

Community Composting Sowing Seeds Here and Now! June 18th, 2010



What is compost?

Decomposed organic matter

“People outline different principles for organic gardening, but the soil is always the starting point”
-Organic Living

“The path to the garden (or farm) of your dreams leads right through the middle of a compost pile”

-Vegetable Gardener's Bible

Benefits of compost

- Provides nutrition and makes plants hardy
- Improves soil structure
- Increases water retention
- Moderates soil pH
- Promotes microorganisms



How we can engage in this alchemy of turning wastestreams into foodstreams?

This is where relationship/community-building is crucial.

For many institutions, donating raw materials to your operation can be cheaper and improves their “green image”.

Be creative: food distribution centers, breweries, coffee roasters and shops, cafeterias, compost cab, utility subcontractors, city governments all want a local and reliable place to dump their organic waste.

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## *Principles of a compost mix*

\*DISCLAIMER: We are describing how to make a hot compost pile in order to speed up the process and eliminate potential pathogens and seeds. This doesn't imply passive piles are bad, but you must consider your needs. In our case, demand for soil is high.

1) Ratio: 30:1 Carbon/Nitrogen (Browns/Greens) You want to end up with a total ratio of 30:1, not a ratio of 30 parts brown to 1 part green. Remember, even "green" material has a significant amount of carbon.

(see attached sheet for list of organic materials and their C:N ratio)

## 2) Structure

- a. Start with base of twiggy, bulky, unshredded browns to promote air circulation (at least 6 inches)
- b. Alternate layers of greens and browns (remember the ratio!)
- c. On top of each green layer, add a thin layer finished compost and/or garden soil
- d. On top of each brown layer, add water until moist but not drenched
- e. Always finish pile with thick layer of browns to isolate greens from the outside
  - \*Prevents odors and unwanted scavengers
- f. Cover pile (usually with tarp), to trap moisture and prevent overwatering or drying

\*TIP: shred your browns to promote faster decomposition

\*TIP: more vertical than horizontal, like a campfire

\*TIP: to promote even more aeration, drive a rebar stake into the pile to make a deep hole, then place a perforated bamboo stick/plastic pole/chicken wire into it (or whatever you think of)

\*TIP: use your pitchfork to loosen and puff up the pile as you build it

3) Activators: save some money and add finished compost and/or garden soil to the layers to bring in some life. This is optional, the composting process will happen with or without adding compost.

## 4) NO

- Diseased plant material (especially those with mildew and fungus infections)
- Animal scraps (oil, bones, meat, dairy)
- Too much citrus
- Too much pine needle
- Weeds? If consistently keeping pile hot, most weed seeds will die

## 5) Maintenance

- Water: damp, but not dripping
- Checking temperatures: ideal is 100-155 degrees Fahrenheit
- Turning the pile: promotes aeration and a thorough decomposition; recommended when temperature drops closer to 100 degrees
- Keep a journal; can take as little as 2 months or as much as 8 months

6) Finished! You'll know it is done when it's crumbly, very dark brown, and fresh! There won't be a significant increase in temperature when you turn or otherwise aerate the pile. There may be

a lot of left over woody material in your compost, and that can be sifted out and recomposed. If you're just adding to your soil, you can mix it in and let it finish the composting in the ground.

### *Types of piles*

Windrows – used in larger commercial scale composting facilities, it is making large rows that can be easily turned and maintained by machinery.

Pallet Bins (3x3 at least) – home or urban farm scale, very mobile and easy to assemble. The advantage of a pallet bin over no bin at all is that you can create more volume and build that campfire structure better.

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WORMS!!! (or vermiculture)

Eisenia fetida or more commonly known as red worms or red wiggler worms.

They prefer decomposing organic matter, and cannot eat any hard material such as wood chips. They seem to really enjoy rotten food, soft food waste (such as bananas and melons), and material already gone through a compost bin.

Can digest their body weight in a day, if not more, and double in population every two to three months.

Can add even more microorganisms and nutrients to soil than traditional compost, while also reducing potential pathogens and improving soil structure.

Castings (worm poop) dissolve slowly, and thus prevent immediate leaching of nutrients when a rain comes. The humic acid (humus) in castings are a pH buffer, capture toxins in the soil, aid beneficial bacteria and fungi, and help roots obtain nutrients.

Principles of a worm farm

1) Container

Lots of options. 5 gallon buckets, rubbermaid bins, or use 2x4s to make bins for large-scale use (we make Growing Power style 4' wide by 4' deep by 3' high worm bins). A good rule of thumb, in contrast to compost piles, is to focus on surface area (horizontal), not depth of bin (vertical). Like with containers for potted plants, you want to make sure there are holes drilled for drainage or the worms can drown.



2) Location

Room temperature is ideal. Worms *can* withstand up to 80s or so, as well as 40s, but in between is best. Find dark location. Some folks leave it under their kitchen sink!

3) Bedding

The easiest thing to do is use compost from your compost pile. Little or no bedding is needed.

If you want to put fresh material into your worm bin, use straw, leaf mold, shredded newspapers, or coconut coir as bedding materials. Other options exist but these are most commonly used. Make a 6-inch or more bed, depending on how wet your material is.

4) Worms

The internet is a good source. While we are trying to build our worm population, we hope to be able to supply worms in the future. Start with at least a pound (1000 worms), but to jump start it, up to 5 pounds is ideal (if not more). Remember, they can eat about their weight's worth in a day, so the more worms you have, the more you can throw in.

Worms double in population, with enough space and food, every two to three months. In theory, 2 pounds of worms can become at least 32 pounds of worms if conditions are right after a year.

5) Food

Finely ground materials make chomping easiest for worms. We use finished compost from our windrows and bins. You can use any soft organic material. The mushier the better, and they like sweet things! It seems like bananas and melons are their favorite foods. Like compost, vermicomposting should NOT include animal products, diseased plants, and too much citrus.

And bury food so you don't attract unwanted flies!

6) Moisture and Aeration

Drill holes every 2-3 inches all around container. Keep watered, but like compost piles, not drenched. Open top periodically, or just loosely lay burlap sack on top.

Harvesting Castings and Worms

Lay metal window screen on top of your worm bin and place fresh food on top and cover with burlap sack (or something similar)

After a few days, majority of worms will be in top 2 inches of bin. Dump that layer into a new bin.

Make a compost screener: make a rectangular frame (as large as you'd like; we do one big enough to cover a wheelbarrel) with 2x4s and ¼ inch hardware fabric screening (use staple gun)

Hover screener over collection site (tarp, wheelbarrel, etc). Dump castings onto screener.

Gently spread out castings and look for worm eggs (small lemon-looking pods) and worms. Put these in new bin. Then apply pressure as you rub castings across screen to sort out material that hasn't broken down.

You may have to dry your worm castings a bit, as dryer worm casting sift faster than overly moist worm castings.

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### *Recommended Reading*

The Rodale Book of Composting: a true compost knowledge bomb

The Complete Compost Gardening Guide: fun to read, with some unconventional and thoughtful methods

Vegetable Gardener's Bible: clearly organized, the basics with practical tips

Worms Eat My Garbage: a classic!

Vermiculture DVD, by Growing Power