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Composting in the Home Garden.

One of the pillars of organic gardening is the steady application of compost to any area that is growing something of value. Compost is, of course, readily available for purchase from the garden center, but compost can be easily made at home with the most minimal tools. And the benefits to soil and plants of composting well justify the modest effort of making it.

Compost is created by combining organic wastes from home and yard in proper ratios and allowing microorganisms, water and heat to decompose the materials into dark brown earthy humus. This humus can then be used as a soil amendment or medium to grow outdoor plants.

All soils can be improved with the addition of humus. Specifically, most urban and suburban soils are of high clay content and compacted. This makes growing plants a challenge. The addition of compost promotes the creation of high quality soils that grow better plants and improve the environment.

Benefits of Composting

- Reduces the amount of waste into your garbage can by up to 50%. The landfills don't need or want this material.
- Reduces or eliminates the need for fertilizers.
- Enriches existing soils and regenerates poor soils by encouraging the production of beneficial micro-organisms. These micro-organisms in turn, break down the organic matter to create humus.
- Helps soil retain moisture and breath. Soils with high organic matter hold moisture better and release it over a longer period of time. They create a more friable soil that roots love to grow in.
- Suppress plant diseases and pests. The beneficial micro-organisms you introduce into the soil naturally suppress harmful diseases and pests.
- Greatly increase yield of crops. It's easy: Better soil-Better crops.
- Holds, degrades or eliminates many chemicals and hazardous materials in the soil. This is particularly important in the city where fallout of chemicals from the air can contribute to hazardous material in the soil.
- Reduce erosion and turf loss on hillsides, grassy play surfaces and roadsides.

There are three ingredients to making compost:

stuff: Dead leaves, branches, twigs, and a little native soil. Shred or break up to

Brown

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Composting Ingredients

There are three ingredients to making compost:

Brown stuff: Dead leaves, branches, twigs, and a little native soil. Shred or break up to as small pieces as practical. Avoid material diseased or infested material or material contaminated by pesticides or petroleum products.

Green Stuff: Grass clippings, vegetable and fruit scraps, garden plants, coffee grounds, wood ash, and egg shells. Again, avoid material that is diseased, infested or contaminated with chemicals or oils.

Water: The right proportion of water in the compost activates the biological activity.

Other Stuff that is OK to Compost:

Horse or cow manure, Cardboard (torn up or shredded), Clean paper, shredded, cotton rags, dryer or vacuum lint, hair and fur, hay and straw, sawdust, no preserved wood, nut shells other than black walnut.

Do not Compost:

Black walnut leaves or twigs, coal or charcoal ash, (only firewood ash), dairy products, diseased or infested plants, fats, grease lard or oils. Meat, fish bones or scraps. Pet wastes, or yard trimmings with possible chemical residues.

Making your Compost Pile

Select a spot for your compost pile or bin on bare mineral soil that is fairly level, and receives plenty of sun. Compost piles that are contained on at least three sides will decompose quicker. There are a number of materials you can make a bin from, such as stone, wire fencing, wood pallets, or several side by side turning bins. Turning bins make turning the compost over easier, by just turning it into the next bin. It requires more space and more compost. You can get plenty of ideas from the resources suggested at the end of this article. Some general suggestions:

- Chop your compost materials up whenever possible. The more surface area available, the faster the decomposition.
- Size the compost pile correctly. . A pile should be between 3 and 6 feet square. Smaller than this and the pile won't be able to generate enough heat for decomposition. Larger than this and it won't get enough oxygen. And that could lead to unpleasant smells.
- Place large or course materials at the bottom of the pile to introduce air into the pile and drain excess water out. Also do not cover the pile with plastic or any impervious material. Air needs to circulate.

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- The first layer should be some branches, twigs and other coarse 'brown' material. Up to about 6".
- Start adding your green materials up about 8-10" thick. Keep the compost 'sponge damp' moist.
- When you've dumped the above amount of green stuff in, add some native soil, compost inoculants, or topsoil on top. An inch or so will do.
- To speed decomposition up a bit, you can add manure, lime or wood ash to the top. These materials add nutrients and reduce the pH of the mix. These materials are especially helpful if there is a lot of bulky material in the pile such as grass clippings, leaves, or ground brush. Make sure these bulky materials are watered.
- Repeat the above steps fill the pile or bin is full.

The pile will generate some heat as the bacteria start their work. This is a good sign. The pile can be left alone to compost in 12 months. Or the pile can be turned every couple of weeks to greatly accelerate the process. This yields nice compost in one growing season.

Compost is ready when the material is brown, crumbly and earthy smelling. If you have unpleasant smells in the compost, turn the pile well and give it more time. Work your finished humus into the top soil layers of flower, shrub or tree beds. Vegetable gardens can be top dressed any time of the year. For lawn applications, apply as a ½ inch layer each spring and rake in.

It is hard to know the exact nutrient make up of compost as it is created. This can lead to swings in soil acidity, nutrient excesses or nutrient deficiencies. It is a good idea to have your soil tested every three years or so. Soil amendments can then be added to soils before serious growth problems reach the plant.

Composting is starting to become a veritable industry. You can obtain compost bins, thermometers, inoculants, and advice at any of the Oakland nursery stores and many websites. Refer to the list of resources at the end of this article for composting information.

Vermicomposting

This is the production of an excellent form of compost called worm castings or vermicompost. Red worms are placed in bins with organic matter to break it down. This can be a good alternative if you lack outdoor space, since vermicomposting requires uniform temperatures for the worm population. An excellent publication can be downloaded from the U.S. EPA website: <http://www.epa.gov/waste/conserve/rrr/composting/vermi.htm>



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Compost Tea

As the name implies, this product is made by steeping high quality compost in aerated water for 1 to 2 days. The compost tea derived from this is then applied to mulch, or soil surface to provide beneficial nutrients and microorganisms to the soil. The beneficial organisms are primarily fungi, bacteria, and protozoa, all important components of a living organic soil. Application of compost tea, undiluted at a rate of 1 quart per 1000 square feet is purported to improve soil fertility, beneficial organisms, and plant growth. The vigorous aeration of the tea solution is of importance to avoid anaerobic conditions, (lack of oxygen) which can lead to a solution harmful to soil and plant life.

An excellent recipe for the making of compost tea is available through the Pennsylvania Dept. of Environmental Protection: <http://www.dep.state.pa.us/dep/deputate/airwaste/wm/RECYCLE/tea/tea1.htm> .

There is a plethora of websites for more information on this.

Resources

Wastes-Resource Conservation-Reduce Reuse Recycle-Composting, U.S. EPA, 2009 www.epa.gov.

Composting at Home, Ohio State University Extension. Fact Sheet HYG-1189-99. 1999, www.ohioline.osu.edu.

www.howtocompost.org

www.compostguy.org

Secrets to Great Soil, Elizabeth P. Stell. Storey Publishing 1998. *Good book on composting, mulching and making healthy, fertile soil for garden and lawn.*

Rodale's Ill. Encyclopedia of Organic Gardening, Pauline Pears, editor. Rodale Books, 2002. *Great book on everything organic and soils.*

Let it Rot, Stu Campbell, 1998. Storey Publishing. Third edition. *First published in 1975, a good book on composting with helpful additions each printing.*

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