



COMPOST

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Compost is a dark, crumbly, and earthy-smelling amendment for soils, made from organic matter decomposed by microbes. It is a great amendment for soils, adding nutrients and improving soil structure. Compost improves both heavy clay soils and sandy soils. Since it breaks down over the year, it should be added to soils yearly.

Compost is an easy way to recycle yard wastes without hauling them to a landfill. Enclosures can be as simple as a freestanding pile, to ones you make or buy. The procedure can be as simple as dumping organic materials to rot on their own, which will take longer than adding certain materials in layers and turning regularly. The method depends on your goal—just to get rid of wastes, or to make a soil conditioner as quickly as possible.

ENCLOSURES—These range from commercially available slatted metal or plastic enclosures, perforated barrels and plastic-coated wire mesh products, to those you can make yourself from wire- or snow-fencing, boards, pallets, or cement blocks. All should have frequent openings to allow for air movement. The size of the enclosure can be relatively small—as with garbage can size units, or quite large. Generally, your enclosure should allow for pile dimensions of 3 to 5-feet wide and no more than 5-feet high when finished. Piles smaller than three feet on each side likely will not get hot enough to work well, while piles larger than five feet on each side may not allow enough air to reach the center. If no room for a larger pile, you can compensate to some extent by using a black barrel or bin that will absorb heat from the sun. Or you can insulate with straw bales.

You can make an enclosure from a 4 to 6 foot length of turkey mesh wire, or reinforcing wire as used in concrete construction. Simply attach the ends together and you will have formed a 3 or 4-foot diameter enclosure. With several of these on hand, you can keep several piles going at once. More elaborate structures can be equipped with movable partitions to separate different lots of compost. I like to have more than one bin so I can keep different ages of compost, or when turning move materials from one bin to one adjacent.

INGREDIENTS—Most any organic matter that was once alive can be used to make compost. Waste from the home that you should NOT add includes meat scraps, fatty foods (like cheese), bones, pet manures, and litter. Waste from the garden that you should NOT add includes weeds, diseased plant material, and woody plant material that isn't chipped (it takes too long to break down otherwise).

To make successful compost, four main ingredients are needed—a source of carbon, a source of nitrogen, oxygen, and water. Carbon serves as an energy source for the microbes that decompose organic matter, and nitrogen is needed for their activity. All organic matter has a ratio of carbon to nitrogen (C:N). This ranges from 500:1 for sawdust to 15:1 for vegetable scraps. An ideal range for compost microbes for fastest decomposition is 30:1. More carbon can be used, the pile will just decompose slower. Since grass clippings are 20:1 and leaves 60:1, a mixture of two part grass clippings to one part leaves would be best. You don't need to get concerned about exact ratios and weighing, just make sure to add lots more carbon materials than nitrogen ones.

In general, coarse and woody material is high in carbon. Examples of good carbon sources for compost are wood chips, sawdust, paper, straw, and leaves (shredded leaves decompose faster). In general, moist and dense material is high in nitrogen. Examples of good nitrogen sources for compost are manures, grass clippings, coffee grounds, and vegetable waste. If too much carbon, the pile may decompose slowly. If too much

nitrogen, you may smell ammonia. A shredding machine, or rotary mower for grass and leaves, chops materials into finer bits that decompose faster.

PROCESS—Of course you can just add organic waste and scraps to a bin to decompose on their own. This is a good way to recycle, but may take a year or more to decompose. Faster compost requires a little more organization and labor.

Once you have an enclosure, if other than open pile, and begun gathering ingredients, start layering. Layering helps you get the best proportions of ingredients, and mixed well. As you add each layer or carbon or nitrogen sources, moisten to the stage of a damp sponge. You may add a few shovels of soil, leftover compost, or bagged compost to each layer to add microbes. Some stores sell compost starters containing microbes. If short on nitrogen materials such as manures, some add a handful of garden fertilizer for each bushel of organic matter.

As the microbes begin decomposition, the compost pile should warm. You can check with your hand, or a compost thermometer (a dial on a long rod) available at complete garden stores. If it doesn't heat, or the heat begins to decrease, add more high nitrogen materials. Check the pile for moisture regularly, especially if a closed bin, and dampen if needed. Once the pile heats, then begins to cool, it is time to turn it either in place or into an adjacent bin. This turning ensures adequate oxygen for the microbes. Even if the pile doesn't warm much, still turn it every few weeks. If warm weather, and the compost pile is properly constructed and maintained, you may see usable compost in two to six months.

PROBLEMS—If your compost pile isn't decomposing as quickly as planned, here are some symptoms to watch (and smell) for.

*If you smell a bad or rotten odor, there may not be enough air (anaerobic conditions), so turn the pile. The pile also may be too large, or too wet.

*If you smell ammonia, there may be too much nitrogen, so add more carbon materials.

*If you notice the center or the pile is dry, add more water.

*If the compost is damp and warm in the middle only, the pile may be too small.

*If the compost is damp throughout, but won't warm, add more nitrogen.

*If the pile is too hot, it may be too large, or not be getting enough air so need turning more often.

*Especially for larger piles, turn them more often. This avoids anaerobic conditions as above.

*If the weather is cold, correct as for a small pile.

*If you have pests in the pile, such as raccoons or rats, make sure there are no meat scraps or fatty foods.

KEYS TO SUCCESS—for the best and quickest compost, remember these simple steps.

1. Provide the right ingredients.
2. Provide much more carbon than nitrogen.
3. Add ingredients in layers, and keep moist. A layer of soil may help.
4. Turn the compost often.

More on compost and related gardening topics can be found in articles and leaflets on Perry's Perennial Pages online (perrysperennials.info).

Adapted from a previous UVM Extension leaflet by Ed Bouton, and leaflets from University of Maine Cooperative Extension. 5/08