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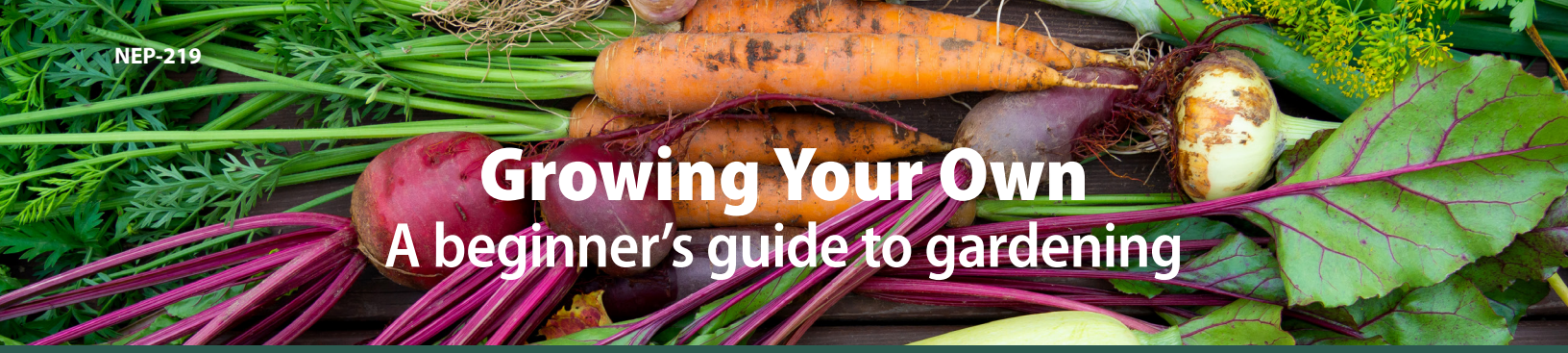


Growing Your Own
A beginner's guide to gardening

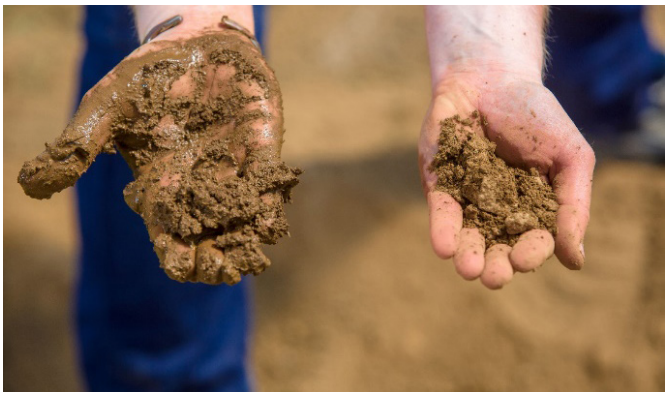
Preparing Your Garden

Good soil is the backbone of a healthy garden. Soil supplies plants with nutrients for growth and support for the roots. Good soil helps produce healthy vegetables.

Working the soil

Working the soil is easiest in the spring. If you are planting right into the soil (not in containers), test moisture by gathering a handful of soil. Squeeze it in your hand and release. If it crumbles, it is ready to be worked. If it stays in a clump shape, it is too wet. A good garden soil is loose but not so loose that it looks like powder or dust.

Use a shovel to loosen the soil. Try to dig down 10 to 12 inches. Put the shovel blade into the soil and turn the blade or pick up the shovel to turn the soil. Repeat throughout the garden space. Break up the clumps and clods with a rake or hoe. Remove large sticks and rocks.



Soil that is too wet for planting (left) and soil that is ready for planting—moist but not clumped (right).

Organic matter is a good addition to your soil. It adds nutrients and loosens heavy soil. It allows sandy soil to hold water better and makes the soil easier to work. The most common forms of organic matter are:

- **Plant material** such as fresh leaves, straw, or grass clippings. Work them into the soil several months before planting so they have time to break down properly.
- **Animal manure** from cows, chickens, or rabbits. Use older, composted manure if you are about to plant in spring. Lay a 1-inch layer of composted manure over the soil before planting, and mix it well into the soil.
- **Compost** from decayed plant material. Many cities and towns have compost available to residents. *Compost* is often mostly made of leaves or small pieces of wood collected from residential yards. Apply a 1-inch layer and work it into the soil.

Testing the soil

A soil test will determine which nutrients are lacking in your soil and how much fertilizer to apply. The test should be done after you have worked the soil, but before making raised beds, fertilizing,

Cooperative Extension Service

SNAP Supplemental Nutrition Assistance Program

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EFNEP Expanded Food and Nutrition Education Program

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or planting. Your county extension agent can assist you with collecting a soil sample, mailing it in, and interpreting the results. Many counties offer free soil testing. If your county does not, a soil test through the University of Kentucky Regulatory Services is $7.

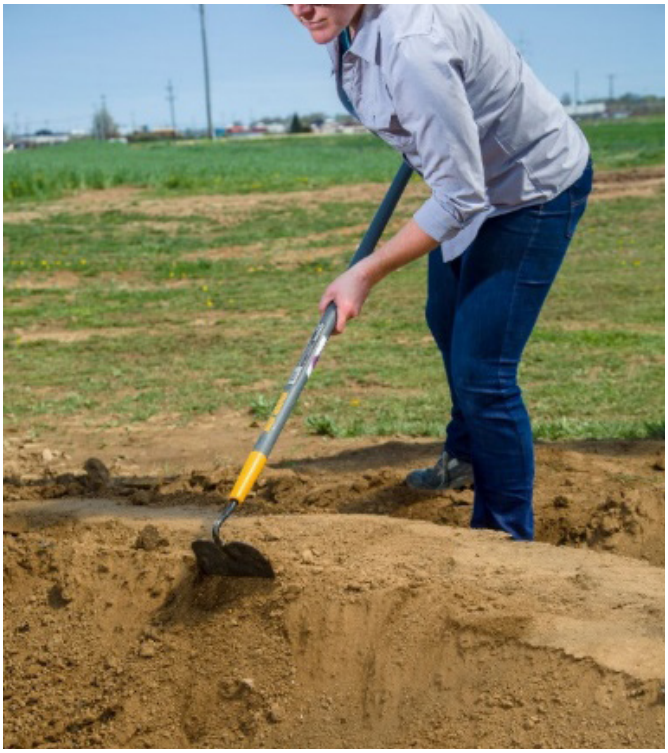
Fertilizing

If you chose to add manure or compost to your soil during the preparation stage, you may not need to add much during the growing season. If you did not add manure before planting, you should add some sort of fertilizer to your soil to provide enough nutrients for your plants. Commercial fertilizers are available at farm supply or home-improvement stores. The main three nutrients that most fertilizers provide are nitrogen (N), phosphorus (P), and potassium (K). They will be listed on the bag and always in that same order: N-P-K (nitrogen, phosphorus, potassium).

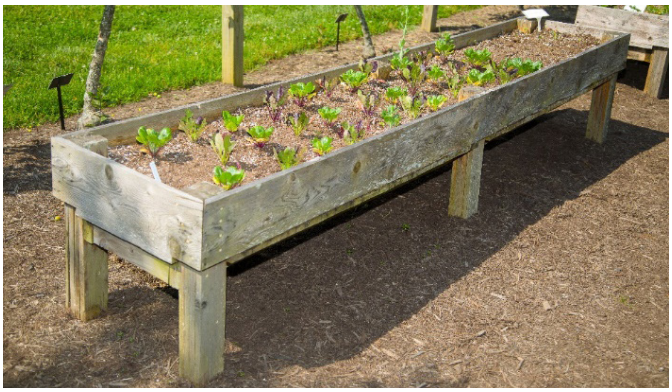
If you choose not to have your soil tested, apply about ½ pound of 33-0-0 fertilizer for every 100 square feet of soil. If you cannot find this fertilizer, urea (46-0-0) will also work. Both types come in the form of granules. Use a cup to spread the fertilizer as evenly as possible where you plan to plant. Incorporate the fertilizer into the soil using a shovel and rake. Wash your hands after handling fertilizer or wear gloves.

Making raised beds

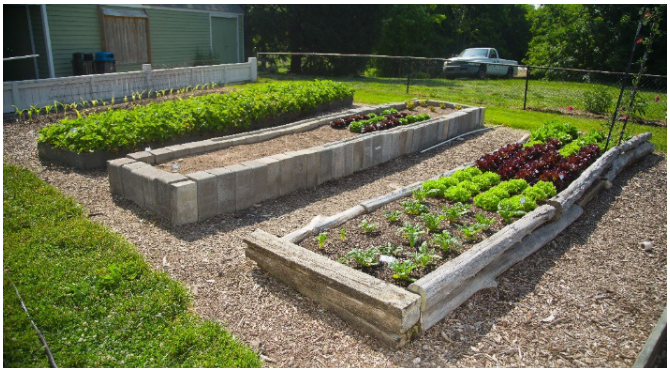
Once you have prepared your soil, begin to form raised beds. *Raised beds* allow for better water drainage and let more air enter the soil, which improves plant root growth. If you plan on having more than one *raised bed*, space them far enough apart so that you can walk between them. About 36 inches from the center of one bed to the center of the next bed is common. The top of the bed should be level and about 8 to 12 inches wide. You can make both the bed width and walkway smaller or wider if you wish. You should be able to reach across the top of the bed and walk between the beds.



An unstructured raised bed that has been formed by mounding the soil and shaping it.



A taller option for a raised bed that could accommodate a wheelchair.



A structured raised bed using wooden beams (right) and cinder blocks (left).

Unstructured raised beds are formed by mounding the soil and shaping it. These beds are temporary and need to be reformed periodically. Permanent raised beds consist of square or rectangular frames filled with soil and compost. Frames may be made from a variety of materials, including wood, blocks, concrete, or bricks. To make gardening easier for those who can't bend or reach a traditional garden, a permanent raised bed may be placed on legs.

Direct seeding

Direct seeding is placing seeds directly into the soil where you want them to grow. Some plants can only be seeded directly. Whether you *transplant or direct seed* will depend on the plant you intend to grow.

If the soil is ready, use your finger or a small stick to create a furrow in the middle of the raised bed. The depth of your furrow will should be twice the size of the seed. Place seeds in the furrow and cover with soil. Check the seed packet for information on how deep to plant your seeds and how much soil to cover them with. If you don't have a seed packet, use a furrow ½ inch deep.

Some vegetable seeds take several weeks to sprout, or germinate. Germination is the first stage in the life of a plant. Keep the soil moist but not wet. Too much water may cause the seeds to wash away.

After the plants are up, you may need to thin them if they are too close together. Thinning requires pulling the weakest plants or pinching the tops off in order to keep the entire planting as evenly spaced as possible. Space the seeds according to the instructions on the seed packet. If you do not have a seed packet, think about how large the plant will become and space the seeds accordingly. Mark the furrow with a labeled stake.

Transplanting

Plants that are going to be transplanted, not direct seeded, come in individual cells or pots. A high-quality transplant will have roots that are well-developed and growing tightly around the potting soil they are in.

Before transplanting into your garden, make sure the plants have been watered recently. The potting soil should be moist. Do not transplant on a windy day or in the middle of a hot day. The best time to transplant is on a cloudy day or later in the afternoon after the heat of the day has passed. You can also transplant early in the morning while the weather is cool.

Dig a hole using a small shovel or trowel. If the soil is very loose, you may be able to use your hand. The size of the hole will depend on the size of the transplants. You want the entire root

To seed directly, take one seed at a time and hold between your finger and thumb (top). Place one seed at a time in the furrow you created (bottom). After you have placed the seeds in the furrow, cover them lightly with soil.

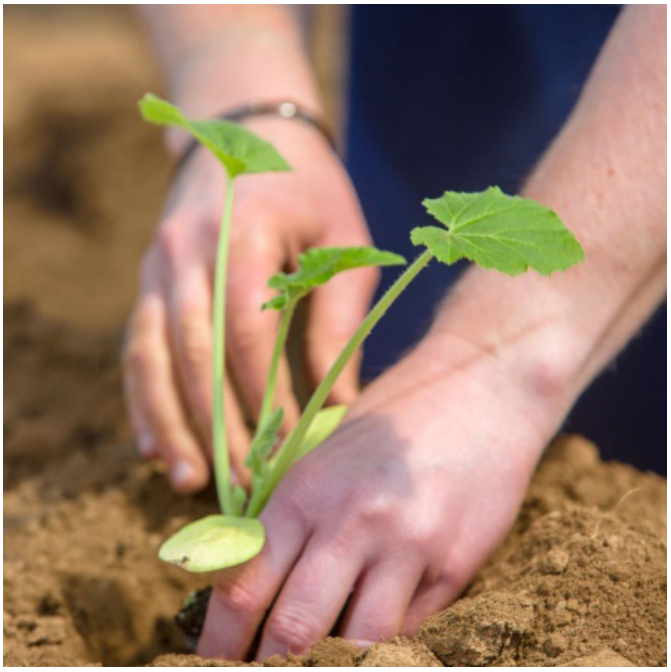
system to fit comfortably inside the hole. Repeat this step down the middle of the raised bed. The distance between your transplants will depend on what you are planting.

Gently pull on the lower stem of the plant to remove the transplant from the plastic tray. Squeeze the roots to loosen them. Place the transplant into the hole. Use the soil from the hole you dug to fill in around the plant. The plant should stand straight up on its own once the hole is filled in and the roots are covered. The soil should be firm around the plant, but not hard or packed.

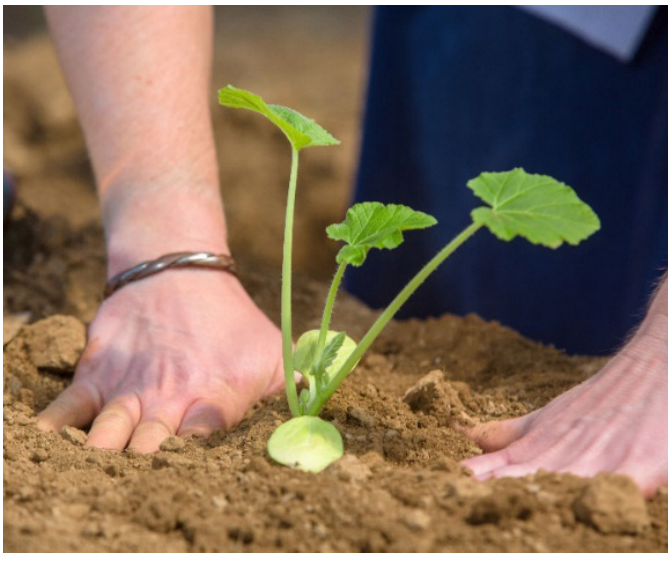
Watering

Most vegetable crops need about 1 inch of water per week. Without rain, you will need to water your garden. To tell whether your plants need to be watered, push your finger about 1 to 2 inches

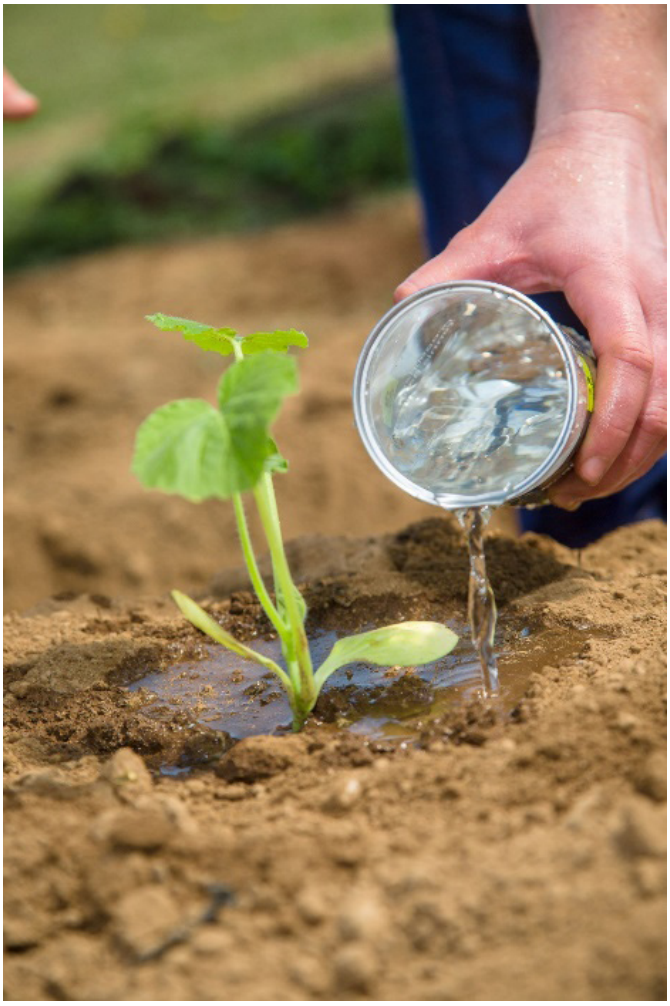
A healthy transplant showing several *true leaves* and the roots growing around the potting soil.



Place the transplant in the hole and make sure the hole is deep enough for the roots.



Fill the hole with the remaining soil and press firmly around the transplant.



Water the base of the plant, not the leaves.

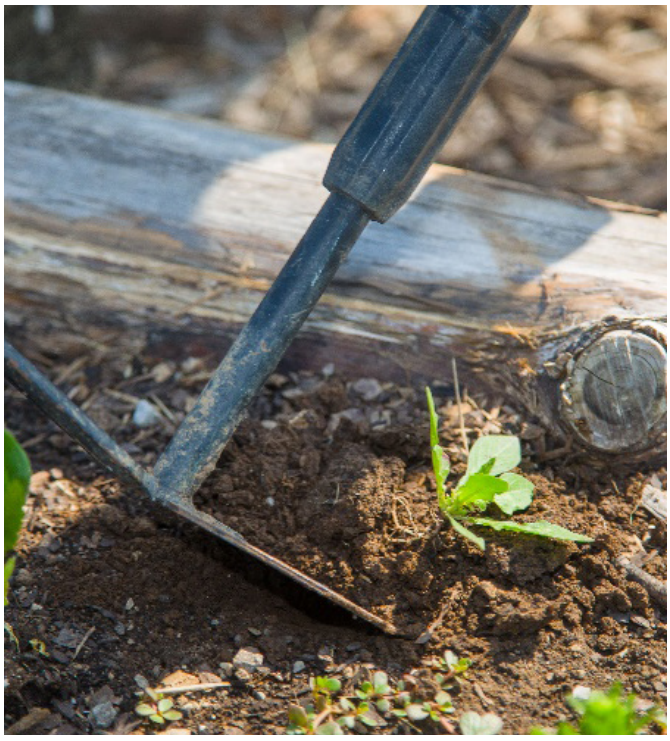
down into the soil near the base of a plant, about 1 to 2 inches out from the stem. Do this in several places in the garden. The surface of the soil may look dry but be moist underneath. If the soil feels dry or not very moist, provide water. When watering, aim for the roots of the plant, not the leaves or top portion. The roots take up the water, not the leaves. Newly transplanted crops may need to watered more frequently to help them become established in the soil.

If plant leaves are drooping or sagging close to the soil, the plant is wilting and most likely needs water. If you are using a sprinkler or garden hose, water your garden early in the day before it gets too hot. This will allow the plants to take up water before they are stressed, and the water that lands on the leaves will have the whole day to roll off or evaporate. The longer the leaves stay wet, the more likely they are to get fungal disease.

Managing weeds

Weeds compete with your garden plants for nutrients and water. If weeds grow too big, they block sunlight from plants and can attract certain plant diseases or insect pests. The best way to control weeds is to keep them from going to seed. Use a garden hoe or your hands while the weeds are small. If possible, try to remove the entire weed, even its roots. Once you have pulled the weeds, remove them from the garden area entirely. Sometimes weeds can re-root themselves or their seeds can grow in the garden even after the weed has been pulled up.

Mulching can also help control weeds. Mulch placed between plants shades the soil and helps prevent weeds from sprouting. Several types of mulch can be used, such as leaves or grass clippings. Large leaves should be shredded so they don't form a water barrier on the surface of the soil. Paper materials such as newspaper or cardboard make good mulch. These mulches will also add organic matter to the soil if they are turned under with a shovel at the end of the growing season.



Remove weeds with a hoe by scratching the soil under the weed and pulling up. This method removes the entire plant, including the roots.

Cleaning up the garden

When a crop has finished growing, remove the plants from the garden and throw them away or bury them. This will help get rid of any insects or diseases that have survived on the plants. If you leave plants in the garden over the winter, they might spread pests or diseases to the next year's plantings. Many insects and diseases spend the winter months on dead crops. Removing crops when they are finished will also speed up your work to get the garden ready in the spring.

You may want to work some fresh manure into your soil in the fall after the garden is finished. Using fresh manure in the spring can introduce weed seed or plant pathogens into your soil, but applying it in the fall gives it time to break down before your next spring planting. And your garden will be easier to work in the spring.

For more information on home gardening, contact your county extension agent or consult the UK Cooperative Extension publication Growing Vegetables at Home in Kentucky (ID-128).

References for glossary

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Glossary

Cole crop plants—vegetables in the genus Brassica, such as cauliflower, broccoli, kale, and mustards.

Compost—organic material that has been well decomposed by organisms under conditions of good aeration and high temperatures often added to the soil to improve plant growth.

Container garden—a form of gardening where plants are grown in containers rather than directly in the ground.

Cover crop—a crop grown to protect the soil from erosion during the time of year when it would normally be bare, or a crop grown for building up or maintaining soil health; not a crop grown to eat or sell.

Crop rotation—planting a different species of plant in an area of the garden each year to prevent buildup of diseases or insects associated with particular crops.

Direct seeding—putting a seed in the soil where it will stay and grow into a mature plant.

Fertilizer—material that adds nutrients to soil.

Furrow—a narrow trench in the soil.

Germination—the sprouting of a seed.

Manure—waste from animals used to enrich soil.

Maturity or harvest date—the number of days from when a plant is seeded or transplanted until it is ready to harvest.

Mulch—any substance, such as straw, used to protect roots of plants from heat, cold, or drought, or to keep fruit clean.

Organic matter—plant and animal material that is either broken down or in the process of breaking down.

Raised bed—a form of gardening where the soil is formed into beds above ground. Soil can be free standing or enclosed in a frame of wood, block, concrete, or brick.

Seed leaf—the first leaf that emerges from the seed.

Seeding—sowing seeds; putting seed in soil.

Seedling—a young plant grown from seed.

Soil testing—a test that determines what nutrients are needed in the soil.

Thin/thinning—removal of excess seedlings spaced too closely together for optimum growth.

Till/tilling—to work the soil for the purpose of loosening the soil, creating a good seed bed, controlling weeds, or incorporating fertilizer.

Transplant—a young plant grown inside for later planting outside.

Transplanting—moving a plant from one location to another.

True leaves—the second set of leaves produced by a seedling; these leaves look similar to the normal leaves of the mature plant.

Wilting—drooping or limpness in plants.

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