

Growing Guide: Potatoes

FUN FACTS

- Potatoes are surprisingly nutritious. They are a good source of Vitamin C and potassium; relatively low in calories (as long as they aren't slathered in butter or sour cream); provide a good amount of fiber if the skin is eaten; and have more protein than many veggies.
- NASA is working with the International Potato Center in Peru to grow potatoes on land engineered to duplicate the kinds of harsh soil, temperature, and atmospheric conditions found on the planet Mars. The hope is that when astronauts travel to the red planet sometime in the future, they will be able to grow potatoes there in order to feed themselves.
- Even though they develop underground, potatoes are not roots. Botanically speaking, potatoes are thickened underground stems called tubers.
- Potato crops are usually started from "seed potatoes," which are small whole potatoes or pieces of larger potatoes, rather than from seeds. This results in new plants that are genetically identical to the parent plant. The plants do flower and produce seeds inside fruits that look like small green tomatoes, but don't think of eating them; all green parts of a potato plant are poisonous.



POTATO GROWING GUIDE

Potatoes are a fun crop to grow with young gardeners. Many are only familiar with potatoes in the form of fries or chips and are amazed to find that the raw material for these foods is a tuber that grows underground! Harvesting potatoes is exciting—like digging for buried treasure. And the “seed” potatoes used to start a new crop are easy for small hands to handle.

Varieties

There is an astounding assortment of potatoes varieties to choose from, offering an array of sizes, textures, and colors.

Texture: How a potato's flesh behaves when it's cooked depends on its texture, which in turn depends on the type and amount of starch it contains. High starch russet potatoes have a dry, mealy, fluffy texture when they're roasted or fried, making them a top choice for baked potatoes. Yellow and many kinds of blue potato varieties have a medium amount of starch and are considered all-purpose, good for both baking and boiling. Waxy white and red potatoes are lower in starch,

so they maintain their shape when cooked and are great for boiling, steaming, and roasting.

Color: White fleshed potatoes may be most familiar, but there are also varieties with yellow, pink and blue flesh. Skin color also varies from brown to red to purple. Some blue, purple and red varieties may have skin and flesh of the same color, while others have colored skins and white or yellow flesh.

Size: Potato tubers range in size from little fingerling potatoes that are only an inch or two in diameter and 2-5 inches long to large russets that can weigh as much as 10-12 ounces when fully mature. Tiny “new potatoes,” which may be any variety harvested at an immature stage, can range in size from walnut to ping pong ball size.

Maturation Date: Early varieties are ready for harvest about 65 days after planting. These varieties don't store well and are best eaten relatively soon after harvest. For longer term storage, choose mid-season and late varieties, which are ready to dig in 80-90+ days.

Site: Full sun and moist but well-drained soil enriched with organic matter will produce the best crop. Avoid adding manure, as this can encourage development of potato scab, a fungus disease. Plant your potatoes in a part of the garden that hasn't been limed recently. Soil on the acid side (pH 5.5-6.0) will help to keep scab under control. Rotate the location of potatoes in the garden on a three-year cycle, if possible.

When to Plant: Begin planting potatoes in the spring about 3-4 weeks before your last frost date. In all but the warmest parts of the country, successive crops can be planted up until about 12 weeks before the first fall frost date. Potatoes grow best in areas with moderate summer temperatures. In the warmest parts of the country, such as the Gulf Coast, plant potatoes in late fall for harvest the following spring.

Planting: Start with certified disease-free seed potatoes to make sure you don't introduce disease into your garden. Plant small (egg size or smaller) seed potatoes whole; cut larger potatoes into pieces, each weighing about 3-4 ounces and with one or two "eyes" (which are the dormant buds) on each piece. Let the cut pieces air-dry for a few days. This decreases the chances that the potatoes will rot in the cool soil of the spring garden. Some gardeners like to dust the cut pieces with garden sulfur, a natural product that acts as a fungicide, for extra insurance.

Another way to increase your chances of good germination is to pre-sprout your seed potatoes, a process known as "chitting". To do this, simply spread your seed potatoes out in a sunny spot indoors for a couple of weeks before planting time. The "eyes" will start to develop shoots. Then cut these sprouting potatoes up as just described. They will root more quickly and mature earlier than unsprouted ones.

As the potato plants grow, they will be forming new tubers above the seed potato piece on underground stems called stolons that branch off from the stems. These new tubers need to be shielded from sunlight to keep them from turning green and inedible. You also

want to encourage the plants to form long stems so they'll produce more stolons and more potatoes. These are several planting methods you can use to accomplish this.

Hilling: Dig a 4 inch deep trench. Place the seed potato pieces, cut side down, in the trench about 8-12 inches apart and fill in the trench with 2 inches of soil. Plants will sprout in about 2-4 weeks, depending on the soil temperature. After they've have put on 6-8 inches of growth, use a hoe to pull up loose soil on either side around the base of plants, burying the stems to just below the lower leaves. Repeat this process every few weeks until the bases of the plants are covered with 8-12 inches of soil.

Surface Planting: Loosen the soil in the planting bed and press the seed potatoes, cut side down, into the soil. Cover with a thick layer of mulch, such as weed-free straw or shredded leaves. Make sure to put down enough mulch to prevent light from reaching the developing tubers. Continue adding mulch as needed as the plants grow over the course of the season.

Container Growing: Choose a large (10-15 gallon) container that has drainage holes. Put a few inches of soil at the bottom of the container; set seed potatoes on the soil and cover them with a couple inches of soil. As the plants grow, add more soil to cover the stems, leaving the tops of the plants exposed. When it's time to harvest, simply tip the container on to its side to reach the potatoes.

Care: Potatoes need consistent water to thrive, especially once the plants have started forming tubers. But be sure that drainage is good, as wet soil can lead to disease problems. Cut back on watering when potato foliage begins to turn yellow as the tubers mature.

Troubleshooting

Colorado potato beetle: Adult beetles are 3/8 inch long, with orange and black striped backs. Their larvae are salmon-colored, hump-backed grubs. Both adult beetles and grubs chew large holes in the leaves of potato plants. Look for and handpick adult beetles as soon as plants sprout. Check leaf undersides for clusters of oval, bright orange eggs and crush them. Cover potato bed with a row cover as soon as potatoes are planted, anchoring the edges securely so beetles can't crawl underneath. Beetles are most active in summer, so planting early spring and fall crops may reduce problems.

Flea beetles: These small black beetles chew numerous small holes in leaves and jump like fleas when disturbed. Cover potato bed with a row cover as soon as potatoes are planted, anchoring the edges securely so beetles can't crawl underneath.

Late blight: Caused by a fungus-like organism, this disease begins on leaves with large, water-soaked spots that turn dark, enlarge rapidly and are not bordered by the leaf veins. The edges of the dead areas may have white, fluffy looking growth, especially on leaf undersides. Plants blacken, collapse, and die rapidly. Infected tubers develop purplish-brown corky spots. This is the disease responsible for the

Irish potato famine in the 1840s. Tomatoes are also susceptible to late blight. Wet weather and moderate temperatures favor the disease. Spores travel long distances on the wind, so if you suspect that this disease is present in your garden, check with your local Extension Service for a confirmed diagnosis and advice, and destroy infected plants promptly to avoid spreading the infection. To prevent problems, start with certified disease-free seed potatoes and choose resistant varieties when possible. Late blight doesn't overwinter on dead plant debris, but can survive on infected tubers that don't freeze. Don't replant stored tubers and if you had any disease problems in your potato patch, don't add infected tubers to your compost pile or leave unharvested tubers in the ground.

Early blight: This fungus disease begins as small, dark, papery spots on leaves that enlarge and turn brownish-black and often have a yellowish ring. They are usually bordered by the veins of the leaves. Infected tubers develop corky rotted spots. To help prevent infection, start with certified disease-free seed potatoes and rotate the location of potatoes (and related tomatoes and eggplant) in the garden. Water plants with drip irrigation or in the morning so foliage dries quickly. Don't harvest potatoes when the ground is wet. The fungus overwinters on infected debris, so clean up the garden well at the end of the season.

Green potatoes: Tubers with a greenish tinge have been exposed to too much light, causing them to develop chlorophyll along with a toxic substance called solanine. If consumed in high enough quantity, solanine can make you sick. It's best to discard any potatoes that have turned green. To prevent green potatoes, keep plants properly hilled, and cure and store harvested tubers in the dark.

Harvesting: You can start harvesting tiny new potatoes when you see flowers on the plants. While you can dig carefully around the base of a plant to harvest just a few new potatoes while leaving the plant growing, the roots are often damaged in the process—it's better to dig up the entire plant.

To harvest your main crop, wait until the tops of the plants begin to yellow and die back. Sometimes the tops don't die back naturally; if this is the case, cut back tops about a week before you plan to harvest the tubers. Dig the potatoes out carefully with a garden fork, taking care not to bruise or cut them; then let them air-dry for a few days in a darkened spot. Brush off any clumps of clinging soil, but don't wash them until you are ready to cook them. Store potatoes in a cool, dark, dry spot, but not in the refrigerator. Eat any potatoes that were damaged in digging soon; they won't keep well.

Recipe idea

Made with reduced-fat sour cream and Cheddar cheese, these [Loaded Twice-Baked Potatoes](#) from [Eating Well](#) are kid-friendly, easy to make, and good for you!

