

GROWING FOOD AT HOME: A BEGINNER'S VEGETABLE GARDEN

Start small, in a spot with full sun near a water supply, and grow what your household already eats. NC State Extension says most vegetables need at least 8 hours of direct sun and about 1 inch of water a week, counting rain.

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A garden is a long-term skill. It takes a growing season to produce, so it adds to the food you have stored rather than replacing it (see emergency food supply). NC State Extension says anyone willing to spend some time every day or two on the plants can grow vegetables, and it does not take a lot of money, time, or talent. The planting advice below comes mostly from North Carolina, and planting dates depend on where you live, so check with your county extension office for local timing. Outside North Carolina, the USDA Plant Hardiness Zone Map also tells you your zone from your ZIP code.

CHOOSING A SUNNY SITE

Use this before you dig or buy anything. NC State Extension calls sunlight the most important factor in choosing a garden site.

1. Watch your yard through a full day and note which spots get direct sun, and for how long.
2. Pick a spot in full sun. NC State's beginner guide says most vegetables need at least 8 hours of direct sunlight. Leafy greens and root crops can grow with as little as 6 hours; tomatoes, squash, and cucumbers need at least 8 and do better with 10.
3. Keep away from trees and large shrubs, which compete for sun, water, and nutrients.
4. Check drainage: look at the spot after a rain. Areas where water pools have poor drainage and are not a good site (NC State).
5. Stay close to a water supply. NC State says water is heavy and hard to move, so locate the garden near a potable water source.
6. Think about what the land was used for before. In urban areas, NC State says testing the soil for contaminants is essential before gardening.

Check: you have counted the hours of direct sun on your chosen spot and it meets the needs of what you want to grow.

SETTING UP CONTAINERS

Use this if you have a patio or balcony, poor soil, or no yard. NC State says many vegetables grow well in containers, including beans, beets, carrots, kale, lettuce, peas, peppers, potatoes, spinach, Swiss chard, and tomatoes.

Steps from NC State Extension:

1. Use containers with drainage holes. If the container sits flat on a hard surface, put the holes on the side, ¼ to ½ inch from the bottom.
2. Do not put gravel or rocks in the bottom. NC State says this makes water collect in the mix above the gravel.
3. Fill with purchased potting soil, or mix equal parts compost, shredded pine bark, and vermiculite. Never use soil from your yard in containers (NC State).
4. Match the container to the crop. Lettuce, radishes, and scallions need at least 6 to 8 inches of mix; carrots grow better in 10 to 12 inches; a tomato needs at least a 5-gallon container.
5. Water thoroughly. NC State says it normally takes water equal to 45% to 60% of the container's volume to wet the mix fully, or 2½ to 3 gallons for a 5-gallon container.

Check: water drains out of the holes instead of pooling. NC State notes containers dry out faster than garden beds and need water more often, and larger containers dry out less quickly.

PREPARING A GARDEN BED

Use this if you have a sunny spot of ground.

1. Start small. NC State says to plant only the space you can manage, and that one 4-foot by 8-foot raised bed may supply a good portion of the produce for one or two people.
2. Keep beds no more than 4 feet across so you can reach the middle from the sides without stepping on the soil (NC State).
3. For a raised bed, do not build it from materials that might leach chemicals into the soil, such as old railroad ties (NC State).
4. Work 2 to 3 inches of homemade or certified compost into the soil.
5. Send a soil sample to your county extension office for a soil test, then add lime or fertilizer only as the results recommend. NC State says the ideal pH for most vegetables is 6.0 to 6.5.
6. If you use animal manure, use it only after it has aged at least six months in an open pile or been composted (NC State).

Check: you have a soil test result for the bed, and the soil is loose enough to dig by hand.

CHOOSING WHAT TO PLANT

Use this before you buy seeds or plants.

1. Grow what you like to eat (NC State).
2. If space is short, NC State suggests the vegetables with the greatest return for the effort: pole beans, tomatoes, root crops, and leafy greens.
3. Plant cool-season crops in early spring and early fall. NC State lists beets, broccoli, cabbage, carrots, kale, lettuce, onions, peas, potatoes, radishes, spinach, Swiss chard, and turnips among them.
4. Plant warm-season crops after the last spring frost, once the soil has warmed. These include beans, corn, cucumbers, peppers, squash, sweet potatoes, and tomatoes.
5. Get local planting dates from your county extension office.
6. Find your hardiness zone by entering your ZIP code on the USDA Plant Hardiness Zone Map. USDA says the zones are based on the average lowest winter temperatures for 1991 to 2020, not the lowest ever, and that the map should serve as a general guide for growing perennial plants. Zone numbers are typically listed with the descriptions of perennial plants in nursery catalogs, so compare them with yours. USDA also says wind, soil type, soil moisture, humidity, pollution, snow, and winter sunshine can greatly affect plant survival, and suggests asking established nurseries, Master Gardeners, or extension services for local advice.
7. Do not plant vegetables from the same family in the same spot more than once every three years. NC State says rotating crops helps prevent insect and disease buildup (NC State).

Check: you have a list of crops your household eats, each marked cool-season or warm-season, with a planting date from your local extension office, and you know your USDA hardiness zone.

PLANTING SEEDS

Use this when you sow seed directly into a bed or container.

1. Check the date on the seed packet. NC State says many vegetable seeds stay viable for three to five years if kept dark, dry, and below 85°F, but old seed may germinate poorly.
2. If the soil is dry, water it thoroughly, 4 to 6 inches deep, and let the surface dry before seeding.
3. Plant seeds only two to three times as deep as the seed's greatest diameter (NC State).
4. Cover the seeds and firm the soil lightly so it touches the seed.
5. Space the plants as the seed packet or plant tag says, leaving room for airflow.
6. Thin crowded seedlings once they have one or two pairs of true leaves. NC State says to pinch or cut them rather than pull them, and that evening is a good time.
7. For a steady harvest, stagger plantings at one- to two-week intervals.

Check: seedlings come up evenly and are thinned to the spacing on the packet.

WATERING THE GARDEN

Use this from planting through harvest.

1. Give the garden about 1 inch of water per week, counting rain. Keep a rain gauge to track rainfall (NC State).
2. Aim to wet the soil 6 inches deep. Dig in with a trowel to see how far the water has gone.
3. To learn how long your hose takes, set a few straight-sided containers around the bed and check them every 30 minutes until they hold 1 inch of water.
4. Water the soil, not the leaves. NC State says many diseases spread by water splashing onto leaves.
5. Avoid frequent shallow watering, which keeps roots in the top 1 to 2 inches of soil.
6. When dew forms, water in mid-morning after the dew has dried.
7. Once the soil has warmed in spring, spread 2 to 4 inches of organic mulch (straw, leaves, or compost) around established plants to hold moisture and reduce weeds.

Check: a trowel pushed into the bed the day after watering finds moist soil 6 inches down.

■ WARNING

If you water with collected rainwater, CDC suggests using public tap water or bottled water, when possible, for plants you plan to eat, because rainwater can carry germs and chemicals.

SAVING SEEDS

Use this at the end of the season to keep seed for next year.

Steps from University of Minnesota Extension:

1. Grow open-pollinated varieties, not hybrids. Seed from hybrids such as 'Big Boy' or 'Early Girl' tomatoes will grow, but the plants will not match the parent. Open-pollinated examples include 'Brandywine' and 'San Marzano' tomatoes and 'Kentucky Wonder' and 'Blue Lake' beans.
2. Start with tomatoes, peppers, beans, and peas. They are self-pollinating and their seeds need little or no special treatment.
3. Choose the most vigorous plants with the best-tasting fruit, and save seed only from healthy plants.
4. **Tomatoes:** let the fruit ripen fully. Scoop the seeds and gel into a glass jar with some water, and stir or swirl it twice a day. It will ferment, and the seeds should sink within five days. Pour off the liquid, rinse the seeds, and dry them on paper towels.
5. **Peppers:** leave some fruit on the plant until fully ripe and starting to wrinkle, then remove the seeds and spread them out to dry.

6. **Beans and peas:** leave the pods on the plant until they are dry, turning brown, and the seeds rattle. Strip the pods and dry them indoors for at least two weeks before shelling.
7. Store seeds in tightly sealed glass containers, kept dry and cool. Minnesota Extension says 32°F to 41°F is ideal, so a refrigerator works. NC State adds that plastic bags may cause seeds to rot.
8. Label each container with the name, variety, and date collected.

Check: Minnesota Extension says to use saved seed within one year, because older seed has lower germination and vigor.

WASHING GARDEN PRODUCE

Use this every time you bring vegetables in from the garden.

Steps from FDA, which says harmful bacteria in soil or water can get onto produce:

1. Wash your hands for at least 20 seconds with soap and warm water before and after handling produce.
2. Cut away damaged or bruised areas. Throw away anything that looks rotten.
3. Wash all produce under running water, including produce you grew yourself. Do not use soap, detergent, or commercial produce wash.
4. Scrub firm produce, such as melons and cucumbers, with a clean produce brush.
5. Dry it with a clean cloth towel or paper towel.
6. Wash produce even if you will peel it, so dirt and bacteria are not carried from the skin to the inside.

Check: FDA says washing reduces bacteria but does not eliminate them, and cooking produce thoroughly kills harmful bacteria. CDC suggests rinsing produce with tap or bottled water rather than rainwater when possible (CDC).

■ WARNING

After a radiation emergency, CDC says do not pick or eat food from your garden until emergency officials determine it is safe (CDC).

PRACTICE LIST

SKILLS

- ☐ Choosing a sunny site: hours of direct sun counted
- ☐ Setting up containers with drainage and potting mix
- ☐ Preparing a garden bed, with a soil test
- ☐ Choosing what to plant, with local planting dates and your USDA zone
- ☐ Planting seeds at the right depth and thinning them
- ☐ Watering the garden: 1 inch a week, 6 inches deep
- ☐ Saving seeds from tomatoes, peppers, beans, or peas
- ☐ Washing garden produce

TRACK

Survival skills

SHEET

13 of 13

REVIEWED

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COMPILED FROM THESE SOURCES

1. NC State Extension, Vegetable Gardening: A Beginner's Guide
2. NC State Extension, Extension Gardener Handbook, Chapter 16: Vegetable Gardening
3. NC State Extension, Extension Gardener Handbook, Chapter 18: Plants Grown in Containers
4. USDA Agricultural Research Service, 2023 USDA Plant Hardiness Zone Map
5. USDA Agricultural Research Service, Plant Hardiness Zone Map: How to Use the Maps
6. University of Minnesota Extension, Saving vegetable seeds
7. FDA, Selecting and Serving Produce Safely
8. CDC, Collecting Rainwater and Your Health: An Overview
9. CDC, Food, Drinking Water, and Medicine Safety in a Radiation Emergency

Every safety claim on this sheet links to its primary source.