



Composting

Composting uses the natural process of decomposition to transform organic matter into a nutrient rich, concentrated substance called *humus*. This beneficial end product is used by gardeners and commercial growers alike as a soil amendment because it improves the overall health of the soil.

Humus will improve soil structure which in turn reduces the tendency for soil to compact, a light, loose soil allows for better gas exchange between plant roots and the air. Loose soil also improves drainage and allows for better root penetration. The addition of compost helps keep soil micro-organisms in balance which naturally control plant disease and insect outbreaks. Compost supplies essential nutrients and increases both the nutrient and water holding capacity of the soil resulting in reduced fertilizer use and water consumption. Best of all it can be available free when you recycling your own yard waste.

Success with composting is easy once you understand the basics. You need to use the right materials combined properly in a large enough space with adequate moisture and air (oxygen).

A compost pile is built so it will retain heat, especially in the center. When the process is at its peak the pile heats up with temperatures ranging between 140 -160 degrees Fahrenheit. The high temperature kills weed seeds and fungi that cause plant diseases. The sterilization may not be complete at the cooler outer edges of the pile or if the overall temperature is too low.

There are different methods used to produce compost. The following is a simple method that works well. Select a location, choose an area at least 5' X 5' square. Using a pitch fork or cultivator loosen the soil to a depth of about 2". This improves drainage and encourages micro-organisms, beetles, and earthworms to "move in". Avoid a site that tree roots may invade.

Next, form the walls of the pile, keep them as vertical as possible. Chicken wire and other lite fence material are good because they allow for good air circulation. I like to use bales of straw for sides, they allow air to enter the pile and are easy to work with, use them like building blocks. Straw bales will decompose slowly on the edge adjacent to the compost and will need replacement from time to time.

Next find the right ingredients. Carbon & nitrogen supply the energy needed by the microbes to break down the organic matter. Nitrogen rich ingredients are referred to as the "Greens" in a compost pile. Grass clippings, and green leaves from pruning are good examples of "Greens". While the Carbon rich ingredients are called the "Browns" with dead leaves, and shredded newspapers being good examples. The smaller the pieces put into the pile the faster they will decay. Push a lawnmower over leaves or rent a power shredder to grind twigs, stems, and leaves for the compost pile.

The list below will help you choose the right ingredients for great compost.

DO USE

- Grass clippings
- Shredded Newspaper & Cardboard
- Coffee Grounds & Egg shells
- Weeds, Hedge clippings
- Leaves, Flowers, Sawdust
- Fruit & Vegetable scraps
- Straw, Hay, Wood ash
- Corn cobs & Husks
- Old potting soil & dead houseplants

DON'T USE

- Butter, Vegetable oil, Lard
- Bones
- Cheese
- Beef, Poultry, Fish
- Peanut Butter, Sour cream, Yogurt
- Glossy or Coated paper
- Thick branches & Limbs (over 1/2")
- Dog & Cat manure
- Dead animals

Start the pile with a 'Brown' layer on the bottom. Add a 'Green' layer and continue to alternate layers as you build up the pile. Spray water lightly on each layer as it is built. When the pile is about 4 feet high add the last layer and make it of "Brown" material. Finally cover with a tarp, it is best to keep it from becoming water logged from rainfall.

After the compost pile sits a few days it will become active and heat up. Oxygen is important for the growth and maintenance of the organisms that decompose the organic matter. The process can be sped up by "turning" the pile which increases the oxygen available to the organisms. ("Turning" is not required for a successful compost pile unless it becomes water logged). Use a pitch fork or spade to mix the

layers together and turn over. Pull the material from the edges of the pile to the center where the heat is greatest. If the pile is *not* moist add water very lightly and recover with the tarp. Turn the pile as desired, about once a week or twice per month. Decomposition slows or stops during the cold winter months, but resumes in spring as temperatures climb again.

The compost is ready for use when there is no longer any heat produced from the pile. The humus end product should be darkly colored, loose and crumbly with a slight earthy odor. Use compost as a soil amendment incorporating it before and during planting. Spread it like mulch on existing shrub beds and lightly cultivate it into the top inch or more of soil. If you are very energetic try using an auger to drill holes at the drip line around trees and then fill them with compost. All trees, especially fruit trees can benefit from this use of compost.

For more information about horticulture or the Master Gardener Program in Frederick County, call the Frederick County Office of the Maryland Cooperative Extension, 301- 600-1596, or visit <http://www.frederick.umd.edu/>. Our mission is to educate Maryland residents about safe, effective and sustainable horticultural practices that build healthy gardens, landscapes and communities.