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.

**Natural Cycle**

- **Plant growth and production**
- **Pruning and harvesting**
- **Composting of waste**
- **Incorporate into soil as soil amendment resulting in healthier plants**
Why Compost?

• Reduces landfill pressures
  - Source reduction

• Makes environmental sense even if your city has a yard waste composting program

• Produces a wonderful soil amendment
  - improves soil structure
  - reduces or eliminates the need for fertilizer
  - results in healthier plants
  - reduces watering needs
  - captures carbon back into the soil

• 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
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”, ideal compost pile.

• Ideal hot compost pile needs:
  – > 1 cu. yd. of material. (3’ x 3’ x 3’)
  – Material chopped ½” – 1 ½”.
  – 50-50 greens/browns mix.

• If you build it…
  – …the bacteria will come (> 140F potentially)
  – >140F 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, which also 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!
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
Tools

• Chop the materials
  - chipper shredder
  - lawn mower
  - weed eater
  - hand cutters
  - Sharp, light weight shovel on bare ground

• 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

- Saves water
- Nutrient reservoir
- pH Buffer
- Promotes healthy plant growth
Incorporating Compost

Bare Soil

Compost Added

Partial Incorporation