Backyard Composting and Garden Soil Amendment

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Why Compost?

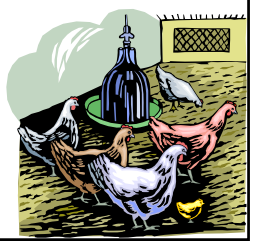
- Recycle waste materials
- Enhance soil structure
- Reduce soil losses from erosion
- Improve oxygen availability in soil
- Increase organic matter
- Recycle essential plant nutrients
- Increase biological activity

What Makes Compost?

- Raw materials (chemical composition)
- Organisms present
- Moist, oxygen-rich environment
- A dedicated space
- An observant, yet patient gardener

Raw Materials

- Kitchen waste
- Yard Waste
- Shredded paper/newspapers
- Floor sweepings
- Vacuum cleaner contents
- Wood ashes (some, not a lot)
- Shredded green yard waste
- Animal manure
- Spoiled hay
- Be creative – watch for materials



Materials NOT to Compost

- Meat/Fat Scraps
- Grease/Oil
- Pet Waste (parasites may be present)
- Large Woody Material
- Diseased Plants
- Weeds Gone to Seed
- Toxic Materials (paint chips, etc.)

Amounts of Raw Materials

- Mix fine with coarse materials
- C:N ratio should be 25:1 to 30:1 (more on this later)
- Moisture/oxygen balance
- Layer materials
- Add small amounts of soil during the process to provide microorganism “inoculant”

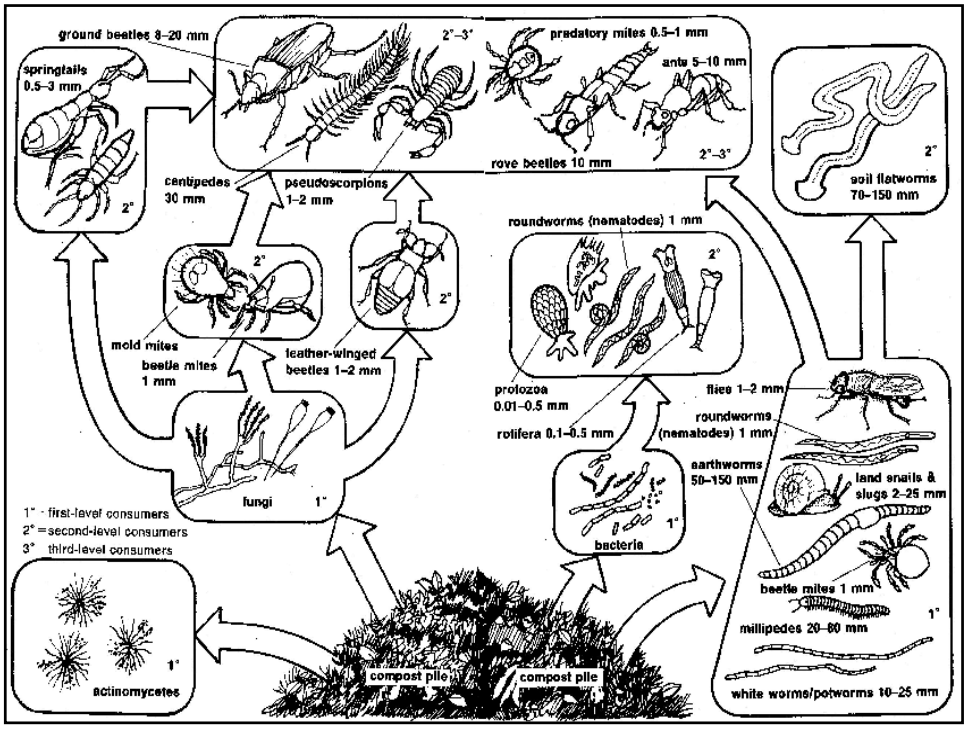
C:N Ratio

When there is too much carbon, the compost pile works slowly because the microorganisms have too little nitrogen to build up their populations.

When there is too much nitrogen, microorganisms cannot get enough carbon to satisfy their needs. The result is often an ammonia odor.

C:N Ratios of Some Materials

Food wastes	15:1
Sawdust, wood, paper	400:1
Straw	80:1
Grass clippings	15:1
Leaves	50:1
Fruit wastes	35:1
Rotted manures	20:1
Cornstalks	60:1
Alfalfa hay	12:1



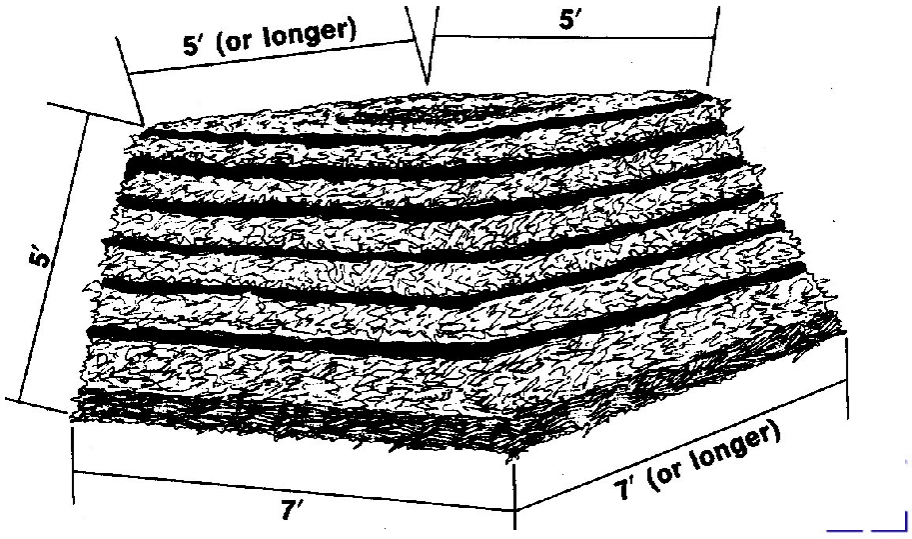
Composting Tools

- Essential
  - Spading or Pitch Fork
  - Water Source
- Optional
  - Thermometer
  - Bin(s)
  - Chipper
  - Turning Tool

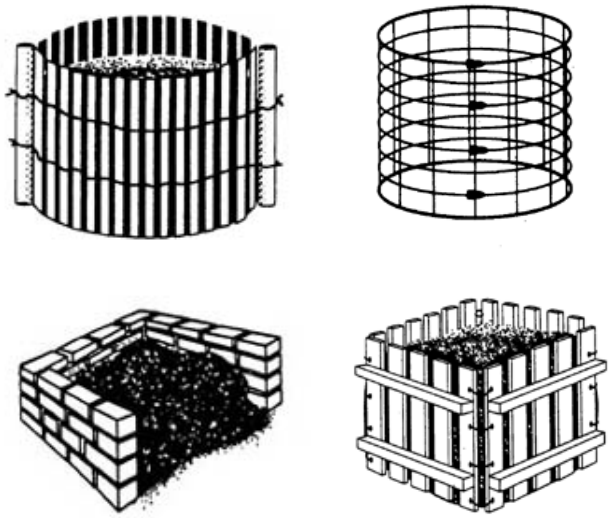
Initial Pile Construction

- **1st layer:** 3-4" of chopped brush or other coarse material (air circulation
- **2nd layer:** 6-8" of mixed scraps, leaves, grass clippings, etc.
- **3rd layer:** 1"of soil serves as an microbial inoculant
- **4th layer:** (optional) 2-3" of manure to provide the nitrogen needed by microorganisms
- Repeat until desired height/volume

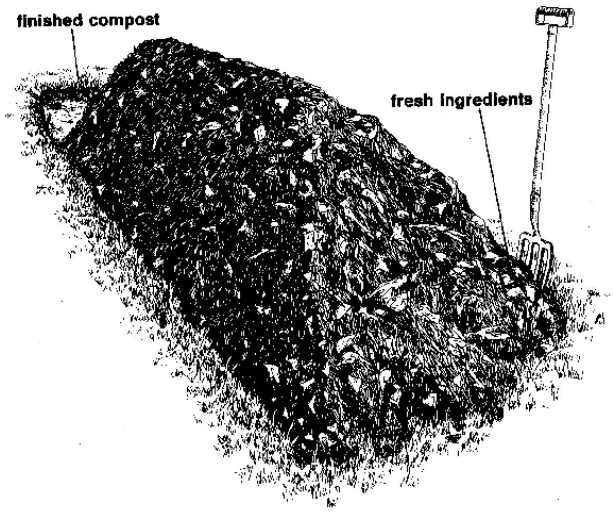
Methods: "Indore" Pile



Methods: Homemade Bins

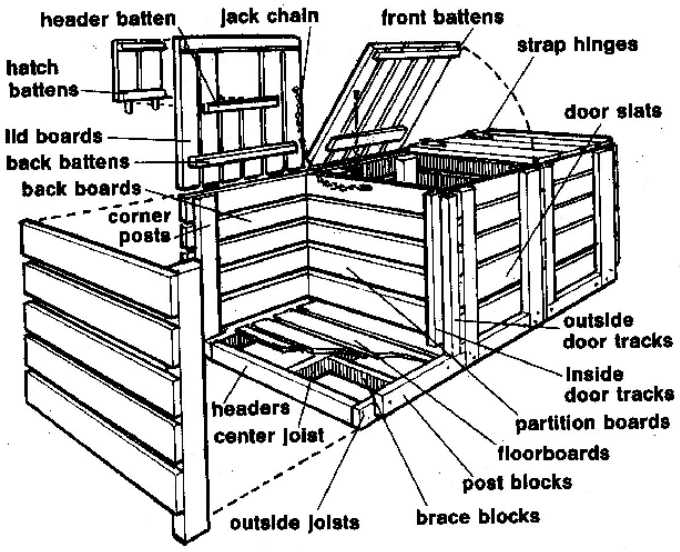


Methods: Wandering Pile



Methods: Prefab Bins

Methods: Three Bins



Methods: Rotating Drum

Methods: Large Windrows

Cool Season Cover Crop and Green Manure

- Plant combination of hairy vetch (a legume) and cereal rye in the fall (October)
- Inoculate vetch seeds with appropriate inoculum (seed catalogs have it)
- Mow and turn into soil 3-4 weeks before planting

Hairy Vetch

Cereal Rye

Cover Crop in April

Cereal rye and hairy vetch cover crop

Working the Cover Crop

Working the Cover Crop

Using Alfalfa Cubes to Amend Garden Soil

- Spread 80 lbs alfalfa cubes over 100 sq ft garden soil
- Water the cubes well until they expand
- Turn expanded cubes into soil
- Plant crops

Alfalfa Cubes on Soil

Alfalfa Cubes Turned into Soil