

# Home Composting

TURN WASTE  
INTO A MATERIAL  
TO IMPROVE  
YOUR SOIL.

COMPOST

5

Composting is a microbial process that converts waste from your kitchen and yard, such as fruit and vegetable peelings, grass clippings and leaves, into a more usable organic soil amendment

or mulch. Gardeners have used compost for centuries to increase soil organic matter, to improve soil's physical properties, and to supply some of essential nutrients for plant growth.

## THE BENEFITS OF USING COMPOST

**As a soil amendment:** Compost loosens and aerates soil, and improves water and nutrient retention. By adding 1-2" of compost to the top 6-8" of garden, you can improve structure over time, making it easier to work while creating a better environment for plant growth. Compost also improves drainage and aeration in heavy clay soils. Sandy soils benefit from compost as well, it improves moisture-holding capacity.

Adding compost to your soil will attract beneficial organisms such as earthworms and microorganisms, that break down organic matter naturally. Compost can also improve seedling emergence and water infiltration by reducing the potential for soil crusting.

**As a mulch:** Adding 6-8" of compost to garden beds can suppress weeds by blocking light to the soil surface. The mulch will decompose, adding organic matter to the soil. Compost also reduces the potential for erosion by protecting the soil surface from wind and the impact of hard rain.



Using compost as mulch can reduce moisture loss. Top dressing your lawn with compost to conserve moisture and add organic matter. Use compost in window boxes and container gardens where rapid moisture loss is a factor. Compost may also keep soils cooler in the summer and warmer in the winter.

## MATERIALS TO COMPOST

Many of us understand what we should compost, but we sometimes get confusing information about what we should NOT compost. Composting is a microbial process and microbes – also called microorganisms – will not decompose synthetic products such as plastics or glass. Meat, dairy, grease and oil can attract critters to your compost bin and, in an urban setting where homes are close together, can cause foul odors (and possibly complaints from your neighbors). Feces from pets may carry pathogens that could cause health problems and therefore should not be included in your compost. Weeds with seeds should be composted separately to reduce the potential for the weed seeds in your compost. Large pieces of wood do not compost quickly and require a lot of energy to decompose, so wood should be chipped or shredded and used minimally. Other organic materials that can be added to enhance the nutritive value of compost are blood and bone meal, cotton seed meal, livestock manure, and aquatic plants.

### What to Compost

- **Yard waste:** grass clippings, plant trimmings, leaves, weeds without seeds, pine needles;
- **Kitchen waste:** fruit and vegetable scraps, coffee grounds, tea bags, egg shells, potato peelings;
- Small amounts of sawdust, wood chips, and small sticks;
- **Wood ashes:** use no more than 1 cup per bushel of compost. Ashes act as a lime source and affect the pH of your compost.

### What NOT to Compost

- **Meat and dairy:** meat pieces, dairy products, bones, fish scraps, raw eggs;
- **Fats:** cooking oil, drippings and grease;
- **Synthetics:** motor oil, glass, plastic, Styrofoam, polyester;
- Feces from dogs, cats and humans;
- Weeds with seeds;
- Large pieces of wood.

### What about cuttings treated with herbicides?

Studies have shown that low levels of herbicides are detectable even in well-decomposed yard trimmings, but these levels are less than 1% of the level found in trimmings prior to composting and is not considered a risk for using in the garden. Ideally, grass clippings from lawns treated with herbicides should be left on the lawn to decompose, also allowing the herbicides to degrade.

## BUILDING YOUR OWN COMPOST PILE

### **TO DO/Choose a compost bin design:**

You can find dozens of different styles of compost bins on the Internet and in garden supply catalogs, as well as many plans for building your own bin. Your bin can be as simple as a few stakes and chicken wire or as advanced as a tumbler-style bin.

Choosing a bin can be a bit overwhelming, so here are some points to remember:

- The bin should be sturdy and have slits or spaces on the sides for air circulation. It should be made of a rot-resistant material such as cedar, plastic, concrete block or wire. The bin can be square or round.
- The lid or cover should fit or lock firmly to keep out critters and not be blown off by strong wind.
- The opening from which you retrieve the finished compost should be large and easily accessible with a spade or garden fork.
- Your bin should be no smaller than 3' x 3' x 3' and no larger than 5' x 5' x 5'. Smaller bins do not allow for enough material and larger bins are too big to manage successfully.

### **TO DO/Find a place for your compost bin:**

Location, location, location! Choose a place in your yard where your bin is easily accessible, but not an eyesore for your neighbors. Some people incorporate a bin into the design of their landscape, sometimes planting their garden right around the bin! Select a spot where your bin gets some sun and heats up your pile. Locating your bin in full sun will heat up the compost pile faster, but it will dry out more often, requiring periodic watering. Some shade will prevent this.

Good drainage is important for your compost bin as is accessibility. You should have enough room around the bin to allow you to turn the compost, and a water source nearby in case you need to add moisture.

Each city has its own ordinances about composting. Check with your city recycling coordinator for details concerning your local laws.

## **THE RECIPE FOR A SUCCESSFUL COMPOST PILE:**

There are four basic ingredients for good compost: carbon, nitrogen, oxygen and moisture.

In the composting process, microorganisms use carbon for energy and nitrogen to make proteins. For home composting, this translates to a proportion of three parts carbon (brown materials) and to one part nitrogen (green materials). Given this “diet,” microorganisms can make short work of your compost.

*Successful Compost Pile, continued next page*

*Oxygen and moisture* are important for the health and activity of the microorganisms. An active compost pile – one in which microorganisms are actively converting organic materials to compost – has good air circulation and moisture consistency of a wrung-out sponge. If a pile is compacted, or too wet or too dry, the microorganisms will cease their work, making the pile passive.

*Air circulation* can be accomplished through turning your pile with a garden fork or – in the case of the tumbler bin models – turning the whole bin! Do not allow the pile to become soggy. This causes anaerobic conditions (meaning no air) and usually will produce a foul smell. A pile that is too wet can be due to excess water from rain or from too much green material. This condition can be corrected by adding carbon material and turning the pile to increase the oxygen level.

### **TO DO/Layer your materials:**

Start your pile with a six-inch layer of brown materials, such as twigs and/or cornstalks. This will help elevate your pile and allow air to circulate at the base of the pile. Then alternate layers of brown materials with green materials, adding layers of garden soil or finished compost. This layer will provide the microorganisms required to speed up the decomposition. Add a little water to dampen the pile and you are on your way!

### **TO DO/Maintain your compost pile:**

As your compost pile begins the decomposition process, the temperature of the pile will begin to rise, especially in the center of the pile. A well-built pile may reach temperatures from 130°–160° F in just a few days. The pile will begin to cool in four to five days and a depression may appear in the middle of the pile. At this point, it is time to turn the pile. Use a garden fork and turn the outside of the pile inward. Steam may rise from the pile – this is a sign that the decomposition process is working. If the pile is dry, add a small amount of water. If it is too wet, add some dry material such as dry leaves or cornstalks. Cover the pile and it will start to re-heat.

*Turn your pile on a regular basis* – about once a week. Doing so will speed up the decomposition process and you will have compost sooner.

Browns ( <i>carbon</i> )	<b>3 TO 1</b>	Greens ( <i>nitrogen</i> )
straw, sawdust, twigs, dried grasses, leaves		grass clippings, green leaves, plant trimmings, fruit and vegetable peelings, coffee grounds

## TO DO/Identify when your compost is finished:

Under warm conditions, a well-tended compost pile will be finished and ready for use in about 2-4 months. Left untended, a bin may take a year to decompose. A finished compost pile is about half its original size, is loose, dark and crumbly, and it smells good – like fresh soil. None of the materials should be identifiable. You can also tell your pile is composted when it is no longer heating up. This is a good indication the composting process is complete and the finished product is ready for use.

## TIPS FOR HOME COMPOSTING

Keep your compost pile at the right moisture level.

If your compost pile has a bad odor, it lacks air circulation or it may be too wet.

Try turning the pile and/or adding dry material to the pile.

If your compost pile is not heating up, it may need more nitrogen or “green” material. Add grass clippings or a nitrogen fertilizer to the pile.

Bury kitchen scraps at least 8" deep in the compost pile to discourage critters.

You can keep adding to your compost pile as it is composting.

However, you may want to start a second pile if you have enough materials.

Add a layer of straw or hay to the top of your compost pile in the winter to keep it warm and keep on composting!

The best pile is made up of a variety of materials.

The smaller the pieces of compost material, the faster the pile will decompose.

## FOR MORE INFORMATION:

–The University of Minnesota Extension Service offers extensive composting resources, available in print or online at [www.extension.umn.edu](http://www.extension.umn.edu)

–“Composting and Mulching: A Guide to Managing Organic Yard Wastes”

(Extension Publication BU-03296) available online at

[www.extension.umn.edu/distribution/horticulture/DG3296.html](http://www.extension.umn.edu/distribution/horticulture/DG3296.html)