Module 01: What is Composting?

LSU AgCenter Home Composting Certificate Course

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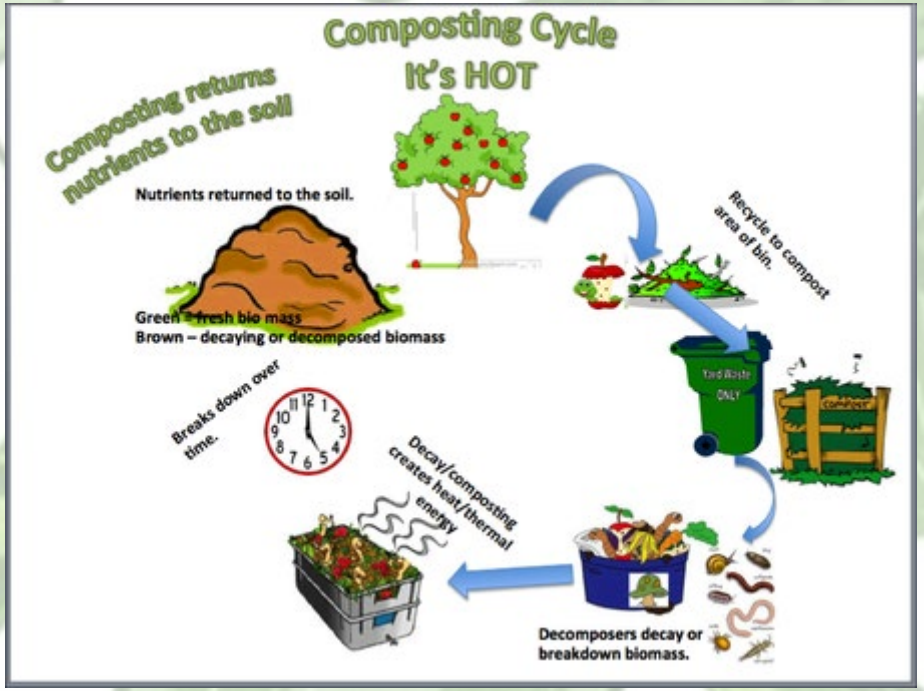
- In its broadest terms, composting is the biological breakdown of organic material to humus.
- Composting is as essential to life on earth as water and air.
- The recurring and endless process of composting is nature's way of processing biological waste and recycling essential plant nutrients.
- Plants, in turn, support all life on earth.



- More commonly, when we talk of composting, we mean the process by which we transform organic wastes into soil-building amendments for our gardens.
- This is a controlled process that requires human activity.

NATIONAL ORGANIC STANDARDS BOARD DEFINITION OF COMPOST

The product of a managed process through which microorganisms break down plant and animal materials into more available forms suitable for application to the soil. Compost must be produced through a process that combines plant and animal materials with an initial C: N ratio of between 25:1 and 40:1. Producers using an in-vessel or static aerated pile system must maintain the composting materials at a temperature between 131°F and 170°F for three days. Producers using a windrow system must maintain the composting materials at a temperature between 131°F and 170°F for 15 days, during which time, the materials must be turned a minimum of five times.

Cold vs Hot Composting

- Cold composting is the slow breakdown of organic matter that is piled together.
- There is little attention paid to the carbon:nitrogen ratio.
- No human involvement in aeration or moisture content.
- Materials are added and left on their own to decompose rather than regularly being turned, mixed, and otherwise managed throughout the season.
- Cold piles generally create compost more slowly, often taking several months or even a year, depending on conditions.

Cold vs Hot Composting

- Cold piles may be more likely to smell because the “aerobic” organisms that begin the composting process will die when the air is used up. They are replaced by “anaerobic” organisms that decompose materials more slowly and release smelly byproducts.
- Another disadvantage of cold composting is that the piles rarely get hot enough to kill plant diseases and weed seeds in the materials being composted.
- Cold compost piles are more likely to attract mice, rats and other varmints coming to feed on the components of the pile.

Cold vs Hot Composting

- Hot composting is the rapid breakdown of organic matter that is managed.
- Attention is paid to the carbon:nitrogen ratio of the pile as materials are added.
- Human activity is required to maintain good aeration and proper moisture content.
- Hot composting generally creates compost rapidly, taking from a few weeks to a few months to produce a finished product.

Cold vs Hot Composting

- Hot composting piles have no offensive odors because the “aerobic” organisms that begin the composting process are the ones that complete the process.
- Hot composting primarily gives off heat, water and CO_2.
- Hot composting reaches temperatures of 131^{o}F to 175^{o}F (sometimes hotter), hot enough to kill plant diseases and weed seeds in the materials being composted.
- Because of the heat and rapid breakdown, hot composting is less likely to attract rodents.

Vermicomposting is the process by which worms are used to convert organic materials (usually wastes) into a humus-like material known as vermicompost.

Please post all your questions and results to the message board .