

## Making and Using Compost

Compost is a fun and significant way to recycle kitchen and garden scraps. It takes organic waste and turns it into nutrient-rich humus that can be used by plants. Composting is a way of returning to the soil what we deplete with traditional gardening practices.

The most significant benefit of adding organic material (compost) to your soil is that it improves the soil itself. Organic material improves the looseness and workability of soil. If your soil is composed of a heavy clay, compost can improve the structure, although it cannot change the composition. Improved structure makes it easier for plant roots to penetrate and grow. If the soils in your garden are sandy, compost will improve the ability of these soils to hold water as well as giving a boost to fertility.

In our flower beds and vegetable gardens we are constantly planting, harvesting and removing plant materials. All of these actions remove nutrients stored in the soil. In nature these nutrients would be returned to the soil with the natural decomposition of plant material. Composting takes that organic material and in a confined space (composting bin) re-creates these processes under optimal conditions. Compost added during tilling or planting, in the spring or fall, will add nutrients that plants can use year-round.

If you're adding compost at planting the best method is to add compost to the bottom of the trench or hole, depending on your planting method. For perennials, tomatoes and shrubs this allows nutrients to be released in the area that roots are developing. For seed planting, compost may be added by "top dressing" or sprinkling it over the top of the soil. This will prevent soil crusting which makes it challenging for new seedlings to break through the soil surface.

A "compost tea" can be made by mixing equal parts compost and water and pouring this liquid over new plants or newly seeded plants. This tea serves as a substitute for soluble fertilizers and the remaining compost can be added to the garden later on.

A lesser known use for compost is mulch. Mulch reduces weeds and soil crusting, holds in soil moisture and regulates soil temperatures. Compost can provide all of these benefits just by applying 2-3 inches around vegetables, flowers, trees or shrubs.

Although leaving grass clippings on your lawn helps reduce the amount of fertilizer it needs, in the same way composting does, many homeowners don't like the look of a newly mowed lawn with clumps of cut grass on top. Adding a fine layer of compost (top-dressing) each year before planting, or reseeding, your lawn, returns some of these nutrients. Make sure you only add a thin layer to ensure even seed germination.

As with all good things, there can be situations where compost isn't appropriate. An abundance of nutrients, which some compost provides, can cause rapid plant growth with limited fruit production. If you add compost that is not completely decomposed it may continue to break down in your soil and tie up soil nutrients in the process. This is especially true with spring applications of compost. Some insects prefer the dark, moist compost and may enjoy a top dressing of compost. Primarily sowbugs and squash bugs, both of which are controllable with other measures. To avoid issues, make sure water can penetrate top dressed compost. If you're seeing a dense, impenetrable layer on top of your soil, add more soil to the compost during the creation process.

Quick composting is a method of composting for those of us who have a large amount of organic material, and limited time to turn that material into compost. With only a few requirements, quick composting gives you humus (the nutrient-rich output of composting) to add to your soil in as little as two weeks.

To begin your quick composting pile, you will need similar components to your standard pile; 4 parts organic materials, 1 part garden soil and high-nitrogen fertilizer. Organic materials include shredded leaves, grass clippings or other plant materials. Make sure you don't compost any plants with insect or disease issues as these could survive the quick composting process. For fertilizer, you may use a commercial product, bloodmeal or something similar.

The first requirement of quick composting is size. Your pile must be at least 3ft long and 3ft wide. This allows the pile to heat up to properly break down materials. The pile shouldn't be too large either as oxygen is needed by microorganisms to decompose the materials. These microorganisms will only naturally penetrate the pile 18-24 inches from all directions.

Chopping or shredding the materials you add to your pile is another key component in aiding speedy decomposition. These smaller pieces have a greater surface area resulting in a rapid breakdown.

Blending together your compost components ensures that all parts are in contact with one another. This can be accomplished by feeding the raw materials through a shredder or chipper or mixing them in a bag or within the pile. Contact between these ingredients creates the atmosphere microorganisms need to break them down. After ingredients have been blended together, moisten them thoroughly.

The final component of quick composting is frequent turning. The compost pile must be turned every 2-3 days with a spading fork or similar tool. When you're not working with your pile it should be covered loosely with plastic or if it's in a bin, line it with plastic. The goal with covering is to reduce moisture loss while also allowing for some air movement. Oxygen is crucial to the microorganisms decomposing the materials.

If you notice your pile developing an off aroma, open it up, allow it to aerate and agitate it. This will allow oxygen to penetrate the organic matter for the microorganisms. Your pile should remain moist, but not saturated for the entire two weeks. Letting it dry completely, or keeping it heavily saturated will delay the process significantly. After two weeks you should notice your pile temperature decrease (you will feel the heat when you're turning it) and that the volume will be halved. Once this stage is reached, you can safely add the humus to your garden!

For more information on composting, including our troubleshooting guide, visit our website: [www.shawnee.ksu.edu](http://www.shawnee.ksu.edu)