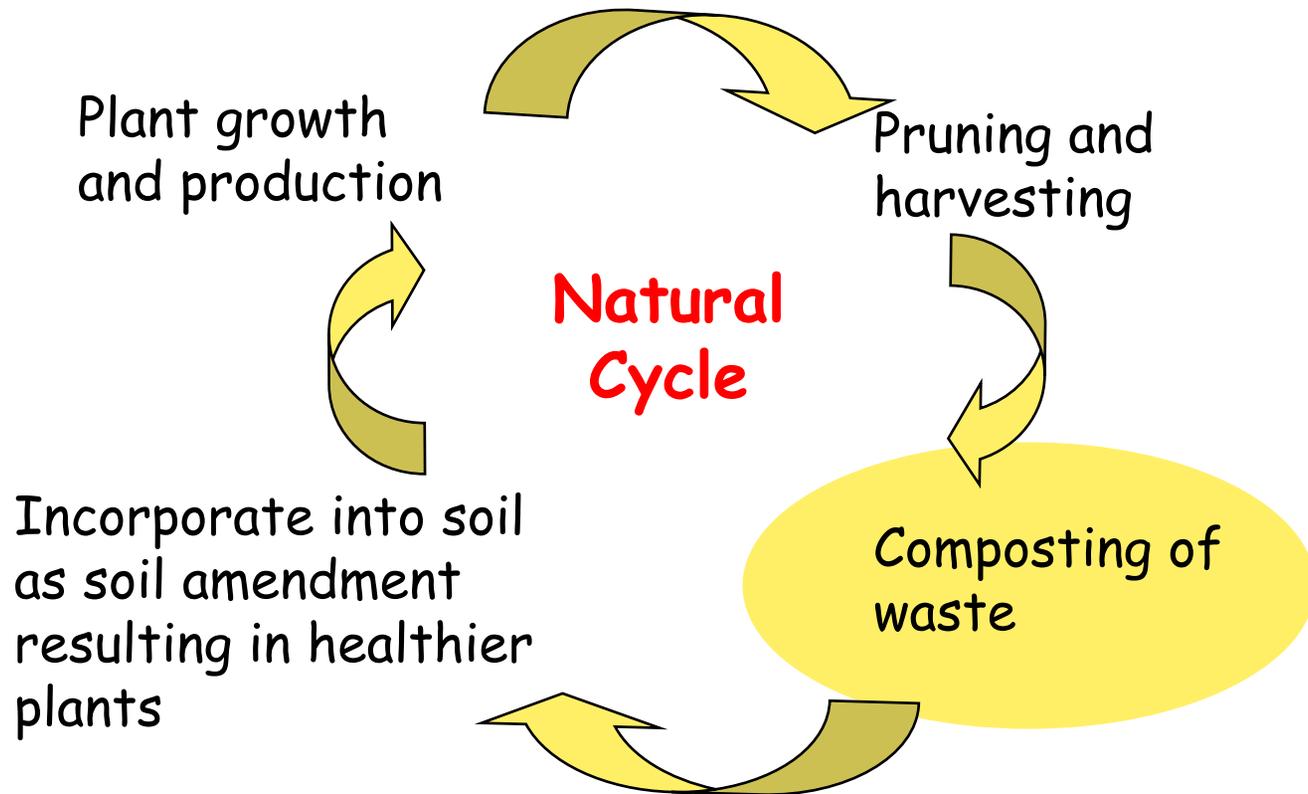


What is Composting

- Controlled decay of organic material
- All techniques are based on natural processes
- Produces a humus rich material from yard and food waste which would otherwise become part of the waste stream



Composting is one step in an ongoing backyard process



Why Compost?

- Reduces landfill pressures
 - Source reduction, Move to Zero Waste
- Makes environmental sense even if your city has a yard waste composting program
- Produces a wonderful soil amendment
 - improves soil structure
 - reduces watering needs
- It's fun and rewarding
 - wholesome exercise



Types of Composting

- Grasscycling

- leave lawn clippings on the lawn

- Mulching

- spread yard waste under plants

- Backyard Pile

- Vermicomposting (worms)

- *more....*

Grasscycling

- Leave grass clippings on lawn
- Mulching mower best
- Mow dry, no more than 1/3 of total grass blade height
- Does not cause thatch
- Reduce waste
- Provides needed nitrogen to lawn
- Supplies organic material to soil

➤ Clippings are 75% water by weight

➤ The rest is a nitrogen rich (green) material

➤ Such a shame to throw it away

Backyard Compost Pile



Ingredients of a Compost Pile

- **GREENS** - Nitrogen rich materials
- **BROWNS** - Carbon rich materials
- **AIR** (fluffed like a salad)
 - aerobic composting
- **WATER** (wrung out sponge)

- Nature provides the organisms
- Time - patience



Greens and Browns



GREENS (C:N < 30:1)

Immature plant material

- kitchen scraps
 - (vegetable 12:1, fruit 30:1)
- grass clippings (20:1)
- coffee grounds (20:1)
- cow, poultry, rabbit, horse manure
 - none from meat eating animals
- vegetable garden wastes
- live plant pruning

BROWNS (C:N > 30:1)

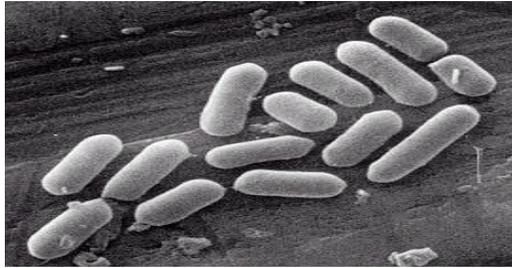
Mature, woody plant material

- Leaves (40-60:1), naturally fallen
- Corn and sunflower stalks
- Dead plants/pruning
- Straw (100:1)
- Pine Needles (70:1)
- Shredded Paper (170:1)
- Wood chips, Sawdust (400:1)
 - no plywood or pressure treated

Material to avoid

- Cat or dog feces
- Meat or dairy food wastes
 - egg shells are welcome in the pile
- Hard to control material
 - Bermuda grass, Bind weed (wild morning glory)
 - Ivy, unless it is finely chopped
- Wood ashes
- Plants treated with herbicides
- Use Oleander only in a **hot** pile
- Thorny plants unless shredded

Organisms



- Psychrophilic: 0°F to 55°F - low temp
- Mesophilic: 70°F to 90°F - middle temp
- Thermophilic: 104 °F to 170°F - high temp

Aerobic Bacteria



Fungus



Actinomycete



Worm



Nematode



Mite



Springtail



Ant



Sow Bug

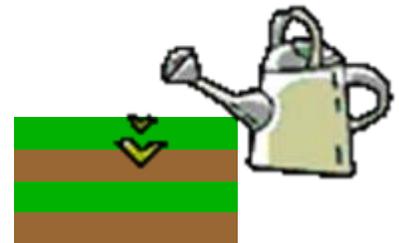
Nature has you covered

Building a Compost Pile

- Use **50% GREENS** and **50% BROWNS** by volume
- Chop the material if you want it to break down faster.
 - Wound for a **cold** pile
 - Chop to ½” to 1 ½” for a **hot** pile
- Build the pile in layers or mix together
 - Mix GREENS and BROWNS

OR

 - 3” of GREENS
 - 3” of BROWNS
 - Water
 - Repeat
- Add water as required (as moist as a wrung out sponge)



Hot Composting

- “Build all at once” compost pile.
- Ideal hot compost pile needs:
 - > 1 cu. yd. of material. (3’ x 3’ x 3’)
 - Material chopped 1/2” – 1 1/2”.
 - 50-50 greens/browns mix.
- > 140F potentially – It’s the bacteria!
 - Thermophilic bacteria.
 - Kills most weed seeds and plant disease pathogens.
 - Compost fast (2-3 months or faster)
- More labor to keep ideal air & water conditions
 - Turn every 1-2 weeks



Cold Composting

- “Add as you go” compost pile
 - Add material as it becomes available (no minimum)
 - 50-50 greens/browns as much as possible
 - Food scraps mix with browns into center of the pile
 - Chop material as much as desired. Chopping will:
 - Reduce volume of material
 - Help speed decomposition => reduces volume
- Temperature is cool to warm
 - Weeds seeds and plant disease pathogens survive.
 - Compost slower (6-18 months)
- As much labor as you want.
 - Turn 1-2 months or pile too dry or too wet.

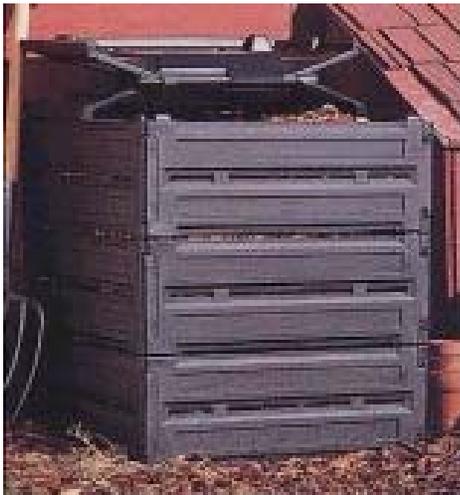


Nothing wrong with either method...Compost Happens!

Demo

Compost Piles

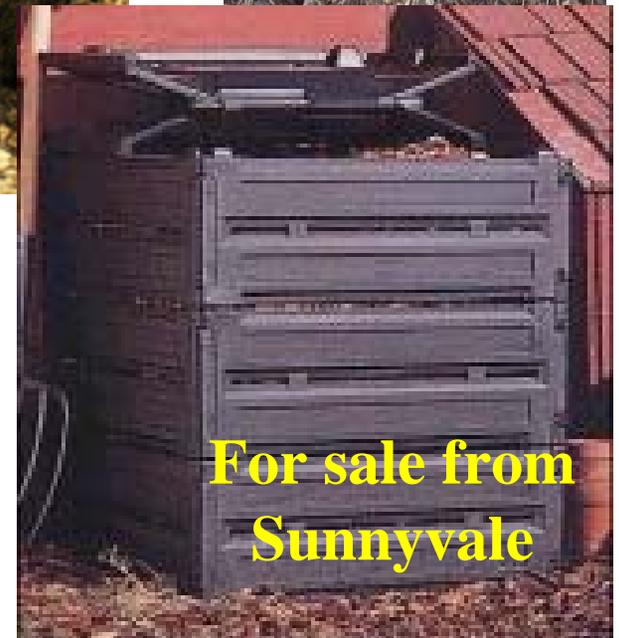
- Open pile (no bin)
 - can be used for **hot** composting
- Compost Bin
 - A bin can keep a pile neater
 - If food scraps are to be added to a **cold** pile, then use rodent proof bin
 - A bin with minimum volume of 3'x3'x3' is required for **hot** composting



Examples of Compost Piles



For sale from
Santa Clara County



For sale from
Sunnyvale

Tools

- Chop the materials
 - chipper shredder
 - lawn mower
 - weed eater
 - hand cutters
 - Meat cleaver on old stump
- Maintain the pile
 - thermometer (fun)
 - turning fork (hot)
 - aerator (cold)
- Bins



Harvesting the Compost

- A **Hot** pile is done with little or no heat being produced
- Material has turned dark brown and original materials are no longer identifiable (sight and smell)
- Screening can be used to remove large not decomposed items mainly in **cold** piles
 - Build your own screen



Using Compost

- Improves soil structure by adding **humus and micro organisms**
 - A soil conditioner
 - Top soil restoration
 - Soil inoculant
- Typical Applications
 - Incorporate in soil prior to planting
 - Amend potting mixes
 - Mulch or "top dress" planted areas
 - Liquid extract
 - Compost Tea

One teaspoon of good garden soil to which compost has been added contains

- **100 million bacteria**
- **800 feet of fungal threads**



Compost as a Mulch

A young green plant with several large, rounded leaves is growing in a garden bed. The ground around the plant is covered with a thick layer of brown mulch, likely made of wood chips or straw. The mulch is unevenly distributed, with some areas being thicker than others. The background shows more of the garden bed and some other plants.

- ▶ Saves water
- ▶ Nutrient reservoir
- ▶ pH Buffer
- ▶ Results in healthier plants

Incorporating Compost





Healthy Soil
Yields a
Healthy Garden