Composting 101

Mixing our recipe

1. Create a base of 3" – 4" of woody, brushy material to promote aeration (do not mix into pile).
2. Alternate layers of green and brown materials; keep the layers 2" – 4" deep. Mix bin contents often (minimum every two weeks). Pile will shrink. Add until bin almost full.
3. Watch temperature. Stir when it gets too cool or add nitrogen source material.

Moisture

Moisture content of bin should be like a wrung-out dish rag. Only add water if pile is very dry after mixing.

Tips

- Chop up larger materials for faster decomposition.
- Whenever you add a food scrap layer, make sure you sprinkle it with soil and cap off with brown layer to prevent smells and flies.
- Place carpet on surface of pile to help retain heat and moisture.

Compost is generally ready to use when it looks and smells like dirt. However, aging the compost for another 1 to 2 months is recommended to allow the critters to rest and cool down.

By current municipal code:

- Composting must be done in a "structure" designed for the purpose.
- Compost must be covered (lid or tarp does not matter).
- Do not place in drainage path.
- If compost contains manure, must be at least 100 feet from wells.

Composting 101

Basics of composting

- **Correct carbon-to-nitrogen ratios.** Composting needs carbon for energy and growth and nitrogen for protein that builds up the microorganisms' bodies and allow reproduction.
- **Oxygen.** Needed by microorganisms to breath while breaking down the materials.
- **130 degrees for 30 days.** At this temperature all pathogens, weed seeds and fly larvae are destroyed. At 160 degrees or above, the essential microorganisms will die, robbing the compost of its added benefits.
- **Control of moisture content.** Too little moisture and composting will not occur. Too much moisture will cause the composting process to slow and creates a leachate (runoff) issue.

Planning for 50/50 mix

If your primary composting resource is grass clippings and you mow 3,000 sq. ft. of yard once a week for 26 weeks, each mowing produces an average of 20 mower bags of grass, or 520 mower bags per summer.

Plan to add equal amount of the opposite source (carbon or nitrogen) through the year.

It's the natural way

Composting is an aerobic (oxygen-requiring) process in which microorganisms break down complex organic components of animal waste and bedding into simple organic, soil-like material called compost that can be used in several applications.

A multi-bin composting system works well for a household or community space that generates a significant amount of waste. This system is efficient, allowing you to have several working piles at different stages of decomposition and it is easy to turn and harvest. Stainless steel buckets work well for kitchen scraps.

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A guide to composting

BENEFITS • METHODS • SYSTEMS

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Composting benefits

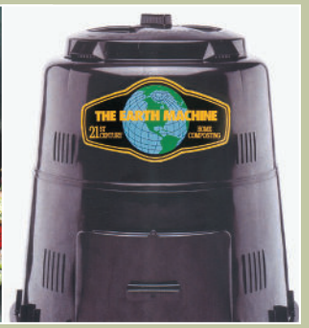
- It reduces environmental and health risks by controlling parasite re-infestation of animals, eliminating a potential breeding site for flies, and reducing the amount of polluted runoff that reaches surface and groundwater.
- It is valuable in erosion control, turf remediation, landscaping and crop production.
- Compost-enriched soil can help suppress diseases and ward off pests, saving you money and reducing the use of pesticides and herbicides.
- Compost can be used in reforestation, wetlands restoration and habitat revitalization.
- It provides an efficient manure-handling process by reducing the volume and odor potential.
- It enhances soil compaction, water-holding capabilities, and fertility for the yard, garden or pasture.

Composting myths

- **Spreads weeds:** if composting reaches a temperature between 130° F and 160°, all weeds, seeds and pathogens are killed.
- **It smells:** composting produces little to no smell if done right.
- **Contaminates ground water:** composting sites must be designed to isolate leachate (run-off) from ground water sources.

It takes time, temperature and moisture

The time it takes to compost varies, depending on the organic materials being composted and other conditions. An ideal composting system may take eight to twelve weeks to complete. Then comes a curing period, which lasts for another four weeks. During this time, the pile cools down and recolonization of other soil microorganisms takes place.



Successful composting systems can take many different forms and can be purchased or homemade. If you include food scraps (never compost meat products), you should use a animal-resistant bin. For large volumes you may need more than one bin or a designed system (the ASWCD can help).

Certain conditions are necessary for timely completion of the composting process:

- Organic material to be composted must have the appropriate carbon-to-nitrogen (C:N) ratio that supports growth and activity of the microorganisms that carry out composting. These bugs use up carbon for energy and growth and nitrogen for protein to build up their bodies and reproduce. Start with a 50/50 mix of carbon-to-nitrogen materials.

- Typical compost piles for animal operations consisting of manure and bedding materials have a high C:N ratio. This combination composts well by itself, especially if the bedding material is straw. Wood bedding material may take longer but you can hasten the process by increasing the nitrogen content by occasionally adding grass clippings or urea.
- The microorganisms need oxygen to break down the materials. Aerobic composting requires a lot of oxygen, particularly during the initial stage. A tremendous amount of energy in the form of heat is given off, creating an ideal environment for the microorganisms. The bugs operate best in temperatures between 110° and 150° F. Temperatures of 130° or higher destroy pathogens, weed seeds and fly larvae; but temperatures above 160° kill off the microorganisms. You can regulate the oxygen and temperature levels by turning the compost pile over about three times a month and monitoring the temperature using a long-stemmed thermometer. If the pile is too cold, add a nitrogen source. If it is too hot add carbon.
- Moisture is a necessary component of the biological activities and chemical processes. You need to manage the moisture so the composting materials are not too wet or too dry. The ideal moisture content is 50 percent. You can estimate the moisture content by squeezing a handful of composted material. It should feel like a damp sponge after you squeeze it – damp but not dripping. You continually lose moisture due to high temperatures and may need to regularly water your composting materials.

Compost must reach a minimum temperature of 130°F.

CARBON SOURCE	NITROGEN SOURCE
Leaves	Fruit scraps
Brush & prunings (slow to break down, chop if possible)	Vegetable scraps
Straw or hay	Grass clippings (add in thin layers so does not clump)
Paper, newspaper, cardboard (avoid glossy or colored paper and shred)	Weeds (only if reaching temperature)
Wood chips, sawdust (add in layers, slower to break down)	Manure (chicken manure is excellent "activator")
Dryer lint	Coffee grounds
NEUTRAL	
Egg shells (crush)	

DO NOT COMPOST MEAT PRODUCTS