BE YARD SMART

A Guide to Environmental Gardening

Special Insert to the UNL Cooperative Extension The NEBLINE

Spring 2004

University of Nebraska Lincoln

UNL Cooperative Extension in Lancaster County
444 Cherrycreek Road, Suite A, Lincoln, Nebraska 68528
Phone: 441-7180 • Web site: lancaster.unl.edu

IANR

Composting Turns Yard "Waste" Into Useful Material

Compost is a mixture of partially decomposed plant material and other organic wastes. It is used in the garden to amend soil and fertilize plants.

The chief advantage of compost is its ability to improve soil structure. Good garden soil is loose and has a high water-holding capacity with adequate drainage. Adding compost to heavy clay soil improves drainage by improving soil structure. Compost also absorbs water and improves the water-holding capacity of sandy soils. To conserve moisture it is essential to have soil with good water-retention.

In addition to improving soil structure, decomposing compost will slowly release plant nutrients. Compost will not provide all the nitrogen that highly productive crops require. Organic gardeners can supplement compost applications with manure to produce good yields without the addition of other fertilizers.

And last but not least, making and using compost allows the gardener to recycle garden wastes and reduce the burdens of organic trash on our landfills.

Composting Materials

Almost all organic materials will decompose, but not all organic materials belong in the compost pile. Yard wastes, such as leaves, grass clippings, straw and non-woody plant trimmings can be composted. The predominant organic waste in most backyard compost piles is leaves. Grass clippings can be composted; however, with proper lawn management, clippings do not need to be removed from the lawn. If clippings are used for compost, it is advisable to mix them with other yard wastes. Branches, logs and twigs greater than 1/4 inch in diameter should be put through a shredder/chipper or cut up prior to placement in the compost pile. Kitchen wastes such as vegetable scraps, coffee grounds and eggshells may also be added. Sawdust

see COMPOSTING on next page

Using Wood Chips for Mulch Has Multiple Benefits

Wood chip mulch is made from the chipping of tree and landscape prunings. Rather than taking up landfill space, these once discarded products (including Christmas trees) are now providing a better growing environment for new plants in landscapes and gardens.

Mulch is material placed on the soil surface for the purpose of protecting the soil and plant roots. Not only do organic mulches add a decorative natural appearance to the landscape, they also provide many landscape benefits.

- **Helps retain soil moisture.** Mulch helps soil retain moisture and reduces water evaporation caused by wind and hot sun. Under its insulating blanket, soil remains moist long after bare areas become dry and require irrigation.
- **Reduces soil temperature extremes.** An application of mulch helps avoid extreme temperature fluctuations. It acts as an insulating blanket and keeps soil cooler during hot periods and warmer in winter months.
- **Reduces weed growth.** When the site has been properly prepared, mulching reduces weed growth (the headache of many gardeners). Occasional persistent weeds will need to be removed.
- **Saves time in landscape maintenance.** Place mulch under and between plants in tree and shrub beds, border plantings, hedges, rose beds and fruit orchards. By replacing grass with mulch, mowing and watering time is cut dramatically.
- **Gives a natural look.** A few fallen leaves in a planting bed with a wood chip mulch gives your landscape the natural beauty of a forest floor.
- **Prevents direct contact with soil.** Mulch prevents vegetables (including squash, pumpkins, melons, cucumbers, and unstaked tomatoes) from making soil contact, thus helps to reduce rot caused by soil microorganisms.
- **Creates paths.** A thick layer of mulch can be used to create walkways throughout the yard. Mulch paths permit easy access to any part of the landscape, even after heavy rains. During dry periods, mulch also reduces dust.
- **Prevents heavy rain damage.** Mulching prevents soil erosion. It permits water to seep slowly beneath the protective covering.
- **Increases survival of new trees.** Not only do mulches keep the soil cool and moist, they also keep the lawn mower and weed trimmer from damaging young bark and killing trees.

Free Woods Chips from City of Lincoln

The City of Lincoln has limited quantities of wood chip mulch on a first-come, first-served basis. Contact the Lincoln Recycling Office at 441-8215 for more information.

- Wood chip mulch is available at the N. 48th St. Transfer Station, located at 5101 N. 48th Street, (any vehicle) and the Bluff Road Landfill, located at Highway 77 and Bluff Road, (pickups and trailers only). There is a charge of $5 per cubic yard. City personnel will load woodchips into open pickups or trailers.
- Individuals may also self-load wood chips at no charge at the N. 48th Street Transfer Station recycling drop-off site.
- Delivery of wood chips within a 50-mile radius of the Bluff Road Landfill is available for a fee. Contact the Lincoln Recycling Office at 441-8215 for more information.

Ideas for Student Research Projects

Compost Ingredients

Garden supply stores and catalogs often sell compost "starters," which supposedly speed up the composting process. Develop a recipe for a compost starter and design a research project to test its effect on the compost temperature profile.

How well do human nutrition concepts apply to compost microorganisms? For example, will the microbes get a "sugar high," demonstrated by a quick, high temperature peak when fed sugary foods, compared with a longer, but lower peak for more complex carbohydrates?

Measure the pH of a number of different compost mixes. How does the pH of initial ingredients affect the pH of finished compost?

Some instructions call for adding lime to increase the pH when compost ingredients are mixed. Other instructions caution to avoid this because it causes a loss of nitrogen. How does adding various amounts of lime to the initial ingredients affect the pH of finished compost?

Microorganisms

Composting recipes sometimes call for inoculating the pile by mixing in a few handfuls of finished compost. Is there any observable difference in appearance of microbes between systems that have and have not been inoculated?

Does the pH of the initial compost ingredients affect the populations of microorganisms during composting?

Compost Physics

What type of insulation works best for soda bottle bioreactors? Does it help to have a reflective layer? Do different insulative materials or different thicknesses affect the temperature profile?

When constructing compost bins or piles, some people incorporate perforated pipe, wire mesh or other systems to increase passive air flow. What is the effect of different methods of aeration on the temperature profile of any one compost system?

How do various means and schedules for turning a pile affect the temperature profile and the time needed for production of finished compost?

see STUDENT PROJECTS on next page