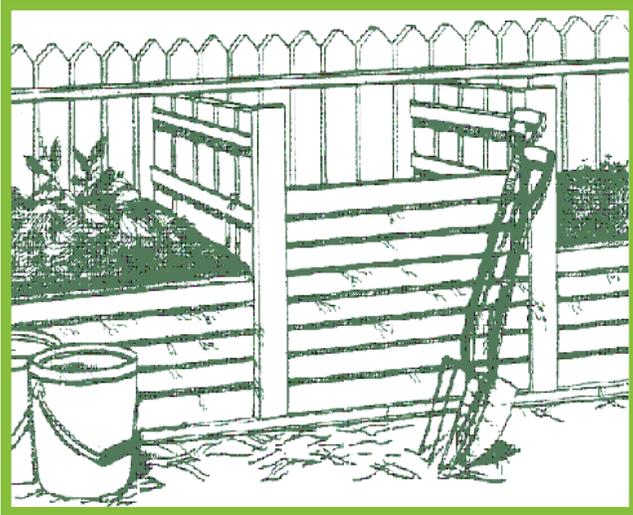


GARDENING with COMPOST

Compost Site and Gardens
Fernbank Science Center, DeKalb County Schools



HOW TO TURN WASTE INTO BLACK GOLD



To many people, composting is a mystery. When I talk to people about why they don't compost, I hear, "it's too difficult, I don't know how, and I don't have time." My personal favorite is, "why would I want to do that?" Composting is the art of turning organic substances, usually leaves and grass, into a dark rich crumbly soil we call humus. This humus is essential to the health of the plants in your yard. In north Georgia, we face the Herculean task of taking red clay and turning it into soil in which plants other than weeds can actually grow. Many people go to their local nursery and actually pay for bags of compost when they could be creating their own, right in their back yard with very little effort!

Composting is actually one of the easiest things in the world to do. In fact, the world has been composting since the first plants grew on earth, and without any help from us! One of my favorite T-shirts says "Compost Happens," and it does. But, if you leave it to Mother Nature, composting may take a little longer than we want to wait,

particularly if you are a gardener. So, if you are interested in learning how to enrich your soil and reduce your yard waste (an environmentally sound practice), then read on.

The word compost comes from two Latin roots, one meaning "together," and the other meaning "to bring." If you want to compost, keep it simple. We want to bring together the BROWN materials in your yard, usually dead leaves, sticks, pine straw, and the GREEN materials, usually grass clippings, annuals that have been pulled, and sometimes food waste. If you bring together these two types of materials, you will eventually get your "black gold" otherwise called humus.

The art of composting has to do with how quickly you can cause this transformation to occur. In order for your transformation to occur as quickly as possible, there are a few things for us to consider. The organisms that are responsible for a majority of this transformation are bacteria and fungi. Advertising has convinced us those bacteria or 'germs' are terrible things, but without them decomposition could not occur. In order to grow and multiply, microorganisms need four things: 1) an energy source, in this case carbon which comes from the BROWN materials; 2) a protein source, or nitrogen which comes from the GREEN materials; 3) moisture; and 4) oxygen. When these four requirements are met, composting can proceed rapidly.

Most people prefer some type of container to hold their yard materials while they are composting. There are many different types of containers available in catalogs and nurseries, but I prefer simple, cheap containers that are easy to make yourself. The simplest is a wire mesh bin. All you need is 12 feet of 36" wide 1" poultry wire, or 1/2" hardware cloth. Make a circle, and wire it together with twist ties, or simply hook the free ends of the cut wire around the other end to hold it.

My second favorite is a wooden pallet bin. These are usually available free of charge from local businesses. Take four pallets, and wire these together to form a square. Be sure to leave the front pallet so that it can be opened to make it easy to dump your wheelbarrow. If you have spare lumber lying around, just waiting



Wooden Pallets can usually be obtained from local businesses free of charge.

for a project, you can make your own wooden slat bin. The dimensions of 4 feet by 4 feet are good for any home composting system.

Once you have decided what type of container you want to use, you need to decide where in your yard to locate it. Many people debate over whether it's better to place it in the sun or in the shade. I tell people to put their bin where they can easily get to it. If your garden is on one side of your yard, and your compost pile is far away and hard to reach, chances are your materials won't find their way to your bin. It is also nice to be close to a water source, but it is not crucial.

Now it is time to fill your bin with those BROWN and GREEN materials. The volume of these materials is important to the speed of decomposition. You always want more BROWN material than GREEN material. I like to think in terms of wheelbarrows, so a ratio of 3 wheelbarrows of BROWN to 1 wheelbarrow of GREEN material is a good ratio. However, if you don't have those quantities, don't worry about it. Things just proceed faster if the ratio is correct.



Completed Wooden Pallet compost bin.

When adding this material to the bin, it is easiest to add it in layers. Start with your browns, add your greens and then mix it thoroughly. After mixing is the best time to add water. You'll be amazed at how much water your material will absorb! You will need it wet enough so that if you picked up a handful and squeezed, you'd produce a few drops of water.

Continue this layering, mixing and watering until your bin is full. At this point, you can turn around and walk away and consider it a job well done. It will take about one full year for your humus to be produced without any further work. A lot of people will start one bin in the fall, and one in the spring. As each bin matures, refill it and that way you'll have humus ready in the fall and the spring.

If you would like to use your compost sooner, there are a few things you can do to speed up the process. Remember that your microorganisms require oxygen for decomposition to occur. When the available oxygen is used up, the bacteria begin to slow their digestion down. One way to be sure that your bacteria are actually digesting your materials is to check the temperature of your pile. Bacteria produce quite a lot of heat, up to about 160 degrees F. This doesn't mean that you have to use a thermometer (although some of us have been known to do so). Just stick your hand inside your pile; you'll know if it's warm! If sticking your hand inside your pile doesn't appeal to you, open your compost pile with your pitchfork and look for steam or feel for heat. When the temperatures begin to drop in your pile, you can be sure that your bacteria are consuming all of the available oxygen. That means it's time to turn your pile. Turning your pile can be as simple as stirring it with a piece of rebar, or pitching it out of the bin, and then returning it. This is also a good time to add water to your pile.

The most common question I hear is, "how do I know when it's done?" You'll know it's done when you can not recognize your original materials anymore, and it looks like brown crumbly soil. If you are continually adding new materials to your bin, this may be a little harder to recognize, but the humus will settle to the bottom of the pile, while the larger, undigested material will stay at the top. Some people like to make a screen out of hardware cloth and 2 x 4's and run their humus through it to remove the larger pieces. I garden on the theory that those larger pieces will help create air pockets in your soil.

There are many ways to use your finished compost. One of the easiest things to do is to use it as a top dressing for your established lawn or gardens. If you are starting a new flower or vegetable bed, double dig your soil and add your compost as your soil amendment. The compost will act as a slow fertilizer, as well as help the roots of your plants get well established. Compost can also be used as a component of potting soil (½ compost, ½ soil) for starting new seeds. There is some evidence that compost helps prevent damping-off disease in seedlings. You can also make compost tea (Mother Nature's Miracle Grow) by mixing equal parts of water and compost. Strain out the compost and use the water as liquid fertilizer.

Some of the most beneficial by-products of learning to compost are: becoming able to recognize the cycles of the earth, to appreciate the complexity of nature and to understand that we too are part of this cycle. If you don't understand what I'm talking about, start composting, I'm sure that you soon will.



For more information on composting, visit Fernbank Science Center's Home Composting Demonstration Gardens. It consists of a walk through exhibit that contains 12 different types of composting bins and on-site information. We have a vegetable garden, hummingbird and butterfly garden, herb garden, bog garden and water garden. Volunteers are often working in the gardens on Saturdays from 11:00 a.m. to 2:00 p.m. and love to answer questions. You can also email t.neal@fernbank.edu for additional information on composting classes that are offered free of charge to organized groups.