

HOME COMPOSTING

What is Compost:

Compost is a dark, friable, partially decomposed form of organic material similar in nature to the organic matter in soil. Compost is created by the controlled decomposition of organic materials by soil organisms known as decomposers.

Why Make Compost:

Composting efficiently and naturally utilizes materials that would otherwise need to be disposed of in a landfill or other disposal site. This process diverts certain organic materials from the waste stream and provides beneficial alternative uses for the resulting product. Wastes of the garden, landscape and home can be turned into a useful product that is beneficial to the soil and environmentally safe.



What Material May be Composted:

Many kinds of organic materials can be used for composting. They are divided into two classes – green and dry. Green materials are such things as grass clippings, green weeds and leaves, animal manure, fruit and vegetable wastes, old flowers and vegetative kitchen scraps. Dried leaves and weeds, straw, sawdust, wood ashes, shredded paper, and other similar products are examples of dry materials. Do not use droppings from carnivores including cats and dogs as they may carry disease-producing organisms. Also avoid meat products such as grease, meat scraps and bones because they may attract animals and develop unpleasant odors during decomposition. Use sawdust and wood ashes only in small amounts because they are slow to break down. Seeds of bur clover and cheeseweed, some amaranthus seeds and oxalis bulbs are not killed by composting.

It is best not to use diseased or insect infested plants for composting since some of these organisms may not be exposed to high enough temperatures to kill them. Weeds with mature seeds should not be used for the same reason.

Making a Compost Pile:

Select a spot in your yard that will not interfere with other family activities, yet is conveniently located to the house and garden and will provide room to work and store the raw materials. Begin the process by separating the green and dry materials. It is important to mix approximately equal amounts of material from the green and dry groups. If too much green material is used, the organic matter will decompose very rapidly, but there will be a loss of nitrogen and problems with odors. If too much dry material is used, not enough nitrogen is available and decomposition will occur slowly or not at all.

Soft, succulent materials do not need to be chopped into small pieces because they will decompose rapidly. Woody material such as tree trimmings or plant stems decay slowly. They should first be cut or chopped into small pieces before adding them to the pile. If compost is desired within a short period of time, these materials should be composted separately.

If lawn clippings, shredded newspapers, large leaves or similar materials are used, avoid matting by thoroughly mixing with other materials. Matting excludes oxygen and water and slows the decay process.

The size of the pile is important. A freestanding pile needs to be a minimum of one cubic yard (36" X 36" x 36") to build up the amount of heat necessary and to prevent heat loss. Heat retention is greater in bins or enclosures than in open piles. For this reason, compost piles in containers can be slightly smaller. As materials decompose, the pile should shrink to about half its original size.

Examples of materials that can be used for enclosures include wooden pallets, wood slat fencing (snow fence), woven wire fencing, cement blocks or scrap lumber. Be sure to allow air to enter the pile. For areas with limited space, a trash can with holes punched in the side and bottom can be used as a compost container.

If bins are used, a series of three side-by-side bins are quite useful. One kept empty at all times so that the material from an adjacent bin can be turned into it.

Maintaining the Compost Pile:

The moisture level of the pile is important. It should be kept at about 50% moisture. Too much water will replace air in the spaces between the residues, resulting in death of the microorganisms due to lack of oxygen. Under these conditions, decomposition will be slow and offensive odors may be present. If not enough moisture is present, decomposition will also be slow or will not occur at all.

To speed up the decomposition process, it is necessary to turn the pile periodically. Turning aerates the center of the pile where the major decomposition activity takes place. Turning also keeps excessive heat from building up, and shifts materials from the outer parts of the pile to the center where they are better able to heat up and decompose.

If the pile gets too hot (above 160 deg. F), the microorganisms will be killed, the pile will cool and the decomposition process will have to be started again from the beginning.

Heat is a product of decomposition caused by respiration of the microorganisms. Weed seeds and undesirable organisms are destroyed by heat when it reaches about 160 deg. Fahrenheit.

Covering the pile with plastic or some other material will keep out excess moisture during the winter and also help with heat retention. Keeping the pile covered during the summer months will reduce moisture loss due to evaporation. Covers also help to keep out raccoons, skunks, rats and other creatures that might be attracted to food wastes.

The more often the pile is turned, the faster the decomposition process takes place. If the pile is turned daily, compost can be ready in as little as two or three weeks. If turned once a week, the finished product may not be ready for several months. It is possible to make compost without turning the pile. In fact, this was the old way of composting. Although this method takes less effort and working time, it has several disadvantages. Space is taken up for a year or more, some nutrients may be lost due to volatilization or leaching by rainwater, and some disease-producing organisms and weed seeds may not be destroyed due to insufficient or uneven heat.

If the pile does not heat up in one or two days, it may be either too wet or too dry. Spread the material to dry if too much moisture is the problem; add water if lack of moisture is

suspected. If neither of these conditions exists, lack of nitrogen may be the problem. Correct this condition by adding materials high in nitrogen such as grass clippings, ammonium sulfate, fresh poultry manure, blood meal, etc.

It is possible to add material to a compost pile that has started decomposing. However, this will extend the length of time it takes for the pile to complete the decomposition process.

The Process of Decay:

The organic materials in a compost pile decompose primarily through the action of bacteria, fungi and other soil microorganisms. Garden and kitchen wastes, soil and dust contain the organisms necessary to start and maintain the decomposition process. It is not necessary to add microbial inoculations or other commercial "compost starter" preparations.

Earthworms, insects and other invertebrates also contribute to the process of decomposition.

Uses of Compost:

When the compost resembles dark brown crumbly soil and stops producing heat, it is ready to be used. Compost contains small amounts of essential plant nutrients that are released slowly during further decomposition of the organic residues in the soil. Nitrogen is probably the most important of these elements, although potassium, phosphorus and other nutrients may be present and will add to the fertilizer value of the finished product.

Compost also improves the physical condition of the soil by reducing surface crusting, aiding water infiltration and plant root penetration, and improving soil aeration. When used as a mulch, compost retards evaporation of water from the soil, lessens soil compaction by rain drops on the soil surface, reduces weed growth and soil erosion, and improves water penetration.

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