



# Composting Made Simple



# WHAT IS COMPOSTING?

Composting is the natural decomposition of plant remains and other once-living materials to make an earthy, dark, crumbly substance called compost, that is excellent for adding to houseplants or enriching garden soil. It is the way to recycle your yard and kitchen wastes.

## Environmental Benefits of Composting

Composting provides a free, top-notch soil conditioner that improves plant, garden and lawn growth. Composting...

- ★ Converts waste into a valuable resource
- ★ Helps break down heavy clay and sandy soils
- ★ Helps reduce erosion
- ★ Helps the soil retain moisture
- ★ Improves plant health and growth, increasing yields
- ★ Increases nutritional quality of home grown foods
- ★ Raises the fibre in the soil helping it bind together
- ★ Recycles nutrients back into the soil
- ★ Reduces reliance on land-filling of waste
- ★ Reduces reliance on toxic chemicals & pesticides.
- ★ Reduces water demand of trees and plants
- ★ Encourages a wider diversity of living organisms in your garden.

## What do you need for composting?

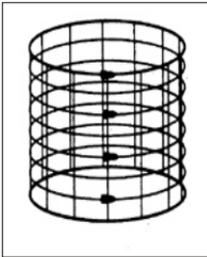
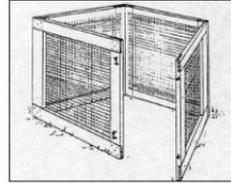
The basic elements needed for composting are organic materials (food scraps and yard waste), air and water in the right amounts. For efficiency, you will also need a container for collecting kitchen scraps; a pitchfork, shovel or other turning device; and a bin for your backyard.



# Compost Bins

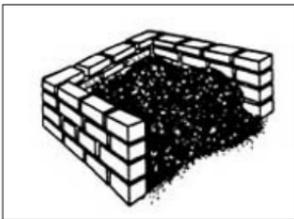
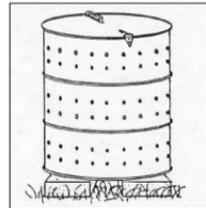
Organic material should be added to the bin as it is generated. Enclosed bins keep out pests and hold heat and moisture. Different bins have different features.

Homemade Bin - Can be made of wire, wood or used pallets. The suggested minimum size for a compost bin is 3 feet by 3 feet by 3 feet.



Circular Wire Bin - This bin can be easily moved to turn piles or to harvest finished compost. Just undo latches, pull the mesh away from compost and set the bin up elsewhere. The pile may then be turned into the bin at its new location and compost can be removed from the bottom.

Barrel Bin - These bins can be made from plastic or metal garbage cans. Take your old 30 gallon garbage can and punch  $\frac{1}{2}$  inch holes in the can every 6 inches or so to provide air circulation.



Block Bin - Compost bins also can be made of brick, cement blocks or rocks.

## Materials to compost

All organic materials contain a mixture of carbon and nitrogen, this is known as the carbon:nitrogen (C:N) ratio. For best results your compost pile requires a balance of carbon and nitrogen. Organic material can be divided into two categories:

"Green" & "Brown". "Green" or "Nitrogen Rich" organic material is wet and often green, like grass clippings or fruit and vegetables.

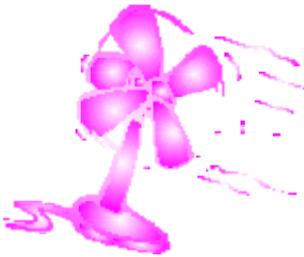
"Brown" or "Carbon Rich" organic material is dry, woody material that is usually brown, such as fallen leaves, and tree-cuttings.

What you can compost		Things to avoid	
From the house	<p><b>Green</b></p> <ul style="list-style-type: none"> <li>Baked goods, including bread</li> <li>Pasta and Rice</li> <li>Tea leaves/bags</li> <li>Coffee grounds and filters</li> <li>Fruit and vegetable scraps</li> </ul>		From the house
	<p><b>Brown</b></p> <ul style="list-style-type: none"> <li>Paper towels/serviettes</li> <li>Egg shells</li> <li>Shredded paper (newspaper, cereal boxes, paper packaging, etc.)</li> </ul>		
From the yard	<p><b>Green</b></p> <ul style="list-style-type: none"> <li>Leaves (leaf mould)</li> <li>Grass Clippings</li> <li>Weeds</li> <li>Plants, plant trimmings (non-diseased)</li> </ul>		From the yard
	<p><b>Brown</b></p> <ul style="list-style-type: none"> <li>Brush (break into smaller pieces)</li> <li>Wood</li> </ul>		
		<ul style="list-style-type: none"> <li>All meat, including chicken</li> <li>Fish and shellfish</li> <li>Bones</li> <li>Fat, grease, oils</li> <li>All dairy products, including cheese</li> <li>Coal Ash</li> </ul>	
		<ul style="list-style-type: none"> <li>Weeds that have gone to seed</li> <li>Diseased plants</li> <li>Large branches, roots, etc.</li> <li>Dog and cat waste</li> <li>Plants previously sprayed with non-degradable pesticides</li> </ul>	

Table showing materials that can be used in composting and materials that should be avoided.

## FACTORS IN COMPOSTING

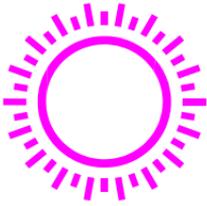
Air: Air is necessary for organic matter to decompose in an aerobic environment. This will result in fast, odour free decomposition. If there is a lack of oxygen in the compost pile, it will begin to smell like rotten eggs. Aerating will eliminate odours and speed up the decomposition process.



Air can be incorporated into your pile in a couple of simple ways: Turn your pile with a pitchfork or shovel or use a special aerating tool. Turning the pile will also help the composting by mixing in new material.

An aeration stack can be used to reduce the necessity of turning the pile, a piece of pipe or a bundle of brush may be used.

This allows air to circulate down into the pile. There is no set rule for how often to turn or aerate your compost. There are many factors that determine the frequency of turning such as: the size of the pile, the types and amounts of material being added to the pile, and how fast you want finished compost, etc. A basic rule of thumb is the more work you put into the compost the faster the compost will work. Turning the pile every week or two will result in faster composting provided that all the other factors in composting are maintained.



Heat: If a compost pile has enough water and oxygen, a good balance of material, and enough volume, temperatures in the pile may reach above 55C. The optimum range is between 30 and 60 °C.

This heat is the result of the work of the micro-organisms that are decomposing the organic material. Higher temperatures mean more work is being done. The compost pile should feel warm or hot to the touch when you dig into it. Temperatures of 55C are desirable because they kill weed seeds and speed up the composting process. The temperature will rise to its highest at the beginning of the decomposing-process, and then dropping to approx. 30°C.



Moisture: Moisture is needed to maintain composting activity in your pile. The micro-organisms that decompose the organic matter need moisture to move around and break down the material.

A good rule of thumb is to keep your pile about as moist as a well-wrung sponge. A good way to test the moisture level is to take some compost and squeeze it in your fist, you should get a couple of drops of water coming through your fingers. If the pile becomes too dry, composting activity will slow down and eventually stop. Adding moisture to the pile is easy: use a hose or watering can. Turn the pile as you add water to allow for even distribution of moisture. Another simple way of adding moisture is to leave the lid off during rain storms (providing you have a lid on your composter). If the pile gets too wet, it may begin to smell like rotten eggs. There are a couple of ways to fix the problem: turn the pile to allow excess moisture to evaporate, add some dry(carbon) materials to soak up excess moisture.

## How long does composting take?

The length of time to compost organic matter varies greatly due to all the different factors involved. If you meet all the nutritional needs of the pile, shred the materials being used, maintain the optimum moisture level, and turn the pile every week, then compost can be ready in as little as two or three months. On average, by adding material as it is generated, turning the pile occasionally and making sure that the moisture level is sufficient, it takes about 5-6 months to produce compost that is ready for use.



## Building your Pile



When you are first building your compost pile, it is a good idea to layer the materials being put in. Start with a layer of twigs or other coarse materials at the bottom of the composter. The layer should be at least 5cm thick. This will allow air to get to the pile from below. Next add a layer of brown material followed by a layer of green material. Each of these layers should be between 5-10cm thick.

Add a thin layer (no more than 2cm) of your own garden soil which will introduce micro-organisms to the pile. This layering method is a good way of getting the composting processes



started. After a few days you can begin combining the materials, by either turning the compost or just adding materials to your composter as you accumulate them. When adding fresh material, especially kitchen scraps it is a good idea to bury it into the compost pile. Or cover the fresh material with a thin layer of soil or some brown material. Doing this will reduce any problems with pests such as fruit flies. Remember try to use twice as much brown material as green material. when adding to the compost pile. It is advisable to try to mix coarse and fine materials to avoid compaction of the pile.

Helpful Hint If you want to activate our pile, try adding some manure, high nitrogen fertilizer or grass clippings.

## When Is Compost Ready?

Using compost before it is ready can damage plants. Undecayed “brown” materials in the soil can temporarily reduce plant-available nitrogen. Undecayed “green” materials can harbour pests and diseases. Immature compost can also introduce weed seeds and root-damaging organic acids.

Compost is ready when...

- ▶▶▶ it smells earthy, not sour, putrid, or like ammonia
- ▶▶▶ it no longer heats up after it is turned or wetted
- ▶▶▶ it looks like dark soil
- ▶▶▶ it is crumbly, and not identifiable as food items, grass, leaves, etc.



## Harvesting your compost



Even though material is constantly added and the pile is often turned, a layer of finished compost will be formed towards the bottom. This finished layer can be harvested by removing the unfinished layer from the top and setting it aside. The finished

Layer can then be taken out, and the unfinished layer placed in the bottom of the bin. In order to remove materials that have not completely decomposed from the finished layer, sift the compost through a framed piece of metal screening. The screening may be 7mm-21mm ( $\frac{1}{4}$  -  $\frac{3}{4}$  inches) depending on the desired coarseness of the compost. All of the incompletely decomposed materials can then be thrown back into the composter.

## Using your Compost

There are many ways to utilize finished compost such as :

- ▶ It can be added directly to the garden or flowerbed and worked into the soil.
- ▶ Mound compost up around the base of plants and trees during the growing season. The nutrients from the compost will leach into the soil and roots of the plants.
- ▶ Top-dress your lawn, by spreading the compost in a thin layer over the grass. It will incorporate itself into the soil.



- ▶▶ Compost can be used for bedding plants or added to your house plants. For starting or transplanting it is recommended to use a mixture of half compost and half potting soil.
- ▶▶ Use compost as a soil conditioner by digging it into the earth before planting flowers and vegetables. Or spread the finished material over your lawn as fertiliser.
- ▶▶ Brew some 'compost tea'. Place some compost in a nylon sock and soak it in water. The nutrients from the compost will be leached into the water. Use the resulting 'tea' to water flowers, vegetables and indoor plants.



Helpful Hint If you are worried about bugs when using the compost in the house, sterilize it. All that has to be done is to bake the compost in the oven at 175F for about half an hour.

“The Environment is Everybody’s Business”



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