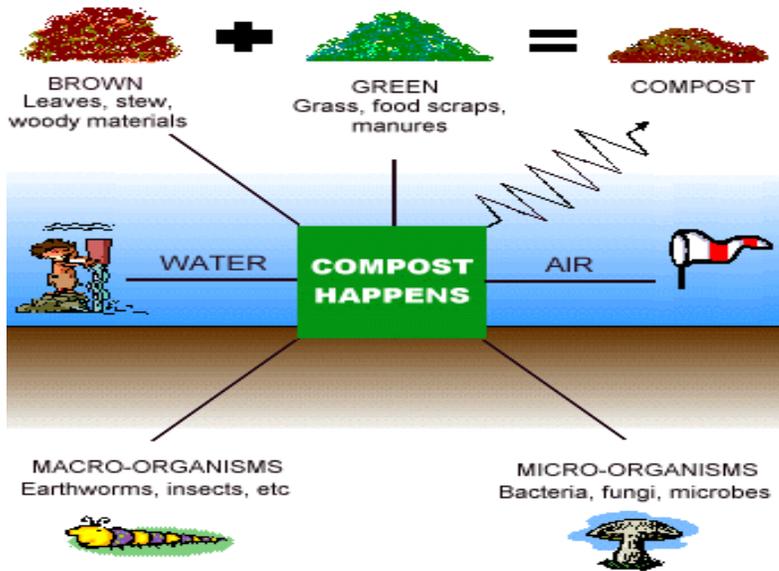


Composting, Getting Started

Arvada Gardeners' Class, April 27, 2022, with Stefan Karg

What is Compost?

Compost is decayed organic material used as a food for plants. Composting is the process of using the principles of decomposition to break down various materials into usable nutrients for plants and soil health.



Aerobic Composting

(shown above)

Lots of oxygen available, and lots of microbiological life helping with the process. Breaks down materials to most available nutrients for plants when suitable criteria for soil life exist: moisture, food, shelter, warmth. Lots of life present!

Anaerobic Digestion

Lack of oxygen, and it is very slow. Methane and CO₂ are produced in large quantities. Some industrial systems can collect and use the gas produced. Not much life needed.

(chart from BioEnergy Consult)

Benefits of Composting

- Environmental benefits of keeping waste out of the landfill where composting does not happen in a useful way. Reduce the need for outside nutrients to soil and plants, and helps to regenerate spent soils
- Economic benefits include spending less on waste removal, store bought compost, fertilizers.
- Personal health, it's fun, and will keep you curious and guessing what will come next!

Common Types of Composting

Hot Composting

Breaking down of both carbon and nitrogen heavy materials utilizing aerobic composting with bacteria, fungi, invertebrates, other microbiology, and HEAT! 110-160F degrees needs to be maintained and if above 140F degrees can kill most weed seeds and soil diseases. Needs lots of aeration and movement as materials breakdown, and watering may be needed in dry climates.

Bins and piles mostly, some trenches and windrows.

Can be very fast.

Cold Composting

This is a long process that does not often suit the home composting needs. Requires setting up a large pile with little additional input after the initial set up. Can take a year or two to breakdown and often has both anaerobic and aerobic decomposition happening.

Bins, piles or windrows typically.

Slow process.

Tumblers

A form of hot composting that makes the flipping/sifting easy. Hard to get finished compost out of and once filled it's hard to add more until it's down composting.

Great for apartments for smaller spaces, and can help keep the heat up.

Vermicomposting

The use of worms, usually red wigglers, to break down organic material to usable nutrients for plants. Takes care and time to make sure the worms are happy. Depending on set up size this can be a great option for a household of 3 or less.

Can be done inside and is great for apartments and small spaces.

Nitrogen to Carbon Materials

Keeping a balance of nitrogen(greens)/carbon(browns) is essential to creating an efficient compost system. The chart to the left has examples of each. The best way to figure out your ratio of nitrogen/carbon is to start with 50/50. If the compost is too dry and doesn't seem to be heating up at all, add some nitrogen. If it's too wet and smelly, add some carbon. Once you find the right mix, composting will be a breeze!

<u>Brown</u> carbon-rich	<u>Green</u> nitrogen-rich
<ul style="list-style-type: none">• dry leaves• straw and hay• shrub prunings• pine needles/cones• chopped twigs/branches• wood ash• newspaper• shredded paper (avoid glossy paper)• cardboard (shredded)• corn cobs, stalks• dryer lint (from natural fibers)• sawdust (from untreated wood)• eggshells• brown paper bags (shredded)	<ul style="list-style-type: none">• table scraps• fruit scraps• vegetable scraps• fresh grass clippings• lawn and garden weeds (if they have not gone to seed)• flowers• seaweed and kelp• chicken manure• coffee grounds/filters• tea leaves (loose or in bags)• corn cobs, stalks• hedge clippings• garden waste• fresh leaves

Other Great Resources

Composting Guides on what to add and picking the best system for you.

<https://learn.eartheasy.com/guides/composting/>

An infographic for creating and maintaining a compost bin/pile:

https://gardeningsolutions.ifas.ufl.edu/pdf/compost_graphic.pdf

CSU Extension Garden Note on making compost:

<https://cmg.extension.colostate.edu/Gardennotes/246.pdf>

Questions

Feel free to email Stefan at karg.ecology@gmail.com with any composting or gardening questions.