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Composting Made Easy

Composting is an easy and cost effective means for managing organic wastes at home. It produces high quality organic matter for soil enrichment and moisture conservation. About 23 percent of household waste is made up of yard and food waste—most of this can be composted at home. Home composting also saves you time and energy by reducing the yard wastes you put at the curb. Backyard composting is also preferable to municipal composting because transportation and processing costs and energy use are avoided. Equally important, home composting conserves the natural environments where peat moss, cedar and cypress wood chips, cocoa shells and other organic inputs are harvested.

At home, compost saves money by eliminating the need to purchase organic soil conditioners and mulches, and it reduces your budget for chemical fertilizers and pesticides because healthy soils grow healthier plants that clean the air and conserve soil and water. Compost is alive. It conditions all soil types (clay, sand and loam) by improving porosity, retaining moisture and slowly adding nutrients. Compost reduces weeds, prevents erosion and compaction and regulates soil temperatures.

Decomposition is a natural part of the cycle of living things. Bacteria, fungi and other organisms feed on organic matter and reduce it to humus. Composting simply speeds up the decay process. It's simply a matter of piling up leaves, grass clippings and other plant wastes on your property so that they decompose into compost. A good compost pile will generate heat as the microorganisms break down the organic matter. When it is finished decomposing, the pile will cool down to normal temperature.

Making a Compost Pile

Making a compost pile is not a difficult or technical process. In its simplest form, it involves piling leaves, prunings and other organic matter in an out-of-the-way part of the yard and letting natural decomposition take its course. When composting is done in this manner with no turning, it will take up to two years for the pile to complete the composting process.

To speed up the production of compost, the following suggestions and the use of bins will be helpful:

Choosing a Site

1. Select a site that is accessible even in the winter. Set aside an area that is 5 by 5 feet for each compost pile/bin.
2. The preferred site is one with deciduous trees—it will be shaded in the summer and sunny in the winter. In the summer, the pile will stay moist, and in the winter, it will heat up on sunny days.
3. More than one pile/bin is desirable. This arrangement will allow you to have one pile/bin that you are actively adding new materials while the other one is finishing the decomposition process.
4. Compost piles/bins need to be sited away from waterways so that nutrients from the compost don't wash into the waterway and harm aquatic life and water quality.

What to Compost

Browns=Carbon Sources	**Greens=Nitrogen Sources**
Breads, grains, beans & spices	Aquarium water & algae
Corrugated cardboard—*Recycling preferred*	Coffee grounds, filters, tea leaves and bags
Dried flowers/dead plants	Feathers
Dry leaves and pine needles	Flower bouquets
Egg shells, nutshells, corncobs	Fresh leaves/green plants
Natural packing materials	Grass clippings—*Leave on lawn*
Newspaper/shredded paper— *Recycling preferred*	Guinea pig/hamster/rabbit droppings/bedding
Old potting soil	Horse manure—small amounts
Paper towels, napkins, plates & cups (*unsoiled*)	Human and animal hair, nail clippings
Rags, lint dust, floor sweepings	Prunings and hedge trimmings
Sawdust and wood shavings (*no treated wood*)	Spoiled juice
Toothpicks, chopsticks, skewers, popsicle sticks	Vegetable and fruit scraps
Woodchips and small twigs	

Aim for a Carbon: Nitrogen ratio of 30:1 (approximately 3 parts brown to 1 part green)

Materials that Should Not be Added to the Compost Pile:

Cat & dog feces	Meat, fish, dairy products, bones, grease & oils
Charcoal ashes or coal	Pesticides
Colored or glossy paper	Pressure-treated wood
Invasive plants, weeds with seeds, diseased plants	Sand
Large branches (*chip before adding to pile*)	Wood ashes or lime *(test soil pH: if needed apply directly to garden/lawn)*

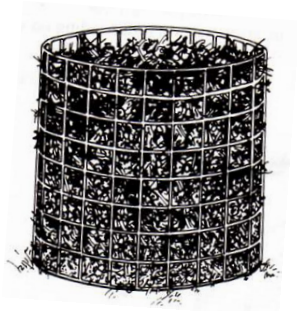
Composting Methods

There are several ways to compost. Each method has advantages, and the selection of a method is based on your particular needs. There are many different plans for do-it-yourself composters available on the internet. Below are some suggested approaches.

Compost Mound

Simply pile your yard waste in a mound 3 to 5 feet wide by 3 to 4 feet high. This method doesn't require any purchased materials. It is easy, inexpensive and good option for residents with lots of leaves or large property. However, decomposition may be slow if the pile is not mixed, taking one to two years for finished compost. The compost mound has an informal natural look.

Wire Mesh Bin

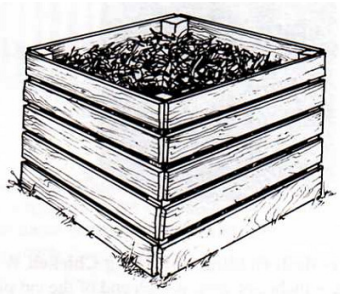


A free-standing wire mesh cylinder is easy to build and will speed the composting process. Wire mesh is available at garden centers and home improvement stores. Wooden or metal posts will increase stability. If you choose to mix the compost, it is easy to lift the bin, place it beside the heap and use a pitchfork to toss the partially finished compost back into the bin. The wire mesh bin is also useful for stockpiling fall leaves to use as brown materials throughout the year.

This bin is easy to build and inexpensive. Decomposition is faster than in the mound method. If mixed, compost will be finished in three to four months during the growing season. It will be finished in approximately one year if it is not mixed. Some residents prefer the wire mesh bin with a more refined appearance.

To make a wire mesh bin, purchase 12 to 15 feet of wire mesh that is 3 to 4 feet wide. The mesh size is approximately 2 by 3 inches. Vinyl covered mesh provides a better appearance and may last longer. A bin about 4 feet in diameter is best for optimum heating up of compost and management. To make the bin sturdy, add 4 eight foot fencing stakes (optional).

Wooden Bin



This attractive composting bin, made of rot resistant two-by-fours, is easy to build and durable. The corners of the bin are secured with reinforcing rods that are inserted through drilled holes. The fourth corner rod is loosely inserted so that the boards on the opened side, which are woven together, can be swung aside to form a doorway. The door facilitates mixing the pile and harvesting finished compost.

The wooden bin is easy to build. It does require more time, skill and tools than the mound or wire mesh bin and it is also more expensive than the mound or mesh bin. There are many different plans available on the internet. Decomposition is also faster than in either the mound method or the wire mesh bin.

To construct a basic wooden bin, purchase 21 eight-foot two-by-fours; use cedar for longer bin life. Do not use pressure treated wood, including wood pallets or wood fencing, as toxins may transfer to the compost. Also purchase 4 four-foot reinforcing rods.

Getting Started with Composting:

1. Loosen several inches of soil. Place a sheet of hardware cloth slightly larger than the composter on the soil. Place the bin on top.

2. Add brown and green yard wastes as they become available. Add kitchen scraps and cover with leaves or mix in to avoid attracting wildlife (bury the scraps at least 6 inches deep). Mix materials. The pile should be about 3 to 4 feet high. Add water as needed—the pile should have the moisture of a wrung out sponge.

3. The best mix is a ratio of 3 parts brown material to 1 part green material, but it is not absolutely necessary to maintain this ratio at all times. In order to have adequate brown materials throughout the year, it helps to stockpile leaves in the fall in piles or wire containers.

4. Chopping materials and shredding leaves will speed up the process. The smaller the pieces, the greater the surface area, which speeds up decomposition.

5. Add a shovel or two of soil or compost to provide the decomposers (fungi, bacteria, insects and other organisms) that will feed on the organic matter. It is not necessary to purchase special compost starters/activators because the local soil and compost contain plentiful native decomposers.

6. Mix the compost every 2 to 4 weeks to provide the decomposers with oxygen and moisture throughout the pile. The more frequently you mix the materials the faster the composting process will go. To mix the pile, use a shovel, pitch fork, aerating tool or a handle from an old broom or painting pole extension.

How to Know when Compost is Finished

Finished compost has a crumbly texture, a sweet earthy smell and is dark in color. The ingredients will no longer be recognizable but tough fibers may be intact. When decomposition is finished, the temperature in the pile will be the ambient temperature. Warmer temperatures indicate compost is not finished. To test whether the compost is finished, put it in a sealed plastic bag. In a few days, open the bag; if it smells good then the compost is finished, but if it smells bad, it is not yet ready.

Uses of Compost

Compost may be used as a thin top dressing for lawns, as a soil amendment in vegetable and flower gardens and as mulch for trees, shrubs, vegetable and flower gardens. It may also be used in containers.

Soil Amendment

- Pre-planting Beds: incorporate 3 to 4 inches of compost 8 to 10 inches deep into planting bed.
- Established Garden Beds: incorporate 2 to 4 inches annually in spring.
- Seeding or Repairing Lawns: loosen soil to 6 inches deep and mix in four inches of compost until well incorporated.

Mulch

- Flower and Vegetable Gardens: apply 1 to 2 inches of screened, finished compost
- Trees and Shrubs: spread to drip line or canopy; use coarse pieces
- Lawns: screen and spread thinly $^{1}/_{8}$ to ¼ inch

Potting Mixes

- Container Plantings: You may use $^{1}/_{3}$ compost to $^{2}/_{3}$ soil or equal parts compost and soil Perlite or vermiculite may be added to reduce the weight of the containers.

Compost Tea

- General Use: fill a burlap or cloth bag with compost and submerge in a bucket of water, swish around and steep for a few minutes.

Trouble Shooting

Most people who practice composting experience few problems, occasionally though difficulties arise. The following table will help you diagnose and solve any problems.

Trouble Shooting Guide

Symptoms	Problem	Solution
Compost has rotten odor	Too little air/too wet	Turn compost. Add coarse, dry materials.
Compost is dry in center	Not enough moisture	Add water, moisten compost and turn pile.
Compost is damp and warm in middle but dry elsewhere	Too small	Collect more materials. Mix old and new materials. If dry, add water.
Compost won't heat up; materials do not break down	Needs more nitrogen or too small or dry	Add green materials and mix with old materials. If dry, add water.
Compost has ammonia odor.	Too much nitrogen	Add brown materials and mix with old materials.
Animals or insect pests raiding compost.	Avoid meat scraps	Put hardware cloth under bin. Put food scraps in middle and cover. Cover vents with screening.
Fruit flies in kitchen around compost container	Keeping kitchen scraps in kitchen too long	Add kitchen scraps to pile daily. Make a fruit fly trap with mason jar. Put $^{1}/_{8}$ cup cider vinegar or banana bits in jar. Make a paper funnel and tape on to top of jar. Check trap for larvae. Kill larvae with hot water and add to compost.

Resources: Composting and Mulching: A Guide to Managing Organic Yard Wastes.
http://www.extension.umn.edu/distribution/horticulture/components/3296-02.html#02
http://seattletilth.org/learn/resources-1/compost/methodsandbins

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