

HOME COMPOSTING



What is Compost?

Compost is a dark, crumbly, and earthy-smelling form of decomposing organic matter. Decomposition and recycling of organic wastes are an essential part of soil building and healthy plant growth in forests, meadows and in your home garden.

Why Should I Make Compost?

Compost is the most practical and convenient way to handle your yard wastes. It can be easier and cheaper than bagging these wastes or taking them to the Composting Facility. Compost also improves your soil and the plants growing in it. If you have a garden, a lawn, trees, shrubs, or even planter boxes, you have a use for compost.

By using compost you return organic matter to the soil in a usable form. Organic matter in the soil improves plant growth by helping to break heavy clay soils into a better texture, by adding essential nutrients to any soil. Improving your soil is the first step toward improving the health of your plants. Healthy plants help clean our air and conserve our soil, making Harford a healthier place to live.

What Can I Compost?

An anything that was once alive can be composted. However some organic wastes should not be put into home composting systems.

Do Compost in Yard Waste Bins

- / Grass clippings
- / Leaves
- / Flowers
- / Old plants
- / Old potting soil
- / Twigs
- / Annual weeds

Don't Compost in Yard Waste Bins

- / Food scraps of any sort*
- / Diseased plants
- / Weeds with seeds
- / Invasive weeds
 - Quack grass
 - Moring glory
 - Buttercup

Bury or Worm Compost These Food Wastes

- / Vegetable scraps
- / Bread and grains
- / Coffee filters/tea bags

Do Not Bury or Compost These Food Wastes

- / Meat or fish parts
- / Cheese, butter, milk...
- / Cooking oil or oil foods

How Can I Use Compost?

Compost can be used to enrich the flower and vegetable garden, to improve the soil around trees and shrubs, as a soil amendment for houseplants and planter boxes and, when screened, as part of a compost, chipped woody wastes make excellent mulch or path material. After they decompose, these same woody wastes will add texture to garden soils.

The Essentials of Composting

With these principles in mind, everyone can make excellent use of their organic wastes.

Biology

The compost pile is really a teeming microbial farm. Bacteria start the process of decaying organic matter. They are the first to break down plant tissue and also the most numerous and effective composters. Fungi and protozoans soon join the bacteria and, somewhat later in the cycle, centipedes, milipedes, beetles and earthworms do their parts.

Materials

Anything growing in your yard is potential food for these tiny decomposers. Carbon and nitrogen, from the cells of dead plants and dead microbes, fuel their activity. The micro-organisms use the carbon in leaves or woodier wastes as an energy source. Nitrogen provides the microbes with the raw elements of proteins to build their bodies.

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Everything organic has a ratio of carbon to nitrogen (C:N) in its tissues, ranging from 500:1 for sawdust, to 15:1 for table scraps. A C:N ratio of 30:1 is ideal for the activity of compost microbes. This balance can be achieved by mixing two parts grass clippings (which have a C:N ratio of 20:1) with one part fallen leaves (60:1) in your compost. Layering can be useful in arriving at these proportions, but a complete mixing of ingredients is preferable for the composting process. Other materials can also be used, such as weeds and garden wastes. Though the C:N ratio of 30:1 is ideal for a fast, hot compost, a higher ratio (i.e., 50:1) will be adequate for a slower compost.

Surface Area

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

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 3 feet cubed (27 cu.ft.) will have trouble holding this heat, while piles larger than 5 feet cubed (125 cu.ft.) 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.

Moisture & Aeration

All life on Earth needs a certain amount of water and air to sustain itself. The microbes in the compost pile are no different. They function best when the compost materials are about as moist as a wrung-out sponge, and are provided with many air passages. Extremes of sun or rain can adversely affect this moisture balance in your pile.

Time & Temperature

The faster the composting, the hotter the pile. If you use materials with a proper C:N ratio, provide a large amount of surface area and a big enough volume, and see that moisture and aeration are adequate, you will have a hot, fast compost (hot enough to burn your hand!) and will probably want to use the turning unit discussed in the next section. If you just want to deal with your yard wastes in an inexpensive, easy, non-polluting way, the *holding unit* (also discussed below) will serve you well.

COMPOSTING YARD WASTES

Holding Units

These simple containers for yard wastes are the least labor and time-consuming way to compost.

Which wastes? Non-woody yard wastes are the most appropriate.

How? Place the holding unit where it is most convenient. As weeds, grass clippings, leaves and harvest remains from garden plants are collected, they can be dropped into the unit. Chopping or shredding wastes, alternating high-carbon and high-nitrogen materials, and keeping up good moisture and aeration will all speed the process.

Advantages & disadvantages For yard wastes this is the simplest method. The units can be portable, moving to wherever needed in the garden. This method can take from 6 months to 2 years to compost organic materials, so you need to be patient.

Variations Holding units can be made of circles of hardware cloth, old wooden pallets, or wood and wire. Sod can also be composted with or without a holding unit, by turning sections of it over, making sure that there is adequate moisture, and covering it with black plastic.

Turning Units

This is a series of three or more bins that allow wastes to be turned on a regular schedule. Turning units are most appropriate for gardeners with a large volume of yard waste and the desire to make a high quality compost.

Which wastes? Non-woody yard wastes are the most appropriate.

How? Alternate the layering of high-carbon and high-nitrogen materials to approximately a 30:1 ratio. These should be moistened to the damp sponge stage. The pile temperature should be checked regularly; when the heat decreases substantially, turn the pile into the next bin. Dampen the materials if they are not moist, and add more high-nitrogen material if heating is not occurring. When the pile has heated up and starts to cool again, turn it into the third bin. After two weeks in the third bin, the compost should be ready for garden use.

Advantages & disadvantages This method produces a high-quality compost in a short time utilizing a substantial input of labor.

Variations The unit can be built of wood, a combination of wood and wire, or concrete block. Another type of turning unit is the barrel composter, which tumbles the wastes for aeration.

Additional information For more information on making and using turning units refer to *Let It Rot* by Stu Campbell (available at some library branches).

The following troubleshooting chart is a guide to more effective composting using a turning unit.

SYMPTOMS	PROBLEMS	SOLUTION
The compost has a bad odor	Not enough air; pile too wet	Turn it; add coarse dry materials such as straw, corn stalk, etc.
The center of the pile is dry	Not enough water; too much woody, coarse material	Turn and moisten materials; add fresh green wastes, chop or shred coarse wastes
The compost is damp and warm in the middle, but nowhere else	Too small	Collect more material and mix the old ingredients into a new pile
The heap is damp and sweet-smelling but still will not heat up	Lack of nitrogen	Mix in a nitrogen source like fresh grass clippings, fresh manure, bloodmeal or ammonium sulfate.

COMPOSTING FOOD WASTES

Mulching

Yard wastes can be used for weed control and water retention.

Which wastes? Woody yard wastes, leaves, and grass clippings.

How? Simply spread leaves and grass clippings around plants; starting a few inches away from the stem. Clipped woody wastes may be used to mulch around trees and shrubs. (Do not use woody wastes in vegetable gardens.) Tree services will often deliver free wood chip if they are in your neighborhood. Chipper/shredder units can be rented or purchased for home use.

Advantages & disadvantages All yard wastes will work first as a mulch and then, as decomposition proceeds, as a soil enrichment. A disadvantage of mulching with woody yard wastes is that you will have to buy or rent power equipment or make arrangements with a tree service.

Variations Use chipped materials for informal garden paths.

Soil Incorporation

Burying your organic wastes is the simplest method of composting.

Which wastes? Kitchen scraps without meat, bones or fatty foods.

How? Everything should be buried at least 8 inches below the surface. Holes can be filled and covered, becoming usable garden space the following season.

Advantage & disadvantage This is a simple method, but because the absence of air some nutrients will be lost. Rodents and dogs can become a problem with wastes buried less than 8" deep.

Variations Using a posthole digger, wastes can be incorporated into the soil near the drip line of trees or shrubs and in small garden spaces.

Earthworm Composting

Feeding worms is a good way to make high-quality compost from food scraps.

Which wastes? Kitchen scraps, without meat, bones or fatty foods.

How? Use a bin with solid sides, drainage holes and a tight fitting lid. Fill the bin with moist leaves, shredded newspaper or cardboard "bedding". Add a pound or more of red worms (from a compost pile, or local worm supplier). Rotate the burial of food wastes throughout the bin. Every 3-6 months push the old bedding to one side of the bin, rebed the empty side, and start burying food wastes in the fresh bedding. Allow composted wastes to cure for a month before harvesting.

Advantage & disadvantages This is an efficient way to convert food wastes into high-quality soil for house-plants, seedling transplants, or general garden use. The worms themselves can be used for fishing bait. However, worm composting is more expensive and complicated than soil incorporation for dealing with food wastes.

Variations A stationary outdoor bin can be used in all but the coldest months, or a portable indoor/outdoor bin can be used year-round.

Additional information Refer to *Worms Eat My Garbage* by Mary Appelhof (available at some library branches) for more information.

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