

MESSENGER-INQUIRER

	University of Kentucky College of Agriculture, Food and Environment Cooperative Extension Service
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Change Yard Waste into Compost for Your Garden
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Bring out the stored leaves from the fall held in trash bags, or rake some leaves and mix them with herbicide-free grass clippings to start composting yard waste in your backyard. The composting process takes the yard waste and produces a soil amendment or mulch for your garden plants.

Composting is the natural, biological process where bacteria, fungi (microbes), and other organisms decompose organic materials. Four key factors, aeration, moisture, particle size, and carbon-to-nitrogen ratios, are involved in successful composting. These factors are associated with keeping the microbes happy, so they break down organic materials through a heating process.

In the backyard, the minimum size of the compost pile is 3 feet by 3 feet by 3 feet or 1 cubic yard, otherwise, the pile will not reach the appropriate temperature range, slowing down the process. The materials for composting can be left in a pile or placed in a structure such as woven wire, wood and wire, untreated wooden pallets, or a three-chambered bin.

MESSENGER-INQUIRER

Compostable materials include leaves, herbicide-free grass clippings, pine needles, straw, and non-woody plant clippings such as weeds and vegetable plants. Do not use diseased plants from the flower or vegetable garden for composting. A small compost pile at home may not heat to high enough temperatures for a sufficient period to kill the disease organisms. It is also best to avoid composting weeds with many seeds, since the seeds may not be killed during the process in a home situation.

Kitchen waste such as coffee grounds, washed eggshells, and vegetable scraps may be added. However, meat, bones, whole eggs, and dairy products should not be used since they attract rodents and other animals.

Woody materials such as branches and twigs can be added, but chip them into one-quarter inch or shorter pieces to allow these materials to break down faster in the compost pile.

Pet and human feces should not be included in the compost pile because diseases from these feces can be transmitted to humans.

Add soil or leftover compost to the pile as the source of microorganisms. Purchasing a compost starter is not needed.

The best way to start the compost pile is to mix the materials together throughout the pile if most materials are available. If materials are collected over time, add them to the center of the pile.

Once the material is in the compost pile, aerate it by turning it with a garden fork or shovel. Aeration adds oxygen, which is essential for microbes. Frequently turning the pile during the initial stages of decomposition increases the activity of the microbes, thus reducing

MESSENGER-INQUIRER

the time and space required for composting. If the pile is turned infrequently, the composting process takes longer, goes without oxygen, and may smell.

Turning the pile also helps it reach a higher temperature. Heat, ideally between 90 and 140 degrees F, destroys some weed seeds and diseases but not the desirable microbes. Check the interior temperature of the pile with a thermometer or with your hand. The temperature of 90 degrees F feels comfortably warm in the hand as compared to 140 degrees F, which is too hot to touch for more than ten seconds.

Microorganisms need moisture. Water the materials as they are added to the pile and mixed together. The pile has the right amount of moisture if two drops of water come from tightly squeezing a handful of material from the compost pile. Add water while turning the pile if it is dry. Cover the pile with a tarp to prevent it from becoming too wet during heavy rain events.

If the pile is too wet, turn the pile frequently or add more organic material such as leaves. Excessive moisture replaces air spaces causing a lack of oxygen in the pile.

In a compost pile, the ideal carbon to nitrogen ratio (C:N) is 30 parts carbon to 1 part nitrogen (30:1). Carbon is an energy source for microbes while nitrogen is required for growth. Materials such as straw and woody material are high in carbon; grass clippings are high in nitrogen. An ideal C:N ratio is achieved by mixing high nitrogen materials with high carbon materials.

If the amount of nitrogen in your pile is low, add blood meal as an organic source of nitrogen or a fertilizer with a high nitrogen content.

MESSENGER-INQUIRER

Lime does not have to be added to the pile. Adding lime to the pile converts ammonium nitrogen to ammonia gas, leading to nitrogen loss. Finished compost usually is slightly alkaline without the addition of lime.

Finished compost has an earthy smell and looks like dark-colored soil. The pile shrinks to around half its beginning volume. The pile is ready to use when it no longer heats again when it is turned. Usable compost can be produced in three months or more, depending on the amount of time spent meeting the needs of the bacteria and fungi that break down the organic materials.

For more information about composting, contact the Daviess County Cooperative Extension Service at 270-685-8480 or annette.heisdorffer@uky.edu. “Composting” is available at <https://publications.ca.uky.edu/files/id192.pdf>. “Home Composting: A Guide to Managing Yard Waste” is available at <https://publications.ca.uky.edu/files/ho75.pdf>.

Annette’s Tip of the Week:

Remember that the smaller the particle size of materials in the compost pile, the faster the material will turn into compost. Smaller particles, such as shredded leaves, have a larger surface area that microbes can attack.

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