Backyard Composting Information

HOW TO MAKE COMPOST

COMPOSTING

Composting is a technique used to accelerate the natural decay process. The technique converts organic wastes to a mulch which is used to fertilize and condition soil. Leaf waste decomposes naturally in about two years. Composting can take as long as a year or as little as 14 days, depending upon the amount of human control.

COMPOSTABLE MATERIALS

Most yard wastes can be composted, including leaves, grass clippings, plant stalks, vines, weeds, twigs and branches. Compostable food wastes include fruit and vegetable scraps, coffee grounds, eggshells and nutshells. Other compostable materials are hair clippings, feathers, straw, livestock manure, bonemeal and bloodmeal.

Materials should NOT be composted if they promote disease, cause odors, attract pests, or create other nuisances. These include meat, fish, poultry, dairy products, foods containing animal fats, human/pet feces, weeds with developed seed heads, and plants infected with or highly susceptible to disease, such as roses and peonies.

Materials that should be composted only in limited amounts include wood ashes (a source of lime), sawdust (requires extra nitrogen), plants treated with herbicides or pesticides (the chemicals need time for thorough decomposition), and black and white newsprint (composts slowly, so it should comprise no more than 10% by weight of the total pile).

COMPOSTING REQUIREMENTS

1. **SHREDDED ORGANIC WASTES**. Shredding, chopping or even bruising organic materials hastens decay. One way to shred leaves is to mow the lawn before raking, collecting the shredded leaves in the mower bag. It takes at least 34 cubic feet of shredded material to form a compost pile.
2. **GOOD LOCATION**. The compost pile should be located in a warm area and protected from overexposure to wind and too much direct sunlight. While heat and air facilitate composting, overexposure dries the materials. The location should not offend neighbors.
3. **NITROGEN**. Nitrogen accelerates composting. Good sources include fresh grass clippings, manure, bloodmeal and nitrogenous fertilizer. Lime should be used sparingly if at all. It enhances decomposition, but too much causes nitrogen loss, and it usually isn`t necessary unless the pile contains large amounts of pine and spruce needles or fruit wastes.
4. **AIR**. The compost pile and its enclosure should be well ventilated. Some decay will occur without oxygen, but the process is slow and causes odors.
5. **WATER**. Materials in the compost pile should be kept as moist as a squeezed sponge. Too little or too much water retards decomposition. Overwatering causes odors and loss of nutrients.

BUILDING AN ENCLOSURE

Enclosing the compost pile saves space and prevents litter. The enclosure should be collapsible or provide an entry large enough to permit the pile to be turned. It should measure at least 4'X4'X4' (a pile under 3 cubic feet generally does not decompose properly), but no taller than 6' (too much weight causes compaction and loss of oxygen). The enclosure can be built of wood, pallets, hay bales, cinder blocks, stakes and chicken wire, or snow fencing. Prefabricated compost bins are also available.

BUILDING THE PILE

Aside from the basic requirements for decomposition and preventing odors and other nuisances, there is no set method for building a compost pile. One technique may be faster than another, but a variety of methods work well. Piles can be built in layers to ensure the proper proportion of carbon (e.g., leaves, woody materials) to nitrogen (grass, fertilizer), but the layers should be thoroughly intermixed after the pile is built.

MAINTENANCE

Turning and mixing the pile with a pitchfork or shovel, or shifting it into another bin, provides the oxygen necessary for decomposition and compensates for excess moisture. A pile that is not mixed may take 34 times longer to decompose. Recommendations for mixing the pile vary from every 3 days to every 6 weeks. More frequent turning results in faster composting. Odors indicate that the pile is too damp or lacks oxygen, and that more frequent turning is necessary.

Occasional watering may be necessary to keep the pile damp, especially in dry weather. Covering the pile with black plastic reduces the need for watering; it also prevents rainwater from leaching out the nutrients.

A pile that is decomposing properly should generate temperatures of 140°-160°F at its center. The heat kills most weed seeds, insect eggs and diseases. The pile should be turned when the center begins to cool. Turning the pile maintains the temperature and ensures that all material is exposed to the center heat. When the compost is finished, the pile will no longer heat up.

Small amounts of fresh materials may be added but should be buried inside the pile to avoid pests and speed composting. It is better to add fresh materials to a new pile.

FINISHED COMPOST

Finished compost is dark brown, crumbly, and has an earthy odor. Depending upon seasonal temperatures, a well-built, well-tended pile generally yields finished compost in 2 weeks to 4 months. An unattended pile made with unshredded material may take longer than a year to decompose.

SAMPLE INSTRUCTIONS FOR FAST COMPOSTING *

- shredded leaves (about 2/3 by volume)
- fresh grass clippings (about 1/3 by volume, or slightly more for faster decomposition)
- kitchen scraps (grind in blender)

Begin the pile with a 4" layer of leaves. Add a 2" layer of grass clippings. Repeat the layers until the pile

is about 4' high, then add the kitchen scraps.

Chop vertically through the pile with the tines of a pitchfork to thoroughly bruise and mix the materials. Add just enough water to moisten the pile, then cover it with a black plastic garbage bag. Using the same chopping technique, turn the pile on the second day after the pile is built, again on the fourth day, then every three days until the compost is finished. Except in dry weather, no further watering should be necessary.

The compost should be finished in about two weeks.

ALTERNATE COMPOSTING METHODS

Compost can be made in a garbage can, barrel or drum** that has a secure lid. Drill holes in the sides and bottom of the container to allow for air circulation and water drainage, and place it upright on blocks. Fill 3/4 of the container with organic wastes, add a little nitrogenous fertilizer (about 1/4 cup for a 55gallon barrel), and moisten the materials. Every few days shake the container or turn it on its side and roll it to mix the compost. The lid should be removed after turning to allow air penetration. This method yields finished compost in about 24 months.

Another method is to use a 30 or 40gallon plastic garbage bag. Fill the bag with organic materials, nitrogen and lime (one cup per bag helps counteract acidity caused by anaerobic composting). Shake well to mix materials. Add about 1 quart of water and close the bag tightly. Bags can be stored outdoors in the summer and in a heated basement or garage during the winter. No turning or additional water is necessary. The compost should be finished in about 6 12 months.

** Instructions are based on composting techniques presented in Make Compost in 14 Days, Rodale Press, Inc., Emmaus, PA 18049 (1982).*

*** Do not use any container that once held toxic chemicals.*

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GRASSCYCLING

IT'S OK TO "LET IT LAY"

Did you know that a 1/2-acre lawn in Pennsylvania produces more than three tons--nearly 260 bags--of grass clippings each year? Think of all the time, money and effort it takes to bag all those clippings. Why go through all that hassle when it's not necessary?

YOU CAN HAVE A HEALTHY GREEN LAWN BY LEAVING GRASS CLIPPINGS WHERE THEY FALL.

It's simple. Grass clippings left on the lawn decompose and act as a natural organic fertilizer. This lets you reduce the amount of commercial fertilizer you need to apply. Your lawn will remain healthy and green because each time you mow, you will be returning valuable nutrients to the soil.

MOWING TECHNIQUES & TIPS

- **Any mower can recycle grass clippings**. Just remove the grass catcher. Ask your lawn mower dealer if you need a special safety plug or adapter kit to convert your mower into a "recycling" mower. Installing a mulching blade also is helpful.
- **Never cut off more than 1/3 of the grass blade in one mowing.** Keep grass mowed to 2" in early spring, gradually raise the height to 3-4" by summer, then gradually reduce to 2" by late fall.
- **Mow when the grass is dry**.
- **Keep your mower blade sharp.** Dull mowers tear the grass blade, injure the plant and cause a brownish cast to the turf.
- If the grass gets too high, **mow over the clippings a second time** to further shred and scatter them.
- To prevent excess growth between mowings, **raise the mower height**, mow, **then gradually lower it** over a span of several mowings. This will help prevent shock to the plants.
- When it's time to replace your mower, **consider a mulching, recycling or nonpolluting reel mower**. All of them do a good job of shredding and scattering grass clippings.

WHAT ABOUT THATCH?

Thatch, a matted layer of dead roots and stems, usually is caused by too much water and fertilizer. Clippings don't produce thatch because they are 80 percent water and decompose quickly. A thatch layer of more than 1/2" should be removed.

USES FOR CLIPPINGS

- **COMPOST.** Fresh clippings should compose no more than 1/3 of the compost pile They are an excellent source of nitrogen. Mix thoroughly with "brown" materials such as leaves or straw and turn the pile regularly to aerate it and prevent odors.
- **MULCH.** Pile about 1" of dried clippings on the soil to reduce weeds and moderate soil temperature. Mulching also controls erosion, run-off and evaporation. If using herbicides, wait at least two mowings after treating the lawn to use the clippings.
- **SOIL ADDITIVE.** Mixing fresh grass clippings into the garden improves soil texture, promotes moisture retention and adds nutrients and organic matter. About once a month, turn a 2" layer of

grass into the soil to a depth of 6".

FERTILIZER APPLICATION

Most grasses need modest amounts of nitrogen for controlled growth and good color. Too much fertilizer increases growth and results in more frequent mowing.

It is best to fertilize around Labor Day and again at the end of October. Fall fertilization promotes a vigorous root system and helps the plant survive winter, but does not lead to the excessive top growth of spring fertilization. Apply only 1/2 pound of nitrogen per 100 square feet of lawn. To calculate how many pounds of fertilizer should be applied per 1,000 square feet, divide 100 by twice the percentage of nitrogen (N) in the fertilizer.

This chart calculates some of the common fertilizer rates for you:

Fertilizer NPK Rating	100 / (2 x N%)	=	Lb. per 1,000 Sq.Ft.
12-4-8	100/24	=	4.1
16-8-8	100/32	=	3.1
20-5-10	100/40	=	2.5
10-10-10	100/20	=	5.0

For slower, more uniform growth, use fertilizers that contain slow-release nitrogen such as methylene urea, ureaformaldehyde, sulfur-coated urea, or IBDU. The label may also read "water-insoluble nitrogen" or "slow-release nitrogen."

WATERING PRACTICES

Pennsylvania has enough rain that **turf grasses don't have to be watered** to survive. Healthy lawns go brown during a drought, but quickly turn green when rainfall resumes.

If you choose to water, **1" of water will wet the soil to a depth of 4"-6".** Place an empty can under the sprinkler to determine when an inch has been applied. If water runs off the lawn before reaching an inch, turn off the sprinkler and wait an hour before resuming.

- **Water deeply and infrequently** to encourage deep root growth. Light, frequent watering encourages shallow roots, which increase the risk of disease and stress injury.
- **Water in the morning**. Less water is lost through evaporation and transpiration.
- **Don't water at midday or in the evenings**. A lawn that remains damp during the night is more prone to disease.

ALTERNATIVE LANDSCAPES

Consider turf grass alternatives. Increase shrub beds, grow a wildflower meadow, or plant ground covers such as English ivy, pachysandra and periwinkle. They look beautiful, don't need mowing and will help **reduce maintenance and yard waste.**

THE KEY WORD IS "LESS"

LESS FERTILIZER

LESS WATER

LESS WORK

LESS WASTE

Recycling clippings back into the lawn is less work than disposing of them as waste. No one has to handle the clippings--not you, your lawn care professional, or the waste management crew. By not trashing grass, you can reduce your mowing time by nearly 40 percent and spend less money on fertilizer and trash bags. And you'll be doing your part for the environment by reducing waste.

If you follow these *IT'S OKAY TO "LET IT LAY"* guidelines, not only will you have a healthy lawn, you'll never have to bag grass clippings again.

Produced by the Pennsylvania Department of Environmental Protection in cooperation with the Connecticut, Massachusetts and Rhode Island Departments of Environmental Protection.

For more information please contact us at our recycling e-mail address: ra-eprecyclepa@state.pa.us

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