TOP SECRET COMPOSTING RECIPE*


Do you know the correct term for gluten-free, sugarless vegan brownies?
COMPOST
ifunny.co

What Is This Secret Recipe?

- Easy and not labor intensive
- Will not require turning
- Will not smell bad
- Will not attract pests
- Efficient
- Will produce the richest compost available
- Will not need to monitor temperature, moisture, pH or Carbon/Nitrogen

What is Composting?

All organic matter decomposes over time.

Composting is the acceleration of that natural decay process. It is the controlled microbial decomposition of organic matter, such as food and yard wastes, by bacteria and other microorganisms, in the presence of oxygen and water.

Why Compost?

- ✓ Adds organic nutrients to soil, which become available to plants over time.
- ✓ Is an excellent soil amendment to improve soil structure, aeration and drainage.
- ✓ Makes plants more able to resist disease.
- ✓ Holds moisture
- ✓ Prevents erosion
- ✓ Balances pH of your soil
- ✓ Decreases garden and kitchen waste going to the landfill or waste stream.

Main Requirements for Composting

- Carbon-containing material at proper ratio
- Nitrogen-containing material at proper ratio
- Microorganisms to break down carbon and nitrogen
- Oxygen
- Moisture
- Warm temperatures

AL'S TOP SECRET COMPOSTING RECIPE

- Tree Leaves
- Nature's original solar panels
- Roots
  - Sends nutrients to canopy
    - Pound for pound leaf compost has more nutrients than manure
- Drops them at our feet every fall
- 2" of leaf compost is all any plant needs to be fed or protected from disease for an entire season

Stockpile of Leaves

What to Add to Leaf Compost

- NOTHING
- This is opinion based on French/Euro Horticulture Standards – Leaf Mold
- Kitchen scraps are cold – no nitrogen
- Although the right kitchen waste may move compost along
- Small amounts of the wrong kitchen waste won't harm compost
- **ONE EXCEPTION:** COFFEE GROUNDS
  - High in nitrogen, calcium, phosphorus and potassium
  - Hot and Moist

How to Leaf Compost (What's the Catch?)

Leaves MUST be shredded

How? What to Consider?

- Site: well drained, preferably sunny location
- Bin choice (indoor organics collection and outdoor composting)

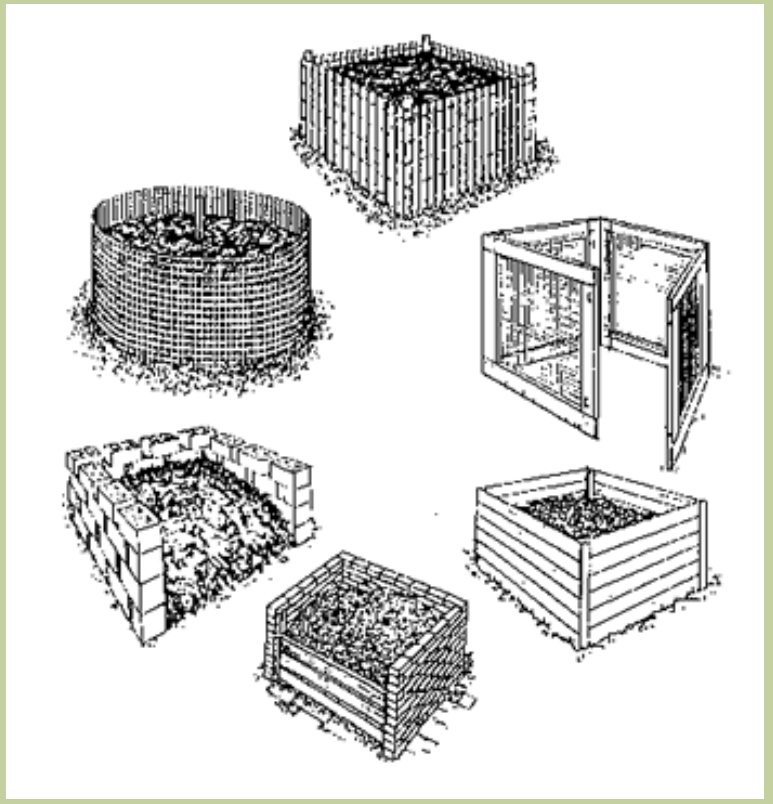
Outdoor Organics: Yard Waste

- Hedge trimmings, grass clippings, leaves, branches, yard waste
- Wider range of yard waste will give nutrient variety
- Some manure OK
- AVOID walnut tree leaves, nuts, branches and a few others*
- AVOID weeds unless you maintain a warm compost pile
- Chop if you can*
- CONSIDER A PILE METHOD for much of your yard waste, or use curbside pick-up or transfer station drop off for large volume

Other Decomposition Factors

- Location: sunny best
- Critical mass: ideal pile is 4 ft x 4ft x 4ft, or anything between 3x3x3 and 5x5x5
- Coarseness of ingredients: finer carbon and nitrogen feed stock breaks down faster (e.g., sawdust breaks down faster than large wood chips, and a chopped apple faster than a whole one)

Compost Cages



Multi-Bin System

Pile Method

A Neater Pile

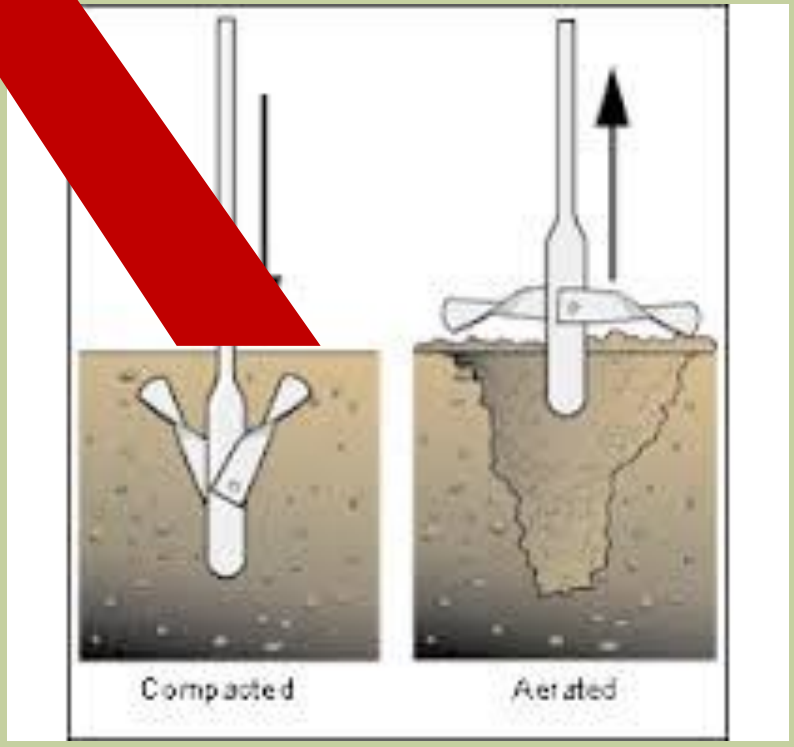
Cost Savings in Inventiveness

HT = Heat Treated = Good
MB = Methyl Bromide = Bad

Oxygen and Water

- Decomposing microorganisms requ oxygen & water for survival.
- Optimally, a pile should be aerated two times a month to provide sufficient oxygen to center of the pile.
- Pile should be damp -- not wet -- and should be constructed on well-draining soil. Add water to each layer*

- s: spade or pitchfork commercial araeting ool like this or auger type



Carbon:Nitrogen Ratio

Ideal for Compo

- Range: 25:1 to 30:1
- Carbon:Nitrogen ratio in common terms is the Brown:Green ratio.
- Brown: dried leaves, s wood chips
- Green: kitchen waste, grass clippings
- FINAL BLEND: 2/3 BROWN, 1/3 GREEN

S ces for Balancing

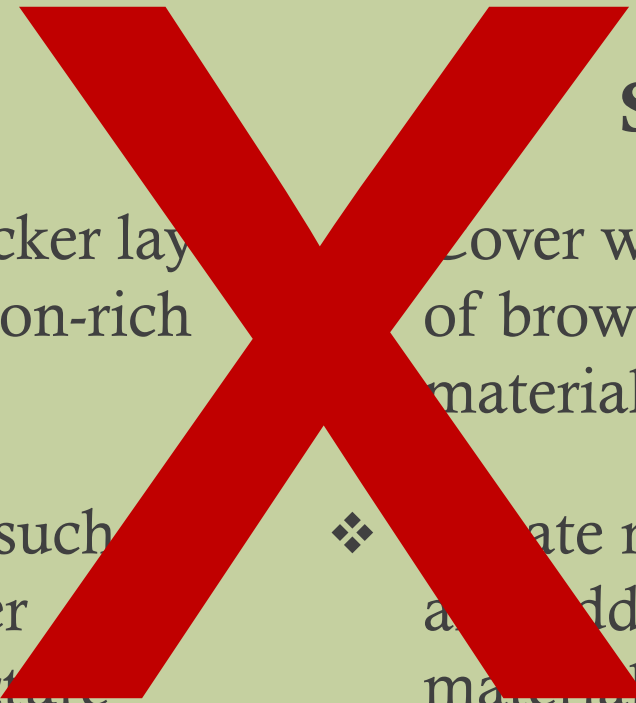
C MATTER	C:N Ratio
sawdust	600:1
	150-200:1
n leaves	50-80:1
Gre eaves	30-50:1
Grass cl	25-40:1
Food Waste	14-16:1
Cow manure	11-30:1

Internal Temperature

❖Ideal temperature f[illegible]icrobial d[illegible]position: between 90º and 125º. Below 9[illegible]d dec[illegible]osition is taking place at reduced rates. *

❖Decomposition still takes [illegible] in a "cold pile" but it takes much longer.

Problems or Barriers



Pests

- Cover with thicker lay of brown, carbon-rich material
- Add a barrier, such fencing or other enclosing structure
- Avoid ingredients attractive to pests

Smell

- Cover with thicker layer of brown, carbon-rich material
- ate more frequently, a dd layer of brown material after aeration
- Avoid very smelly ingredients

Summary: Composting Essentials

- Proper C:N Ratio
- Compost activators (pres[illegible] of microorganisms)*
- Monitoring dampnes[illegible] the
- Monitoring of ou[illegible]r and inte[illegible]ile temperatures
- Frequent aeration (for proper level of oxygen)
- Helpful considerations: location, size of pile, size of ingredients

What to do with Kitchen Scraps?

GARDENING TIPS

ALLOW WORMS TO DRAG UNWANTED ORGANIC MATTER DEEP INTO THE SOIL

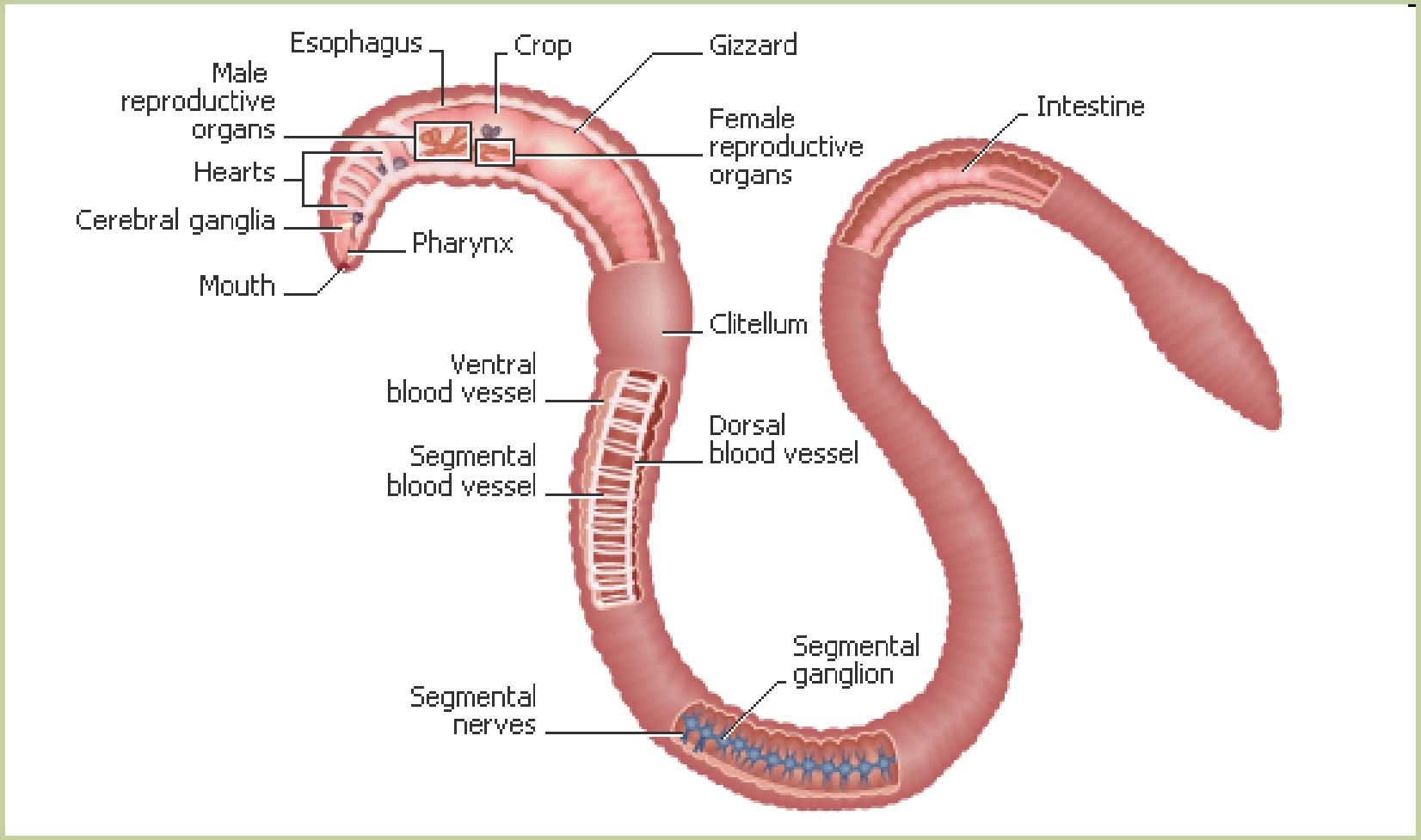
Worms

- 4500 species of worms worldwide
- 2500 species of earthworms
- None native to New England!
- Two types:
  - Earthmoving
    - Includes night crawlers
    - Found in New England soils but NOT native
  - Composting
    - Includes red wigglers

Composting Using Worms

- Worms
- Container
- Bedding Materials
- Moisture
- Ventilation
- Warm temperatures
- Appropriate pH
- FOOD!!

Worm anatomy



Worm physiology

- Worms do not have
  - Eyes
    - Sense light
  - Teeth
    - Has gizzard to grind food
  - Lungs
    - Air exchange diffused through skin
- Worms have five hearts

The good, the bad, and the ugly

Good

- Worms are low maintenance pets
- Indoor composting during colder weather
- No yard needed
- Low cost

Bad

- Composting worms are exotic species
- Swindlers sell inappropriate worms

Ugly

- Crazy snake worm (Amynthas spp.)

Worm Numbers

- One pound of worms = 1,000 worms
- One pound of worms will eat
  - One pound of garbage producing
  - One pound of compost per
  - One day (OR so they claim)
- Actual results may vary, just like the ad disclaimers

Container

- Specialized worm bins
- Wooden bins
- Plastic bins
- Drip tray to protect floor
- 2’x2’x2’ ideal for a pound of worms
- Ensure holes for air circulation

Bedding Materials

- Shredded newspaper but no glossy paper
- Coconut coir fiber
- Leaves chopped up with mower
- Several handfuls of soil
- Shredded cardboard but not waxed

Moisture

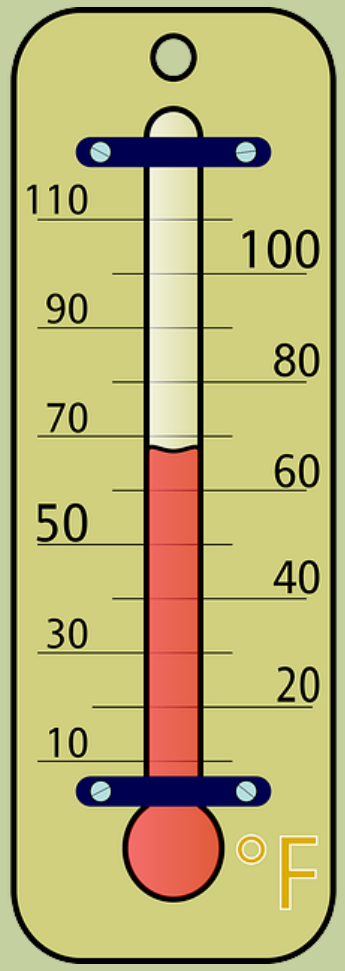
- Moisture level should be that of a wrung out sponge
- Worms will die if too dry
- Excessive wetness will cause anerobic conditions

Ventilation

- Holes are needed all bins, plastic or wooden
- Fluff bedding to increase pore spaces in bedding
- If bedding compacts, add airier material

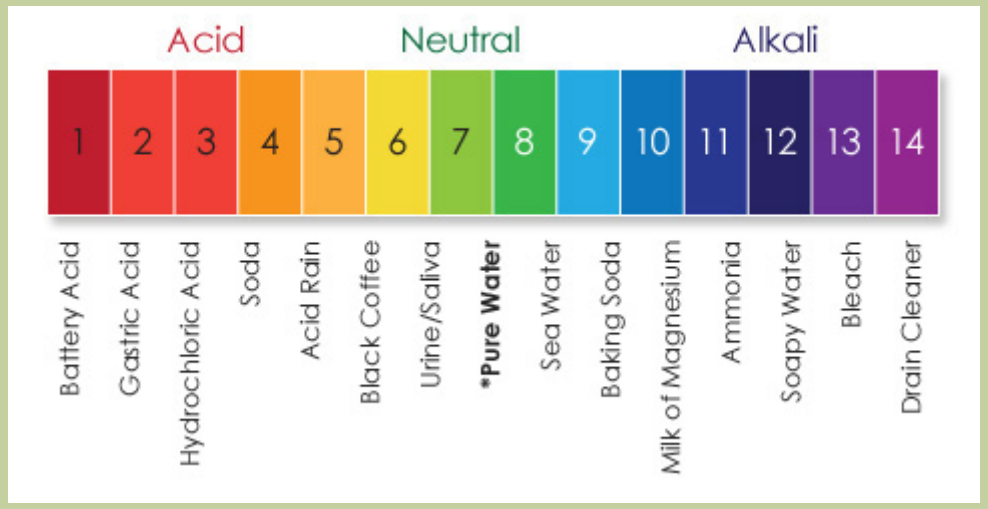
Temperature

- 95°F and above: worm death
- Over 86° F: overheating and escapees
- 68° to 77°F: optimum
- 40° to 50°F: very slow activity



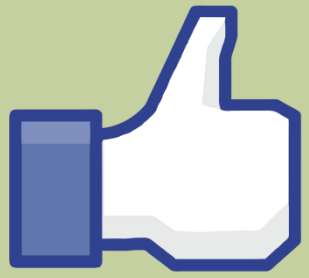
pH

- pH of 5 to 9 is the range acceptable to red wigglers
- Overly acidic (below pH 5) will kill the worms
- You may see escapes to alert you if the pH is too far off



Kitchen Organics Collection Bins

Worm Food



YES

Fruits
Vegetables
Cereal and Oatmeal
Cornmeal
Eggshells (crushed)
Coffee grounds and filters
Loose tea and tea bags
Shredded newspapers

NO

Animal bones
Animal bits
Butter
Salad Dressing
Mayonnaise
Glossy paper
Greasy food
Oil
Dairy
Pet waste

Kitchen Organic Waste for Bin Composting

- Fruit and vegetable scraps (including skins, pits*, stems)
- Coffee grounds (OK in paper filters) and tea bags (OK in paper tea bags, but not silk bags)
- Egg shells*
- Paper towels, paper napkins (look for unbleached variety)*
- For questions about what can be composted (e.g., an olive in brine/vinegar), consult websites like *Can I Compost This?*

HARVESTING METHODS

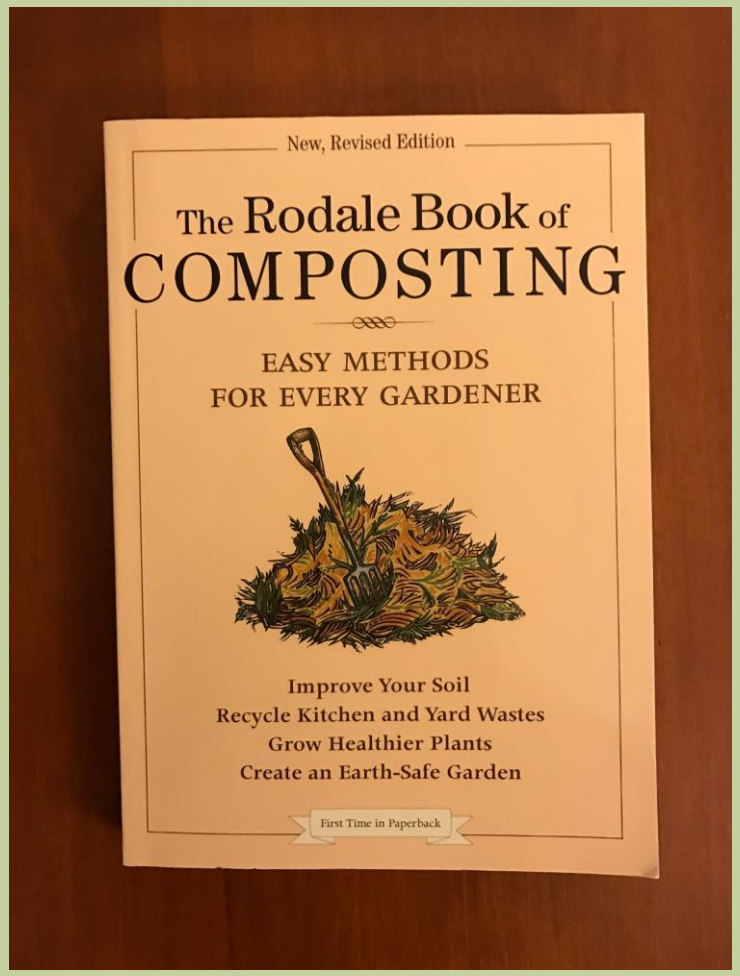
- Dump and sort

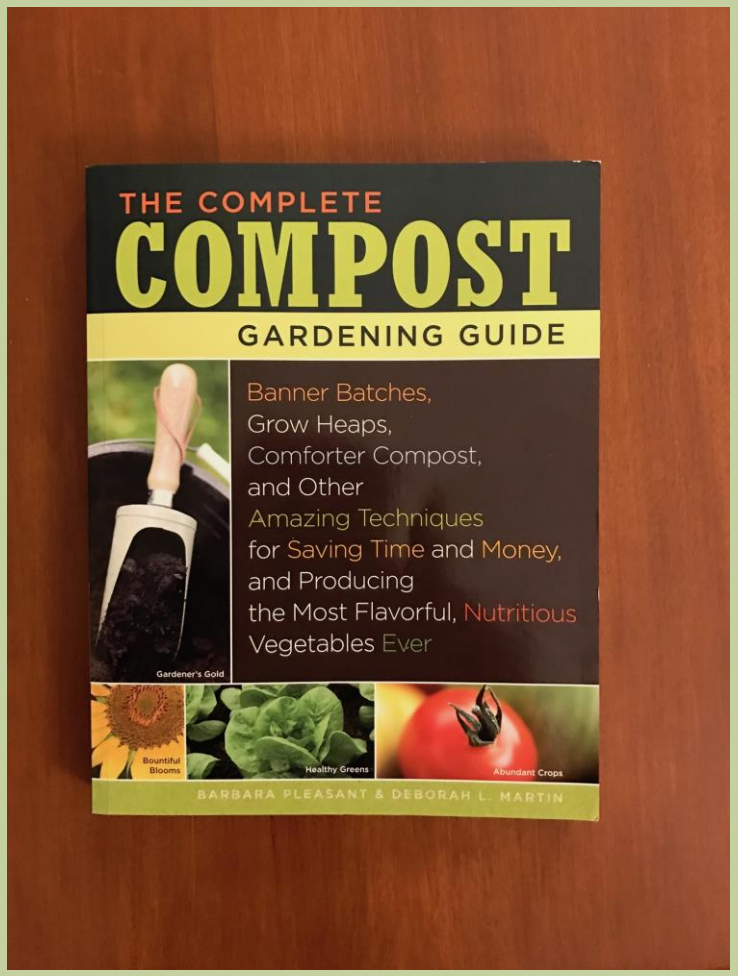
- Worm self-sorting

Troubleshooting

SYMPTOM	DIAGNOSIS	TREATMENT
Unpleasant odor	Too much food Not enough air Too Moist	Stop adding food Gently stir contents Ensure proper drainage Clear or add more drainage holes
Unpleasant odor	Too many acidic foods (citrus, coffee grounds)	Cut back on acidic foods. Add a little dolomitic lime or ground eggshells.
Fruit flies	Food left exposed	Always bury food. Cover surface of bin with plastic sheet, old carpet, or sacking.
Uneaten, smelly food	Don't overload the bin with too much food	As you vermicompost you will get a feel for how much food your worms need. Remember that the bedding is also consumed as food.

Good References





References

- The Rodale Book of Composting, Deborah L. Martin & Grace Gershuny, Editors (Rodale Press)
- The Complete Compost Gardening Guide, Barbara Pleasant & Deborah L. Martin (Storey Publ'g)
- Let it Rot, Stu Campbell (Storey Publ'g 3d edition)
- Soil & Composting, Nancy J. Ondra (Taylor's Weekend Gardening Guides)
- http://www.soiltest.uconn.edu/documents/compostingbasics.pdf

Useful Sites and Contacts

- Contact about this presentation:

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- Special thanks to Dawn Pettonelli and Greg Moonie, who taught the Master Composter class, and from whom I borrowed several slides

- The Worm Ladies: www.wormladies.com

Happy Composting