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Thursday, May 1, 2025



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How to Grow Bell Peppers: The Complete Guide



Photo Credit: D. Leonis/Getty Images

Botanical Name:	<i>Capsicum annuum</i>
Plant Type:	Vegetable
Season:	Full Sun

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Planting, Growing, and Harvesting Bell Peppers (Sweet Peppers)

By [Catherine Boeckmann](#)
Last Updated: April 24, 2025



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Pick a pint of pickled peppers! Bell peppers are heat-loving summer vegetables that are pest-resistant and disease-resistant. Did you know that a green pepper is the same pepper as a red pepper? They're simply harvested at different stages. See how to start, grow, care for, and pick your sweet peppers!

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About Bell Peppers

Peppers have a long growing season (60 to 90 days), so most home gardeners buy starter pepper plants at the garden nursery rather than grow them from seed.

However, you can start pepper seeds indoors if you want to grow your own.

Northern gardeners should warm the outdoor soil by covering it with black plastic as early as possible in late winter/early spring.

BUY SEEDS NOW

Red and green peppers are good sources

derful raw in salads or as a snack with dip or [hummus](#). You can also stuff peppers with rice, seasoned bread crumbs, or meat and bake them.

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Note that peppers can be divided into two categories: hot and sweet. Much of the growing advice is the same. That said, we also have a growing guide for [hot peppers](#)!

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- [Starting Seeds Indoors: How and When to Start Seeds](#)
- [10 Fast-Growing Vegetables for Cool Weather](#)

PLANTING

Grow peppers in a space with full sun and well-draining, moist (but not wet) soil.

Plant peppers in a spot where they will get at least 6 hours of direct sunshine every day. A balance between sandy and loamy soil will ensure the soil drains well and warms quickly. Mix large amounts of organic matter (such as compost) into the soil, especially when working with heavy clay.

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family members—such as tomatoes, [pota-
toes](#), or eggplants—as this can expose peppers to disease.

When to Plant Peppers

- To start peppers indoors in pots, sow seeds 8 to 10 weeks before your last spring [frost date](#).
- Plant pepper starts or transplants outdoors about 2 to 3 weeks after the threat of frost has passed and the soil has reached 65°F (18°C).

Make the Most of Your Available Space
See how many plants will fit and which crops can occupy the same space in your garden at different times of the year.



Pepper (15 plants) - row length: 21' 6"

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How to Start Peppers Indoors

- To start indoors: Start pepper seeds 1/4-inch deep, three to a pot filled with potting mix. For faster germination, maintain soil at 70°F (21°C) or above. To achieve these sorts of temperatures, you'll probably need a heated propagator or heat mat and

- Ideal conditions should see seedlings appear within about 2 weeks, but some varieties take as long as 5 weeks, so don't give up on them too soon! Thin out the weakest seedling; let the remaining two pepper plants in each pot grow as one. The leaves of two plants help to protect the peppers.
- If seedlings become leggy or too tall before it's time to plant outside, re-plant them in a bigger pot up to their lowest leaves, just like tomatoes, to help support them. Keep seedlings warm with plenty of light until you're ready to plant. If the plants have around five to eight leaves and you can see roots at the drainage holes, it's time to move them up a pot size.
- Be sure to harden off the seedlings about 10 days before transplanting outdoors, as peppers are very sensitive to cool temperatures. Before planting peppers outdoors, acclimatize plants to outdoor conditions by placing them in a sheltered spot outside for gradually increasing periods over 2 weeks. Take care to avoid frosts. Plant

How to Plant Peppers Outdoors

- If you're buying pepper starts, choose ones with straight, sturdy stems, 4 to 6 leaves, and no blooms or fruit. To harden off pepper plants, set plants outdoors a week or more after the frost-free date or when the average daily temperature reaches 65°F (18°C).
- Before transplanting in the garden, mix aged manure and/or compost into the soil about 8 to 10 inches deep and rake it several times to break up the large clods.
- Put transplants into the ground once the soil temperature has reached 65°F (18°C). Speed up the warming of the soil by covering it with black plastic or a dark mulch about a week before you intend to plant.
- It is best to transplant peppers in the evening or on a cloudy day. This will keep the plants from drying too much and wilting.
- Make the transplant holes 3 to 4 inches deep and 12 to 18 inches apart

with water and let it soak in. Into each planting hole, put two or three wooden matchsticks (for sulfur) and 1 teaspoon of [low-nitrogen, high-phosphorus fertilizer](#) (too much nitrogen will reduce the fruit set).

- When pulling the transplant out of its tray or pot, be gentle and leave as much soil as possible around the roots. Set the transplants about 1 inch deeper than they were in their original container. Fill the hole with soil and pack it loosely around the plant. Leave a slightly sunken area around each plant to hold water.
- Water the plants after planting.
- Using liquid fertilizer material (manure tea, [compost tea](#), or starter fertilizer) is usually beneficial at this time.
- Stake now to avoid disturbing the roots later. If necessary, support plants with cages or stakes to prevent bending. Try commercially available cone-shaped wire tomato cages. They may not be ideal for tomatoes, but they are just the thing for peppers. Or, [build your own garden supports](#)

**Check out this video to learn how to
plant bell peppers:**

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... Peppers from Sowing to Harvest



GROWING

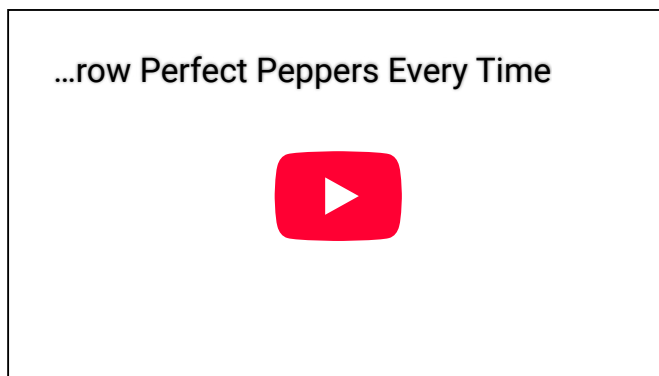
- Water regularly with 1 to 2 inches of water per week. This doesn't mean shallow watering; peppers like a good dousing but should be left to almost dry out between waterings; they need

grow strong. Do not let pepper plants wilt because this will reduce the yield and quality of the fruit. Inconsistent watering also makes pepper susceptible to blossom-end rot.

- Pinch out the growing points at the top once plants reach about 8 inches tall. This will encourage plants to become bushier, resulting in more fruits.
- Once they start producing flower buds, begin feeding plants regularly. Use a tomato fertilizer or other liquid feed high in potassium.
- In a warm or desert climate or at the height of summer, you may need to water daily. Note that in desert regions at around 4,000 feet of elevation, sweet bell peppers often fail to develop a thick, fleshy wall.
- Peppers are extremely heat-sensitive. Blossoms may drop if plants are stressed—if it's too hot (above 85° to 90°F in daytime) or cold (below 60°F at night) or if water is inadequate. Use shade cloth or row covers to avoid heat stress or sunscald (exposure to direct sun rays during hot

- Mulch to maintain moisture and deter weeds.
- Weed carefully around plants to avoid disturbing roots.
- Contrary to popular belief, spraying pepper plants with Epsom salts isn't beneficial.

Here's another great video on growing and boosting the productivity of your peppers!



Types

Look for varieties that ripen to their full color quickly; fully mature peppers are the most nutritious—and tastier, too!

- Green peppers that turn Red: **'Lady Bell', 'Gypsy', 'Bell Boy', 'Lipstick'**
- Orange: **'Milena', 'Orange Sun'**



HARVESTING

- Once the plants begin producing fruit, pick them promptly: the moment they have reached their full size and color. Regular picking encourages plants to produce more flowers and, of course, more fruit.
- That said, the longer bell peppers stay on the plant, the sweeter they become and the greater their vitamin C content.
- Snip the stems of fruits with a sharp pair of clean pruners, scissors, or a sharp knife.

How to Store Peppers

- Peppers can be refrigerated in plastic bags for up to 10 days after harvesting.

- Peppers can also be dried. Preheat oven to 140°F. Wash, core, and seed. Cut into 1/2-inch strips. Steam for about 10 minutes, then spread on a baking sheet. Dry in oven for 4 to 6 hours; turn occasionally and switch tray positions. Cool, then store in bags or containers in a refrigerator.



WIT AND WISDOM

Sweet bell peppers do not contain capsaicin, which is the compound that gives hot peppers their pungency and heat.

Do different-colored peppers come from different plants?

Surprisingly enough, the green and red

bell peppers have just been allowed to mature on the plant longer. The longer a bell pepper stays on the plant, the greater its vitamin C content, so red peppers have more vitamin C (and a sweeter taste).

Are there male and female peppers?

There is a popular myth that states that pepper fruits can be either male or female—the difference between them being that male peppers have 3 bumps on the bottom and are better for cooking, while female peppers have 4 bumps, have more seeds, are sweeter, and are better for eating raw. This is not true! Pepper fruits do not have a gender, and any obvious difference between them is simply the result of growing conditions or variety.

PESTS/DISEASES

Pollination can be reduced in temperatures below 60°F (16°C) and above 90°F (32°C). Too much nitrogen in the soil can produce healthy foliage growth

humidity. If the air is very dry, douse the soil with water and thoroughly mist plants.

Spider mites and **aphids** are two common pests of peppers, especially plants grown under cover. Spider mites—identified by the fine webbing on the underside of leaves—thrive in hot, dry weather. Mist-spray these areas regularly at the first sign of an attack to make conditions as hostile as possible for the mites.

Aphids also prefer the undersides of leaves but are found on other parts of the plant, too. Squish isolated clusters, or for more serious infestations, take plants out into the open, away from other peppers, then carefully turn the plants upside down so you can brush or blast the aphids off with a hose.

See more pest and disease information in the below chart:

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Bell Pepper Pests and Diseases

Pest/Disease	Type	Symptoms	Control/Prevention
Anthracnose	Fungus	Yellow/brown/purple/black spots on leaves; sunken, dark spots on stems and fruit; spots may develop a salmon-pink, gelatinous mass; eventually, plants rot	Destroy infected plants; choose resistant varieties; provide good drainage; avoid overhead watering; apply compost for nutrition; use mulch; practice crop rotation.
Aphids	Insect	Misshapen/yellow leaves; distorted flowers/fruit; sticky “honeydew” (excrement produced by aphids); sooty, black mold that forms on honeydew; large presence of ants on plants	Grow companion plants to either attract aphids away (nasturtiums) or repel them outright (basil, rosemary, strong-scented plants); knock aphids off plants with water spray, apply insecticidal soap; put banana or orange peel around plants; wipe leaves with a 1–2% solution of liquid dish soap and water every 2–3 days for 2 weeks; add native plants to attract aphid predators.
Bacterial leaf spot	Bacteria	Varies; water-soaked rust/black leaf spots between veins later dry/fall out, leaving holes; leaves yellow/ distort/wilt/die; stem cankers	Destroy infected parts/ severely infected plants (do not compost); remove plant debris regularly; disinfect tools; prevent plant stress/injury; good air circulation; avoid overhead watering.
Blossom-end	Disorder	Caused by lack of suffi-	Remove affected

		site the stem) may enlarge and become sunken, leathery, rotted	mulch; maintain proper soil pH (6.5) and nutrient levels; avoid excessive nitrogen; provide good drainage; avoid damaging roots.
Colorado potato beetles	Insect	Yellow-orange eggs laid in clusters on leaf undersides; larvae and adults chew holes in foliage	Remove eggs/larvae/beetles by hand; use straw mulch; weed around plants; use row covers; destroy plant matter at end of season; practice crop rotation.
Cucumber mosaic virus	Virus	Symptoms vary, but may include: stunting; mottled green/yellow/white pattern or ringed spots on leaves/fruit; distorted leaf growth; warts on fruit	Often spread by aphids . Destroy infected plants; choose resistant varieties and certified virus-free seed; use row covers; disinfect gardening tools after each use; keep garden weed-free; use mulch.
Flea beetles	Insect	Numerous tiny holes in leaves (as if they had been hit by a tiny shotgun)	Use row covers to physically block flea beetles; mulch heavily; add native plants to attract beneficial insect predators.
Leaf miners	Insect	Meandering blisters in leaves caused by tunneling larvae	Remove infested leaves; weed; use row covers; till soil early in season; rotate plantings.
Root-knot nematodes	Insect	Roots become “knotted” or galled: plants	Destroy affected plant matter (espe-

			manure/compost; disinfect gardening tools between uses; till soil in autumn; practice crop rotation.
Spider mites	Insect	Fine webs; yellow-specked under-side of leaves, later brown-edged or bronze or yellow leaves; leaf drop	Rinse plants with water, mist daily; apply insecticidal soap.
Tomato hornworms	Insect	Chewed leaves (initially toward top of plant); rapid defoliation; black/green excrement; gouged fruit	Check undersides of leaves for hornworms, remove by hand and dispose of hornworms. (If you encounter hornworms that have white, ricelike cocoons on their backs, relocate them instead; the cocoons belong to beneficial parasitic wasps.) Till soil in autumn and spring; companion plant with dill/basil/marigolds to attract (and trap) or repel hornworms; spray plants with Bt (<i>Bacillus thuringiensis</i>).

RECIPES

PICKLED PEPPERS

**ROASTED RED PEPPER,
MOZZARELLA, AND BASIL-
STUFFED CHICKEN**

**ROASTED BUTTERNUT SQUASH
AND RED PEPPER DIP**

COOKING NOTES

Peppers are excellent with almost anything: sandwiches, scrambled eggs, pizza, salads, and dips.

We also enjoy cooking peppers, whether in a beef stir-fry, as smoky roasted peppers, or in meat- and rice-stuffed peppers.

Plus, peppers can be pickled! [See how to make pickled peppers!](#)

VEGETABLES

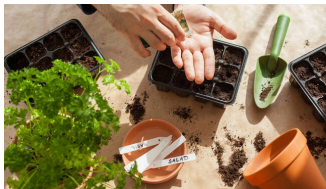
ABOUT THE AUTHOR

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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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WildWoodGardener (not verified) 8 months

1 week ago

Hi, and thank you for your article. I have been gardening for decades and truly enjoy it.

Growing peppers has always been a staple. This

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dozens of tiny leaves where the blossoms would be. No fruit. 2: a brown film like a paper bag got wet and dried in them. Can be scrubbed off but 20% would remain in the creases of the fruit. 3: recently we went to harvest a few from the healthy plants (we did get a dozen or so from unaffected plants), and the recent fruits (8/26) were soggy and like mush. Never had any of these issues before, any ideas? Thanks again for your article and insight.

REPLY

judy cooper (not verified) 2

months 3 weeks ago

I had this same brown, papery splotches on my peppers and the plants did not grow normally (stunted). Fruit was small and no usable. What do I need to do? Thank you.

REPLY

My pepper plants are always leggy. They are grown in a greenhouse as I live in Northern B.C, they get loads of flowers but don't set much fruit. Any suggestions?

REPLY

Deborah Pike (not verified) 2

weeks 5 days ago

Sounds like not enough pollination going on, need more pollinators to have access to plants.

REPLY

Joe (not verified) 1 year 1 month

ago

Leggy is usually caused from low-light. Too much nitrogen can cause pepper plants to become very green and lush but not produce fruit.

Solution: To figure out where your soil is at, you can get a soil testing kit to show the pH balance of your soil, as well as fertilizers for any nutrient

REPLY

The Editors 1 year 2 months ago

Legginess can be caused by a few things, such as not enough light. Are the plants all leaning toward a certain direction from which the most sun-light comes? If so, that might be the cause; in which case you might consider supplemental lighting. Also make sure that the plants are not overcrowded.

Avoid giving too much nitrogen, which can cause legginess and lots of vegetative growth vs. flowers; the fact that you do have flowers, though, suggests that this is not the issue.

Sometimes a little too much warmth, such as from a heat mat, can cause leggy seedlings; if you suspect this might be the case, be sure to provide enough airflow. This can also help the lack of fruit issue: Even though pep-

a fan, or to brush your hand across the plants gently (which can also help legginess). Or, if you don't have a lot of plants, you can try hand pollination.

Too high or low temperature can also deter fruiting; when peppers bloom, try to keep the temperature inside the greenhouse below 85F in the day (hot peppers can tolerate higher temps) and above 60F at night.

Hope this helps!

REPLY

Kitty (not verified) 1 year 11 months ago

I soaked some pepper seeds, from the red, Yellow and orange peppers I bought from the grocery store. I let them soak a couple of days, and planted them in little TP pots. To my amazement, they all sprouted. But Now, after 2 months in those pots, they will not grow a second set of leaves. I have them in a light filled

78 degrees. I am letting them dry out between watering. There are probably about 10 or 20 plants in each pot. Why won't the sprout more leaves?

REPLY

The Editors 1 year 11 months ago

Hi Kitty,

It sounds like there might be a couple issues keeping your pepper plants from thriving. First is that peppers need a minimum of 6 to 8 hours of direct sun per day, so you should put them in a spot that gets more direct sun, either inside or outdoors now that the weather has warmed.

Another thing is the amount of plants per container. Peppers need plenty of room to grow and enough space around them for adequate airflow.

That many plants per pot, no matter the size, is too many. Most recommend only one plant per pot to en-

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ter being moved to their own pots or just a couple plants in larger containers.

REPLY

Nicole (not verified) 3 years 3 months ago

I'm trying indoor seeds for the first time. I understand pepper seeds and seedlings love it hot. My house stays at 62. I use a heating mat, but it says it only heats to 10 degrees higher than the room. Should I double up on the heating mat? I have two.

REPLY

The Editors 3 years 2 months ago

Hi, Nicole, Doubling heating mats, thereby putting a lot of heat on the bottom, is not necessarily a solution. Instead, use the one heating mat and tent your seedlings to that they have a bit of greenhouse effect. Don't seal them off entirely but, for ex., cover

REPLY

MORE COMMENTS

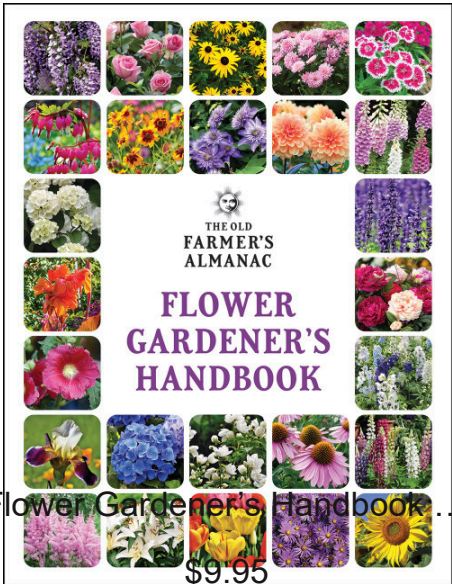
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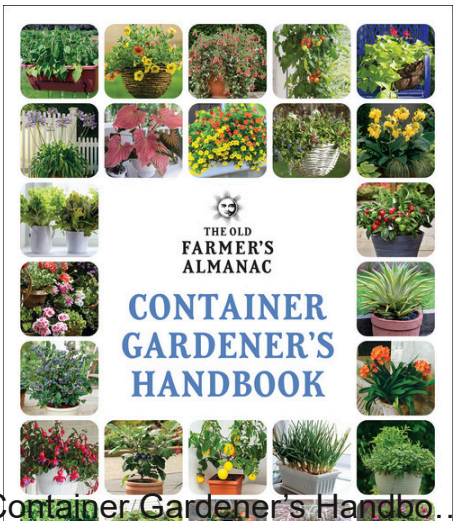
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