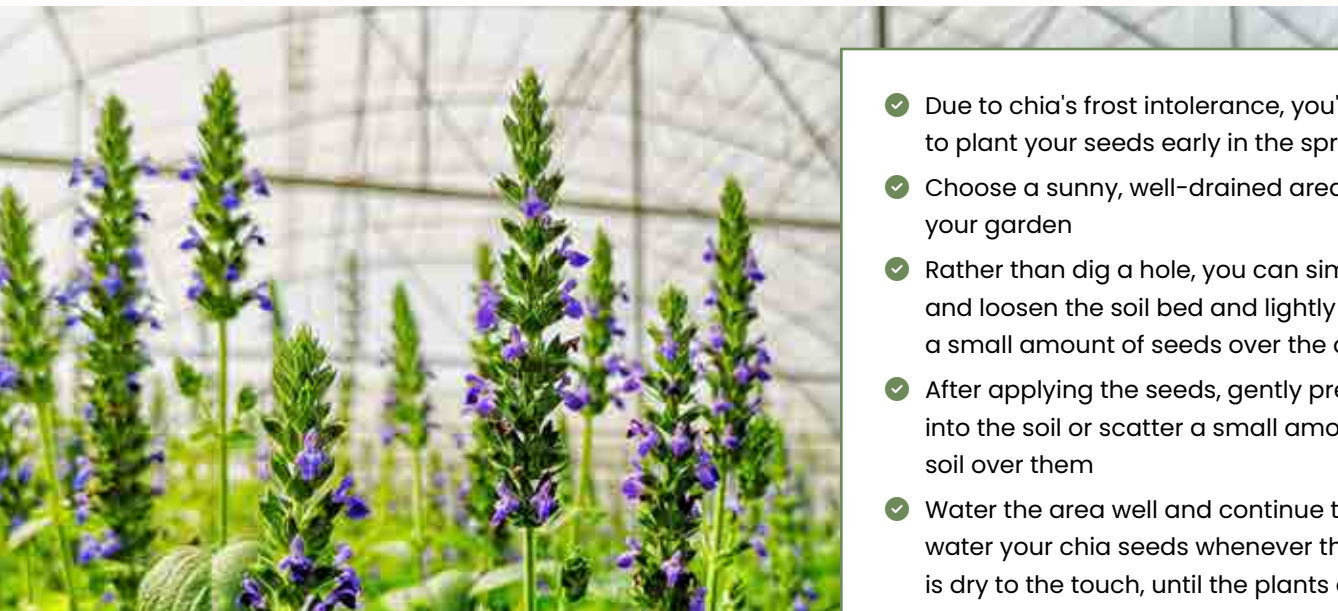
To prevent digestive upset due to their high fiber content, limit your intake of chia seeds to 1 to 2 ounces a day. In addition, since they are able to absorb up to 12 times their volume when introduced to water, you'll want to stay well hydrated when consuming whole chia seeds.



Growing Chia Plants

Chia is hardy in USDA zones 8 to 11. It is characterized as a **desert plant** that grows well in sandy loam soils. Chia plants need moisture during the growth cycle but can cope with moderate drought once established. The plant resists insect pests and diseases, perhaps in part due to the **natural repellent properties** of chia leaves. Chia's pest and disease resistance make it highly desirable for organic production.

Given proper conditions and ample space to grow, chia is one of the easiest herbs to grow. If you are interested in growing a full plant from which you can harvest chia seeds, you can either make space in your garden or plant chia in containers. Another option is to sprout chia, which I will address later in this article. Gardening experts provide the following helpful information on how to plant chia:



As an alternative to direct sowing in the ground, SF Gate suggests you can start chia indoors in March or April. Under proper conditions, the seeds will germinate in three to 14 days. Plant your chia seeds indoors by:

- ✓ Due to chia's frost intolerance, you'll want to plant your seeds early in the spring
- ✓ Choose a sunny, well-drained area of your garden
- ✓ Rather than dig a hole, you can simply rake and loosen the soil bed and lightly sprinkle a small amount of seeds over the area
- ✓ After applying the seeds, gently press them into the soil or scatter a small amount of soil over them
- ✓ Water the area well and continue to water your chia seeds whenever the soil is dry to the touch, until the plants are well-established
- ✓ Thin the plants when seedlings appear to maintain proper spacing

- ✓ Scattering a small amount of chia seeds on top of a moist paper towel or over a seed-starting mix
- ✓ Watering the seeds immediately and keeping them moist and warm
- ✓ Exposing them to six to eight hours of bright light every day
- ✓ Waiting until the seedlings are at least 6 inches tall — or roughly four to six weeks after germination — before plucking them out individually and transplanting them into your garden or containers





When transferring your seedlings to the garden, be sure to maintain **12 to 18 inches of spacing** on all sides. When transplanting them into containers, start with a large pot to ensure it will accommodate future growth as the plant matures. Chia plants can easily grow 3 to 5 feet tall and about 18 inches wide. Flowers will generally appear about four months after germination. Your plants must flower if you want to harvest chia seeds.



Harvesting Chia Seeds

The key to harvesting chia seeds is to wait for the flower spikes to fully develop. Chia flowers will attract bees, butterflies and hummingbirds to your garden. After they are pollinated, the flowers die back and tiny seeds develop. You can encourage bloom production by **deadheading the flowers**.

The best time to begin collecting individual flower heads is after most of the petals have fallen off. You can place harvested flower spikes on a drying rack or inside an open paper bag so air will circulate in a manner that will dry the flowers.



*Once the flowers are completely dry, you can **crush the spikes by hand**, which will reveal the seeds. You'll want to separate the dry plant material from the seeds. Maintain the seeds in dry form until ready for use.*

As soon as you rinse chia seeds, they will begin to absorb water, which means you'll need to use them right away. If you do not harvest the seeds and they are allowed to spill out on the ground, you can expect sparrows and other seed-eating birds to devour them.

How to Grow Cilantro

Best time to plant: 🌸 Late spring or 🍂 early fall | **Harvest:** 50 to 55 days after planting

Cilantro (*Coriandrum sativum*), a member of the carrot and parsley family, has a verdant, fern-like appearance, and is easy to harvest. The more mature it is, the more feathery it appears. Its fanlike leaves are easy to chop to add to dishes. **Cilantro seeds**, better known as coriander seeds, are also used as a confectionery seasoning and spice. Growing this herb in your garden is sure to be a delicious and healthy investment.

Health Benefits of Cilantro

Cilantro's shiny, scalloped leaves contain its share of potent compounds that give it multiple health benefits. Clinical studies have found it to be antibacterial, antifungal, antiseptic and disinfectant, the most prolific of these being:

- ✓ Antioxidant polyphenolic flavonoids like quercetin, kaempferol, rhamnetin and apigenin
- ✓ Minerals like potassium, iron, calcium, manganese and magnesium
- ✓ Vitamins A, C and K, as well as B vitamins

In addition to cilantro leaf having medicinal uses as far back as Babylon, **coriander seed oil** has also been used for athlete's foot, as a pain reliever and antibacterial, among other things, due to its linalool content.



Growing Cilantro

Unlike many herbs, cilantro is an annual, meaning it must be planted rather than appearing voluntarily every year like perennials (usually) do. It grows best in cool weather; it doesn't mind more sun during the spring and fall, but in warmer climates, it should be planted in areas of partial shade, if possible, and the plants kept moist, especially during the warmest seasons.

HERBS / CULINARY / CILANTRO

It's easy to start planting with seeds straight into the garden, one-half inch deep (about 1.25 cm) in easily drained soil in a sunny spot (or shady in a particularly hot climate), and after the last hard frost if possible. Growing inside for later transplant into the soil outside is not recommended. However, you can also grow cilantro in pots to place in a sunny window, patio or porch. Just make sure the pots have good drainage.



Here's a tip many gardeners swear by: splitting half your seed to encourage germination. You can split the little round seeds using your thumbnail against your palm or a sharp knife on a cutting board, and then plant them along with whole seeds if you'd like.

Because cilantro is an early bolter, especially when the days get longer and the temperature soars, you may want to look for other varieties labeled "**bolt resistant**."

*The Spruce suggests two superior seed varieties: **Santo** and **Marino**, which are full of flavor and slow to bolt.*

Once the seedlings pop up, thin them to stand about 4 inches (about 10 centimeters) apart, although the plants don't last long enough to become crowded. Cilantro usually grows to between 6 and 10 inches (15 to 25 cm) in height and, like many other herbs, harvesting the leaves encourages plants to spread; most varieties reach 4 to 10 inches (10 to 25 cm) in width.

You can expect problems like pests or diseases to be practically **nonexistent** when it comes to growing cilantro. One thing cilantro loves is rich **organic matter**, which can consist of broken down and decayed leaves, compost and animal manure to improve the soil. Something to note is that **over-fertilization** may release too much nitrogen into the soil, which can diminish the vibrance of the flavor.





Harvesting Cilantro

You're generally able to begin harvesting in **50 to 55 days** (which you might want to write on your plant markers, along with the date the seeds were planted as a reference). You'll note that when you plant a patch or row of cilantro, every plant tends to reach its peak all at the same time. You no sooner get started with harvesting than it begins to bolt. You can circumvent this by planting smaller amounts at two-week intervals throughout the season to prolong the harvest.

To harvest cilantro, **pinch off stems** toward the upper part of the plant. If the plant begins producing pale mauve-colored flowers, that means the leaves are now slightly more bitter, but they're still edible; try using them in a salad. The blossoms are also excellent at attracting desirable bees and other pollinating critters to your garden.

FUN FACT

Cilantro tastes soapy to people who possess a particular gene that makes them sensitive to the aldehydes in this herb.

Tips for Storing and Freezing Cilantro

Cilantro will last for several days, especially if you wrap them loosely in a dry paper towel to wick off any moisture before refrigerating it. If they're soaking wet, gently shake off the excess moisture and wrap them in a dry paper towel. Whether you wash cilantro before refrigerating it or waiting until you use it, **keeping it dry** in storage is key. Another storage method is placing the **cut ends in a glass of water** in the refrigerator, again, covered loosely with a plastic bag.

When **freezing** herbs like cilantro, which is a good preservation technique for herbs with a high water content, you'll want to use the leaves when they're at their freshest and most flavorful (harvested in the morning when they're still dewy, if possible). They may become limp, but still retain their flavor for several months. Here's the drill for freezing cilantro whole:

1. Use paper towels to pat them dry (although completely dry is not necessary).
2. Spread leaves on a baking sheet or other flat surface individually so they don't stick together.
3. Cover with waxed paper (freezing plastic wrap isn't recommended) to keep them clean and to prevent them from falling off the tray.
4. When they're frozen solid, remove them from the tray, place them in airtight containers and return to the freezer.
5. Label the containers and include the date.

If you'd like to freeze cilantro for later use in cooking, doing so in ice cube trays is an innovative method. Just pop a few into cilantro cubes into your soups and stews.

When cooking with chopped cilantro, add it toward the end. Coriander seeds, on the contrary, aren't adversely affected by heat. They can actually be roasted in a dry skillet until they take on a nutty aroma, which is delicious and adds a nice texture when they're crushed and used in curries and dips.

How to Grow Cumin

Best time to plant: 🌸 Spring

Harvest: 🍁 Fall



Cumin (*Cuminum cyminum*) is one of the most popular spice in the world, second only to black pepper. A member of the parsley family, cumin seeds have been prized for thousands of years and are best known in their ground form as a spice with a warm, earthy flavor that adds depth and a bit of kick to a wide variety of foods, earning it a starring role in many spice blends.

While you may be tempted to head to the supermarket to stock up on this versatile spice, you can easily grow cumin in your own backyard. Once you collect the seeds, put them in a coffee grinder and you'll have fresh, ground cumin whenever you need it.

Health Benefits of Cumin

Cumin seeds, not to be confused with black cumin or black seed, which are entirely different plants, are a good source of iron and contain a number of other nutrients including manganese, copper, calcium, magnesium, vitamin B1 and phosphorus.

Cumin essential oil has shown promise for relieving the symptoms of irritable bowel syndrome, including stomach pain and bloating. The plant's active components, including terpenes, phenols and flavonoids, also exhibit anticancer and antidiabetic properties. In fact, cumin has been found to work better than the drug glibenclamide in treating diabetic rats and similar benefits were found in a human study.



Cumin also has antistress, antioxidant and memory-enhancing activities. Its antioxidant properties were evaluated in a 2004 study, which found that the spice was far more potent than vitamin C. Moreover, it acts as an expectorant that can loosen mucus and phlegm in the respiratory tract, making it beneficial for people with respiratory disorders such as asthma and bronchitis. There's even research showing that cumin could aid in weight loss and improve insulin metabolism.

Growing Cumin

Cumin is a flowering annual plant that grows to be about 12 to 20 inches tall, or about 30.5 to 51 centimeters (cm). Its short-lived flowers are pink or white (flowering begins midsummer) and yield the cumin seeds used in cooking. The plant takes about **four months** to reach maturity and prefers a **hot growing season**.



DID YOU KNOW?

Cumin has antimicrobial and antibacterial properties that may help lower the risk of foodborne illness and thwart multidrug-resistant bacteria.

If you live in an area with a short growing season, you'll need to start the seeds indoors, generally about four to eight weeks before the final frost in your area, only transplanting them outdoors when temperatures are at 60 degrees F (16 degrees C) or above and the plants are about 2 inches (5 cm) tall.

Seeds should germinate in about seven to **14 days**. Soaking them prior to planting (for about eight hours) may increase germination rates. Cumin seeds **don't tolerate transplanting** well, so it's best to use biodegradable pots that can be planted directly into the soil when the time comes.

You can also plant cumin in containers, and some suggest planting them in clumps rather than rows, which helps support the sometimes-spindly plants as they grow and keeps the seed pods from spilling over onto the ground.



Because each cumin plant only produces a small number of seeds, you'll need to grow a lot of plants if you plan to use the seeds regularly. Cumin does best in full sun, so choose a bright, sunny spot in your garden and sow the seedlings shallowly in the soil about 4 inches (10 cm) apart, in rows that are 18 inches (about 46 cm) apart.

Seedlings should be kept moist and watered occasionally, especially in dry weather, but avoid overwatering, as this plant enjoys well-drained, sandy soil (but will tolerate most soil types as long as it's fertile). If you live in a region with long periods of dry heat, cumin may benefit from misting.

Overwatered cumin plants can develop **root rot**, while the plants are also susceptible to aphids, wilt, blight and powdery mildew. That said, they're also known to attract beneficial insects to your garden that can help keep other pests away.



Harvesting Cumin Seeds

Cumin plants must be watched closely late in the growing season as, left unattended, the seeds will dry and scatter on the ground, making harvesting difficult if not impossible. The plants may also ripen at different rates, so be prepared to harvest some of the plants while leaving others behind.

The seeds are ready to harvest when the flowers are done blooming and the clusters turn brown, typically in the fall. The Homestead Garden recommends:

“When some of the plants are ready, cut down **five to six cumin plants** at the stem and place the pod clusters in a paper bag. Tie it and hang the bag upside down in a warm, dry place. After **seven to 10 days**, the pods will have dried. Rub the pods between your fingers and the seeds will drop out for immediate use or for storage ...

You can also **thresh the bag** when it is ready to harvest: [B]eat the bag against a hard surface to dislodge the seeds. Sift the seeds through a mesh cloth to remove the chaff. ”

Be sure the seeds are completely dry before storing them in a cool, dry location away from direct sunlight. The seeds can be saved for about two years. They can be used whole or ground, but to preserve freshness and flavor, grind what you need just before cooking.



How to Grow Flax

Best time to plant: 🌸 Early spring

Harvest: About 100 days after planting

Flax (*Linum usitatissimum*) is among the most ancient of **superfoods**, with a history of use spanning over 10,000 years. The flax plant grows to about 3 feet tall (around 1 meter) and has narrow, pale green leaves and small blue flowers. Once the flower drops off, a seedpod forms in its place. Each seedpod contains anywhere from four to 10 seeds. According to Mother Earth Living, a small 4-foot (1.2 meter) square plot of flax can provide enough seeds "for a batch of bread."

Health Benefits of Flaxseeds

Flaxseeds are one of the best sources of **alpha-linolenic acid (ALA)**, a plant-based omega-3 fat. They also contain a diverse mixture of vitamins and minerals, including vitamins E, K, C, B1, B2, B3, B5 and B6, as well as calcium, magnesium, phosphorus and iron. All of these are essential to maintaining various functions in your body and supporting good health.

Flaxseed is also a rich source of **lignans**, a plant compound with antioxidant and estrogen-blocking properties that have been shown to lower your risk of cancer.

In one study involving 6,000 female participants, those who consumed flaxseed were 18% less likely to develop breast cancer. In another study, 15 men who ate 30 grams of flaxseed per day had reduced levels of prostate cancer biomarkers, suggesting a lower risk of prostate cancer.



FUN FACT

Flaxseeds contain 75 to 800 times more lignans compared to other fruits and vegetables!

One tablespoon of flaxseed also contains 3 grams of dietary fiber – both soluble (20% to 40%) and insoluble (60% to 80%). Soluble fiber helps maintain healthy blood sugar and cholesterol levels, and feeds beneficial bacteria in your gut, while insoluble fiber helps maintain digestive health by binding water to your stools, allowing them to pass through your intestines quicker. This can help lower your risk of constipation, irritable bowel syndrome and diverticular disease.



Growing Flax

Thanks to its adaptability, flax can be grown in most parts of the U.S. Ideally, select a plot that gets plenty of sun with fertile, well-draining soil. Flax grows best in cooler weather, so it's ideal to start planting during **early spring**, once the risk of frost has passed.

You'll need about 1 tablespoon of flaxseed per 10 square feet (about 1 square meter). The seeds are small, so the easiest way to sow them is to mix them with a **small amount of flour**, which helps separate them. Scatter the seeds across the surface of the plot, then use a rake to gently mix them into the top half-inch of the soil.

Water gently and keep the soil moist but not soaked until the seeds have germinated, which takes about **10 days**. Once they've germinated, the plants tend to develop a robust root system and require less frequent watering. Adding a **nitrogen-rich amendment** to your soil can boost seed yield; otherwise, fertilizer is generally not needed.

Pests & Disease Prevention

As with most plants, a number of insects and diseases can take their toll on flax. To minimize the risk of plant disease, avoid growing flax in the same area for **more than three years in a row**. Also avoid growing flax in areas where you've previously grown potatoes or legumes to minimize the risk of the fungal disease **Rhizoctonia solani**. Some of the most common pests and plant diseases known to attack flax include:



1. Flax bollworm

The larvae look like small green inchworms with white stripes, and feed on the flax flowers and seeds. Simply remove them from the plant wherever you find them.



2. Cutworms

Cutworms will eat the leaves. Sprinkle diatomaceous earth around the base of the plants to prevent cutworms, and pick off any found on the plants.



3. Aphids

To dislodge aphids, spray the plants with a strong stream of water. Sticky traps or soapy water can also be used.



4. Fusarium wilt

This soil fungus kills seedlings and causes mature plants to yellow and wilt. Infected plants need to be uprooted and destroyed (do not compost). The fungus remains in the soil, so do not plant flax (or other plants known to be affected by fusarium wilt) in the area for at least three years.



5. Powdery mildew

Another fungal disease, powdery mildew causes the plant to drop its leaves and impacts its ability to produce seeds. Once it gains a foothold, it's difficult to stop it from spreading. To prevent it, avoid planting your flax in areas that don't drain well, as the wetness encourages growth of the fungus.



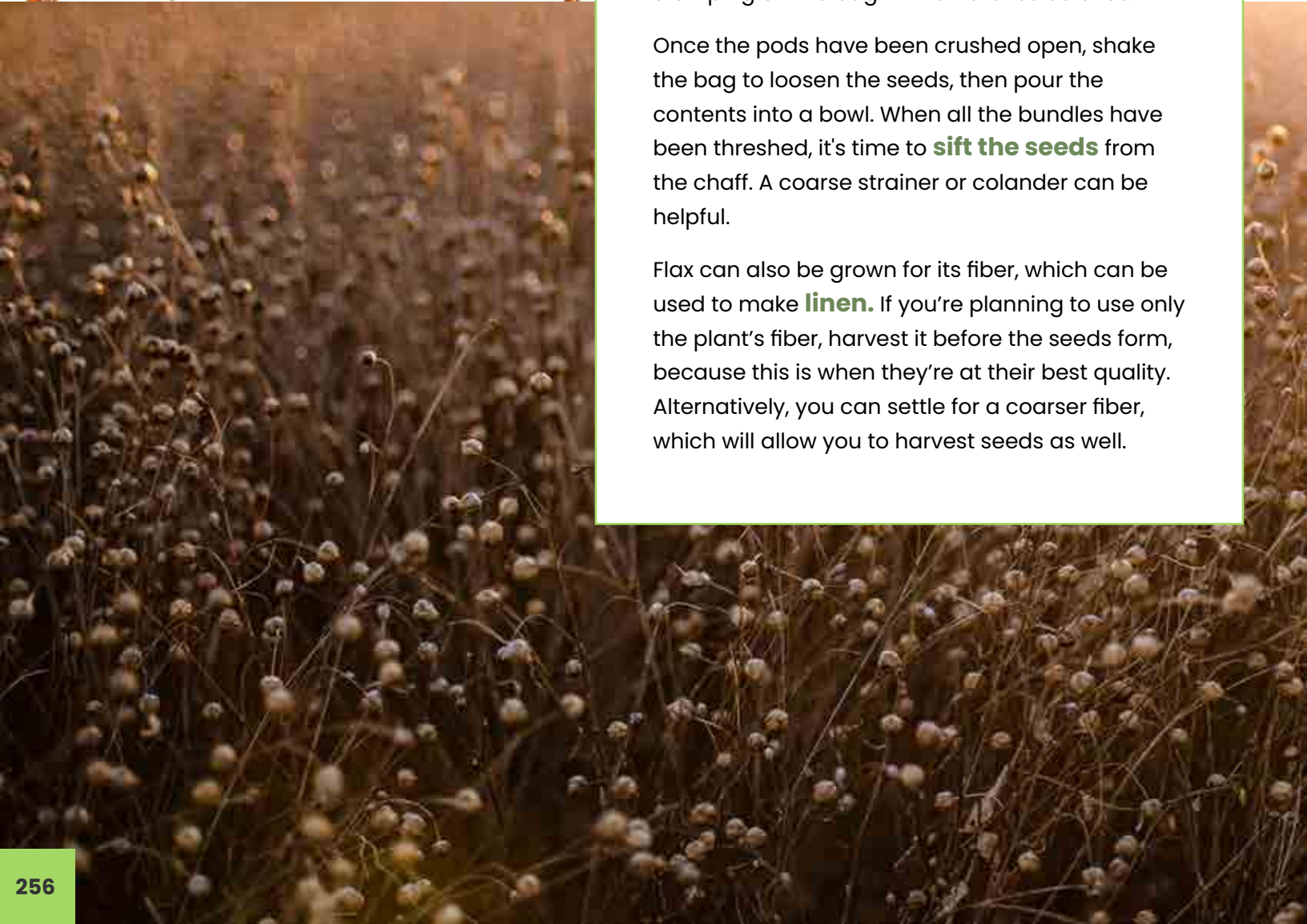
Harvesting Flaxseed

To get the seeds out of the pods, you have to crush the seedpods open, a process known as **threshing**. While simple, it requires a bit of physical effort. Take a bundle of flax stems you collected and place them in a fabric bag. An old pillowcase will do fine.

Tie the opening shut around the stems and place the bag on a flat surface that will not be damaged by some pounding. Using a block of wood, rock or rubber mallet, beat the pods through the bag. Other strategies include using a rolling pin, or stomping on the bag with a hard-soled shoe.

Once the pods have been crushed open, shake the bag to loosen the seeds, then pour the contents into a bowl. When all the bundles have been threshed, it's time to **sift the seeds** from the chaff. A coarse strainer or colander can be helpful.

Flax can also be grown for its fiber, which can be used to make **linen**. If you're planning to use only the plant's fiber, harvest it before the seeds form, because this is when they're at their best quality. Alternatively, you can settle for a coarser fiber, which will allow you to harvest seeds as well.



How to Grow **Ginger**

Best time to plant: 🌸 Late spring or 🍁 early fall | **Harvest:** 50 to 55 days after planting



DID YOU KNOW?

Gingerol is the compound that gives ginger its characteristic warm, spicy flavor.

Ginger (*Zingiber officinale*) is a spice well worth having on hand at all times. Not only is it a wonderful addition to your cooking (and can be used in a number of beverages), but it also has a wide variety of medicinal benefits, including broad-spectrum antibacterial, antiviral, antioxidant and antiparasitic properties.





Growing your own ginger is an easy and inexpensive way to ensure you always have this medicinal wonder worker on hand. Growing your own will also provide you with something you won't get at the store — so-called "**stem**" **ginger**, which has its own culinary uses. The only way to get it is to grow your own, and dig some out as you need it.

Health Benefits of Ginger

Ginger a rich source of antioxidants including **gingerols**, **shogaols** and **paradol**s, all of which have documented anticancer activity. Furthermore, because ginger helps prevent the toxic effects of many substances (including cancer drugs), it may be useful to take in addition to conventional cancer treatments. It has also been shown to:

- 👉 Enhance the bronchodilation in asthmatics
- 👉 Improve blood glucose, triglyceride, total cholesterol and LDL cholesterol levels in diabetics. It also benefits diabetics by inhibiting carbohydrate metabolism and improving insulin sensitivity.
- 👉 Relieve motion sickness, morning sickness in pregnant women and general nausea and upset stomach

Its potent anti-inflammatory effects make it a particularly valuable tool for all sorts of pain relief. For example, research has shown it can help:

-  **Reduce knee pain associated with osteoarthritis**
-  **Decrease muscle soreness in athletes**
-  **Relieve menstrual pain in women as effectively as ibuprofen**
-  **Reduce severity of migraine headaches as well as the migraine medication Sumatriptan, and with fewer side effects**



Growing Ginger

Growing ginger is easy, and can be done either in a container, kept indoors or out or directly in your garden bed. Most growers tend to favor containers, as it's easier to control the soil and moisture that way; plus, you can easily move it if it needs more or less light or heat.

All you need to get started is a fresh and healthy-looking leftover piece. Ideally, look for a firm, plump piece with smooth skin and visible eyes — tiny yellow tips on the rhizome that will eventually develop into new sprouts. While you could potentially grow it at any time of the year, it tends to grow best if planted sometime between spring and fall; April through May tends to be ideal if growing them outdoors. Here are some **tips to propagate ginger**:

1 If using a store-bought piece to propagate your ginger, or if the piece you're using seems a bit dry, **soak it in warm water overnight**. If pressed for time, three hours of immersion will typically suffice. When replanting a really fresh piece, such as a freshly harvested rhizome that still has the plant stem on it, you can forgo this step.

2 Plant it in a well-draining pot filled with quality potting soil mixed with plenty of organic compost. California Gardening suggests using a ratio of **90% compost and 10% potting mix**. The Spruce suggests adding **worm castings**. If using a 5-1-1 potting mix, be sure to add a complete **vegetable fertilizer**. Alternatively, you can plant them directly into your garden bed, provided you've made the appropriate soil amendments.

If you have a larger piece of ginger, go ahead and cut it into smaller bits. Press the ginger pieces into the soil, making sure the eyes face toward the surface, then cover with a light layer of soil (just enough to cover the eye without burying it).

3 Water well, cover the pot with a clear plastic bag to raise the humidity level and place it in a spot with partial sunlight. Mist regularly to maintain moisture. Should the root dry out, its growth will be permanently stunted. On the other hand, you'll want to **avoid overwatering**, as soggy soil will encourage rotting. So, keep soil moist but never soaking wet. A **drip-irrigation system** can be helpful.

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The Spruce also offers the following trick to raise the humidity level: "[P]lace your pot on a tray of small stones. Keep the tray full of water. This way it is always evaporating and adding moisture right directly to the plant's area." If your soil is overly wet and you need to improve drainage, add some perlite or vermiculite into the mix.
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4 Once green tips start to sprout — which may take up to a month, depending on the temperature — remove the bag and keep it in a warm room with plenty of natural light. An ideal temperature is right around **75 degrees F** (24 degrees C). You can expect to begin harvesting the rhizome in **six to eight months**.



Storage Tips

Fresh ginger will keep for **at least three weeks** in the refrigerator. To maximize shelf life, place a whole, unpeeled piece in a resealable plastic bag; squeeze the air out and place it in the crisper drawer. If the piece has been cut or peeled, blot the moisture off with a paper towel before storing.

If left out on the counter, it'll dry out within days. Once the ginger starts to wrinkle, it will have lost much of its flavor and medicinal potency. **Grated ginger** can also be frozen for about six months, saving you a bit of time and cleanup when cooking.



Harvesting Ginger

If you planted your ginger in the spring, it'll be ready for harvest in the fall. The easiest way to assess whether it's ready for harvest is to look at the **size of the plant stems**. The root is ready for harvest when the stems have reached a height of at least 3 to 4 feet (about 1 to 1.2 meters). The taller the plant, the larger the root.

You can either dig out the entire root, or simply snip off a piece for immediate use, leaving the rest. If you want mild-flavored "stem" ginger for a culinary twist, harvest only what you need each time as the root will become "hotter" as the outer skin begins to dry out.

Remember to save some pieces to repropagate your ginger plants. Either select a plump, firm piece and cut in to smaller pieces, as you did before, or simply replant smaller rhizome pieces still attached to the plant stems. This way, you'll be able to maintain a continuous supply of ginger year-round. In winter months, you could simply bring the pot indoors.



How to Grow Marjoram

Best time to plant: 🌸 Spring

Harvest: Six weeks after planting

Even if your cupboard is stocked with a few dozen of the most common spices and herbs, chances are **marjoram** (*Origanum majorana*) is not one of them. One reason may be that many confuse it with oregano, in part because their botanical names and traditional monikers are similar.

Health Benefits of Marjoram

Marjoram is grown as an herb to flavor dishes but, just as importantly, imparts several impressive health advantages. It's known as an **anti-inflammatory** that increases digestive enzymes for improving problems with tummy troubles, and benefits your heart due to its ability to maintain normal blood pressure and optimize cholesterol levels.

It also contains compounds that are antifungal, antiseptic, antiviral and antibacterial, which makes adding it to your food good for staving off a number of illnesses, including cold, flu and even food poisoning and staph infections. As an **essential oil**, marjoram has been identified for its ability to reduce insomnia, stress and anxiety and overall, lift your mood and sense of well-being.

Organic Facts adds that marjoram is good for improving brain function and may help prevent age-related decline and dementia.



DID YOU KNOW?

Oregano is also sometimes known as “wild marjoram.” While marjoram is milder and sweeter, oregano has a strong “piney” taste.



Harvesting Marjoram

Marjoram grows fairly quickly and should remain constantly available when it's continually harvested. To dry sprigs of marjoram, choosing stems that look as if they might flower soon will help perpetuate the plant so it doesn't flower and go to seed too quickly.

That's also when the flavor is considered "peak;" however, even the flower buds are edible and add a lovely, fragrant essence to vinegars and to make olive oil-based dressings.

Line up 3-inch-long marjoram sprigs on a dry baking sheet, place in an oven set at 150 degrees F (65 degrees C) and **bake for two or three hours**. This method retains both the essential oils in the herb as well as the vibrant green color. Store the stems with their leaves intact sitting upright in a jar or similar container in a cool dark place.

As an alternative, you can cut small bundles of the herbs, tie them together with **twine or burlap**, and hang the bouquets upside down in a dark, well-ventilated room, preferably not touching other bundles you may have drying.

When dry, you can also strip the leaves from the stems and store them in a dry glass jar away

Using Root Cuttings

Besides perpetuating your healthy marjoram plants by digging them up and taking them indoors to plant in pots when frost is imminent, Mother Earth News further advises:

“Most marjoram plants are grown from cuttings, so they are well rooted and ready to grow as soon as you transplant them into warm soil. After the last spring frost, set out plants in full sun, in soil that is gritty and fast draining with a near-neutral pH.”

When cuttings are taken in midsummer in order to root them, marjoram should regroup quickly enough for you to get a second cutting of sprigs by early fall. Three-inch-long stem tips sans flower buds can be perpetuated nearly indefinitely by taking a few easy steps, then repeating the process:

- ✓ Remove all but the topmost six or eight leaves from each sprig.
- ✓ Place the cut part of the stems in moist seed-starting mix.
- ✓ Place the “starts” in a warm, shady spot, keeping them constantly moist.
- ✓ In about three weeks, vigorous new roots will be visible, which should be transplanted to 6-inch pots filled with potting soil, and transfer to larger pots when the main stems grow to 5 or 6 inches in height.
- ✓ In a few weeks, pinch back the tops to encourage branching, which should continue through the fall, winter and spring, at which point new cuttings can be taken to transplant into your outdoor garden.

from sunlight. Unlike some other herbs, the dried version imparts nearly the same essence as the fresh leaves. Whenever you need a little extra flavor, just strip off the leaves in the equivalent of a teaspoon or two, depending on the amount needed. If you have any left over, use it in a fine mesh bag in sachets, potpourri or floral wreaths.

How to Grow Parsley

Best time to plant: March or April, and 🌞 late summer | **Harvest:** Year-round, in the morning



Whether you prefer curly or flat varieties, **parsley** (*Petroselinum crispum*) is more than a garnish or natural breath freshener. Rich in vitamins K, A and C, as well as minerals like calcium and iron, parsley can be easily grown outdoors when ground temperatures are above 50 degrees F (10 degrees C), or indoors year-round. Despite being a slow germinator, parsley does well when maintained in moist, well-drained soil with decent sun exposure.

Parsley is packed with **flavonoids and volatile oils** known to provide numerous health benefits. This nutrient-rich herb has been shown to act as a diuretic, aid diabetes management, build strong bones, fight cancer, reduce inflammation and strengthen your immune system.

Health Benefits of Parsley

As mentioned earlier, parsley possesses nutrients and bioactive compounds that may help support your health. Here's a summary of published studies that show the potential of this plant:

Act as a diuretic In addition to its historical use, animal studies have validated the diuretic effect of parsley. It is also useful in addressing gallbladder and kidney stones and aids your recovery from urinary tract infections.

FUN FACT

Parsley is a versatile herb that can be used in various ways. Add it into vegetable juice, blended into smoothies or even used as herbal tea!



Aids diabetes management An animal study involving diabetic rats, published in the journal *Phytotherapy Research*, validated the use of parsley for managing blood sugar levels. The study authors stated:

“ [D]egenerative changes were significantly reduced or absent in the hepatocytes of diabetic rats treated with parsley. Diabetic rats treated with parsley demonstrated significantly lower levels of blood glucose, alanine transaminase and alkaline phosphatase. The present study suggests parsley demonstrates a significant hepatoprotective effect in diabetic rats. ”

Possesses anti-inflammatory properties

Research showed that flavonoids in parsley contain anti-inflammatory properties thanks to its inherently powerful antioxidants. Furthermore, these flavonoids may also help lower the risk of ulcers from forming in the gastrointestinal tract.

Contains anticancer compounds Two of the anticancer compounds identified in parsley are apigenin and myristicin. According to research published in the *Journal of Cancer Prevention*:

“ Several studies have demonstrated the anticarcinogenic properties of apigenin occur through regulation of cellular response to oxidative stress and DNA damage, suppression of inflammation and angiogenesis, retardation of cell proliferation, and induction of autophagy and apoptosis. ”

A 2015 study validated apigenin's potential role in the prevention and/or management of breast cancer. Regarding myristicin, an animal study published in the *South Asian Journal of Cancer* suggests:

“ [M]yricetin increased the antioxidant levels in plasma, erythrocyte lysate and breast tissue, and was effective in preventing the oxidative damage induced by the carcinogen 7,12-dimethyl benzantracene (DMBA). ”

(DMBA is a procarcinogen with selectivity for breast cancer in the experimental female Wistar rats used in the research.)



Growing Parsley

As a biennial plant grown as an annual, parsley is best suited to U.S. Department of Agriculture hardiness zones 5 through 9. Flat-leaf parsley typically has a stronger flavor than its curly cousin, which is the type most recognizable as a plate garnish. Given the right conditions, you can easily grow parsley indoors year-round. Be sure to use organic seeds. Below are some of the factors to consider when growing parsley:

Germination

Seeds germinate slowly, perhaps taking as long as six weeks! You can speed up germination by soaking parsley seeds in water overnight prior to planting them.

Sun

Set plants in full sun to partial shade. In warmer climates, your plants will do better if they receive afternoon shade protection from the sun.

Sowing indoors

Use starter pots with drainage holes, and sow several seeds per pot. Always use a soilless potting mix because garden soil drains poorly and is too heavy to use in pots. Sow seeds 1 to 2 inches apart and about one-quarter inch deep.



Sowing outdoors

When the soil temperature is around 50 degrees F (10 degrees C), plant your seeds 1 to 2 inches apart and about one-quarter inch deep.

Water

To encourage germination, keep your soil moist but not waterlogged. Once your plants reach full size, they will need 1 to 2 inches of rain or supplemental water every week to flourish. Proper watering is vital to keeping parsley happy — with dry soil, the plant withers, while overwatering will cause root rot.

Soil

Choose rich, moist, well-drained organic soil.

If you have a good crop of parsley going strong in your vegetable garden when the weather is cooling off, some have had success potting a few of the hardiest plants and bringing them indoors. If you are successful in keeping your parsley plants alive through the offseason, you may be able to transplant them back outside in the spring. Be sure to remove any flower stems that may appear to prevent the plants from going to seed. As a perennial, parsley plants will naturally flower and go to seed in the second year.



Harvesting Parsley

Harvesting parsley is a breeze. Once the plant reaches maturity, as evidenced by vigorous growth, you can snip individual outer stems whenever, as often as you'd like. When you harvest the outside stems (the ones that grew first), the plant will respond with new growth from the center. Always cut stems close to the ground. **Avoid snipping the tops and leaving bare stems** because doing so will stunt new growth.

While fresh is best, washed parsley that is allowed to air dry can be frozen in plastic bags to prolong its use. Another option is to air dry parsley or use a **food dehydrator** for a few minutes at a setting of 100 or 110 degrees F (37.7 to 43.3 degrees C), just until all moisture is removed.



How to Grow Rosemary

Best time to plant: 🌸 Spring

Harvest: 🌸 Spring to ☀️ summer

Rosemary (*Rosmarinus officinalis*) is a woody, perennial herb that is fragrant, evergreen and native to the Mediterranean. While some gardeners plant a rosemary bush in their garden to harvest the herb, others use it to add beauty and fragrance, without ever using the leaves.

The plant has needle-like leaves and pink, purple or blue flowers. It blooms during spring and summer in temperate climates, but may flower constantly in warm climates. Interestingly, this herb may grow upright or as a trailing plant along the ground.

Rosemary may be used in multiple ways in your home and is extremely hardy, faring well both inside and outside, in the ground or in a pot. Although it loves the light, heat and humidity are not a must, making indoor growing easier than other herbs. Planting and cultivating a rosemary plant are not difficult and may bring you years of seasoning for your kitchen and perfumed landscape pleasure.

Health Benefits of Rosemary

Not only is rosemary a fragrant herb that works well in your cooking and as a scented home décor, but it also has medicinal benefits. As a member of the mint family, it is a rich source of **antioxidants and anti-inflammatory compounds** that play an important role in neutralizing the effects of free radicals.

FUN FACT

Ancient Greeks wore garlands of rosemary while studying to help with their memory and learning.



Rosemary contains **carnosic acid** that appears to have some protective effects against stroke-induced brain damage, as well as neuroprotective effects. Some studies also found that rosemary may help protect against **age-related cognitive problems**, and exhibits **anti-inflammatory and antitumor properties**. The antiaging properties of rosemary may also have an effect on your skin, healing blemishes and wounds.

In one study, researchers found that when rosemary was added to ground beef, it reduced the number of carcinogenic compounds that were formed after certain cooking methods. Moreover, rosemary may benefit your working memory and concentration, as researchers found that individuals who were exposed to its oil extract demonstrated improved speed and accuracy of cognitive performance.



Growing Rosemary

If you have purchased a small plant from the garden store, you'll want to dig a hole as big as the pot the plant comes in. Press on the side of the pot all the way around and on the bottom to loosen the soil and small roots from the side, so the plant and entire root ball slides out easily. Once out of the pot, loosen the soil around the roots and place it in the hole. Backfill the hole with soil and tamp it down to remove air pockets around the roots.

Rosemary plants grow slowly the first year after planting and pick up speed in the next years. If you want to harvest a significant amount of the herb by your second year, you'll want to forgo a smaller plant and opt for a larger pot. In **warmer climates** they grow quicker, so you'll want

to plant them at least 3 feet (about 1 meter) apart to allow ample room for growth.

If you live in **northern climates** and commonly experience freezing weather lower than 15 degrees F (-9 degrees C), you'll want to grow your rosemary in a pot and bring it in during the winter months. While inside, keep the plant in a south facing window and do not harvest if it is not actively growing. By the end of winter, the plant may appear **a bit raggedy**, with dried up needles and sparse stems.

However, after hardening off the plant, place it outside and it should return to full health rather quickly.



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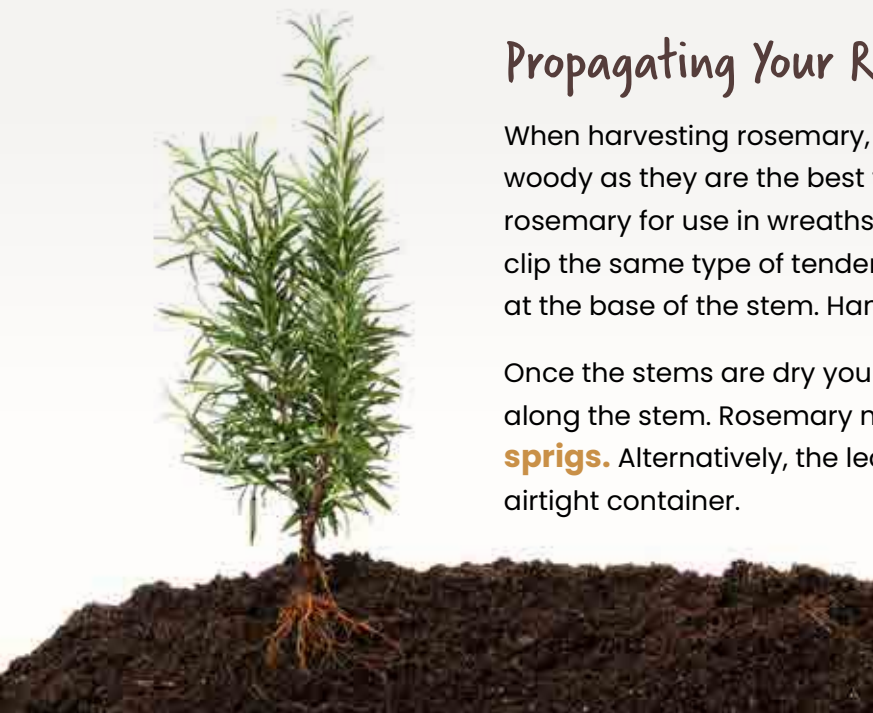
The **hardening process** allows the plant to get used to being in full sun and helps prevent shock. It's easily accomplished by setting the plant outside for **two to three hours** the first day and **gradually increasing the time** over 10 days until it is outside full-time.

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Propagating Your Rosemary From Cuttings

When harvesting rosemary, snip the **tender end shoots** that aren't woody as they are the best to use in your cooking. If you want to dry some rosemary for use in wreaths or to store for use in the winter months you'll clip the same type of tender shoots and tie several together in bunches at the base of the stem. Hang these upside-down in a cool dry area.

Once the stems are dry you can strip the leaves by running your fingers along the stem. Rosemary may also be preserved by **freezing the sprigs**. Alternatively, the leaves may be dried flat and stored in an airtight container.



Harvesting Rosemary

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Caring for Your Rosemary Plants

Rosemary grows best in hardiness **zones 6, 7, 8 and 9**. It loves least five hours of direct sun and does well when the pH of the soil is between 6 and 7. Once planted in the soil, taking care of a rosemary bush is relatively simple. The plant does best in dry soil and is prone to root rot. Allow the soil to dry out before giving the plant a good watering. Soil that drains well will help reduce the amount of water that sits for long periods of time against the root system.

Good air circulation around your plants is an often-overlooked tool that reduces the amount of dampness that remain around your plants. The rosemary bush doesn't require frequent fertilization. One treatment in the early spring with a **fish/kelp emulsion** will start the plant out well for the season and provide you with good harvest.

During the spring season your plant requires a good pruning after it flowers. During pruning it is not good to take more than one-third of the plant at a time and important to make your cuts above a leaf joint.

How to Grow Saffron

Best time to plant: September and October

Harvest:  Fall



Saffron is a spice derived from the stigmas of the purple crocus flower (*Crocus sativus*), which blooms once a year. Due to the fragile stigmas needing to be picked by hand, harvesting saffron is a labor-intensive job.

Notably, about 90% of the world's supply of saffron is grown in arid fields across Iran. Most of the crop is harvested by women who earn about \$5 per day picking saffron threads by hand. Other countries producing saffron include Afghanistan, Italy, Morocco, Spain, the Netherlands and the U.S. Saffron gives many rice dishes, including paella, its characteristic taste and golden-yellow color. In addition, this prized herb is featured in bouillabaisse, a traditional French fish stew.

If you want to have access to your own saffron and circumvent its high prices, consider growing your own flowers instead. Your body will also thank you in the long run, as saffron has been shown to possess health benefits as well.

DID YOU KNOW?


Saffron is regarded as the world's most expensive spice by weight!

Health Benefits of Saffron




Cancer — The anticancer potential of saffron was highlighted in a 2013 study published in the journal *Pharmaceutical Biology*. After reviewing the current research on saffron, the researchers stated, "Saffron possesses free radical-scavenging properties and antitumor activities. Significant cancer chemopreventive effects have been shown ... Based on current data, saffron ... could be considered as a promising candidate for clinical anticancer trials."


Consider the following research on some of the health benefits of this time-tested herb:

 **Dementia** — Saffron contains two chemical plant compounds — **crocetin and crocin** — both of which are thought to support your brain's learning and memory functions. A 2010 study involving 46 patients with mild-to-moderate Alzheimer's disease found participants taking 15 milligrams of saffron twice a day for 16 weeks demonstrated "significantly better outcomes on cognitive function" than those receiving a placebo.


The study authors said, "This ... study suggests, at least in the short term, saffron is both safe and effective in [cases of] mild-to-moderate Alzheimer's disease."

 **Premenstrual syndrome (PMS)** — A 2008 Iranian clinical trial investigating saffron as a treatment for PMS symptoms in women aged 20 to 45 with regular menstrual cycles suggests 15 milligrams of saffron taken twice daily is effective to relieve PMS symptoms.

A 2011 review published in the Journal of Psychosomatic Obstetrics & Gynecology that evaluated several herbal remedies for PMS, as well as the more severe premenstrual dysphoric disorder (PMDD), validated saffron as an effective treatment for addressing bothersome symptoms. The study authors noted, "Single trials also support the use of ... *Crocus sativus* [for PMS]."

 **Depression** — A 2014 systematic analysis involving six clinical studies on saffron and depression suggests the spice was as effective as antidepressant medications. The study authors stated, "Saffron's antidepressant effects potentially are due to its serotonergic, antioxidant, anti-inflammatory, neuroendocrine and neuroprotective effects."

Research conducted so far provides initial support for the use of saffron for the treatment of mild-to-moderate depression."

 **Heart disease** — Hypertensive lab rats were shown to benefit from an oral, daily dose of saffron in a 2015 Iranian study. Specifically, the rats received 200 milligrams of saffron daily per kilogram of body weight during a five-week period. Saffron prevented blood pressure from increasing beginning in the third week.

About the outcomes, the researchers said, "Nutritional saffron prevented blood pressure increases and remodeling of the aorta in hypertensive rats. It may be useful for preventing hypertension."

Growing Saffron

In the U.S., saffron crocus blooms in the fall. Remember, each corm (bulb) produces only a single flower and each flower yields just **three saffron threads**. As such, you'll need to plant a generous number of bulbs to ensure a measurable amount of threads.

Purchase your saffron crocus bulbs from a reputable online retailer or nursery and expect to wait a year after planting for the flowers to bloom. Saffron crocus bulbs do not store well so plant them soon after receiving them, ideally in the early fall. Gardening experts suggest the following **tips for growing** this exquisite flower, which is best suited for U.S. Department of Agriculture (USDA) hardiness zones 5 to 9:



Fertilizing

Although not required, you can help your plants thrive by fertilizing them annually.

Dividing

As soon as the flowers fade, you can gently dig up your corms, separate them and replant them immediately; while dividing the corms is not required annually, be sure to do it every few years to ensure they do not become overcrowded and therefore less productive.

Sun

Plant saffron crocus in an area receiving lots of direct sun.

Spacing

When planting saffron crocus bulbs, ensure at least 6 inches of spacing on all sides.

Soil

Saffron plants need rich, well-draining silty soil (pH 6.0 to 8.0); they will rot in swampy, poor-draining soil.

Mulching

Although saffron crocus is hardy to about to -15 degrees F (-26 degrees C), if you live in a region where temperatures regularly dip lower, you'll want to add a layer of mulch around the plants as soon as they finish blooming.

Planting

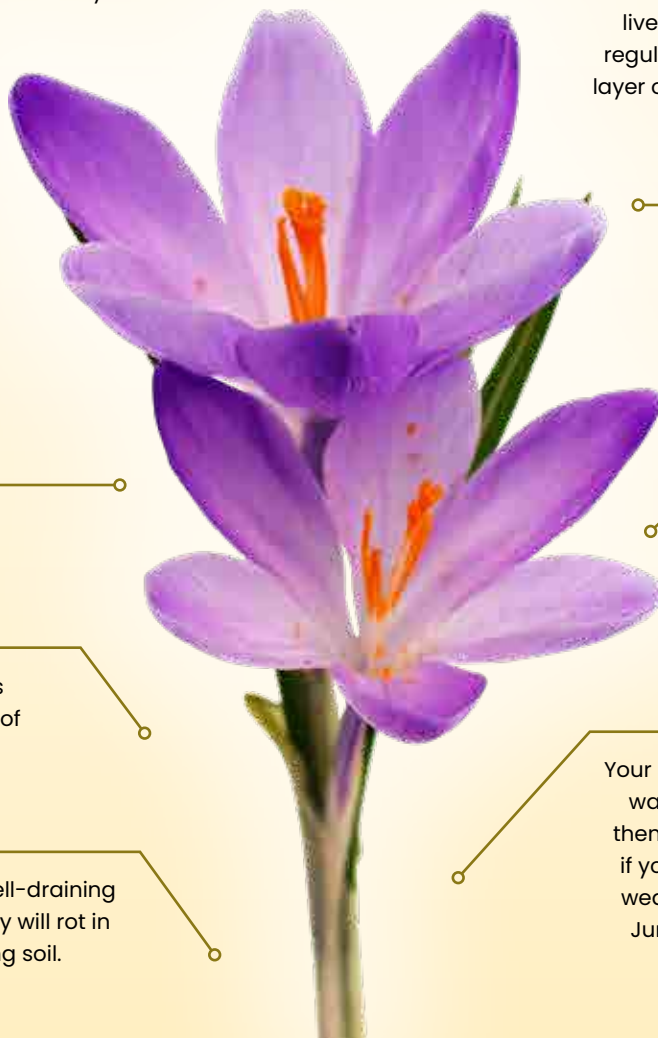
Place your saffron bulbs in the ground at a depth of 3 to 5 inches with the pointy end of the corm facing up; depending on the variety grown, plants reach 3 to 12 inches in height.

Yield

About 50 to 60 saffron flowers will produce around 1 tablespoon of saffron spice, so plan on a large growing area if you love saffron.

Water

Your plants will do fine with minimal water and you need only water them during the blooming season if you live in an area prone to dry weather; the plants are dormant June through August so do not water them at that time.



Harvesting Saffron

As mentioned, harvesting saffron is tedious, time-consuming work. After the crocus flowers bloom, you'll need to handpick the red-orange stigmas from each plant. For best results, **use tweezers** to carefully extract them. Obviously, harvesting large quantities of this spice will take time and a lot of effort near ground level.

Once picked, you can spread harvested stigmas on a cookie sheet to dry at room temperature until they crumble easily. The **yellow stamens** and **purple petals** of the saffron crocus have no use and can be composted.

How to Grow Stevia

Best time to plant:  Spring

Harvest:  Summer or  fall

Stevia (*Stevia rebaudiana*) is a perennial herb found within the Asteraceae family. A mature stevia plant can grow to about 2 feet tall, or around 60 centimeters (cm), and has small, moderately broad green leaves. Despite being sweeter than sugar, stevia does not spike your blood sugar levels, making it an **ideal substitute** for diabetics and dieters alike.

It's often a better choice than honey, maple syrup and molasses. You can sweeten hot beverages, such as tea, simply by placing stevia leaves directly into the liquid. Although it is widely available for purchase, to ensure you get a 100% natural product, you may want to grow your own.



DID YOU KNOW?

Stevia is up to 200 times sweeter than sugar!

Health Benefits of Stevia

Besides being a zero-calorie sweetener with appeal to diabetics and dieters, stevia:



Acts as a **natural antioxidant** due to the presence of caffeic acid, flavonoids, quercetin, and tannins— enabling your body to fight free radicals that can damage your cells and contribute to cancer, heart disease and other health concerns



Regulates your **blood sugar level**, as the glucose-containing particles of stevia is absorbed in your colon and not your bloodstream, like sucrose (table sugar)



Inhibits the growth of **cavity-promoting bacteria** and is also believed to prevent dental cavities and gingivitis



Promotes **weight loss**, which means you can enjoy "sweets" without the calorie burden and negative effects of sugar



Reduces **high blood pressure**, thereby protecting your heart health, due to the presence of **glycosides** in stevia known to relax your blood vessels

While stevia has been deemed generally recognized as safe by the FDA, you will want to avoid it if you have an allergy to other members of the Asteraceae family, such as ragweed. If you experience allergic reactions, you should stop using stevia. Fortunately, side effects are rare, and stevia is easy to process at home.



Growing Stevia

Stevia is not your typical herb, and it is not as easy to grow as most culinary herbs. With patience, however, it can be grown successfully in hardiness zones 11 and up. Stevia thrives in **semi-humid locations with acidic soil**, and does best when started indoors. Take note that stevia is a very poor germinator, and a germination rate of **less than 10%** is common. When planting stevia, be sure to:

- ✓ Start seeds indoors about 12 weeks prior to the last frost
- ✓ Plan for well-draining soil with a pH ranging from 6.7 to 7.2
- ✓ Anticipate a very low germination rate by placing at least three seeds in each planting cell; some suggest darker (mature) seeds are more likely to sprout than those of lighter colors
- ✓ Use a germination mat or overhead "grow" lights

When stevia plants have achieved **six to eight weeks** of growth, you can transplant them in your garden, assuming nighttime temperatures are consistently above 50 degrees F (10 degrees C). If not, move your young plants to 3-inch (8 cm) pots and maintain them indoors until the weather warms up.

When transplanting to your garden, space plants 8 to 10 inches (20 to 25 cm) apart, and maintain rows 2 feet (60 cm) apart. Stevia grows best in full sun to partial shade. Plants will thrive in compost-rich, light sandy or loamy soils that are well-drained, but cannot handle wet soils. Applying a **light mulch** around your plants will help maintain moisture to the roots.

To get a year's supply of dried leaves, you should plan to grow **at least three plants**. Some growers start stevia from cuttings, which is easier than trying to sprout seeds, especially given the poor germination rate. If you are in a warm weather area and intend to grow stevia as a perennial, you may want to consider growing it from cuttings. Look for stevia in the herb section at your local nursery, and keep in mind the **sweetness** of the leaves varies from **type to type**.



Pruning is important for stevia's characteristic lanky and upright plants. To maximize leaf production, you will want to trim back your plants several times to encourage branching. Perform the first pruning when plants are about 8 inches (20 cm) tall. Prune again in early summer.

Stevia blooms in **early to midfall**, displaying crisp white flowers. Take care when weeding around stevia because its branches are somewhat brittle. Fortunately, stevia is not prone to diseases or pests, perhaps due to its sweetness, which acts as a natural defense mechanism.

You have **two options** for using the pinch-backed stems:

Harvest the leaves from them or **root them in moist potting soil** to cultivate additional stevia plants for yourself or a friend.

Overwintering Stevia

Although stevia does best in warmer climates, it has been known to overwinter in areas as low as zone 8. That said, when growing stevia in a colder climate, plan to grow it as an annual by overwintering your plants indoors to protect them against frost. If you live in zone 8 or warmer, stevia is generally winter-hardy and will grow as a short-lived perennial when provided with a protective winter mulch.

If you live in a colder climate, you can choose two healthy, 1-year-old plants to overwinter indoors. To prepare them for overwintering, cut them back to a height of 6 inches (15 cm). Prune their roots as needed to accommodate their transfer to 6-inch pots filled with potting mix. Place the plants in a warm, sunny location indoors, or in a heated greenhouse.

In spring, when new growth appears, you will want to cut most of the new stems and use them as cuttings to start additional plants. Cuttings can take root in two to three weeks when placed in a moist seed-starting mix or perlite.



Harvesting Stevia

While stevia can be harvested all summer long, the sweetness of the leaves improves when the weather turns cooler. To ensure the tastiest leaves, plan to harvest your stevia in **late September or early October**. You'll want to harvest the entire plant as soon as four to five flower buds have appeared but before they have opened.

Because the sugar content of the leaves is highest early in the day, plan to **harvest leaves in morning**. If you wait to harvest until most of the flowers have blossomed, expect an increasingly bitter aftertaste to be distributed throughout the plant. Stevia leaves keep best when dried. Store your dried stevia leaves in an airtight container alongside other herbs. It is best to crush the leaves only when you're ready to use them.



How to Grow Tarragon

Best time to plant: 🌸 Early spring

Harvest: 🌸 Late spring to 🍁 early autumn



The **tarragon plant** (*Artemisia dracunculus*) is a perennial herb from the sunflower family and often grows wild across much of North America. The herb is popularly used in cooking and such a vital part of French cuisine it is one of the **"Fines Herbes."** These herbs are four of the most commonly used in French cooking and include parsley, chervil and chives.

Health Benefits of Tarragon

Tarragon has a dense nutrient profile, containing vitamins A, B, C and flavonoids. The plant is also an excellent source of minerals, such as magnesium, zinc, iron and calcium. When eaten regularly, tarragon may help reduce the risk of blood clots, stroke and heart attack as it supports cardiovascular health. The plant may also slow blood clotting, which may increase the risk of bleeding if it's taken as a supplement.

The plant is a **natural diuretic** and may help reduce water retention. Polyphenolic compounds and dietary fibers found in tarragon may help to lower blood sugars naturally in individuals who suffer from diabetes. The presence of iron helps in the production of red blood cells and the presence of zinc may help repair damage to your intestinal mucosa and support your immune system.

FUN FACT

The word tarragon is derived from the Latin word *dracunculus* meaning "little dragon."

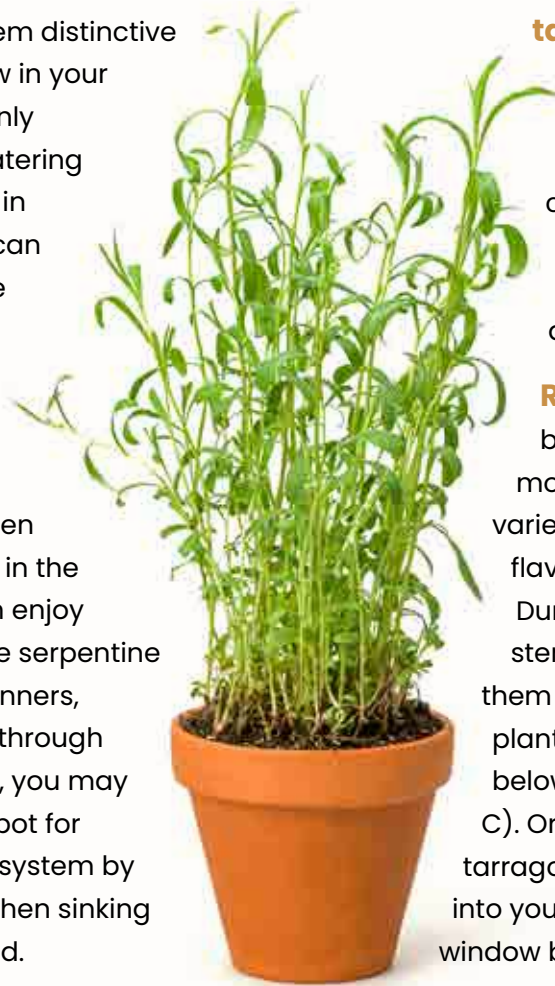
As the plant contains **eugenol oil**, tarragon has a numbing effect helping to reduce mouth and tooth pain. Consider drinking the tea or simply chewing on the leaves. **Tarragon tea** may also help with insomnia because of its calming effect and can help fight bad breath and reduce body odor.



Growing Tarragon

Tarragon has a flavor reminiscent of anise and licorice. Gardeners find it makes an attractive border as the plant has an upright growth and delicate leaves. Tarragon is a **perennial** plant with thinly shaped leaves and a hint of silver in the light, making them distinctive in garden beds. Easy to grow in your garden, tarragon requires only well-drained soil, regular watering and plenty of sun. If you live in southern climates, the Mexican type may be a better choice as it will not lose flavor in extreme heat.

The French variety of tarragon is suited for growing in pots in your kitchen and can be planted directly in the ground. This means you can enjoy your herb **year-round**. The serpentine root system puts out little runners, spreading the plant rapidly through your garden. For this reason, you may want to have a dedicated spot for tarragon or restrict the root system by planting in a large pot and then sinking the container into the ground.



The plants grow up to **3 feet tall**, depending upon the type of tarragon. Most French tarragon plants flower a white, somewhat greenish globe, which are tiny and sometimes easy to miss. The flowers appear mid- to late summer, but are sterile and do not produce seeds. **French**

tarragon is unusual as it spreads by rhizomes or cuttings, but not from seeds. When grown in your garden, clumps should be divided every three to four years so the plant maintains the characteristic aromatic flavor.

Russian tarragon plants can be propagated from seeds, but most gardeners grow the French variety as it is more aromatic and flavorful than the Russian variety. During winter months, cut the stems to ground level and mulch them for protection. Most tarragon plants are hardy up to 10 degrees below zero Fahrenheit (-23 degrees C). Or, if you are growing your tarragon in pots, they can be brought into your home and placed in a sunny window before the first frost.

Cultivating and Propagating Tarragon

While growing your own herbs is a convenient way of having fresh ingredients whenever you need them, you also have the additional benefit of avoiding pesticides and other chemicals used in commercially grown plants.

How to Grow Thyme

Best time to plant: 🌸 Spring

Harvest: 🌞 Early summer

When someone decides to begin growing an herb garden, **thyme** (*Thymus vulgaris*) is one of the most often-chosen herbs, in part because it's very useful in a number of dishes to create depth and complexity. It's becoming clearer how beneficial thyme is to health and, serendipitously, as a **perennial** thyme reappears year after year. There are several thyme varieties that are delicious in a range of dishes from soup to eggs, bruschetta and in savory sauces and salad dressings.

Recipes can be enhanced by using different thymes with recognizable foodie fragrances, such as lemon thyme, or lime, orange, balsam, nutmeg, caraway, coconut and oregano thyme. **Creeping thyme** is often used as a hardy ornamental ground cover or between flagstone pavers. These are designated *Thymus serpyllum*, with a crown of tiny white, lavender, bronze or rose-colored flowers and even tinier leaves, but they're still edible. *Thymus vulgaris*, however, is the type most used for cooking.

Health Benefits of Thyme

According to Medical News Today, **thymol**, aptly called "**oil of thyme**," has antibacterial, antiseptic and antimicrobial properties, even standing up against such virulent bacteria as E. coli, Staphylococcus aureus, Bacillus subtilis and Shigella. In fact, as much as 60% of thyme essential oil may be made up of thymol. Other volatile oils in thyme include carvacrol, borneol and geraniol.



FUN FACT

Your cooking will definitely benefit from thyme. Add some of it to your dishes and get an all-new perspective to your favorite food!



The scent thyme emits that was — and is — beneficial as a **purifier** is still a frequently used fragrance in relaxing **aromatherapies** and even helps deter moths, fleas, mosquitoes and lice, while stimulating your mind, strengthening your memory and calming your nerves.



In one study, thyme was found to support **brain health**. Animal experiments supported its potency in two different ways. Mice were divided and half were given a thyme supplement while the others got a placebo.

When their brains were analyzed, scientists found that the animals receiving thyme had significantly higher antioxidant enzyme activities and total antioxidants than mice given a placebo. Secondly, the levels of healthy fats, including omega-3s, were "significantly" higher in the thyme-treated mice. Healthy Fellow reports findings from another study, which revealed:

“ ... [T]he addition of 5 percent of either rosemary or thyme could mitigate the ill effects of a 'Western-style high-fat diet' in a group of mice that was examined for 12 weeks. The authors theorized that the benefits were the result of positive changes relating to the 'inhibition of platelets and stimulation of endothelial cells.' ”



Growing Thyme

The first thing you have to decide when you bring home a small pot of thyme or seeds for backyard planting is where to place them to ensure they'll get plenty of sun. Then, besides dry, gritty soil, the only other prerequisites for healthy growth are good drainage and plenty of water in the heat of summer.

If you start with a root, thyme will **multiply very quickly**, so you may need to keep your eye on it every few weeks to make sure it doesn't overtake other herbs and plants, according to Yolanda Vanveen, a sustainable gardener from Kalama, Washington. In fact, while timid gardeners may feel they need more specific information about how to grow thyme, you can relax because as the saying goes, if you plant it, it will grow.

You can also start thyme from seed indoors. In northern planting zones that are particularly harsh, covering plants with evergreen boughs is one way to help protect them so they'll return again in the spring. Beds of thyme don't require a severe cutback in the fall, either, as some plants do. Another succinct perspective worth noting comes from Every Green Herb, making a few more excellent points regarding the successful cultivation of thyme:

“It may grow to a height of 12 inches with woody twig like stems and tiny oval leaves. Creeping or wild thymes may have a more delicate appearance. Clip often to encourage new growth. Propagate by divisions, stem cuttings or root cuttings. Thyme should be harvested before and during flowering. Store dried thyme in a cool, dark, dry place.”



Harvesting Thyme

Harvesting the plant is easy, too: When thyme begins to flower, cut the top half off the branches and hang them in a shady place, say in the garage or barn, or place them on baking sheets in the oven or in a food dehydrator. Once they're dry, you can strip the leaves off and store them in a dark corner of your pantry until you're ready to use them.



How to Grow **Vanilla Beans**

Best time to plant: August to September

Harvest: 8 to 9 months after flowering



Orchids are one of the largest families of flowering plants, and **vanilla** is the only orchid plant that produces an edible fruit. The vanilla orchid is found near the Equator, especially in Brazil, the West Indies and southern Africa. While the plant does best in the tropics, there are ways to grow vanilla beans in your own home and enjoy the rich flavor and health benefits.

DID YOU KNOW?

There are more than 24,500 known orchid species!

Health Benefits of Vanilla

Vanilla may be used in its natural form when the seeds are scraped directly from the pod and added to your baked dishes. The beans may be used to produce an extract used in baking or oil infusions for aromatherapy. The oil infusions can also be used for massages to help relieve sore muscles and joints due to vanilla's **antinociceptive** (blocks pain sensation) **properties**.

Growing Vanilla

The vanilla bean plant grows as a vine. In subtropical and tropical areas, it may be grown outdoors in the ground, but in the remainder of the world it will do better in a container in a protected environment. This orchid is **epiphytic**, meaning the vines have roots beneath each leaf that are able to absorb water from the air.

Orchids are started from a cutting that do best in a combination of half bark and half potting soil in a



pot design for orchids with adequate drainage holes. While this mixture is a little denser than most soil for orchids, the initial plant will need the special formulation to provide nutrients while it grows.

Once the epiphytic roots develop, the plant no longer depends on the roots in the potting mix. At this point, you may want to transplant the orchid into a pot with fir bark and an orchid mixture.

As a vine, you'll want to provide the plant with something to climb on. In the tropics, a vanilla orchid can grow up to 300 feet, usually in the trees. However, growing in your greenhouse or home, you'll want to keep the vine to 20 or 30 feet so it's more manageable. By training the vine to grow laterally, you may harvest more in a smaller space.

Use a slab of hardwood that does not easily rot, such a **cedar or cypress** as the vertical support. The best way to raise a vanilla orchid at home is in a **greenhouse**, or a **room** in your home where you can carefully control the light, heat and humidity. It grows best in temperatures from **70 to 90 degrees F** (21 to 32 degrees C). In cooler temperatures the growth slows.

Light and Humidity Are Important

The plant also requires enough light to produce flowers. Low light will encourage lush green growth, but no flowers. Watch your plant for the color of the foliage. Grown with sufficient light, the leaves will be a **green-yellow color** with strong vertical growth.

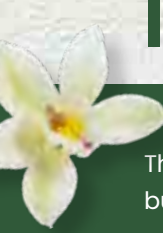
After the plant has established epiphytic roots, the soil should have exceptional drainage and hold sufficient moisture but also allow for air movement. When grown at home, orchids may enjoy an **overhead paddle fan** on the lowest setting to encourage air movement throughout the area without directly blowing on the plant.

Your vanilla orchid will thrive in high humid conditions when the humidity is kept at 80% so the epiphytic roots can gather water from the atmosphere. When the humidity is lower, you will want to mist your plant every day, making sure to provide enough water to keep the soil damp, but not over watered and not allowed to dry out.

When you water, use enough that it runs from the drainage holes as this soaks the soil but also flushes the collection of waste products. If you live in a humid climate, **clay pots** work well. In a drier climate or without as much humidity, a **plastic pot** may hold moisture longer.

When orchids receive these requirements, they may grow well without fertilizer. However, you'll get better results when the plant is routinely fed **every two weeks** during the spring and summer.

Experienced orchid growers believe **observation is the key** to keeping your plants healthy. Examine them on a regular basis so you can correct any issues before they develop serious problems. The moist and humid environment leaves the plants open to root rot, so take care to examine the roots and repot them annually.



Hand Pollination Is a Learned Skill

The insects responsible for pollinating vanilla orchids are not found in the northern hemisphere. If you're growing your vanilla plant to harvest beans, you'll need to learn the skill of hand pollination. The technique requires a little skill and a lot of patience. The plants flower in the morning and live for one day.

Once the vine reaches a height of 3 to 5 feet, it may begin to flower. Gardeners believe it may be the end of the winter months as well as growth overflowing the support that help stimulates flowering.

Harvesting Vanilla Beans

Vanilla beans are **picked by hand** as they begin to turn yellow, which can take eight to nine months. Take the pod between two fingers and snap it from the vine or use a pair of sharp, recently cleaned scissors to remove the pod.

Pods do best when they're **scalded** the same day they're harvested. Heat a pot of water to 190 degrees F (87 degrees C) and submerge the beans for 20 seconds. This stops the growth and releases enzymes which are important to the vanilla flavor.

Remove the pods and wrap them in a wool towel, then place them in a dark, airtight container, called **sweating the pods**. This continues the process of developing the complex components that give vanilla its unique aroma. When the beans are cured in the field, they are left tightly wrapped for two weeks, alternating between being laid in the sun and being returned to containers at night and when rain is on the way.

On the following day, transfer the beans to a 120-degree F (48 degrees C) oven. Let them **roast for two hours** and then return them to the box. Repeat this process of oven drying and sweating for seven days. Once this is completed, place them outside daily to air-dry until the beans are completely cured, which may take up to three months.

Next, place the beans in a box lined with wax paper and keep them there for a month. This enhances the flavor and aroma. Once the box is opened, the beans will look black and slick with a light coat of oil. If moisture has been allowed in, however, you may find your crop has molded and the beans cannot be used.

The plant blooms in succession, and the flowers appear opposite a leaf node over a period of several weeks. The flowers need to be pollinated in the morning hours. When pollination is successful, you'll see the area below the flower begin to swell in the coming days. Continue to care for your plant as you do normally, as it requires nearly nine months for the pods to mature to harvest.

Growing your vanilla orchid in a greenhouse or hothouse provides the best condition for the plant. It needs the extra humidity and air circulation.



Try to spend time in your garden daily — as they say,
"The best fertilizer is the gardener's shadow,"
— and soon you'll be reaping its many rewards.





HOW-TO-GROW FLOWERS



How to Grow **Amaranth**

Best time to plant: 🌸 Mid-spring to ☀️ early summer

Harvest: 40 days to three months after planting



The **amaranth family** (*Amaranthus*) has nearly 60 different varieties. Some are grown and harvested for food, while others are weeds. The name “love-lies-bleeding” describes one of the ornamental plants, but is only one variety in the *Amaranthus* genus.

Other varieties, including “fountain plant” or “Joseph’s coat,” are found in ornamental gardens. A load of tassel-shaped flowers either droop or remain erect are usual in the ornamental plant, which may also have edible leaves and seeds. The flowers are often red, but varieties include orange, yellow and green.

The leaves of the plant may be as decorative as the flowers. Some varieties have bronze or purple foliage ranging in height from 20 inches to 5 feet or more. The taller variety should be planted at the back of a border or alongside other tall annual plants. As many varieties of amaranth have edible leaves and seeds, it’s a natural choice for an ornamental vegetable garden.

DID YOU KNOW?

Another name for a variety of amaranth is **pigweed**, an annual green leafy vegetable that may show up in your garden uninvited.

Health Benefits of Amaranth

Technically not a grain but a seed, amaranth is gluten-free and pale ivory with up to 17% protein. It is high in lysine, an essential amino acid normally low in cereal crops.

The protein content found in amaranth grain is comparable to milk, but more easily digested. The primary proteins are albumin and globulins, which, in comparison with the prolamins in wheat, are more soluble and digestible.

The grain is high in fiber and has been associated with a reduction in cholesterol in laboratory animals. The grain is also higher in minerals, such as calcium, iron, phosphorus and carotenoids, than most vegetables.

One cup contains 15 milligrams (mg) of iron and 18 mg of fiber; 105% of the daily value per serving of manganese is found in the seed. Amaranth is also the only grain with documented vitamin C content.



Growing Amaranth

The seeds of the amaranth plant are very small so it is important your seed bed is filled with fine firm soil. Consider using **30% perlite, 30% compost** and **30% peat moss** to start your seedlings. Sow a handful in a pot and water the soil lightly, being sure you don't drown the seeds.

Although the seeds can be planted directly into your flower garden, starting the seedlings in a pot allows you to plant the flowers spaced approximately 10 inches apart after the seedlings have emerged from the soil. It may take up to two weeks for the new plants to have two to four leaves and be ready to be transplanted.

You can easily pull seedlings from the pot and plant them in a raised bed, in your flower garden or in another pot. The plants appreciate plenty of organic material, but don't otherwise require fertilization. Optimally, they appreciate well-drained soil to reduce the risk of fungus.

Amaranth prefers warm weather and is susceptible to frost. When starting your seeds outdoors, be sure the soil has begun to warm and the chance of frost is over. Amaranth plants are very drought tolerant, and while they don't like excessive irrigation, they appreciate consistent watering.

The biggest pest affecting the plant are deer. They often browse the foliage and eat the seeds as readily as any other vegetable. Unfortunately, they're only deterred by fencing. Other pests such as cutworms, aphids and leaf miners may also damage the leaves. An effective method of controlling them is to cover the bed with a fine screen or nylon mesh netting.





Harvesting Amaranth

When growing plants to harvest the leaves, in your vegetable garden, you may start to harvest **40 days after planting**. However, if your intent is growing for the seeds and the flowers in an ornamental garden, you'll want to wait until the end of the growing season.

After 40 days you can clip the top of the plant and additional stems will appear on each side, making the plant bushier and lower to the ground. The plant will continue to grow until the first hard frost hits.



You can begin to harvest seeds several weeks before the first frost, usually

three months after planting. The simplest way to determine if seeds are ready is to **gently shake or rub the flower heads** between your hands. When the seeds easily fall out, it's an indication they are ready for harvest.

Once ready, the easiest way to gather seed outside is to bend the plant over a bowl and rub the seed head between your hands. This is best done in dry weather and when wearing gloves to protect your hands.

Another option is to **cut the flower heads and hang the plants upside down** to dry indoors. Some find the seeds naturally fall out of the flower head, dropping to a receptacle you have below the plant. However, others find the plants may become extremely brittle, and it is then difficult to separate the seed from the chaff when dried inside.

If you are removing the seeds after drying indoors, remember to wear gloves to protect your hands. There are several ways to separate the seeds from the seed heads, including placing the seed heads between two pieces of cloth and stepping on them without shoes or placing the seed heads inside a paper bag and beating them together.

Once harvested, the leaves will last in your refrigerator about as long as spinach does. The seed may be stored in an airtight glass container so you can use the grain throughout the winter months.

If you see small birds gathered around the plants, it's likely they are eating seeds — another indication they are ready for harvest.



How to Grow Cyclamen

Best time to plant: 🍁 Fall to ❄️ winter

Harvest: ☀️ Summer (for bulbs and seeds)

Cyclamen is a vibrant flowering plant that's particularly popular as a houseplant. It's best known for its striking blossoms that come in shades of pink, white, purple and red along with their impressive foliage, which includes heart-shaped or round leaves patterned with shades of green and white.

Cyclamen technically refers to a number of plants from the **Primulaceae family**, many of which can survive outdoors in USDA hardiness zones 7 and above. The most popular variety in the U.S. is **Cyclamen persicum**. This perennial plant is often found for sale in garden shops during the fall and winter and is most prized as a houseplant.

Health Benefits of Cyclamen

The therapeutic properties of cyclamen are thought to be due, in part, to triterpene glycosides known as **saponins**, found in the roots. With noted anti-inflammatory properties, cyclamen has been used since medieval times in the treatment of arthritic conditions. Saponins may also help regulate inflammatory response by influencing the behavior of human macrophages.

The plant also has a long history of homeopathic use for a variety of ailments, from anemia and bone pain to uterine and menstrual disorders. The *C. europaeum* cyclamen species may also help reduce facial pain and ease mucosal obstruction in patients with mild to severe rhinosinusitis if used as a nasal spray for seven days.



DID YOU KNOW?

Cyclamen was traditionally used as a medicinal plant before it became a popular ornamental plant!

The extract of *Cyclamen coum*, an endemic cyclamen plant in Turkey, has even been found to be helpful in inhibiting cervical cancer and nonsmall cell lung cancer cells in a laboratory study, with researchers suggesting it could prove to be a novel anticancer agent.



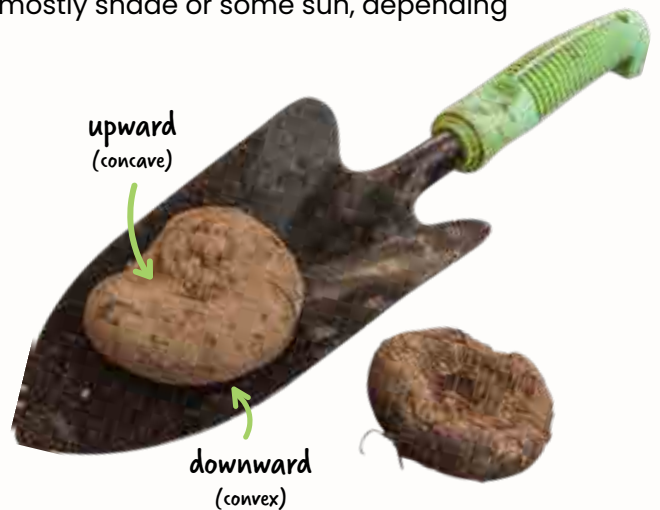
One Important Caveat About Cyclamen

Cyclamen is **toxic to pets** due to the saponins it contains. Any part of the plant can be dangerous, but the **tubers or roots are especially toxic**. Be sure to keep these plants (and their tubers during the dormant season) away from pets. Cyclamen can also be **harmful to people, especially children**. As long as it's kept in a safe place, however, cyclamen is a beautiful plant that can make a stunning addition to your home or garden.

Growing Cyclamen

There are **23 species of cyclamen**, and if you plan to grow it outside you'll need to choose a variety that's hardy and make sure you're in the proper hardiness zone. Cyclamen enjoys hot dry summers (during which it's typically dormant) and cool winters without frost. If you live in an area with heavy summer rains, the tubers may rot. Choose a protected area, as cyclamen in the wild tends to live among trees, shrubs and rocks. It may need mostly shade or some sun, depending on the variety.

If you're planting a tuber and there are no visible roots, you may be wondering which way is "up." If you look closely, you'll notice a growing point on one side, which is what should face upward. If the tuber is shaped like a saucer, the Cyclamen Society notes, "Plant with the convex side downward [and the] concave side upward."

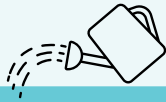


As for species, according to Plant Delights Nursery:

The following list groups the species from easiest to grow in temperate gardens to most difficult, based on their cold hardiness and overall adaptability.

1. *Cyclamen hederifolium*, *cilicium*, *coum* and *alpinum*
2. *Cyclamen purpurascens*, *pseudibericum*, *repandum*, *mirabile*, *rhodium*, *intaminatum*, *graecum*, *colchicum*
3. *Cyclamen balearicum*, *creticum* and *parviflorum*
4. *Cyclamen africanum*, *coum* ssp. *elegans*, *rhodium* ssp. *peloponnesiacum*, *persicum*, *rohlfsianum* and *somalense*





Watering Guidelines

How to water a cyclamen plant depends on the season. During the summer, when the plant is dormant, you should stop watering altogether, as excess moisture will cause the tuber to rot.

"You can expect that by the end of April it will want to go dormant ... so you should stop watering then until September," according to the Cyclamen Society.

Overwatering is one of the most common problems gardeners experience with cyclamen plants. This may cause the leaves to turn yellow. During the winter, cyclamen should be watered when the compost feels dry, either from the top or bottom, and then allowed to drain thoroughly.

Any water remaining in the saucer should also be cleared away after five minutes. Because cyclamen may rot if you get too much water near the center of the plant, some people prefer **watering cyclamen from the bottom** (by filling the pot's saucer with water) **or using a self-watering planter.**

You can also carefully water the plant around the edges of the pot. If you don't have a green thumb, you shouldn't feel intimidated by the cyclamen's sometimes-demanding nature. ***"The main things really are keep it cool, out of direct sunlight and don't over-water,"*** the Cyclamen Society notes. ***"Let it dry out, then stand the pot in several inches of water to give it a good soak, then let it drain and leave it until it is fairly dry before repeating the process."***

If you need to repot a cyclamen plant, wait until it goes dormant in the summer to do so. To keep the tuber over the dormant season, store it in a cool, dark, well-ventilated place until early autumn. When the plant starts to sprout new leaves, you'll know it's time to start watering it again.



Harvesting Cyclamen Bulbs or Seeds

There are a couple of ways to grow new cyclamen plants, one being from seed and the other by division. After the cyclamen goes dormant for the summer, you can cut up the tuber like a potato, making sure that each section has a growing point, or eye, and a root bud on the bottom.

Dust the cut areas with rooting hormone then place them in moist sand covered with a tent of plastic to increase humidity. Once roots form, the tubers can be placed into a small pot of potting soil and kept moist until the winter.

If you're growing cyclamen in your garden, you can also collect seeds to grow new plants. Plant Delights Nursery explains:

Cyclamen are facultative out-crossers so they will set seed best if there are multiple plants growing near each other (that are not clones). Keep an eye on the developing fruits. They will start to soften prior to splitting open. You need to collect the seed after they are mature, but before the fruit opens since insects will likely haul them away before you do.

Ripe seed change color from white to light brown. When they dry out, they turn dark brown. Since the seed have no dormancy requirements, they are best sown fresh and will germinate in [two to four] weeks. They can also be dried and stored for a year or so if needed.

How to Grow Dahlia

Best time to plant: 🌸 Mid-spring to ☀️ early summer

Harvest: 🌻 Late summer to 🍂 early fall



DID YOU KNOW?

The dahlia plant is native to the high plains of Mexico. Some species have also been propagated in Guatemala, Honduras and Costa Rica.

The **dahlia** plant produces flowers in a range of colors, shapes and sizes. The flowers are often loved by gardeners as they have one of the longest blooming periods compared to other plants. Dahlias will start blooming in June and many continue to flower until the first frost.

👉 Growing Dahlias

Dahlias appreciate well-drained, rich soil with a neutral pH near 6.5. If your soil is clay or heavier, consider enriching it with plenty of organic matter, even when planting in containers or window boxes. You may also add sand, aged manure or peat moss for better drainage and to keep the texture loose.

.....
Bone meal may be added as you plant the tuber, but if you have animals in the yard that are attracted to bone meal, they may dig up your tubers!
.....

In containers, use **two parts garden soil** with **one part potting soil**, which helps with moisture retention as potting soil dries quickly. Dahlias grow from tubers that form at the base of the stem in the fall.

In addition to rich soil, your growing dahlias will do best when regularly watered. Although the plants appreciate a **drip irrigation system**, if you're hand watering, water at the base of the plants to keep the foliage dry and reduce the risk of fungal growth.

Select a site in full sun as your plants will produce more blooms when they have up to eight hours of direct sunlight. In a less sunny location the plants will grow taller but have fewer blooms. Look for a location protected from the wind as the larger plants may take a beating during inclement weather.

Planting and Caring for Your Dahlias

Your dahlias will do best in plain garden soil without using potting soil mixes. **Weed killer** can burn your tubers before they sprout and cause them not to grow at all. If you're planting in a container, it should be no smaller than 12x12 inches for each one you plant. The larger dahlias could be grown in a pot the size of a whiskey barrel. **Do not use prefertilized potting mix** because it may burn the tubers.

If you're planting directly in the garden, the soil should be at least 60 degrees F (15 degrees C). If you live in cooler climates, you can start your plants indoors four to six weeks before you expect the last frost. Start them in containers with the same proportion of garden soil to potting soil.

Whether planting in a container or in the ground, be sure the soil is loosened at least 1 foot deep. As you plant the tubers, keep the stems or sprouts upright and position the top of the tuber no more than 2 inches below the surface. They should be 18 to 24 inches apart. If the soil is dry, water it sparingly but do not soak it.

Most outdoor areas have enough rain in the spring to meet the water needs until your dahlia plant is fully established. **Be careful because overwatering can cause rot.** If you add **mulch** to the base of the plants it helps retain moisture and keep the soil cool.

Experts disagree on the amount of fertilizer dahlias require. Most recommend using a low if you choose to use any at all. It's also commonly suggested to be careful not to **overfertilize** because this can make the plant develop weak tubers at the end of the season and have smaller blooms as well as fewer blooms. The American Dahlia Association believes the best strategy is to **test the soil** to determine the specific needs.



Dahlia plants do well when you spend a bit of time through the summer months **deadheading and pinching them back.**

Cut the flowers back to the main stem to stimulate the growth of longer stems. The longer stems are better for cutting and displaying in your home.

If you're intent on producing large show blooms, you'll want to remove the outer two buds of the three that develop. Although this reduces the number of blooms, the ones that develop will be larger.

Cutting or pinching the plants may help promote a shorter, bushier plant, according to Swan Island Dahlias. You can accomplish this by either pinching off or cutting the center shoot slightly higher than the third set of leaves. Also, if you expect any plants to reach 3 feet or higher, stake them to support the stems and flowers.

How to Overwinter Dahlias in Cold Climates

As the winter season approaches, you may need to make some accommodations so they overwinter successfully. Outside of hardiness zones 8 to 11, dahlias are grown as **annuals**. After the first fall frost blackens the greenery, cut each plant down to 4 inches above the soil. Carefully dig around the plants and pull up tubers without damaging them.

Keep them out of direct sunlight and in a frost-free area to dry for a few days. Once the tubers have dried, carefully remove any excess soil and keep about 2 inches of the stem. Store the tubers in a **ventilated box** or in a **basket** filled with sand, peat moss or vermiculite that is slightly moist.

Place the container in a cool, dry area where temperatures stay above 45 (7 degrees C) but not more than 55 degrees F (12 degrees C). Check them from time to time to make sure they're not rotting or drying out. If they start to



shrivel, mist them with water. If you find rot, trim that portion so it doesn't spread.

In spring, separate the healthy areas from the parent and plant as described above. Each tuber you use must have at least one piece of crown attached to it or an eye; otherwise it won't develop. The eye looks like a little pink bump at the base of the stem.

If you live in zones 8 to 11, the tubers can be left in the ground to overwinter, covered with a deep layer of dry mulch after cutting the stems 2 inches above the ground.



Harvesting Dahlia Flowers

Dahlia plant blooms look beautiful in both your garden and in your home or office. They make wonderful cut flowers, and the more you cut, the more blooms the plant produces. The best time to cut your flowers is early in the morning, placing them directly into a bucket of cool water.

Remove the bottom leaves from the stems so they don't rot in the water or take up any nutrients from the plant. Be sure to place the stems in a vase. Put the vase in a cool spot away from direct sunlight and change the water every day. If you take care of your flowers this way, the blooms should last a week or a little longer.

How to Grow Honeysuckle

Best time to plant: ❄️ **Late winter** (deciduous types) and 🌸 **spring** or 🍁 **autumn** (evergreen types)

Harvest: As soon as fully formed blooms appear, preferably in the morning

Honeysuckle (*Lonicera*, in the family *Caprifoliaceae*) is commonly found growing along roadsides or creeping up fences as ornamental plants. But these colorful and delightfully scented plants are more than just pretty decorations — they have medicinal uses as well, exhibiting powerful antiviral activity. Honeysuckle plants are heat-tolerant, rarely prone to pests and diseases, and known for their versatility and abundance, which makes growing and caring for them easy.

Health Benefits of Honeysuckle

Raw honeysuckle, honeysuckle tea and honeysuckle oil are all known for their medicinal benefits. In Traditional Chinese medicine (TCM), the plant is known as Jin Yin Hua and is used to help ease the flu, colds and sore throat.

A study published in the journal *Cell Research* found that a plant microRNA called **MIR2911** in honeysuckle effectively suppressed both swine flu and bird flu viruses. Importantly, the antiviral properties of MIR2911 remain after boiling, suggesting honeysuckle tea may offer effective antiviral benefits. According to the authors:

"We suggest that as the first natural product to directly target influenza A viruses, MIR2911 is the 'virological penicillin' that serves as a novel therapeutic and preventive agent against not only influenza A, but potentially also other types of viruses."



Xiao Er Ke Chuan Ling Oral Liquid (KCL), an herbal preparation that uses honeysuckle and nine other plants, has antiviral, antibacterial and potent pharmacological actions and has been shown to help treat acute bronchitis in children.

Honeysuckle has also been shown to have wound-healing properties. Aside from showing antimicrobial activity against *Escherichia coli*, *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Candida albicans* and *Candida tropicalis*, an ointment prepared with honeysuckle extract "exhibited potent wound healing capacity as evidenced by the wound contraction in the excision wound model."



Growing Honeysuckle

Depending on the variety, the honeysuckle plant will grow as shrubs or crawling vines, and can be either deciduous or evergreen, especially those growing in warmer regions. The **climbing varieties** flower in the summer, while **shrubby varieties** flower in late winter, spring and/or summer. While both shrubs and climbing varieties are easy to cultivate, they have different requirements in terms of soil, pruning and training:



Climbing varieties require fertile, well-drained soil rich in humus. Full sun will encourage greater profusion of flowers, but aphid attacks are discouraged if grown in partial shade. So, you may want to weigh out the pros and cons before planting. **Japanese honeysuckle** does not require regular pruning, but you may want to control growth by cutting back shoots in spring and thinning out congested growth.

Common honeysuckle (*Lonicera periclymenum*) should be pruned back one-third in late summer, once it has flowered. All climbing varieties can be renovated by hard pruning to about 2 feet (61 centimeters) from the ground in early spring. Also remember that climbers need support, especially when they're young, so secure them with galvanized wire to a fence or trellis.



Shrubby varieties will thrive in just about any soil type, provided it drains well, and can be planted in either full sun or partial shade. Deciduous shrubs should be pruned in late spring or summer, after flowering.

To stimulate growth, remove old, weak stems and cut back one-third of the older branches. Make the cuts next to a new, upright shoot. **Evergreen shrubs** make a nice hedge and should be pruned three times between spring and fall. Both types can be renovated in early spring by hard pruning.

Regardless of the type, adding organic compost and mulch around the base will reduce water stress, discourage powdery mildew and help the plant thrive. To encourage flowering, add a top dressing such as fish blood and bone in the spring.

Ways to Propagate Honeysuckle

Honeysuckle can be propagated either by seed, layering, softwood, hardwood or leaf bud cuttings:

1 Seeds

Seeds can be sown in a cold frame in the fall. An alternative is to refrigerate the seeds with a small amount of moist compost for four to 12 weeks, then germinate the seeds at a temperature of 55 to 64 degrees F (13 to 18 degrees C).

2 Layering

Layering is commonly used to propagate honeysuckle vines. In early spring, when shoots are flexible and dormant, simply bend a 1-year-old stem to the ground and pin the shoot 6 to 9 inches from the tip, forming a U. Cover the base of the U with soil, making sure the tip is still above ground.

3 Hardwood cuttings

Evergreen shrubs can be propagated by taking an 8- to 12-inch (20- to 30-cm) hardwood cutting between fall and midwinter.



4 Softwood cuttings

Cut a 2- to 3-inch (5- to 7.5-cm) piece from the mother plant in late spring or summer. Pinch leaves off the lower half of the cutting and remove any flowers. Make a cut just below a leaf node and dip the base in a root-promoter before planting.

5 Leaf bud cuttings

Another simple way to propagate honeysuckle vine is to cut a small section, making the first cut just above a pair of leaves and the second cut halfway between two leaf joints. Growth regulator can be used to promote roots but is not required.

Place the cutting, leaf end up, in a small pot. Keep the soil moist but well-drained in a warm, sunny area. Placing a clear plastic bag over the pot to create a mini hot-house will encourage heat and moisture retention. Once the risk for frost has passed, allow the plant to acclimate to the outdoors, then plant it in the ground.



Harvesting Honeysuckle Flowers

Honeysuckle flowers, which are yellow to bright red, are known for their lovely fragrance and sweet nectar. Harvest the flowers in the **morning**, selecting **fully formed blossoms** that are about to open. They should be elongated, **not the trumpet shape** of mature blooms. Old, fully opened flowers may not have as many active chemical compounds as immature ones. Small, tightly closed buds will work, too. The honeysuckle blossoms can be used for tea either fresh or dry.



DID YOU KNOW?

Climbing honeysuckle varieties can produce red berries that are loved by birds but **toxic to humans**. So when using honeysuckle, stick to the flowers only and leave the rest of the plant behind.

To dry them, spread the flowers out on a tray first, making sure to avoid crowding; cover them with **layers of cheesecloth**. Put the tray in a place with low humidity and good air circulation for a few days to a week. Dry the flowers until they are brittle and break apart easily. Once dried, store the flowers in an opaque, airtight container kept in a cool, dry place. **Keep them out of direct light** to avoid damaging the chemical compounds and essential oils.

How to Grow Hydrangeas

Best time to plant:  Spring

Harvest:  Late summer to  fall



Hydrangea plants produce large blooms that are popular as cut flowers and in the garden. The color of the flower varies depending on acidity of the soil. Hydrangeas tend to bloom **pink flowers in neutral to low acidity** and **blue flowers in high acidity soil**. They are one of the few plants that concentrate aluminum, which is released from acidic soil and gives the flowers their blue color.

While hydrangeas are stunning and produce immense flowers, they are also easy to care for, cultivate and encourage abundant blooms.

Growing Hydrangeas

Each variety has slightly different requirements, but most thrive in somewhat moist, rich and porous soil. If the soil in your garden needs amendments, add organic compost before planting and work it into the soil well.

Preparing the Soil for Your Hydrangea Shrubs

Hydrangea shrubs prefer full sun in the morning hours and tolerate afternoon shade. Depending upon your hardiness zone, it's important to remember most of the shrubs do not appreciate extremely hot conditions, so if you live in warmer climates, ensure your plants get afternoon shade. This is one area where the different types may vary, as some will bloom in shade but produce fewer blooms.



Plant your hydrangeas in the spring after the last threat of frost is gone. Dig a hole as deep as the root ball and up to three times as wide. Set the plant in and fill it halfway with soil. Water the root ball and after it has all drained, fill the rest of the hole with soil. If you are planting multiple shrubs, you'll want to space them about 3 to 10 feet apart depending upon your variety. Once planted, **they enjoy a deep watering weekly, especially during the dry season.**

You may get more abundant blooms if you add a side dressing of organic fertilizer in the spring or summer. Hydrangea shrubs may be transplanted during their dormancy, in the late fall or winter. If you're moving your hydrangea in your yard, be sure to dig up the whole root ball and then replant it immediately.

As winter approaches, the shrubs should be covered to protect them from severe weather. Add **18 inches of mulch, leaves or straw** in the fall. Then cover the entire plant by making cages out of chicken wire and filling the cage with leaves. Steer clear of maple leaves as they tend to stick together when they're wet and may suffocate the plant.

Propagating Hydrangeas From Cuttings

The process of taking a cutting is also called "**striking**" in some areas. The first step is to select a stem.

Look for a branch without a bud. If it's early spring and the plant has not formed buds yet, both blooming and non-blooming stems develop as cuttings. Use sharp and clean shears to take the cutting and sanitize them first so no fungal disease is introduced to the original plant or the cutting.

Look for tender green stems as woody stems will be less active and take double the time to root. The cut should be 2 inches below a leaf node and about 5 inches long in total. Once the cutting has been removed, take off all but the top two leaves.

The leaves should be removed with your shears, so you do not damage the stem. Cut the leaf off where the stem begins to expand into the leaf. After trimming inspect the stem for damage. Discard any damaged cutting at the stem as it will likely develop root rot or will not thrive.

DID YOU KNOW?

Each color of the hydrangea has a different traditional meaning. Pink hydrangeas symbolize love and sincerity, while blue flowers stand for forgiveness and regret.

The Spruce recommends propagating in the spring when plant growth is at its peak. Take your cutting in the early morning or late evening as this reduces heat stress.

Next cut the top two leaves in half crosswise, as the cutting is not equipped as yet to deliver enough moisture and nutrients to feed the leaves without first rooting. Once all this trimming is completed the stem should have enough energy to produce roots, then developing into a full shrub.

Before sinking your cutting into soil medium, treat the cut end with rooting hormone made using **willow water**. The willow tree is a rich source of **indole acetic acid hormone**, which helps the plant to grow roots.

Pick a few young stems and twigs of a willow tree and boil it in water. Let this stand overnight and then dip your cutting edges in the tea. Use fresh tea each time you propagate new hydrangea plants for the best results.

Cuttings develop best in a warm, moist environment, much like a hot house. Consider making your own for each cutting by watering the pot well and covering in a plastic bag, using sticks to hold the plastic away from the plant. Place your cuttings in indirect sunlight to avoid burning the plant and check every two to three days to ensure the soil is moist.

Pruning Hydrangeas

Flowers blooming on old wood are best pruned to remove damaged areas or dead stems. Plants older than 5 years may be revitalized by pruning. **Old wood types of hydrangeas** should be pruned only after blooming in summer but not into the fall as they will start developing buds for the following season during August and September.

On the other hand, **hydrangeas blooming on new wood** set their flower buds in the current season and may be pruned in the fall. Some gardeners choose to prune to the ground each fall, but this will slowly weaken the plant. If your hydrangeas have not produced an abundance of flowers, it might be because the plant has not gotten enough sun, was pruned at the wrong time or a frost killed the flower buds.

When a hydrangea plant gets older, it may produce smaller blooms. In this case, regular removal of some of the older canes to ground level may keep the shrub growing vigorously. Climbing varieties do not usually need to be pruned, but you may consider it to keep the new shoots under control.



Harvesting Hydrangeas

By cutting and drying flowers, you'll be able to enjoy them all year long. Begin by allowing them to dry naturally on the plant, which often happens **between August and October**. When the petals have turned a parchment paper color and the flowers feel like paper it's time to cut them from the plant.

If they are cut during peak blooming or during your rainy season, the levels of water in the stems and leaves will be too high and the flowers will dry too slowly. If you wait too long, the flowers will turn brown and not keep their color. Cut them in the early morning hours leaving a 12- to 18-inch stem.



How to Grow Lavender

Best time to plant: 🍁 Fall (around October)

Harvest: 🌸 Early spring

Cultivated and prized worldwide, **lavender** (*Lavandula*) is a slow-growing perennial that tops out around 3 feet, characterized by short, slightly crooked stems. Its narrow bluish-green leaves are offset by brightly colored, barrel-shaped flowers. Valued as a pollinator, as well as for its hardiness and drought resistance, lavender is commonly found in flowers beds, gardens, highway medians and public parks.



Health Benefits of Lavender

Lavender oil is one of the most well-known and commonly used essential oils in aromatherapy. According to the Natural Medicine Journal,

"The efficacy of aromatherapy of lavender is thought to be due to the psychological effects of the fragrance combined with physiological effects of volatile oils in the limbic system."

In terms of specific health benefits, lavender essential oil may help:



Improve digestive — Research has discovered that lavender oil may protect the gut microbiome from pathogenic bacteria.



Promote better skin health — A study published in 2016 noted that lavender essential oil may help boost the ability of skin to heal from wounds.



Relieve pain — Applying lavender essential oil to your muscles on your own, or as part of regular massage treatments, helps to relieve muscle and joint pain, stiffness and soreness.



Induce sleep — Lavender is widely known as a nondrug alternative to treat insomnia and other sleep disorders.



Promote relaxation — Lavender is easily recognizable by its calming scent, which has been shown to help relieve anxiety.

Growing Lavender

You must first determine if you are able to offer suitable growing conditions for lavender based on its unique needs. Due to its Mediterranean temperament, lavender will not do well in cold or humid weather. As such, it's important to remember that lavender:

- ✓ **Germinates poorly** – When starting seeds indoors, place three or four seeds in each planting cell to ensure proper germination. You can always thin the plants later as needed.
- ✓ **Hates standing water** – If excessive rainfall is a problem for your outdoor lavender plants, consider assisting with drainage by adding a layer of gravel about a half-foot below the plant's root ball.
- ✓ **Needs space** – A good rule of thumb is to plant lavender as far apart as the plant is expected to grow tall. In humid climates, your plants will need extra room for air to circulate.
- ✓ **Prefers lean soil** – Lavender does best in soil containing very little plant food. As such, an alkaline, lean soil will make for happier, healthier lavender plants.
- ✓ **Thrives in heat** – Maintaining your lavender plants in a location receiving six or more hours of sunlight a day is ideal. If you live in a cooler climate, plant lavender near southern-facing stone walls or other structures that will radiate heat. Another option is to apply stone mulch around the base of the plant to attract and retain heat.

How to Grow Lavender From Cuttings

When growing lavender, you can start with cuttings from an existing plant or planting seeds, which shortens the overall growing time. The key steps to obtaining and planting cuttings include:

1. Select and cut only healthy, straight, vigorous stems; choose flowerless stems with good color so the cutting will put all its energy into growing roots instead of flowering.
2. Use a knife to remove cuttings measuring 3 to 4 inches long.
3. Cut hardwood stems slightly below a leaf node (characterized by a small bump).
4. Remove all leaves from the lower 2 inches of the stem.
5. Use a knife to gently scrape the skin off one side of the bottom portion of each stem.
6. Place cuttings in a small pot prepared with commercial or homemade starter mix.
7. Stick the lower end of each cutting into the soil to a depth of about 2 inches and pat the soil so the cutting will stand up straight.
8. Keep the soil evenly moist until new roots form.
9. Cover the pot with a plastic bag to simulate a greenhouse effect.

Lavender softwood cuttings will root in **about two to four weeks**. Hardwood cuttings take longer. The roots are likely in place when new growth appears, or if you feel resistance when giving cutting stems a gentle tug. Remove the plastic bag when roots have formed.

Set the plants in a sunny location and water them when the soil is dry an inch below the surface. For quicker growth, fertilize the plant weekly with one-quarter strength liquid plant fertilizer. In two to three weeks, place the plant in the ground or transplant it into a larger pot with regular potting soil.



FUN FACT

Aside from therapeutic uses, lavender has varied applications. It's even used in perfumes and personal care products!

How to Grow Lavender From Seeds

If you do not have access to lavender cuttings, you can plant lavender seeds. Here's the general process of growing lavender plants from seeds:

1. Plant seeds in a seed tray about 10 weeks before the last frost, using a light, well-drained soil mix (remember to plant about three seeds in each cell because lavender is a poor germinator).
2. Maintain trays in a warm location — about 70 degrees F (21 degrees C).
3. Water lightly, from the bottom, as needed, but do not let the soil stay damp because it will foster mildew growth.
4. After your seeds sprout (in about two weeks), move seedlings to a location with full sunlight.
5. When your plants have two or three true leaves, transplant them into their final location.
6. If you are planning to maintain your lavender in pots, choose a breathable pot such as terracotta.
7. You will need to replot lavender in a larger container annually to allow for maximum health and growth.

When placing lavender in your garden bed, be sure to:

- ✓ Choose an open area with lots of air circulation
- ✓ Select a location with full sunlight exposure — at least six or more hours of sun daily
- ✓ Maintain well-drained soil with a pH between 6.7 and 7.3
- ✓ Space seeds 12 to 18 inches apart

Once established, lavender is a hardy plant you will surely enjoy given its bright blossoms and aromatic scent. Lavender is a wonderful **pollinator plant** that will attract bees and butterflies to your yard. No matter how you start it, lavender makes an elegant addition to any container, flowerbed or landscape.



Harvesting Lavender

Because many of the decorative and medicinal uses of lavender call for the plant to be dried, you'll need to allow an extra month between the time you harvest your lavender and when you plan to use it. Below are **five easy steps** for harvesting and drying lavender:

1. Harvest stems as soon as the blossoms begin to open.
2. To prevent the possibility of mildew, harvest lavender stems on a sunny day when the plants are completely aired out and dry to the touch.
3. Cut each stem back to the first set of leaves.
4. Gather the stems into bundles according to your desired size, and secure each bundle with a rubber band.
5. Hang each bundle individually on a hook or nail upside down in a cool, dry place that is out of direct sunlight.

How to Grow Nasturtium

Best time to plant: 🌸 Spring to 🌞 early summer

Harvest: 🍁 Fall



Native to South America, **nasturtium** (*Tropaeolum majus*) is an easy-to-grow, edible flowering plant that's sure to add a splash of color and health benefits to your life. Although the flower is most often enjoyed, the entire nasturtium plant is edible.

Because nasturtiums are most often grown from seed, you may have trouble finding them at nurseries. Since you'll want to raise pesticide-free plants, your best option is to plant your own. Here's everything you need to know to successfully grow nasturtiums.

Health Benefits of Nasturtiums

All parts of the nasturtium plant can be used medicinally. Its flowers contain about 130 milligrams (mg) of vitamin C per 100 grams serving. Notably, nasturtiums boast the highest lutein content — 45 mg per 100-gram serving — found in any edible plant.

The importance of lutein for your eye health was noted by researchers, who said, "As increasing evidence supports the role of lutein and zeaxanthin in reducing the risk of cataract and macular degeneration, food sources of these

carotenoids are being sought." According to the Urban Cultivator, nasturtiums are more than just a pretty flower; they have well-known medicinal properties:

FUN FACT

Nasturtiums have a slightly peppery flavor that is similar to the taste of watercress.

"Both the leaves and petals of the nasturtium plant are packed with nutrition, containing high levels of vitamin C. It has the ability to improve the immune system, tackling sore throats, coughs and colds, as well as bacterial and fungal infections. These plants also contain high amounts of manganese, iron, flavonoids and beta carotene."

Further building the case for the nutritional value of nasturtium plants, The Kansas City Star states:

"In traditional medicine, an ointment is made from nasturtium flowers and used to treat skin conditions, as well as hair loss. The group of phenols in the pigments of orange and red flowers helps [neutralize] the damaging effects of free radicals, thereby helping to protect us from chronic diseases such as cardiovascular disease and cancer."

If taken during early pregnancy, nasturtiums might induce menstruation and cause a miscarriage. As such, it's best to avoid eating any part of the nasturtium plant — capers, flowers, leaves and stems — during pregnancy. Additionally, even though nasturtiums were used for kidney and urinary tract problems in ancient times, be sure to consult your physician before using this plant for health purposes.

Growing Nasturtiums

While some varieties of nasturtiums are perennial in hardiness zones 9 to 11, most are grown as annuals going from seed to seed in a single season. They do well in lean soil and thrive when somewhat neglected. Unless your plants have been stressed and are holding onto spent blooms, you generally do not need to deadhead nasturtiums. Below are some tips to ensure your success in cultivating these eye-catching, edible plants:

Seeds Nasturtium seeds are readily available and germinate quickly (*I recommend you try heirloom varieties*).

Sun While they will bloom best in full sun, nasturtiums can also grow in partial shade.

Sowing If you get frost, sow organic and heirloom seeds in spring and summer. Direct seed outdoors as soon as the soil has warmed or start seeds indoors two to four weeks earlier. If you live in a warm-hot climate, you can plant nasturtiums anytime. Plant the seeds about one-half inch deep.



Soil Nasturtiums prefer lean soil, so do not feed them. Fertilizer will cause them to put out more foliage and fewer flowers.

Transplanting Because they don't like being transplanted, you should always use peat or paper pots to reduce transplant shock when moving plants outdoors.

Water Nasturtiums do best with weekly watering. They can survive drought conditions, but will produce fewer flowers with less attractive foliage during dry spells.

The beauty of nasturtiums is found not only in their vibrant colors, but also the fact they will **attract hummingbirds**, as well as **bees, butterflies and other beneficial pollinators** to your yard and garden. In terms of diseases and pests known to afflict nasturtiums, be on the lookout for **aphids**, as well as **caterpillars, flea beetles and slugs**.

When planted alongside your vegetable garden, nasturtiums can act as a trap crop to draw pests, particularly aphids, away from other plants. Usually, a strong blast of water (or a spray of soapy water) is enough to knock out aphids. To avoid ingesting pests, always rinse the flowers well before eating them.



Tips on Choosing Nasturtiums for Your Garden

Whether you are looking for nasturtiums to add color to salads and party trays, act as a trap plant in your garden, or cover an arch or trellis, there is certain to be a nasturtium variety suited to your need. Before choosing a nasturtium variety, give some thought to the design effect best suited to your yard or garden. You will want to pay attention to the varieties you choose because the flowers can sometimes be obstructed by the plant's ambling foliage. Some options for planting this cheerful flower include:



Bushy

These luxuriant ground-hugging nasturtiums, such as **Alaska, Empress of India, Strawberries and Cream, and Whirlybird**, are great for edging, complementing similarly colored day lilies and roses. They grow up to 12 inches tall, or about 31 centimeters (cm), and 18 inches (16 cm) wide.



Containers

Compact dwarf varieties like **Alaska Variegated, Cherry Rose Jewel, Empress of India, Nasturtium Fiesta Blend and Peach Melba** work well in containers.



Climbing varieties

Colorful nasturtium types such as **Canary Bird Creeper, Multicolor, Red Canary Creeper, Trailing Mix and White Moonlight** will amble up walls or through shrubs, growing up to 10 feet (3 meters) tall.



Harvesting Nasturtiums

In cooler climates, expect your nasturtiums to produce flowers from early summer through fall. In milder growing conditions, nasturtium plants will bloom fall through spring and fade in summer heat. For culinary use, it is best to harvest nasturtium flowers and leaves just prior to use.

How to Grow Peonies

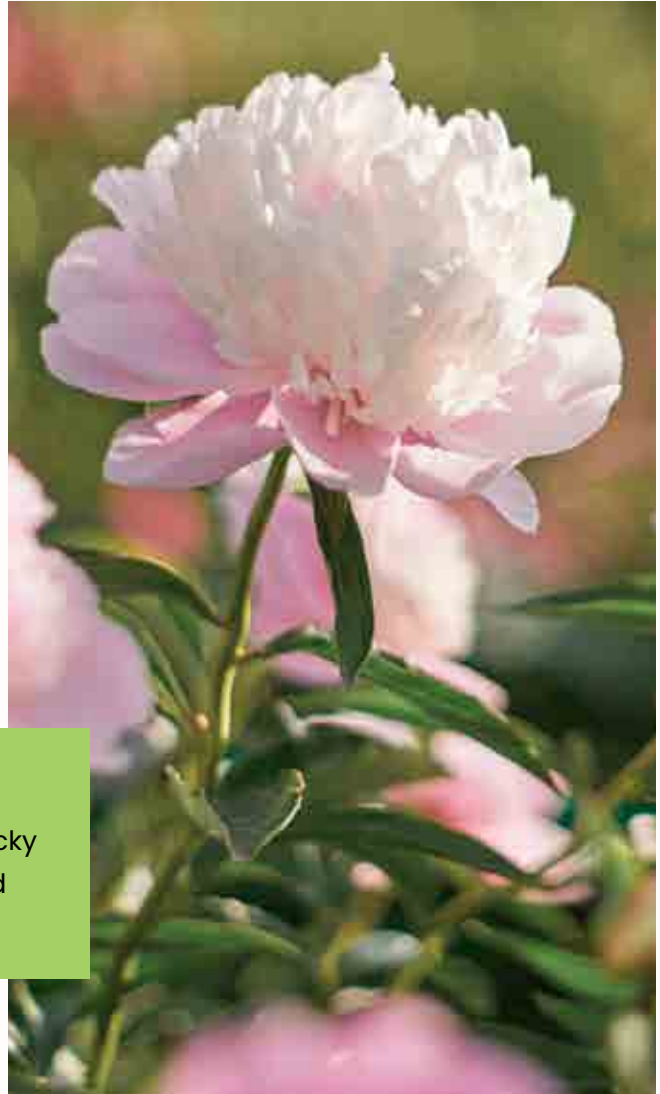
Best time to plant: 🍁 Fall | Harvest: 🌸 Late spring to ☀️ late summer

With luxuriously large blooms, **peonies** (*Paeonia*) make a wonderful addition to your table, a wedding bouquet or left to bloom in the garden. The rich, showy plants are easy to plant and care for, and are a true perennial long-lived plant, as many varieties will come back year after year for 50 years or more.

Peonies come in every color **except blue**. The genus is broken up into three groups: tree peonies, herbaceous peonies and intersectional peonies. Most peony flowers are fragrant, but the scent will differ between cultivars. Some smell of lemons while others have a scent described as slightly spicy.

DID YOU KNOW?

In the Victorian age it was considered unlucky to dig up a peony; if you did, it was believed fairies would curse you!



🛠️ Growing Peonies

Peonies bloom from late spring to late summer, depending on the variety. If you plant multiple varieties, you may be able to enjoy their luscious flowers throughout the summer months. However, **all varieties are best planted in the fall**, approximately four to six weeks before the first freeze.

This allows the plant to establish a root system before the winter and gives you a greater potential for enjoying blooms in the spring. Peonies planted in the spring may not bloom for one to two years.

When planted too closely, air flow is restricted increasing the potential for mold growth. As you are planting in the garden, give each plant enough space to grow without being crowded. As most grow to 3 feet in diameter, you'll want to allow a 4-foot range for each plant. However, tree peonies, which grow as big as 5 feet wide and 5 feet tall by their 10th year, will need even more space.

Herbaceous peonies do best when they are planted close to the soil surface, 2 to 3 inches (5 to 7 centimeters) deep. This may seem counterintuitive to leave the roots close to the air, but the plants need to be chilled to attain dormancy and set buds for the spring. If you are growing peonies from bare root, start with a hole 2 feet deep and 2 feet across in a well-drained area of the garden.

While herbaceous peonies enjoy a shallow planting, tree peonies need to be planted 4 to 6 inches deep and intersectional peonies may be planted just one-half to 1.5 inches deep depending on your climate. In warmer zones you'll want to place the plant one-half inch deep in the soil, and in cooler climates they are planted 1.5 inches deep.

Add organic material into the planting hole and 1 cup of bone meal, as growing peonies need

phosphorus, but do not flower well with added nitrogen. Mound the soil in the center to a height just below the surface and set the root clump on top so the eyes of the plant face upward with 2 inches of root below the surface. Backfill and water thoroughly by sprinkling the area.



Peonies do not like wet feet, or waterlogged roots. If you are growing peonies from a potted plant, prepare a large hole and amended with compost and bone meal. Loosen the root ball and position the plant at the same height it was in the nursery container. Backfill the hole and water the planting site.



Take Care With Sun and Soil for Beautiful Blooms



Proper soil preparation often reduces the need for fertilization in the first couple of years. Herbaceous varieties need **potassium** to bloom and are heavy feeders. They prefer slightly **alkaline soil**, so adding **lime or wood ash** may help improve plant growth.



According to *Garden Design*, adding trace minerals such as **azomite** may inspire tree peonies to produce larger flower size, increased bud count and intensify flower color.



Peonies thrive in **full sunlight**. The minimum is six hours of sun each day, but a full day of sun is optimal. Without sufficient sunlight, your plants will bloom less, and the flowers will be smaller. Sunlight also helps to reduce the risk of fungal diseases, which plague the peony when they do not have enough air circulation.

Peonies should also be sheltered from strong winds and planted well away from other trees and shrubs as they do not compete well for nutrients and water.

When the soil is prepared well, most plants won't need a side dressing of compost until the second year to help them settle well and continue to bloom.

As the buds swell, they produce a sugary substance. This attracts ants that feed on the liquid. As soon as the buds begin to open, the ants often disappear as their food source is gone. Although some gardeners find the presence of ants distressing, they don't harm the plants, and some believe they help the bud to open properly by removing the sticky liquid.

Unlike roses, peony bushes do not require pruning, and it is usually necessary only in the event of damage or disease. At the end of the growing season, the herbaceous peony and intersectional peony plants should be cut back. The herbaceous peony may be cut to the ground, but the intersectional plants do better when you leave 4 to 6 inches of stem.

Tree peonies may require some pruning after the first five years of growth to allow for better air circulation. However, these are slow-growing plants and do not do well when they are pruned in the first three years of life as it hinders their progress and reduces the number of blooms.



Harvesting Peonies

The peony does well as a cut flower, often lasting longer than a week. For the best vase life, they should be harvested while they are in bud. You may get a better bloom and the flower may last longer on your table when you harvest the bud when it **feels like a soft marshmallow** in the morning.

Gently squeeze the flower bud for sponginess. If they're still hard, you may want to leave them on the stem to ripen longer. When cutting, use a set of sharp shears and leave at least two sets of leaves on the bush so the plant may continue to grow and store food over the summer.

Since most peonies flower for such a short time during the summer months, you may also cut stems to be stored for later use. Using a set of sharp shears, cut several stems, again leaving at least two leaves on the bush, and slip a bunch into a plastic bag with a few paper towels inside.

The towels will absorb the excess moisture and help prevent mold growth.

Lay the flowers flat on a shelf or drawer in the produce area of your refrigerator. Check them every couple of days and discard any that show signs of mold or begin to rot. They may stay this way for up to three weeks in the refrigerator. Once you remove them, the flowers may look limp.

Recut the stems underwater in a warm bath with flower preservative. Let the stems sit in the warm water for several minutes and then move them to your flower vase with flower preservative.

The flowers will open within 24 hours and the blooms will last a week on your table.



How to Grow Sunflowers

Best time to plant: 🌻 Late spring

Harvest: 🌻 Fall (or when the petals die down)



Nothing says summer like the bright yellow faces of **sunflower plants** (*Helianthus*). Growing sunflowers is easy as they are heat-tolerant, resistant to pests and are remarkably tough. Seeds can be harvested in the fall and are a great snack with an irresistible flavor and satisfying crunch.

They're excellent for appetizers, salads, desserts and other dishes. If you choose not to harvest sunflower seeds, the birds in your yard will love you! It doesn't take long to discover how growing sunflowers will perk up your garden, your dinner plate and your health.

Health Benefits of Sunflower Seeds

Aside from the bright flowers, another main reason you should be growing sunflowers is for their seeds. A quarter cup has a mere 204 calories with a low glycemic index. One serving has nearly 82% of the daily recommended intake of vitamin E, 70% of copper and high levels of vitamin B1, selenium, phosphorus, magnesium and manganese.

Not only tasty, the health benefits of sunflower seeds include anti-inflammatory effects

benefiting your cardiovascular health. The **phytosterols** found in sunflower seeds help balance your cholesterol, may help reduce the severity of asthma, lower blood pressure and prevent migraine headaches, while magnesium is a necessary nutrient for helping improve muscle fitness.

FUN FACT

You're not the only one who's going to enjoy sunflower seeds. If you're going to harvest seeds soon, make sure to protect your plants because squirrels and birds will go after them, too!



Sunflower seeds are a healthy source of **selenium**, an important mineral in the removal of waste from the body. The seeds are also high in **fiber**, which may help add bulk to your stool, slow glucose absorption and keep you feeling full longer.

Choose Your Sunflower Variety and Plant in Full Sun

Consider planting sunflower seeds indoors before the last frost to get a head start on the growing season. However, the plants have long tap roots, so if you do start indoors, be sure you can plant outside by the time the seedlings have two leaves. This helps to ensure you don't damage the tap root.

Planting sunflower seeds indoors will mean the young plants need to harden before being transplanted outdoors. Put them out during the day to allow the weather to thicken the stems, but return them indoors overnight. The plants may need up to two weeks to harden before being transplanted into the ground.

Planting sunflowers seeds in direct sunlight, or an area of your garden getting six to eight hours of sun per day, is best for the health of your plants.

Choosing the right spot may be one of the most challenging parts of growing sunflowers as the plants are heliotropes and follow the sun's path across the sky.

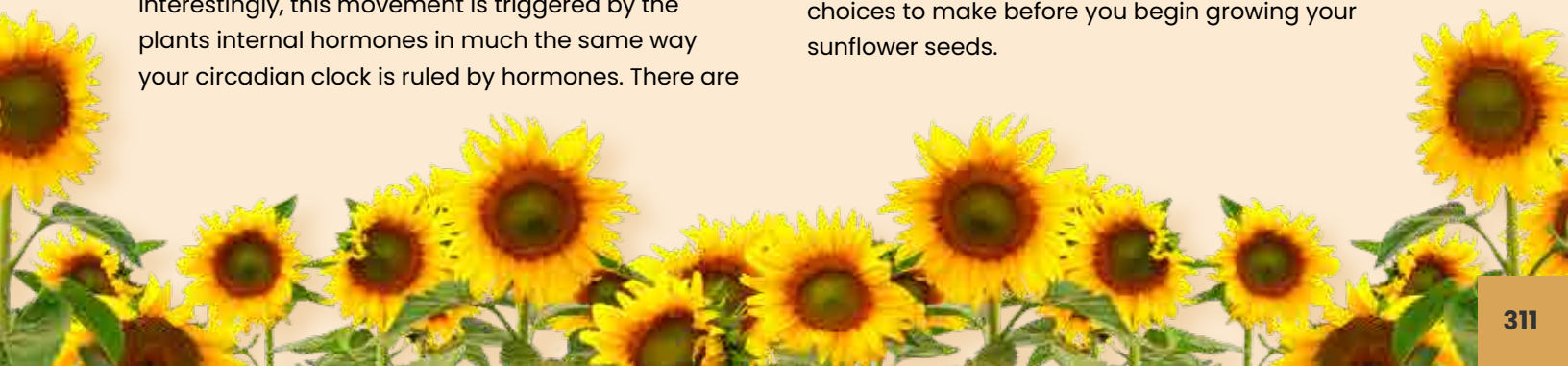
Interestingly, this movement is triggered by the plants internal hormones in much the same way your circadian clock is ruled by hormones. There are



several varieties of sunflower plants. The taller types can cast a long shadow in your garden, so plant these on the north side of your garden plot, unless you want to supply shade for other plants.

The American Giant and a couple other varieties will grow as tall as 15 feet with flower heads spanning 1 foot across. However, if you don't have a large space, you still have the opportunity to plant sunflowers, since dwarf varieties will measure only 1 or 2 feet tall. Medium-height sunflower plants will stand between 5 and 8 feet with heads up to 10 inches across.

Some varieties produce a single large flower, while others will form several heads. Not all sunflowers have yellow flowers. Little Becka and Terracotta have red tinged flowers and Ms. Mars and Chianti grow in shades of purple. In other words, you have several choices to make before you begin growing your sunflower seeds.





Sunflower Plants Have Soil and Water Preferences

Although hardy and easy to grow, sunflower plants have soil and water preferences to support their growth and provide you with a strong harvest. If you've chosen a low-growing variety, give them plenty of room as they branch out. Plant your seeds no more than 1 inch deep and 6 inches apart when planting outdoors, and transplant your strongest seedlings between 6 and 8 inches apart.



Harvesting Sunflower Seeds

Harvesting sunflower seeds is a fun activity for your family. If you wait too long the seeds will be too dry to roast or your local critters will have harvested the majority for you, leaving you nothing to enjoy in the fall and winter. As the plants are ready to harvest, the heads will begin to droop and the seeds will start turning brown.

There are two methods for harvesting the seeds. The first is to harvest sunflower seeds **when they are fully ripened on the stem** and beginning to loosen from the head. Cut the stem about 1 inch below the head and briskly rub the seeds with your hand. Allow the seeds to dry before storing in an airtight container.

You may also begin harvesting sunflower seeds **when two-thirds of the seeds are mature**. In this case, cut a longer piece of the stem and wrap a paper bag around the head. Hang it in a well-ventilated area for a few weeks making sure the area is dry and warm but not hot.

Once harvested, sunflower seeds can be used immediately or saved for the next planting season. Dry the seeds completely before storing and keep them in a sealed, airtight container. Most sunflower seeds will store well for up to a year when kept in the refrigerator or freezer.

A light application of organic compost mixed into the soil at the time of planting will encourage strong roots and protect young tender plants from blowing over in the wind. Add mulch as the plants reach 6 inches to minimize weed growth and conserve water. While drought-resistant, you'll have a greater sunflower seed harvest if the plants receive sufficient water.

Consider planting sunflower seeds staggered over five to six weeks so you'll continue to enjoy blooms through the summer and get a strong harvest in the fall. Don't overfertilize the plants as they are not heavy feeders. Overfertilization may cause weaker stems to break once the tops get heavy with seeds.

Once the plants are established, water thoroughly but infrequently to encourage deep rooting. As the plants grow taller, water once a week with several gallons of water unless the weather is exceptionally wet or dry and then adjust as needed. Taller plants may need bamboo supports that must be buried deep in the soil to provide enough support in windy conditions.



How to Grow Sweet Alyssum

Best time to plant: 🌸 Early spring

Harvest: 🌸 Spring and 🍁 Fall

Sweet alyssum (*Lobularia maritima*), also known as sweet alison, is indigenous to the Mediterranean region, growing along the coast in areas of full sun. Alyssum was found in gardens as far back as the 1500s and prized for their low-forming growth and fragrant flowers.

During the 1800s, the yellow variety enjoyed popularity in the U.S. By the 1900s, the more fragrant white-flowered variety grew in popularity and was recommended as a plant for attracting bees. A member of the mustard family, sweet alyssum is beautiful in your landscape and may be tasty in your salad, but it's not often used medicinally.

Health Benefits of Sweet Alyssum

There is a long list of traditional uses for sweet alyssum, some of which are not in current practice, as the condition it was used to treat responds more consistently to other treatments. Rabies is one such example.

In fact, the name alyssum is derived from the Greek prefix "a-" (which negates the word following it) and the Greek word "lyssa," meaning rage, so *alyssa* means "without rage." Those who named the plant may have had rabies in mind, as it was used in folk medicine to treat the condition. Alyssum has also been used to treat:

- ✓ Abdominal pain
- ✓ Colds and coughs
- ✓ Pain from cavities and bleeding gums
- ✓ Edema
- ✓ Ascites (*fluid in the abdomen*)
- ✓ Scurvy

FUN FACT

In Spain, sweet alyssum is valued for its vitamin C content, and was also used as a diuretic and an astringent in the treatment of gonorrhea.



Growing Sweet Alyssum

Sweet alyssum is a delicate carpet of tiny cross-shaped, four-petal flowers with narrow lance-shaped leaves. It can spread and create a living mulch under taller plants, working well to fill in nooks and crannies on walkways and walls or along edges. It **attracts pollinators and butterflies**, and are **generally pest-free**.

Although an annual plant in many hardiness zones, those who live in areas with a mild winter may find they return easily as a perennial, or even bloom through the winter. **The plants easily self-seed, being carried by the wind through your yard.** If you're planning to change varieties the following summer, you may be surprised by several volunteers sprinkled throughout your garden.

When planted in the ground, you may not need to add fertilizer unless the soil is poor. Planted in a container, alyssum will need more frequent watering and monthly feedings with an organic fertilizer, as it prefers a rich soil with a neutral pH.



••••• Tips on Sowing Sweet Alyssum Seeds

Since sweet alyssum enjoys the cool weather, it can be sown directly onto your garden several weeks before the last frost. Gardeners in the hardiness zones 7 through 11 may have plants growing year-round. As long as it's not a hard freeze, your seeds will germinate and grow outdoors. However, if you'd like a large impact on your garden, start the seeds indoors **five to six weeks** before your last expected frost date.

Sowing seeds is done simply by scattering them on the ground and pressing down so they make good contact with the soil and aren't blown away. It is important the seeds are still exposed to light in order to germinate. Keep the soil moist until germination and then water whenever the soil feels dry. If you start indoors, don't transplant outside until after the danger of frost is past.

Although it's somewhat frost-tolerant once established, tender transplants do not fare well. In northern climates where the summers are cooler, the plants will enjoy full sunlight. However, in warmer climates as you move further south, the plants need protection from the hot afternoon sun to extend blooming a little longer into the season.

It requires a significant amount of energy for the plants to produce so many flowers. **Once the weather gets very hot**, alyssum will stop blooming. The more heat- and drought-resistant plants may bloom longer into the hot weather.



Sweet Alyssum Varieties to Choose From



Easter Bonnet

This is an early blooming variety in lavender or white, blooming through the spring.

Blushing Princess

This has a fragrant flower and a lavender color, also heat tolerant growing up to 8 inches tall (20 cm) and spreading nearly 24 inches wide (61 cm).



Snow Princess

This is a sterile hybrid with white flowers. It is extremely heat-tolerant and noted for the characteristic of spreading and cascading.

The genus alyssum contains nearly **170 species** of flowering plants in the Brassicaceae family. Most are **annual or perennial** herbaceous plants growing up to 4 inches (around 100 centimeters) high. Although sweet alyssum is best known for the fragrant white-flowered type, the plant does come in a variety of other colors, including:

Pastel Carpet

This is a blend of pink, lavender and cream colors, offering a subdued colorful variety to your garden.



Wonderland Series

This type has a deep red color growing in a compact flat plant, excellent for edging as it only reaches up to 5 inches tall (13 cm) and spreads 24 inches across (61 cm).



Harvesting Sweet Alyssum

Alyssum leaves, flowers and stems can be used to add a **peppery flavor** to salads and other dishes. The leaves are best harvested when they're young, while the flowers can be harvested right after the buds have opened. Alyssums bloom during **spring and autumn**.

Spent flowers that weren't harvested should be deadheaded to help the plant continue to bloom. This can sometimes be tedious if you have a large bed. With a large drift, you can shear them by one-third, encouraging the plants to set new buds quickly.



How to Grow Tulips

Best time to plant: 🍁 Fall

Harvest: 🌸 Early to late spring



If you want splashes of color in your spring garden, the classic **tulip** is a timeless essential. Even if there's a chill in the air, you can get started with planning — and planting — these cheerful harbingers of spring.

The basic tulip is cup-shaped with three petals, sturdy stems and six elongated leaves. Perhaps you've seen swaths of tulips in sunny yellows, vibrant pinks or breathtaking combinations, like the Tom Pouce variety, delicate lavenders such as Alibi or snowy white Hakuun. Extensive hybridization has produced every color imaginable, although blue is rare.

Tulips grow 6 to 24 inches high and average 16 inches wide depending on the variety and growing conditions, with rounded or pointy-tips and solid or contrasting petal shades. For constant color, plant early mid-spring and late-spring bloomers and plant a new batch every fall.

DID YOU KNOW?

There are 15 tulip divisions based on origin, shape or bloom time, such as "double late" or "single early" varieties. Strains include white-fringed Crispa and feathery Ballerina tulips.

Growing Tulips

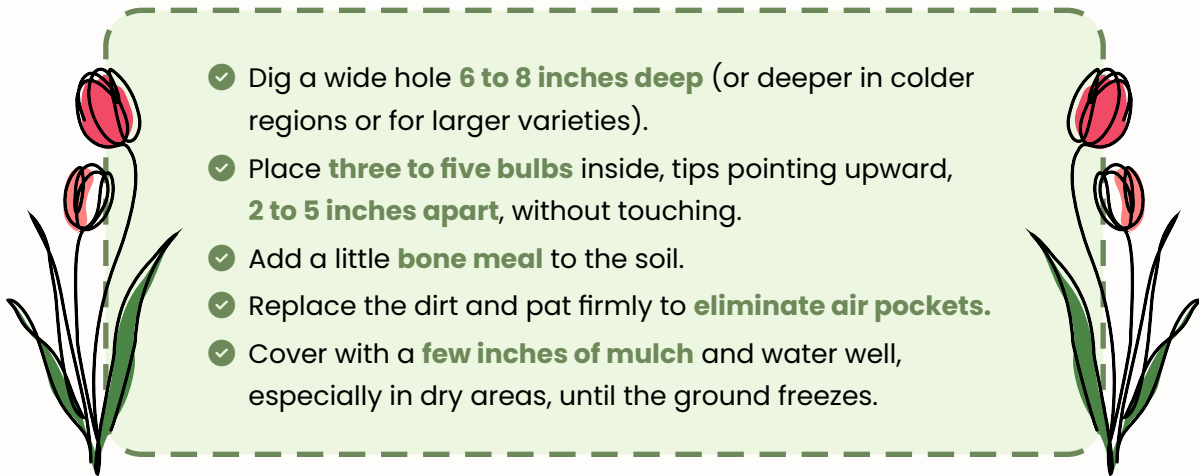
Tulips look best planted in clusters rather than rows. Good companion plants are other spring bulbs like daffodils, iris, snapdragons and pansies. Mass plantings called "**drifts**" can cover large areas, and you can buy bulbs based on the square footage you want to cover.

Tulip bulbs are planted in the fall before the ground freezes. As cool-weather perennials, they need about 10 weeks of



cold for future growth, but they can be fussy about moisture and temperatures. The best places for growing tulips are in **U.S. Department of Agriculture Hardiness Zones 4 through 6**, although some strains can survive in Zones 7 and 8.

Ideally, tulips thrive in spring weather that's cool and moist, but prefer hot, dry summers. Depending on your climate, tulips require full sun or partial shade. Well-drained, slightly acidic (a pH of 6.0 to 6.5), sandy soil with organic matter works well, but avoid dirt that's waterlogged. Rather than step-by-step instructions for planting tulips, a few rules are all you need:



- ✓ Dig a wide hole **6 to 8 inches deep** (or deeper in colder regions or for larger varieties).
- ✓ Place **three to five bulbs** inside, tips pointing upward, **2 to 5 inches apart**, without touching.
- ✓ Add a little **bone meal** to the soil.
- ✓ Replace the dirt and pat firmly to **eliminate air pockets**.
- ✓ Cover with a **few inches of mulch** and water well, especially in dry areas, until the ground freezes.

Feed your tulips with **bone meal in the spring** when the leaves appear, and water well. When there are no leaves and the bulbs are dormant, don't water. Deadhead wilted flowers, but allow foliage to die naturally to feed the bulbs. You can remove the foliage and flower stalks once they've turned dry to keep the plant from "stealing" energy from the bulbs.

Growing Tulips Indoors



Gardeners often ask how to care for tulips indoors. Indoors, use shorter varieties, and note the length of time for your chosen variety to bloom; for example, plant bulbs in October for December blooms. Tulips grow well in urns, pots, rock gardens and window boxes, but these should be **at least 15 inches high and 18 inches across**. Make sure there are drainage holes.

Whether you should dig up and store tulip bulbs depends on your planting zone. If you live in Minnesota, it may be necessary. Only dig bulbs for storage when their leaves begin wilting and turning yellow.





After a few years, lack of blooms may indicate **bulb overcrowding**. In late spring, divide bulbs off the mother plant and replant elsewhere. Use a hand trowel to dig away the dirt first to avoid damaging the bulbs, then lift them out. If necessary, store the bulbs in a box filled with sand or peat at temperatures between 60 and 66 degrees F (15 and 18 degrees C), away from light, and leave them until the fall planting.

Before moving potted tulips into your garden, check your planting zone and plant six to eight weeks before the ground freezes.

If your tulips fail to come back each year, your winter may not be cold enough, there was too much water or something ate the bulbs. Plant shorter perennials in front of tulips to hide fading leaves.



Harvesting Tulips

Deer may find tulip bulbs enticing, but fences around the bulbs, sprinklers with timers, motion-detecting lights or chimes may help. As natural repellants, try placing **human hair, red pepper flakes or garlic in panty hose** to hang nearby.

Tulips look beautiful against hedges, walls and walking paths. They bloom from early to late

spring, but diminish slightly after the first year. Choose healthy bulbs, avoiding those that are moldy, soft or have black spots.

In vases, cutting tulip stems on an angle helps them soak up water. Change the water every other day, and avoid placing them in direct sunlight or heat as they wilt faster once they bloom.



How to Grow **Wildflowers**

Best time to plant: 🍁 Fall or 🌸 early spring

Harvest: A few weeks or months after flowering, depending on the species of wildflower

Wildflowers are important to the health and growth of pollinating insects, and attract various bees, birds and butterflies, depending upon the flowers planted. They also provide a natural and low-maintenance option for meadows and fields. Since they're normally native plants to your plant hardiness zone, they don't often require much care through the growing season.

You don't need a large area to enjoy wildflowers. You may have a strip of ground within your garden or within your yard where you'd like to plant wildflowers. If you have a vegetable garden or fruit trees, attracting pollinators using wildflowers is a great way to ensure a good harvest.

An additional bonus are the insects they attract to help ward off the bugs that might otherwise feed on your crops. If you have unsightly areas on your property, wildflowers are a great way to fill in the area with beautiful flowers while benefiting from their medicinal uses.



DID YOU KNOW?

Many wildflowers have been used for centuries to provide medicinal products. These include echinacea and chamomile, both of which are especially popular as tea.

Health Benefits of Wildflowers

Flowering plants provide nearly **25% of the basic ingredients** for modern drugs. North America has tens of thousands of native plants that have yet to be studied. However, there are a list of flowers to grace your garden with known medicinal properties, including the **dandelion**.



Purple coneflower

(*Echinacea purpurea*)

This is perhaps one of the most famous medicinal species of the native plants to North America.

The flowers are brilliant purple to pink and are often found in fields and thickets. Now known as echinacea, it's used as an herbal remedy and supplement to stimulate the immune system and reduce the length of the common cold.



Yarrow (*Achillea millefolium*)

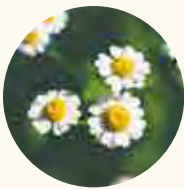
This herb is famous in folklore for use in anticoagulation of wounds and nosebleeds and considered in the care of bleeding skin.



Betony (*Stachys officinalis*)

The flower has spikes of red and purple and is well loved by bees and butterflies. It has been used in various applications

such as anxiety, headaches, diarrhea and throat irritations.



Feverfew (*Tanacetum parthenium*)

A traditional flower, feverfew is often found in old gardens and thought to relieve inflammation from insect bites. One study has

shown that it has been historically used for fevers, migraines and headaches.

Growing Wildflowers

The question of when the best time to plant is answered depending on your location or climate. For the most part, wildflowers may be planted during the spring, summer and fall, but the best time will depend on your **winter temperatures** and **availability of water** in your area.



For instance, if you live in an area where there is minimal or no frost during the winter months, wildflowers may be planted nearly anytime. It is best to steer clear of the hottest times of the year, though, as this is often when you receive the least amount of rain.

If you live in areas with bitter cold winters, spring or fall planting works well. Some gardeners prefer to plant in the fall, as these will bloom earlier in the spring. If you choose to plant during the fall, it's best to wait until after you have received a good hard frost to sow the seeds, so they do not sprout until the soil has warmed enough for germination in the spring.

If you plant in the spring, put the seeds in the freezer for a couple of weeks before planting so they germinate quicker. Planting in the spring will give you a chance to clear away the weeds before planting but it will delay getting your seeds in the ground.

How to Prepare your Soil

Wildflowers native to your geographical area will appreciate native soil. In other words, if you're planting cattails, they enjoy being around creek beds and heavily watered soil. But for the most part, **wildflowers don't like soggy soil**. If your area is not well draining, consider amending it.

The essential element to well-drained soil is **oxygen**, and the best way create well-drained soil in clay is to create a raised bed. Additionally, when the soil does not drain it compacts easily and dries out in the sun, making it extremely hot.

*MI Gardner recommends the addition of one of five different amendments to help to improve drainage. These are **perlite, sand, compost, mulch** or **vermiculite**.*

Vermiculite and perlite are absorbent volcanic rock and help to break up the soil

While compost may help drainage, it may provide too many nutrients for your wildflowers. Mulch may take some time to add to your soil, but it can be effective as it holds water, breaks down slowly and protects the soil. Sand (not sea sand) may be one of the cheapest things you may add to break up the soil. Each of these amendments must be worked in well to the area where you want to plant.



Harvesting Wildflowers

Since wildflowers encompass different species, harvesting time depends on what you've planted. Thankfully, the Florida Wildflower Foundation has provided an easy guide that you can follow.

They stated that wildflower seeds can be harvested three weeks (or months) after flowering. Another useful guide is to use your eyes — the seeds are ready for picking when they turn brown and easily fall out.

Once you've collected all that you need, you can leave the rest for the birds!

ABOUT DR. MERCOLA

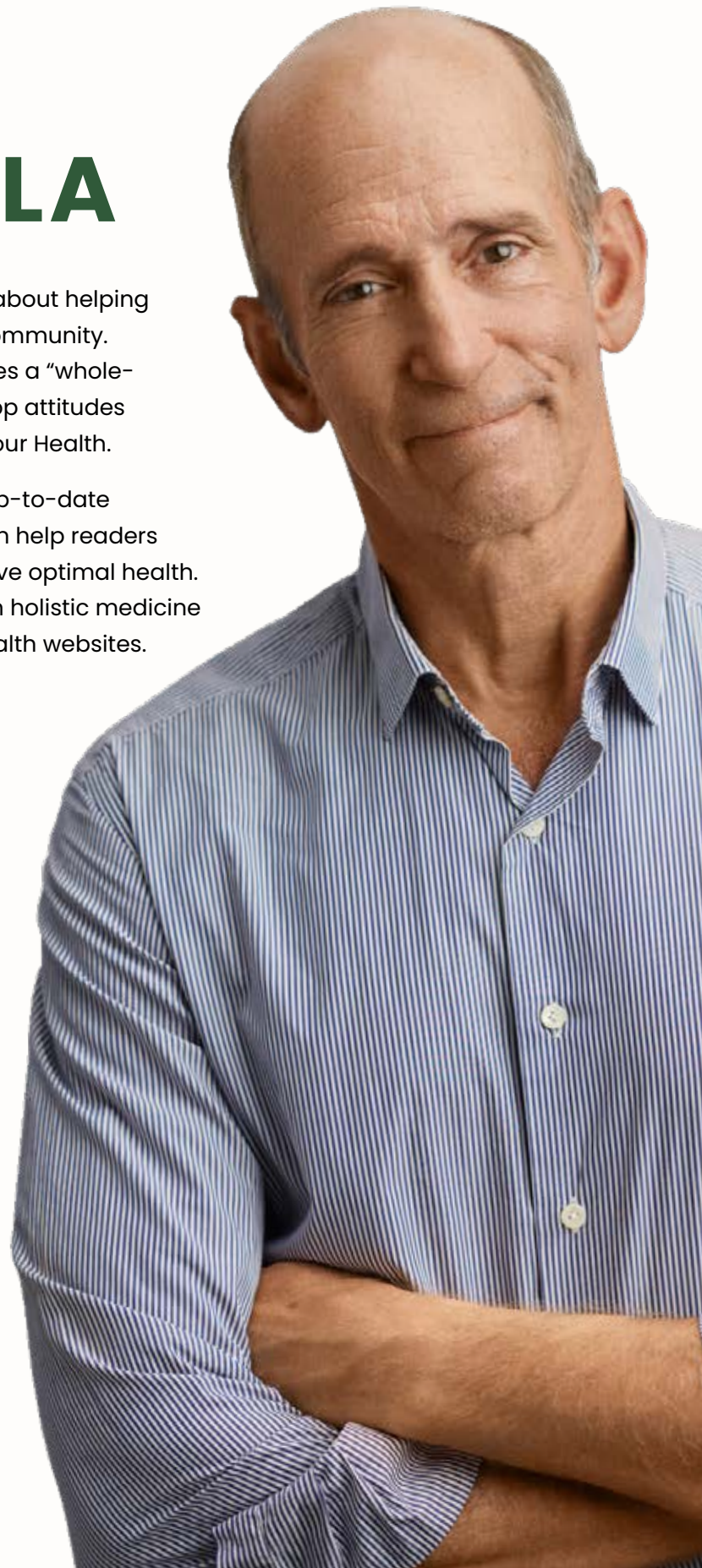
Dr. Joseph Mercola has always been passionate about helping preserve and enhance the health of the global community. As a doctor of osteopathic medicine (DO), he takes a “whole-person” approach to wellness, helping you develop attitudes and lifestyles that can help you Take Control of Your Health.

In 1997, he founded Mercola.com as a portal for up-to-date natural health information and resources that can help readers and subscribers adopt better lifestyles and achieve optimal health. It’s one of the first health websites that focuses on holistic medicine and is now routinely among the top 10 natural health websites.

Dr. Mercola is also a best-selling author, with three of his books, namely “Effortless Healing,” “The No-Grain Diet” and “The Great Bird Flu Hoax,” having been included in The New York Times Best Sellers list. His most recent book, “The Truth About COVID-19,” is also a national bestseller on Amazon, Wall Street Journal, USA Today and Publishers Weekly.

By sharing valuable knowledge about holistic medicine, regenerative practices and informed consent principles, he has become the most trusted source for natural health information, with a legacy of promoting sustainability and transparency.

Visit [Mercola.com](https://www.mercola.com) to get timely health updates and information from Dr. Mercola.





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