

1990

Composting

Jerry L. Goodspeed
Utah State University

Larry A. Sagers
Utah State University

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Composting

*Jerry L. Goodspeed and Larry A. Sagers, USU
Extension Horticulturists*

HORTICULTURE FACT SHEET 08

1990

HG/H 08

In the growing season 30% or more of the landfill waste is organic yard refuse. This wastes land, tax dollars, and natural resources. Composting these products at home eases landfill problems. Composted materials are excellent soil amendments for increasing the tilth, workability, fertility, water holding capacity, and drainage of existing soils.

Composting is a natural process by which organic material is decomposed into humus, a soil like substance. Humus improves the water holding capacity, drainage, workability, and fertility of existing soils. Decomposition is done by microorganisms, earthworms, small insects, and other soil inhabiting organisms. These organisms decompose the organic matter as their food source. The process requires carbon, nitrogen, water, oxygen, and heat.

Carbon is the principal component of all organic matter. A material must have a proper ratio of carbon to nitrogen, termed C:N ratio, to compost properly. The most efficient ratio for composting is 15-30 parts carbon for every 1 part nitrogen. If the ratio is too high or too low the composting process is slowed.

Oxygen (air) is also necessary. If oxygen is eliminated, the materials decompose anaerobically (without oxygen). This decay process is slow and causes foul odors. Adequate oxygen, supplied by mixing the compost, eliminates the odors. The correct ratio of carbon, nitrogen, water, and oxygen produces heat which speeds the process and kills most weeds, seeds and harmful pathogens. Composting, done correctly, is simple, odorless, and produces a valuable, natural soil amendment.

STEPS FOR A SUCCESSFUL COMPOST PILE

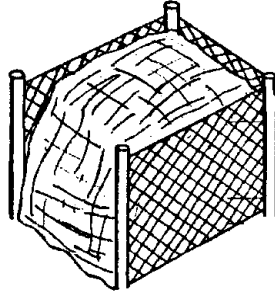
● I. SITE SELECTION

- a) At least 6 hours of sunlight a day.
- b) A site that does not detract from the landscape.
- c) Convenient for adding materials and removing compost.
- d) Available water.

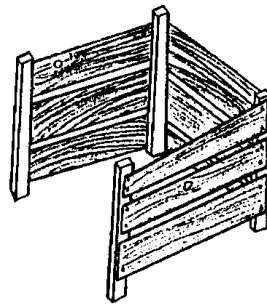
- **II. CONTAINER**

Many containers are suitable provided they are accessible, resist decay, and allow air flow. Three containers, next to each other, permits for the pile to be turned to speed the process. Ideas for containers are listed:

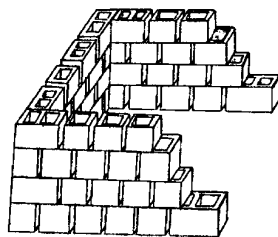
- a) Poles with chicken wire.



- b) Wooden bins.



- c) Open sided cinder blocks bin (without mortar).



- d) No bin, true compost pile.

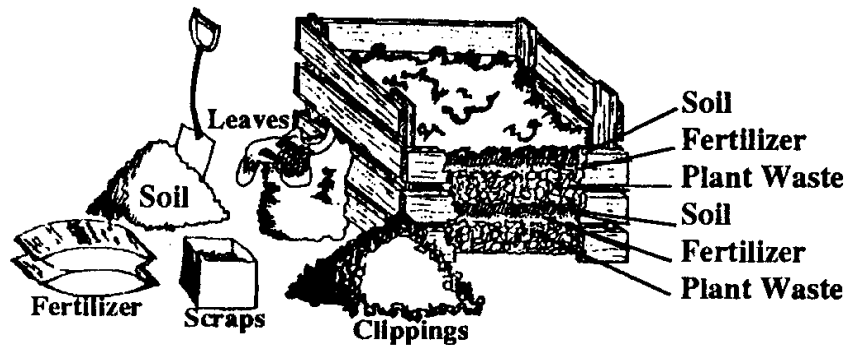


- **III. SELECT THE PROPER MATERIALS**

Acceptable	Not Acceptable
Grass Clippings	Meats
Leaves and Weeds	Bones
Manures	Large Branches
Coffee Grounds	Dairy Products
Wood Chips and Sawdust	Synthetic Products
Bark, Stems, Stalks	Plastics
Garden and Canning Waste	
Fruit and Vegetables	

● IV. MAKING THE PILE WORK

A compost pile is not just rotting garbage. Successful compost piles are structured as follows:



HELPFUL

HINTS:

- Turn pile every 2 to 4 weeks and keep pile moist to speed composting, allow air circulation and eliminate unpleasant odors.
- Build pile 3 to 5 feet tall, with an equal circumference. Small piles don't heat enough and large piles don't receive enough air in the middle for good composting.
- Apply a 1" layer of soil every 8 to 14 inches of organic waste to increase microbial activity.
- Apply nitrogen fertilizer every 1 to 2 feet to decrease the C:N ratio. Some common materials and their C:N ratio are listed:

Material	C:N Ratio
Garden refuse	20-35:1
Kitchen scraps	20-35:1
Manure	20-50:1
Sawdust	200-500:1
Grass clippings	15-30:1
Straw	50-150:1
Leaves	70-120:1

- Mow lawn every 5 to 7 days and don't bag clippings. Grass clippings break down quickly and do not add to the thatch layer.

- f) Gather leaves in the fall and till into garden and flower beds. By spring they decompose and add more humus to the soil.

● V. TROUBLE SHOOTING

Strong odor

Insufficient oxygen. Turn pile for increased air circulation. Materials may be too wet to allow for good oxygen penetration. Add dry materials.

Pile damp, but won't heat

Insufficient nitrogen. Add fertilizer or grass clippings. This decreases the C:N ratio, and increases decomposition.

OR

Materials too wet. Allow pile to dry or add additional dry materials.

Dry and not composting

Insufficient water. Form pile so center is the lowest point. This prevents runoff.

Ammonia smell

Too much nitrogen. Add sawdust or other high carbon materials and turn pile.

SUMMARY

Compost is an excellent, inexpensive way to increase the productivity and workability of soil. It reduces and recycles yard waste and produces an excellent soil amendment. Help the garden, the environment, and the pocketbook by composting lawn and garden waste.

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