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## Protecting Water Quality Composting Yard Wastes

**A**cross the nation, composting is gaining increased attention as an environmentally sound way to manage yard wastes.

Yard wastes, such as leaves, grass clippings, brush, and tree prunings, account for nearly 20 percent of all garbage generated in the United States each year (more than 31 million tons). During peak months (primarily summer and fall), yard wastes can represent as much as 50 percent of municipal solid waste. In many communities and 12 states, new laws have banned yard wastes from landfills.

Not only is composting sensible from an environmental perspective, it also effectively converts yard wastes into a useful soil additive or mulch.

### Building A Compost Structure

To save space, keep your yard looking neat, and speed composting time, plan to contain your compost in some type of structure. Typical dimensions of a compost pile are 5 x 5 x 5 feet. Simple bins can be built from woven wire fencing and metal posts. More permanent and elaborate structures can be made from rot-resistant wood, wire, and metal posts.

For a more detailed discussion of composting and composting structures, contact your county Extension office.

### Locating Your Compost Pile

Locate your compost pile close to where it will be used so it won't interfere with activities in the yard or offend neighbors. The pile will work best where it is somewhat protected from drying winds yet receives partial sunlight to help heat it.

### Deciding What To Compost

Many organic materials can be composted besides grass and leaves: non-woody shrub trimmings or twigs less than ¼ inch in diameter, faded flowers, weeds, leftover plants at the end of the gardening season, lake plants, straw, coffee grounds, eggshells, fruit and veg-

etable scraps, shredded newspaper (black and white print), small amounts of wood ash, and sawdust.

The smaller the plant pieces, the more rapidly they will break down. Use a shredder or power mower to chop up leaves and non-woody shrub trimmings or small twigs before adding them to the pile.

Sawdust requires the addition of extra nitrogen; wood ash raises compost alkalinity and may result in nitrogen loss from the pile.

There should be little need to compost grass, since clippings may be safely left on the lawn if you mow regularly and remove only one-third of the blade length each time. If you do compost grass, mix it with other yard wastes. Grass clippings, alone, pack down and restrict air flow, which limits the availability of oxygen that is needed for decomposition.

Some things should not be composted. Pet feces can transmit diseases. Meat, bones, grease, whole eggs, and other dairy products attract rodents and other animals. Badly diseased or insect-infested plants and weeds that are loaded with seed may not heat up enough to be rendered harmless.

### Preparing Your Compost Pile

The microorganisms responsible for decomposing yard wastes need oxygen, water, and nitrogen, so build your compost pile in layers. Begin with a layer of 8 to 10 inches of leaves, grass, or plant trimmings. Water it to the point of being moist, but not soggy. Then add a nitrogen source, such as ammonium nitrate, ammonium sulfate, or an inexpensive high nitrogen lawn fertilizer without herbicide.

Sprinkle the pile with ⅓ to ½ cup of fertilizer per 25 square feet of surface area (a 5 x 5 foot bin). If you live in a rural area and have access to livestock manure, you can use a 2-inch layer of manure as your nitrogen source.

You may choose to add a 1-inch layer of soil or completed compost over the nitrogen to increase the number of decomposing microbes in the pile. However,

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most leaves and plant scraps have enough microorganisms to get the job done without the addition of soil or compost.

Repeat these layers until the pile reaches a height of 5 feet, watering each time you add new layers.

### **Maintaining Your Compost Pile**

An active compost pile will heat to somewhere between 130 degrees and 160 degrees F. As the center cools, turn the pile to help speed decomposition and minimize any objectionable odors. You will need to do this once or twice a month. Continue to water your compost pile periodically to keep it moist but not soggy. You can add a little fresh material when you turn the pile, but generally, you are better off beginning a new pile.

A well-managed compost pile will be ready in 2 to 4 months in the warm season, whereas an untended pile will take a year or more to decompose. When completed, your compost pile will be about half its original height and will have a pleasant, earthy smell.

### **Liming**

It is normally not necessary to add lime to your compost pile to improve the breakdown of most yard wastes. Finished compost is usually slightly alkaline; if you add lime during the decomposition process, it will probably be too alkaline when completed. If your pile contains large amounts of acidic materials, such as pine needles or fruit wastes, you might add lime, but no more than 1 cup per 25 cubic feet of material. Excessive lime application can lead to loss of nitrogen from the compost pile.

### **Using Finished Compost**

Gardeners have used compost for centuries to improve the physical condition of soil and to add some of the nutrients needed for plant growth. Incorporating compost into light, sandy soil helps it hold both moisture and nutrients, while adding it to heavy soil improves internal drainage. If you've added fertilizer or manure during the composting process, you may find the compost is all you need to achieve good plant growth and production.

To use compost for lawns, screen the material and use as a seed-starting material or as a top-dressing.

When working the compost into the soil of flower beds or the vegetable garden (before or after planting), apply at a depth of 2 to 3 inches.

Compost can be mixed with topsoil for use with indoor potting plants. Sterilize the compost by baking it in a 200 degrees F oven for 1 hour.

### **Composting Other Organic Wastes**

Composting can convert a wide variety of otherwise wasted materials into safe, valuable, and marketable soil amendment products. Researchers are documenting an ever increasing array of materials that may be composted. Other than yard trimmings, compostable materials include food scraps, nonrecyclable paper, food and seafood processing by-products, livestock manures, dead chickens, municipal sewage sludge, and other clean, source-separated, decomposable organic materials. More expertise is required in the composting of some materials.

### **Conclusion**

Composting provides a way in which solid wastes and water quality concerns can be joined together. An increasing number of individuals, communities, and businesses are expected to turn to composting to divert materials from landfills and to lower waste management costs. Although waste stream managers view composting primarily as a means to divert materials from disposal facilities, the environmental benefits, including reduction in water pollution, should be substantial.

### **Tips For Composting Yard Wastes**

- Do not try to compost woody material that is greater than ¼ inch in diameter. If larger, it should be chopped.
- Mix manure (if available) or high nitrogen fertilizer with yard wastes. Sprinklings of fish fertilizer, ammonium sulfate (20-percent nitrogen), or urea (45-percent nitrogen) also work well. Do not use more than ¼ pound of fertilizer per 15 square feet (½ cup per 25 square feet) of compost. When composting low-nitrogen materials such as sawdust, paper, and woody plants, increase fertilizer rates.
- Add lime, small amounts of wood ashes, or crushed eggshells to neutralize acids which may form in compost and cause an odor problem.
- Layer materials 2 to 6 inches thick, taking care to mix up grass clippings. (Grass clippings tend to compact.)
- Add topsoil to layers to provide a good source of microorganisms.
- Avoid composting weeds that are heavily laden with seeds. (Some weed seeds might not be killed during the heating process.)
- Turn the pile when strong odors are detected.
- Avoid adding meat or fish scraps to the compost mixture. They may attract animals (dogs, cats, rats, etc.), and they do not decompose easily.

- Avoid adding diseased vegetable plants to the pile if compost will be used on a vegetable garden. The disease organisms may reappear the next year.

- Use compost only when it is ready. Unfinished compost will rob your plants' nitrogen instead of acting as a fertilizer. You can also spread garden diseases with unfinished compost.

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**For more information**, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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