

# Backyard Composting

## What is Compost?

Composting is a simple, natural biological process that breaks down organic waste such as leaves, grass clippings, vegetable and fruit scraps, wood chips, straw and small twigs, into a crumbly, dark-brown, earthy-smelling humus material with soil-like texture. It is the breaking down of yard

waste by bacteria, fungi, microbes and insects. The microbes need water, air and food to start and continue the decomposition process. Compost is the natural recycling of organic waste, returning organic matter to the soil. . . . giving back to the soil what we've taken from it.



## Benefits of Composting

### Soil Enhancement

Compost supplies nutrients and can be used to enrich your flower and vegetable gardens, improve the soil around trees and shrubs, and as a soil amendment for house plants and planter

boxes. It stimulates

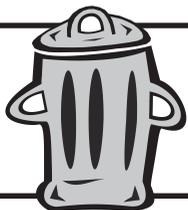
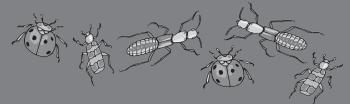
seed germination and plant growth, improves heat resistance and reduces susceptibility to pest attacks. The abundant beneficial microbes in compost contain most of the nutrients needed by plants. As these microbes die, otherwise unavailable nutrients are provided to plants slowly over the entire growing season.

### Increases capacity to hold water

Compost acts like a sponge and improves soil structure, resulting in greater water retention, increased infiltration of water, less runoff, increased plant vigor during the dry season, lowered irrigation costs, and reduced crusting problems. It also helps to provide resistance to erosion of sandy soil.

### Disease Suppression

By improving the health and balance of the soil, compost use can aid plants in resisting many diseases as well as insect and weed pressures. The Rodale Book of Composting tells us, "Among the more exciting of recent developments is the use of custom composts that suppress specific disease organisms."



### Waste disposal reduction

Backyard composting reduces the volume of your yard waste requiring disposal, thus saving valuable landfill space. Yard waste comprises approximately twenty per cent of the average person's garbage.

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## Eliminates chemical fertilizers

Many citizens have the habit of using too much fertilizer or use the wrong mix. This results in not only a waste of money, but all too often the excess fertilizer ends up in our lakes, streams or groundwater where it can pollute drinking water supplies. Also, improper use of

fertilizer can burn your grass and plants or upset the balance of your lawn's ecosystem, inviting disease and even the death of your grass or plants. Compost is naturally balanced, turning to rich crumbly soil because the balance of vegetable matter is just right.



## Getting Started

### Choosing a Bin

If you are not worried about aesthetics, a container is not really necessary. You can simply rake your ingredients into a mound. All bins have advantages and disadvantages, but as a general rule they should be at least 3'x3'x3' but no larger than 5'x5'x5'. The bin you choose should be constructed of material that will not restrict the air flow, such as wire mesh or louvered boards. A good rule of thumb is: KEEP IT SIMPLE. Wooden pallets, chicken wire, bricks or concrete blocks are all good materials to use for your bin. There are also a variety of commercial composting bins available. It is easier to work with the pile if one side is left open.

### Location

Your compost pile should be located on fairly level ground, preferably in the sun to facilitate heating the pile. The area used should have good drainage, with no standing puddles at any time of year, but should be near a water source. It should be open to give organisms access to the pile. If you build the compost pile near trees or other woody plants with active surface feeding roots, place a sheet of plastic film on the ground under the pile. This will stop roots from coming up into the compost.

## Composting Essentials

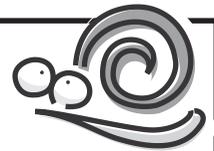
### Biology

The compost pile is really a teeming microbial farm. Bacteria start the process of decaying organic matter, breaking down plant tissue. They are also the most numerous and effective composters. Fungi and protozoans soon join the bacteria and

somewhat later in the cycle, centipedes, millipedes, beetles and earthworms do their part. Compost should be ready to use in six to twelve months, depending on the season, type of materials, turning frequency, etc.

### Surface Area

The more surface area the microorganisms have to work on, the faster the materials will decompose. It's like a block of ice in the sun - slow to melt when it's large, but melting very quickly when broken into smaller pieces. Chopping your garden wastes with a shovel or machete, or running them through a shredding machine, will speed the composting process.



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## Volume

A large compost pile will insulate itself and hold the heat of microbial activity. Its center will be warmer than its edges. Piles smaller than three feet cubed will have trouble holding this heat, while piles larger than five feet cubed don't allow enough air to reach the microbes at the center. These proportions are of importance only if your goal is a fast, hot compost. You can expect an approximate 30% volume reduction in the first week.

## Moisture

The microbes in a compost pile function best when the compost materials are about as moist as a wrung-out sponge. Extremes of sun or rain can disrupt the moisture balance in your pile. Therefore, you may need to add water to your compost pile if it is too dry or cover the pile (burlap works well) if it is receiving too much

moisture. During dry spells, add water to the pile manually. You may have to dismantle the pile in order to water the dry pockets of material that are hard to reach. If the moisture content is greater than 60%, you will run the risk of having the foul odors of an anaerobic pile.

## Aeration

Good aeration is essential to the process of decomposition in your compost pile. You can raise the pile off the ground with light brush trimmings to start with. Compost piles comprised primarily of grass clippings do not provide spaces for the air to circulate through the pile.



## Materials for Composting

### Introduction

Almost any organic matter can be composted. Since the decomposition of the material is a surface area phenomenon, the material should be reduced to the smallest particles possible. Running the material through a chipper-shredder is ideal. However, if one is not available, yard waste can be spread on the ground and run through a rotary lawn mower several times. Kitchen wastes can be chopped up in a food processor. Large or bulky material can be chopped with a machete. The ideal carbon (browns) to nitrogen (greens) ratio in a compost pile is

around 25:1. If it is much higher than this, the decomposition will be very slow, and nitrogen should be added in some form. In general, materials that are not green such as sawdust, straw, and dried leaves will need a nitrogen addition. Good sources of nitrogen are manure (not from pets), fertilizer and bone meal. Adding two or three pounds of nitrogen supplement to every one hundred pounds of highly carbonaceous raw material will usually bring the C:N ratio down to within reasonable range. The cause of most compost heap "failures" is lack of nitrogen.

### Time and Temperature

Generally speaking, the hotter the pile, the faster the composting. If you use materials with a proper C:N (carbon:nitrogen) ratio, provide a large amount of surface area, a sufficient volume, and see that the moisture and aeration are adequate, you will have a hot, fast compost. If you just want to deal with your yard waste in an inexpensive, easy way, simply maintain a passive compost pile and just leave it be. You don't have to worry about layers, temperature, moisture, etc. A passive pile can take from six months to two years to provide usable compost.



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## Easy compost recipe

Start with a layer of coarse material, like twigs, straw and leaves to allow for air circulation. Add a layer of grass clippings and leaves, mixed with egg shells, coffee grounds, tea bags, fruit and vegetable scraps from your kitchen, along with water and soil or old compost. Always bury or cover food waste when it is added to a compost pile to decrease the likelihood of attracting rodents or flies. Add more leaves, grass clippings and kitchen scraps as they become available. Turn the mixture with a garden fork, mixing the greens and browns together, on a regular basis to provide spaces for air to circulate. Be sure it stays moist, but not soggy. To ensure aerobic decomposition, it is a good idea to drive vent stacks into the center of the pile. These can be bundles of cornstalks, perforated pipe or tubes of wire mesh. Adding a few inches of alfalfa meal or cat litter on top of the “green” layers will absorb odors.



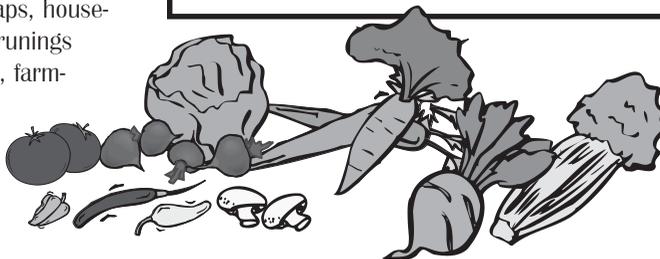
## What to Compost

**BROWNS** (carbonaceous):  
leaves, pine needles, sawdust, shredded newspaper (small amounts), straw, small twigs, wood chips and shavings, corncobs, cornstalks, hay, nutshells, tomato vines and stalks, etc.

**GREENS** (nitrogenous):  
grass clippings (pesticide-free), fruit and vegetable scraps, houseplant trimmings, soft prunings from garden, eggshells, farm-animal manure, spent flowers and plants, coffee and tea grounds, etc.

## What Not to Compost

Stones, meat, fish, bones, dairy products, (human, dog, cat or bird) excrement, weeds spread by runners, weeds gone to seed, large branches or wood chips, treated lumber, non-biodegradables (plastic, metal, glass, etc.), grease, oils or fats, cardboard, diseased plants, pieces of eucalyptus, red cedar or black walnut trees, anything that has been treated with pesticides or herbicides (Pesticides also kill the GOOD bugs!)



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