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## How to Grow Potatoes: The Complete Guide



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# Planting, Growing, Harvesting, and Storing Potato Plants

By Catherine Boeckmann

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Have you ever thought about growing potatoes? To us, potatoes epitomize the iov of gardening—satisfying to plant, quick

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Growing Guide covers planting, growing, harvesting, and storing potatoes.

Potatoes aren't fussy vegetables, which makes them a fabulous choice for first-time growers. They do well in most soils and almost always produce plenty to hunt for at harvest time. That said, you can do a few things to elevate your crop.

#### **About Potatoes**

The potato (Solanum tuberosum) is a coolweather vegetable that typically yields bigger crops in the northern portion of the United States; however, they can be grown as a winter crop in warmer climates. Potatoes are related to peppers, tomatoes, and eggplants but are adapted to higher elevations and harsher growing conditions; the Incas in Peru first documented them. According to the Maine Potato Board, this vegetable arrived in the American Colonies in 1621 when the Governor of Bermuda sent potatoes to the Governor of Virginia at Jamestown.

The edible part of the potato is the underground tuber, an enlarged storage portion of the potato plant. Once the plants are 6 to 8 inches tall or around 5 to 7 weeks after planting, the tuber develops from underground stems called stolons.

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Potatoes are nuggets of goodness. The nutrient-rich skin provides **45% of your daily vitamin C** and 18% of potassium, plus many more nutrients.

Despite the limited options in the grocery store, gardeners know there's much more to potatoes than the traditional Idaho and size from large to fingerling! Floury types are perfect for roasting or mashing, while firm, waxy potatoes are superb boiled or as salad potatoes. You can learn all about potato varieties in the section below.

Potatoes for planting are called seed potatoes and are usually sold in bags or netting. The planting season for seed potatoes starts in the spring, 2 to 4 weeks before the last frost.

#### Read Next

- <u>Choosing the Best Potato Varieties to</u> <u>Grow</u>
- <u>Guide on Harvesting Vegetables:</u>
   When to Harvest Most Common
   <u>Crops</u>
- How Are Yams and Sweet Potatoes
   Different?

#### **PLANTING**

You'll need a location with at least 6 hours of direct sunlight and fertile, loose, welldraining soil; hard or compacted soil leads 13°C). In the fall, mix compost or organic matter into the soil. Learn more about compost, soil amendments, and preparing the soil for planting.)

#### When to Plant Potatoes

Garden potatoes can be planted 2 to 4
weeks before the average last frost date.
The soil temperature should be at least
55°F during the day and 45°F at night.
However, pay more attention to the soil
than the calendar to determine planting
time. The soil should not be so wet that it
sticks together and is hard to work. Let it
dry out a bit first. If you have a late and
wet spring, you can plant later—through
April (depending on location) or even
June, especially in containers.

In cooler regions, the early-maturing potatoes are usually planted early to mid-April. In warmer regions, planting times range from September to February; in central Florida, gardeners plant potatoes in January; in Georgia, they plant

See our Planting Guide for the best dates to plant by zip code or postal code.

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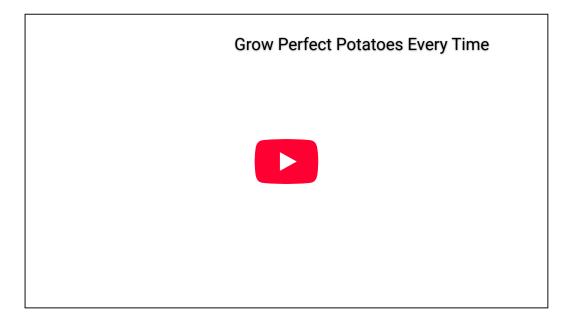
#### **How to Plant Potatoes**

Potatoes for planting are called seed potatoes and are usually sold in bags or netting. Use certified (disease-resistant) seed potatoes from which eyes (buds) protrude. Do not confuse seed potatoes with potato seeds or grocery produce.

When you get them, break them free, lay them out in a tray (such as an old egg carton), and pop them somewhere bright and frost-free to sprout—such as an indoor windowsill. This is a process called *chitting*. It's not essential, but chitting helps speed things along so that by the time the potatoes are planted, they'll be primed and itching to send out roots.

As the video below shows, after a month of chitting, the potatoes produced stout, stocky, green sprouts, which is exactly what we're after; we don't want the long, pale sprouts you get when potatoes are left in the dark. But if you haven't had a chance to chit your potatoes and it's already time to plant, don't worry—get them in the ground.

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A great way to get more seed potatoes for free is to cut them in half. But only do this if they've got plenty of eyes, which appear as small dimples and are where the sprouts emerge from. For this reason, you want to place the end with the most eyes facing upwards.

At least 2 days before planting, use a clean, sharp paring knife to cut large potatoes into golf ball-size pieces, with one to two eyes each. This time allows the pieces to heal or form a protective layer over the cut surface, improving both



Preparing seed potatoes for planting.
Photo by tanyss/Getty Images.

 Outside, prepare the planting area by simply spreading compost across the surface to a depth of around an inch or 3 cm. Potatoes are fairly hungry plants, so this extra nourishment will help to support good soil fertility and a strong harvest.

## 4 Methods of Planting Potatoes

There are different approaches to planting potatoes. (See a demonstration in the above video, if needed.)

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- Dig Holes: For each seed potato, dig a hole about 6 inches deep (or 16 cm).

  Add in a little slow-release organic fertilizer (e.g., chicken manure pellets) and then pop in the potato with sprouts pointing up and cover with soil. Space potatoes about 16 inches (or 40 cm) apart in both directions for early types. Main crop potatoes need a bit more space to stretch their legs, so space them at 18 inches (or 45 cm) apart.
- Dig V-Shaped Trenches: Dig 2- to 2.5-foot-deep (or 15- to 190-cm) trenches. Lay a nourishing cushion of garden compost along the bottom and a few of those chicken manure pellets, then set your tubers into position about 1 foot (or 30 cm) apart. Then, just fill back in. I don't think it makes a huge difference which way you plant, so do whatever's easiest in the space you have.

them with straw. See our article on planting potatoes in straw.

• Plant Potatoes in Pots: If you don't have the garden space, plant in large containers, old compost sacks, or purpose-sold potato sacks. Fill the bottom of your pot or sack with about 4 inches (10 cm) of potting mix, then lay one or two potatoes on top and cover. Once the foliage is growing, add in more potting mix, a bit at a time, to hill or earth them up until the soil level reaches the top, at which point the foliage almost seems to explode in size.

See our article about container gardening with potatoes.

#### **GROWING**

• Watering Potatoes: Firstly, water! This is really important because potatoes are lush and leafy plants, and those tubers take a lot of effort to swell. So if it's dry, water thoroughly. Maintain even moisture, especially from the time after the flowers bloom. Potatoes

form can cause them to become misshapen. Stop watering when the foliage begins to turn yellow and die off.

If you're growing in containers, take extra care to keep your plants really well watered, especially in warmer weather, as this really will make all the difference in achieving a good crop.

• **Hilling Potatoes:** The potato flavor is improved by depth and darkness. As the potato plants grow above the soil surface, you'll need to periodically "hill up" or mound up soil and compost around the plant so that only the top leaves stick out of the ground. It's vital not to allow potato spuds to be exposed to sunlight, as this also causes them to turn green and produce solanine, a chemical that gives off a bitter taste and is toxic. Do the hilling in the morning, when plants are at their tallest. (During the heat of the day, plants start drooping.) Just draw up the soil with a hoe every time the

this in stages until you can no longer draw up any more soil, or the foliage closes over in between the rows.

If you're growing your potatoes in a smaller raised bed, it may be easier to simply top up with organic matter around the whole area.



Hilling keeps potatoes from getting sunburned, which can cause them to turn green and produce a bitter, toxic chemical.

Credit: Avalon Studio/Getty.

• Protect From Frost: Late frosts can damage the young foliage—something to watch out for with early starts. Frost-bitten plants usually have enough energy to shake off any damage, but it can set plants back nonetheless. So if a frost is forecast and potatoes stand to get clobbered, do whatever you can to protect them.

cover clusters of shoots with pots, or draw up the soil to bury the young shoots.

Note: In cool growing seasons, potato vines may sport berries. The berries are the fruit. Cut one open and see how it resembles its cousin, the tomato.

**ble.** Plus, their seeds will not produce potato plants that resemble the parent.

Discard them.

Practice yearly <u>crop rotation</u> with potatoes in order to avoid pests and diseases.

#### **Types**

There are three classifications for potatoes based on when you harvest (vs. when you plant). If you harvest for storage, be sure to choose the right type:

Early-season potatoes: first to be planted in early spring. Grow quickly (60 to 80 days), ready to harvest by early summer, tender flesh, thinner

in 80 to 100 days, typically lifted up from second half of summer, store up to a month.

3. **Late crops:** mature in 100 to 130 days, best for storing, lasting 2 to 3 months in the right conditions; planted in August and harvested in fall.

Also, decide on the texture and flavor of your potatoes, and how you'd like to eat them:

- Dry-fleshed, mealy potatoes like russets and long white potatoes are used for baking, frying, and mashing. As mashed potatoes, they will not be gluey, and they will absorb gravy, butter or sour cream.
- Moist, waxy, round potatoes are great in soups, curries, frittatas, and salads because they don't fall apart when cooked. You can pan-fry leftover boiled potatoes. When you mash waxy potatoes, they can become sticky.
- **Red-skinned potatoes** are often used

Some popular potato varieties, such as 'Yukon Gold', fall somewhere in between truly waxy and mealy.

There are over 100 potato plant varieties!
Go beyond the Idaho potato to explore more exotic and delicious options. See our article on choosing the best potato varieties!

#### **Early Varieties:**

- 'Irish Cobbler': tan skin, irregular shape (great heirloom potato for delicious mashed potatoes!)
- 'Red Norland': deep red skin, sweet, delicate flavor, great in potato salads or boiled
- 'Mountain Rose': red skin and pink flesh, resistant to some viruses

#### **Mid-Season Varieties**

- 'Yukon Gold': popular, tan skin and buttery-yellow flesh, mid to large size
- 'Red Pontiac': red skin, deep eyes (eas-

• 'Chieftan': red skin, resistant to potato scab, stores well

#### **Late Varieties**

- 'Katahdin': tan skin, resistant to some viruses
- 'Kennebec': tan skin, resistant to some viruses and late blight
- 'Elba': tan skin, large round tubers, resistant to blight and potato scab
- All Blue Potatoes
- 'Fingerling Salad' potatoes

#### **HARVESTING**

Harvesting potatoes is fun! It's like unearthing nature's treasures. Harvest potatoes on dry days. Dig up gently, being careful not to puncture the tubers. Avoid cutting or bruising potato skin. The soil should not be compacted, so digging should be easy. Potatoes can tolerate light frost, but when the first *hard* frost is expected, it's time to get out the shovels and start digging potatoes.

of a slug or disease attack, particularly for main crop spuds.

Earlies are the first to be lifted, usually while the plants are still in flower. Your tubers should be about the size of a hen's egg or a touch bigger, but it's up to you how big you want them. Use a fork and work your way in from the edge of the plant, taking care to avoid stabbing into the potatoes themselves. Once you've loosened the plants, you can lift them to expose most of the spuds, but be sure to dig around in the soil for any you've missed!

Dig up main crop spuds once the foliage is dying back towards the end of the growing season. I find it easier to cut back the foliage before digging up the potatoes on a dry day. Leave the potatoes on the soil surface for a few hours so the skin can dry off a bit. Don't leave them there any longer, or they may start to turn green.

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## Extra tips for knowing when and how to dig up potatoes:

- Toughen up potatoes for storage before harvest by not watering them much after mid-August.
- Dig up a test hill to see how mature the potatoes are. The skins of mature potatoes are thick and firmly attached to the flesh. If the skins are thin and rub off easily, your potatoes are still too new and should be left in the ground for a few more days.
- If the soil is very wet, let the potatoes air-dry as much as possible before putting them in bags or baskets.
- Small green spots can be trimmed off,
   but throw the potato out if there is
   significant greening.

don't want problems in storage, and check on stored potatoes every few weeks and remove any that are starting to spoil.

#### **How to Cure Potatoes**

- Once they've dried off, pack them up into breathable sacks or just sturdy cardboard boxes to store somewhere dark, cool but frost-free (45° to 60°F / 7° to 15°C) for up to 2 weeks. This allows the potato skin to cure and thus keep longer.
- Brush off any clinging soil; do not wash the potatoes until ready to eat; washing will shorten their life.

#### **How to Store Potatoes**

If you are harvesting potatoes to eat within a few days, storage is not an issue. You can store anywhere.

To store potatoes for keeping, however, you need **a dark**, **cool** (38° to 40°F) place; if it's too warm, potatoes will sprout and be susceptible to disease. Also, it needs to

water, so if it's too dry, potatoes wither and dry out.

If you happen to have a damp cellar, you're all set! Otherwise, consider an extra refrigerator set a few degrees higher than normal with tubers in dark-colored plastic bags that are perforated (with many holes cut in the side) for air movement. Avoid all light to prevent greening. Or, consider an unheated entrance, spare room, closet, attic, cabinet, or insulated garage. To elevate humidity, you could place large pans of water in front of the air source.

Even after harvest, potatoes still use oxygen and give off carbon dioxide, so they must have fresh air and ventilation. Never put potatoes in airtight containers. Use perforated bags, as mentioned above. Do not store potatoes with apples; the fruit's ethylene gas causes spoilage.

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## Find more tips on getting potatoes ready for the root cellar.



The fruit (metaphorically speaking) of a very happy potato plant!

#### **GARDENING PRODUCTS**





#### PESTS/DISEASES

#### The most common potato disease is scab,

which causes rough, scabby patches on the skin. These can be peeled off along with the skin, so it's not all bad. But scabby potatoes ain't half ugly! So avoid scab in the first place by watering to keep the soil consistently moist at the critical time when tubers are developing—basically once the foliage has started to bush out. Adding compost or other organic matter to the soil before planting should help improve water retention, too. It's also worth seeking out scabresistant varieties.

Potato blight, or late blight, is a little trickier to dodge. It strikes after a period of warm, wet weather, seemingly out of the blue. Blight causes dark patches on the leaves as it takes hold—then it spreads with devastating speed, killing off your entire crop. There are a few blight-resis—

are usually harvested before the blight arrives later in summer. Check regularly, and if you do spot the tell-tale signs of blight, act fast to cut back the foliage before it spreads to the potatoes belowground—then harvest them as soon as possible.

#### **Potato Pests and Diseases**

Pest/Disease	Туре	Symptoms	Control/Prevention
Aphids	Insect	Misshapen/yellow leaves; sticky "honey- dew" (excrement); sooty, black mold	Grow companion plants; knock off with water spray; apply insecticidal soap; put banana or orange peels around plants; wipe leaves with a 1 to 2 percent solution of dish soap (no additives) and water every 2 to 3 days for 2 weeks; add native plants to invite beneficial insects
Blight (early)	Virus	Leaves, beginning	Destroy infected

Pest/Disease	Type	Symptoms	Control/Prevention
		eventually die; tubers/stems also may be affected	good air circula- tion; avoid over- head watering; wa- ter in morning; dis- infect tools; rotate crops
Blight (late)	Insect	Small, greenish gray, water-soaked spots on leaves that enlarge and turn brown, sometimes with yellow halo; white, fuzzy growth on leaf undersides; stems also affected; tubers develop reddish brown dry rot	Destroy infected plants; choose resistant varieties and certified, disease-free seed potatoes; ensure good air circulation; avoid overhead watering; remove plant debris; rotate crops
Colorado potato beetles	Insect	Yellow-orange eggs laid in clusters on leaf undersides; larvae and adults chew holes in foliage	Handpick; use straw mulch; weed; use row covers; destroy crop residue; rotate crops. In the nymph state, they can be controlled with diatomaceous earth (food grade). If they continue to be a problem, a few sprays of

Pest/Disease	Type	Symptoms	Control/Prevention
			beetles. Always use products at dawn or dusk to avoid harming beneficial insects.
Flea beetles	Insect	Tiny black beetles that jump when spooked. Numerous tiny holes in leaves; clusters of holes, as if leaf was hit by shotgun	Use row covers; mulch heavily; add native plants to in- vite beneficial insects
Leafhoppers	Insect	White shed skins on leaf undersides (from nymph molting); stippling (many tiny spots) on leaves; "hopperburn" (leaves yellow/brown, curled, or stunted); reduced yield	Knock nymphs off leaf undersides with strong spray of water; use row covers; monitor adults with yellow sticky traps; weed; destroy crop residue
Potato scab	Bacteria	Brown, rough, corky spots that can be shallow/raised/sunken	Choose resistant varieties and certified disease-free potato seed; maintain soil pH between 5.0 and 5.2; dust seed potatoes with sulfur before

Pest/Disease	Type	Symptoms	Control/Prevention
			ter tubers start to form; do not use manure; rotate crops
Tomato hornworms	Insect	Chewed leaves (initially toward top of plant); rapid defoliation; black/green excrement	Handpick (leave larvae that have white, rice-like cocoons, which house braconid wasp parasites); till soil in fall and spring; weed; add native plants to invite beneficial insects; grow dill as a trap crop or basil/marigolds as repellents; spray Bacillus thuringiensis (Bt)
Whiteflies	Insect	Sticky "honeydew" (excrement); sooty, black mold; yellow/silver areas on leaves; wilted/stunted plants; distortion; adults fly if disturbed; some species trans- mit viruses	Remove infested leaves/plants; use handheld vacuum to remove pests; spray water on leaf undersides in morning/evening to knock off pests; monitor adults with yellow sticky traps;

Pest/Disease	Type	Symptoms	Control/Prevention
			and hummingbirds with native plants; weed; use reflec- tive mulch
Wireworms	Insect	Seedlings severed; stunting/wilting; roots eaten; tubers/bulbs bored	Trap by digging 2- to 4-inch-deep holes every 3 to 10 feet, fill with mix of germinating beans/corn/peas or potato sections as bait, cover with soil or a board, in 1 week uncover and kill collected wire- worms; provide good drainage; re- move plant debris; rotate crops

#### WIT AND WISDOM

What I say is that if a man really likes potatoes, he must be a pretty decent sort of fellow.

-A. A. Milne, English writer (1882–1956)

Folklore offers many "best days" for

- Old-timers in New England planted their potato crops when they saw dandelions blooming in the open fields.
- The Pennsylvania Dutch considered St.
   Gertrude's Day (March 17, aka St.
   Patrick's Day) to be their official potato-planting day.
- Many Christian farmers believed that Good Friday was the best day to plant potatoes because the devil holds no power over them at this time.

Did you know: Potato promoter Antoine
Parmentier convinced Marie Antoinette to
wear potato blossoms in her hair.

Grated potatoes are said to soothe sunburnt skin.

#### **RECIPES**

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**POTATO FOIL PACKS** 

MARTHA WASHINGTON'S POTATO ROLLS

#### **COOKING NOTES**

Potatoes can be prepared in many ways:

into dumplings or pancakes, grated into hash browns, and even brewed as alcoholic beverages.

Most potato dishes are served hot, but some are first cooked, then served cold, notably potato salad and potato chips.

**VEGETABLES** 

#### ABOUT THE AUTHOR

#### Catherine Boeckmann



Catherine Boeckmann loves nature, stargazing, and gardening so it's not surprising that she and The Old Farmer's Almanac found each other. She leads digital content for the Almanac website, and is also a certified master gardener in the state of Indiana. Read More from Catherine Boeckmann

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#### **COMMENTS**

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**Ollie Kovaluk (not verified)** 2 months 1 week ago

Love Farmers Almanac.....my parents always used the Farmers Almanac since 1940s.

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How do I get rid of potato scabs?

**REPLY** 

Hi, Ollie. There are several things you can do: choose resistant varieties (such as 'Chieftan' and 'Elba'); try to maintain soil pH between 5.0 and 5.2 (you can decrease soil pH by adding elemental sulfur); dust seed potatoes with sulfur before planting; use pine needle mulch; keep soil moist after tubers start to form; and do not use manure.

**REPLY** 

**Harold Van Beke Jr (not verified)** 7 months 4 weeks ago

This is my first time planting potatoes I planted at the end of apirl there growing very tall and the white flowers are there when do I harvest them

**REPLY** 

**John Landry (not verified)** 9 months 1 week ago

growing and

taking over my small raised garden beds. I will harvest middle to end of August. Looking for a useable crop. [Skill level - 6] Thanks for all the great information. I hope to use the info in the future. [THANKS] John

**REPLY** 

Mary Pelcher (not verified) 1 year ago
I was not able to harvest my potatoes last summer. Will they report in the spring? Or what should I do for a new crop this year?

**REPLY** 

The Editors 1 year ago
Hi, Mary. If you live in a place where
the ground does not freeze over in
the winter, your potatoes likely continued to grow and will now be
crowded and small. When you dig
them up, check to make sure they are
not green and that the skin is

**REPLY** 

Kk (not verified) 1 year 2 months ago
I have had a problem with scab. But last year,
when I dug my potatoes they were beautiful. I
had moved my potatoes to a totally new location. After storing in the basement, they are
now developing a rough skin that doesn't look
like scab. The potatoes are solid and beginning
to sprout, but when I peel them they have tiny
pepper size dots that I cut out. I plant red
Pontiac potatoes. What is causing this? The
potatoes show no rot or softness. I do not use
manure but do use leaves that are composted. I
would be grateful for any suggestions. Thank
you KK

REPLY

**The Editors** 1 year 2 months ago Hi KK,

That was a great idea to grow your

Black spots or dots in potatoes can be attributed to internal bruises caused by the movement of your potatoes after harvest or how they are stored together. It could also be the result of sugar concentrations brought on by a number of pre- or post-harvest conditions. You are doing the right thing by removing the areas, but the condition should be generally harmless.

**REPLY** 

Mark Keith (not verified) 1 year 6 months ago
I plant Russets but my potatoes are very small...
why?

**REPLY** 

The Editors 1 year 6 months ago
Hi, Mark. Was your entire crop of
potatoes very small? It is not unusual
for potatoes to vary in size and to
have some large, some medium, and

which could be that alternate wet and

dry conditions stunted their growth.

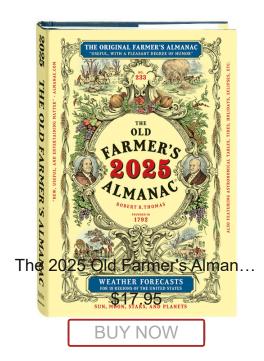
Potatoes prefer evenly

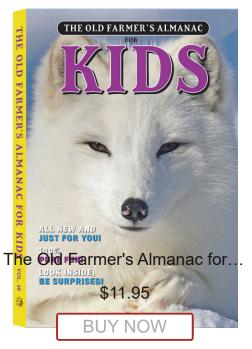
moist conditions.

**REPLY** 

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