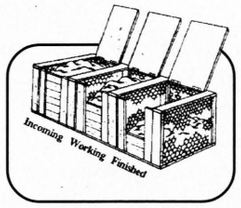


Also, there are a number of commercial composting systems available through mail order or at the local hardware store. Some are more attractive than homemade bins and may find greater acceptance in some neighborhoods. In some cases, municipalities may provide composting bins as an incentive to reduce the waste stream. Because there are so many bins on the market now, it is wise to shop around for one that fits your needs. Look for sturdy construction and a realistic size that can handle all your leaves, grass, kitchen and garden scraps. Many manufacturers are also making bins of recycled plastic

## Be Step-Wise

1) Ideally, the compost pile should be placed in a semi-shady location near a water source. Keep in mind neighbors who may object to a compost pile within their view.

2) Gather the materials to be composted, keeping a good mix of greens and browns in mind. Place coarse materials, such as corn stalks or straw, in the bin first to allow air into the pile.

3) Materials may either be mixed before placing them in the bin or layered. Layer materials by placing a 4- to 6 - inch layer of high carbon materials (leaves, sawdust) in the bin. On top of this place several inches of high nitrogen material (grass clippings, kitchen scraps).

4) Water each layer.

5) Continue layering or placing already mixed materials in the bin until it is full. Remember to water each layer.

6) The pile should reach 110 F in just a few days. If it does not heat up it needs more nitrogen. Turn the pile after one week and every two weeks after that.

# Composting Alternatives

### "Cool" Composting

Compost can also be made in a less labor-intensive manner by simply gathering materials in a bin and allowing the natural decomposition to take place without help. It is best to start this type of system in the fall when leaves are plentiful. Making compost by this method takes time, usually about a year. But, if you fill a bin each fall, by the following fall you will have finished compost. Turning the material speeds up the process.

## Sheet Composting

Sheet composting returns organic material to the soil by simply tilling it in. This works especially well in the fall, after the vegetable garden has finished producing and there is an overabundance of leaves and garden scraps. An easy way to do this in the fall is to rake leaves onto the garden area, till them in, and sow a cover crop such as rye or wheat to prevent soil loss from erosion and to add organic matter for next year's garden. For established perennial gardens, till or spade the materials lightly into the garden. By the following spring, the organic materials will be decomposed and blended into the soil and the soil will be noticeably looser. This method can work during the growing season as well by tilling grass clippings and kitchen scraps into unused areas of the garden.

## What About Mulching?

Grass clippings, leaves and woody wastes can be used as mulch to increase water retention and for weed and erosion control. Simply spread the materials around the base of plants, and as they decompose they will enrich the soil. Woody materials should be chopped or shredded before use, but grass clippings and leaves can be used as is. Take care not to place fresh grass clippings near the stems of tender plants as they will produce heat when they decompose.

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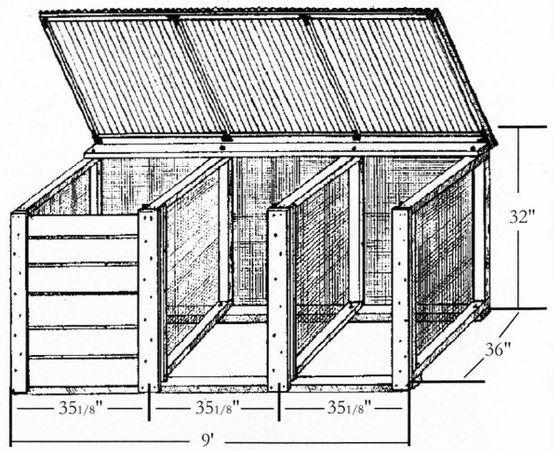


**Wood and wire 3- bin system**


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For more information on composting, contact your local Cooperative Extension Office.


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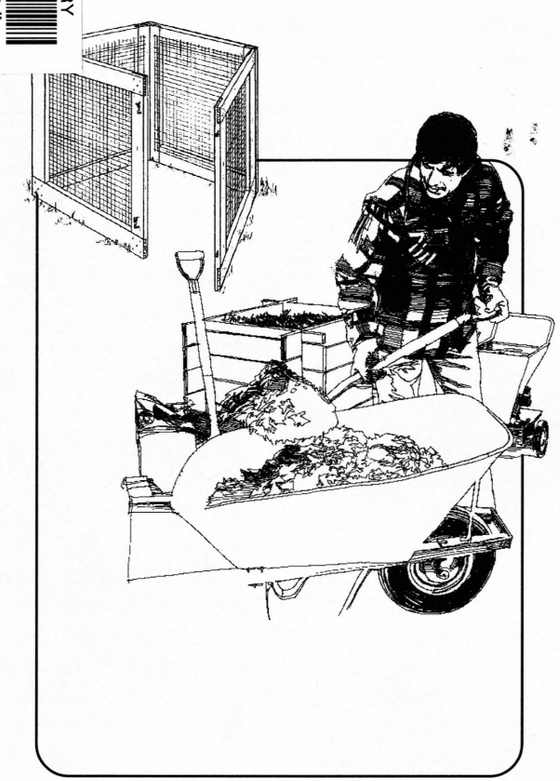
Virginia Cooperative Extension

# Backyard Composting



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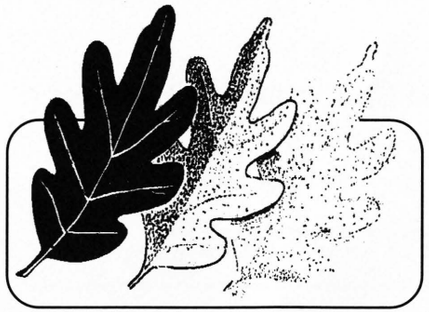


## What is Composting?

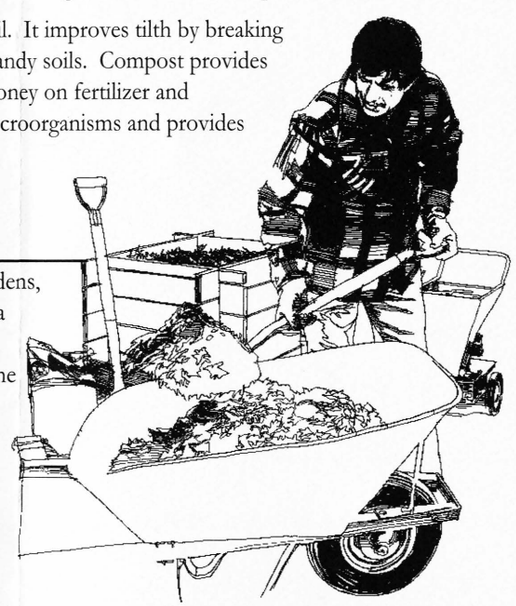
Composting is the controlled breakdown of carbon-containing materials — like yard trimmings, kitchen scraps and paper — into stable organic matter. The end-product — compost — is a dark, crumbly, earthy-smelling material that can substitute for peat moss or as a soil amendment. We control the process by providing appropriate conditions for the microorganisms that transform the "waste materials" into compost.

## Why Should I Make Compost?

Many states are rapidly running out of landfill space. Nearly one-quarter of what goes into landfills is leaves, grass and food wastes. Composting is a practical and convenient way to handle these wastes. Composting is recycling! Just as we recycle aluminum cans, plastic, glass, and paper to save landfill space and protect our natural resources, we can recycle the nutrients in yard wastes and kitchen scraps back to the soil — where they belong.

In about the same amount of time it takes to rake leaves to the curb or to bag and haul grass clippings, you could layer them in a compost bin. Rather than throwing vegetable peels, lettuce leaves and coffee grounds in the trash, they can be set aside and emptied daily into the compost bin along with the leaves and grass clippings. Don't put meat, bones or oily foods such as cheese or butter in the compost bin, as they tend to attract dogs, rodents and other pests.

The resulting compost provides many benefits to your soil. It improves tilth by breaking up heavy clay and increases the moisture-holding capacity of sandy soils. Compost provides some nutrients and helps soil retain nutrients longer, saving money on fertilizer and preserving our natural resources. It also contains beneficial microorganisms and provides food for earthworms and other soil inhabitants.



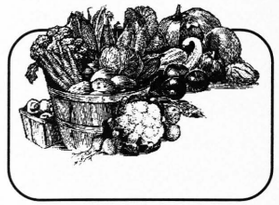
## How Can I Use Compost?

Mix compost with soil to enrich flower and vegetable gardens, use it to improve the soil around trees and shrubs, or use it as a mulch. Screen compost by separating the larger particles and any uncomposted materials from the finer ones and add it to the potting mix for house plants or use it as a topdressing for lawns. Compost "tea" can be made by soaking compost in a burlap or cheesecloth bag steeped in water. This weak nutrient solution can then be used as a starter solution for transplanting young seedlings.

# The Essentials of Composting

### Micro and Macro-organisms

There are a number of microorganisms, such as bacteria, fungi and actinomycetes, that break down organic matter in a compost pile. They live on the water, nitrogen and carbon in the organic material. Their bodily functions generate heat, which is conserved by the mass of the pile. Later in the cycle, centipedes, millipedes, beetles, mites and earthworms do their parts to continue the decomposition process.



### Materials

Many items in your refrigerator or growing in your yard are potential food for tiny decomposers. Organic materials contain carbon and nitrogen — nutrients which provide energy and growth to the microorganisms. Leaves, sawdust and straw are high in carbon. Grass clippings, manures and vegetable scraps are higher in nitrogen. It may help to think of these materials as "greens" and "browns." Greens, such as grass clippings, are high in nitrogen. Browns, such as leaves or sawdust, contain high amounts of carbon. Mixing greens and browns together gives the microbes the right balance of nutrients so they can best do their job. Too many browns (or too much carbon) will slow down the process. Adding some greens (or high nitrogen materials) will speed up decay and produce compost in less time. Experiment to find the right combination of materials for your compost pile.

### Moisture and Aeration

The microbial decomposers in your compost pile require water and oxygen to thrive. These microbes function best when the materials are about as wet as a wrung-out sponge and are provided with plenty of air. Too much water will cause anaerobic (without oxygen) conditions and kill the beneficial microbes. Anaerobic decomposition also leads to the production of compounds toxic to plants, and creates odor problems from gases like ammonia. Compost that has decomposed anaerobically should be exposed to air to complete the composting process and to destroy any plant toxic compounds before it is used. Too little moisture will slow decomposition. Whenever you add water, mix the material to distribute the moisture evenly.

### Time and Temperature

A compost pile may reach 140 F or higher during decomposition. This temperature kills weed seeds, insect larvae and possible plant pathogens. Turning or mixing the pile helps dissipate heat, which can kill the beneficial microbes at temperatures above 160 F, in addition to aerating, or supplying oxygen to the microbes. The time required to produce compost depends on the kind and coarseness of the materials, volume of the pile and availability of moisture and air. It can take as little as several weeks under proper management or as long as several years if minimum attention is paid to details.

### How To Begin - First Choose A Bin

A simple compost bin of wire or snow fencing, wooden slats, shipping pallets, or even a 55 gallon drum will provide a suitable area to layer organic wastes and turn them into a soil conditioner. Compost can be made in open piles. However, bin systems help keep piles neat and are more appropriate for many urban situations. The bin should be large enough to contain a pile capable of holding heat while small enough to allow air to the center of the pile. Generally, the minimum dimensions should be 3' x 3' x 3' to hold heat. If the bin is too large, not only will airflow to the center of the pile be restricted, but turning it will become quite a chore. Turning the pile is probably the most important, and unfortunately, most ignored step in producing compost.