

Compost Happens! An Introduction to Feeding the Soil

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Overview

- What is compost?
- Why should you compost?
- Benefits of compost
- How to use compost
- Vermicomposting
- Resources for further study



What Is Compost?

- Nature's way of recycling
- Controlled decomposition



What Goes into Compost?

- Carbon-rich material (leaves, straw)
- Nitrogen-rich material (green plants, food scraps)
- Oxygen (turning helps add)
- Water (moisture speeds decomposition)



Let's Get Specific...

- Need 30:1 carbon-to-nitrogen
- Try for 2 parts green to 1 part brown.
- Example: 1/3 pile leaves, 1/3 grass clippings, 1/3 food scraps



What NOT to Compost

- Meat scraps
- Bones
- Dairy products
- Cat or dog manure
- Greasy or oily foods



Okay to Compost:

- Fruit peels
- Vegetable peelings
- Coffee grounds and filters
- Tea bags
- Leaves
- Grass clippings
- Straw
- Egg shells
- Wood ashes
- Paper towels and napkins
- Sawdust
- Plant trimmings



There are many ways to compost.



How long does it take?

- Size of pile
- Mixture of materials
- Environmental conditions
- Small piles won't heat, take longer to finish
- Try for 1 cubic yard (3 feet)



When is it ready?

- Can't recognize the material that went into it.
- May have a sweetish smell
- Dark brown and crumbly, looks like soil



A Few Tips

- Keep it moist. Aim for feel of a wrung-out sponge.
- Turning more often adds air, and helps avoid the odors associated with anaerobic decomposition.
- Try multiple bins or containers to stockpile material.



Benefits of Composting



- Saves space in your trash can, landfill
- Food waste makes up 12% of waste in NC
- Reduces methane gas formation in landfills→fewer GHG emissions

Benefits of Using Compost

- Improves soil texture
- Makes it easier for water to infiltrate soil
- Adds nutrients slowly, and at levels that won't harm plants



How to Use Finished Compost

- Incorporate 2" to 3" into new flower and vegetable beds
- Work 2" to 3" into top 6 inches of soil before seeding turfgrass
- Use 30% compost in soil mix for container plants



What is Vermicomposting?



Vermiwhat?

- Vermicompost- castings (poo) from worms that makes the greatest plant fertilizer in the world
 - It's black, earthy-smelling, nutrient-rich humus
- Vermiculture- the cultivation of a worm and microorganism environment that leads to the production of worm castings



Why vermicompost?

- Breaks down stuff and turns into free fertilizer
- Gets rid of what would otherwise go to dump
- Helps to make you feel good
- Worms are cute, in their own special way



What's a Red Wiggler?

- *Eisenia fetida*-
 - “I SEE nee a FET id a”
- Very different from an earthworm
- Most commonly used worm for composting
 - Tough
 - Withstands handling
 - Can be bought on internet anytime of year



Worm Sex Ed

- Worms are hermaphrodites
- Worms have ovaries and testes
- Worms join together head to tail in a slimy pouch and exchange sperm
- After mating, the worms separate and eventually form an oval shaped cocoon
- Cocoons are about 1/8" long
- Two or more sexually immature worms hatch from a cocoon



Essential Ingredients for a Worm Bin



- Opaque container
- Ventilation
- Drainage holes
- Composting worms
- Bedding
- Food
- Water



Worm Bedding



- Shredded newspaper
- Leaf mold
- Animal manures (only pastured animals)
- Coconut fiber (coir)
- Wood chips
- Peat moss (not a good choice)
- Soil (only a handful when starting out)



How many Red Wigglers do I need?

- Worm: garbage ratio (2:1)
- 1 lb of worms for $\frac{1}{2}$ lb of daily garbage, 1 lb of worms for 4 square feet of surface area
- 1 lb of worms for 1 lb of daily garbage, 2-3 lbs of worms in a six cubic foot bin



Where do I put the bin?

- 59-77F optimum
- Above 86F BAD,
below 50F BAD
- Should be moist
not wet
- pH 5-9
- Needs good
ventilation



Where do I put the bin?

Think convenience:

- Kitchen
- Patio
- Balcony
- Basement
- Garage
- Make it into a coffee table



Varieties of garbage

- Vegetable waste
- Tea bags, coffee filters and grounds
- Noodles and egg shells
- Watch out for citrus fruits- too much acid is bad
- Avoid meat waste and bones
- Just say no to Fido or Felix's poo
- Just say no to non-biodegradables

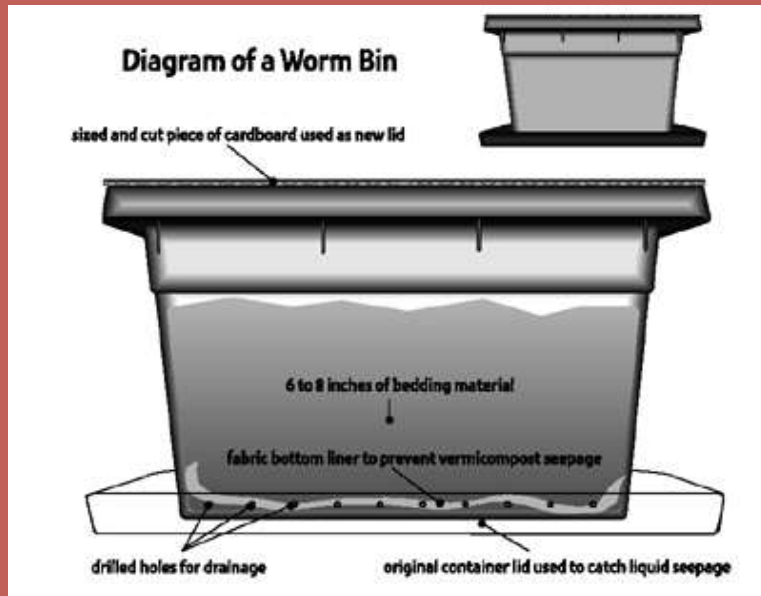


How do worms control the population?

- Young dudes compete for food
- They excrete castings and it is toxic to their own kind
- When the old guys die, they rapidly decompose, so you don't find dead worms all over the place
- They pretty much self regulate



Some problems



Excess water

- Drain and catch
- Add dry bedding
- Suck up with a turkey baster
- Pour off and drain
- Make a peat-moss or coconut fiber worm

Inside My Worm Bin



How do plants benefit from worm bins?

- Use as top dressing on pots or throw into your garden
- It's powerful fertilizer but it won't burn your plants
- Put it into a sock, let it soak in a 5 gallon bucket (like a tea bag) and reuse up to 5 times for watering





Learn More! Resources:

Print

-  Appelhof, Mary. Worms Eat My Garbage.
-  Brooklyn Botanical Garden composting book.

Internet

-  NC Division of Pollution Prevention and Environmental Assistance.
www.p2pays.org/compost
-  Rhonda Sherman, NC State University.
www.bae.ncsu.edu/people/professionals/sherman/

