

An Introduction to Composting

A How and Why Guide to Getting Started

Objectives

- Understand the basics of the composting process
- Identify the differences between “Hot” and “Cold” compost
- Be able to identify common problems faced by home composters
- Be able to select appropriate composting methods for specific needs

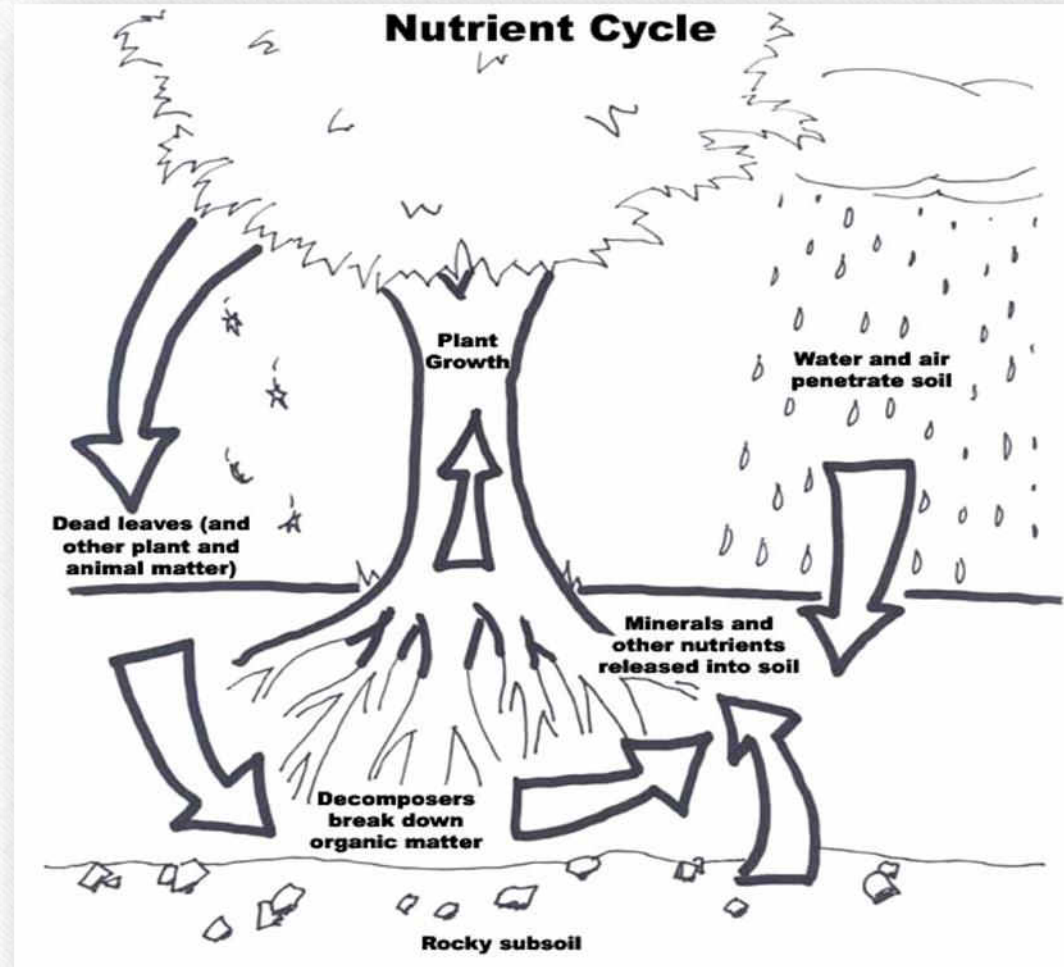
What is Composting

- The organization and management of dead organic material, in a way that it (the dead organic material) decomposes, as microorganisms go to work.
- The result of this decomposition is the final product: Humus.
- When introduced to the soil, the Humus recycles the nutrients from the dead organic material back into the soil. This is known as “*The Law of Return.*”

Dealing with Organic Material

- When the right conditions are met, anything that once lived will decompose, be it plant or animal.
- Microorganisms and Moisture are key elements in the decomposition process.
- In desert climates, low moisture can hamper composting projects.

The Law of Return as seen in Nature



The Main Ingredients

- Browns: AKA Carbon material - provides microbial nutrition. It will decompose slowly if left alone.
- Greens: AKA nitrogenous – Provides nutrition, and proteins to defend against microbial infection.
- It is important to keep a good balance of these ingredients in your compost piles.
- You want approximately 25-30 parts Carbon to 1 part Nitrogen.

Putting them Together

- Combining greens with browns helps speed up the decomposition of the materials.



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How it all Comes Together



The Good, the Bad, and the Maybe

- The Good: Organics! Vegetables, fruits, coffee grounds, leaves, trimmings, branches, if it was alive, and didn't have a pulse, it is definitely safe for the pile. Chicken poop is cool too.
- The Bad: Non organics like plastic, metal, or glass. Diseased plants, weeds with seeds, chemically treated wood product, pesticides, herbicides, fungicides. Also avoid large amounts of fats and oils, meat, fish, and dairy, and pet poop! Glossy colored and waxed paper are also bad, as is coal ash.
- The Maybe: It is ok to use meat and dairy products, but be aware that they may cause odors.

Things to Keep in Mind

- Moisture levels should be kept at around 50% throughout the composting process.
- The time to the end product is determined by factors such as Air flow, the temperature of the pile, and the C:N ratio.
- There must be sufficient Oxygen in the pile to keep the microbes alive. (adding ruffage, like broken branches and wood chips, can help increase airflow)
- The success of your compost pile is determined by these interdependent factors.

Composting Methods

Different Ways to get your Compost On

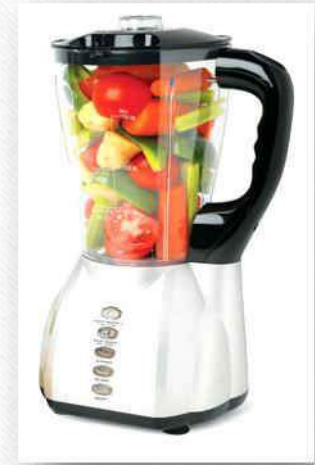
Managing the Pile

- There are two styles of compost management.
- Active: turning and churning the pile (More labor intensive)
- Passive: static, aka “dump & run” aka “Live and let lay”



Cold Composting Methods

- Bins and Piles
- Pit/ Trench
- Bokashi
- Sheet/Layered
- Worms
- Bag & Wait



Hot Composting



Hot Piles need to be at least 3 x 3 x 3 / 1 cubic yard in volume so that the pile reaches an effective temperature.

The larger the piles, the more heat gets produced.

The C/N ratio is very important in keeping the pile active.

Turning and Churning is required.



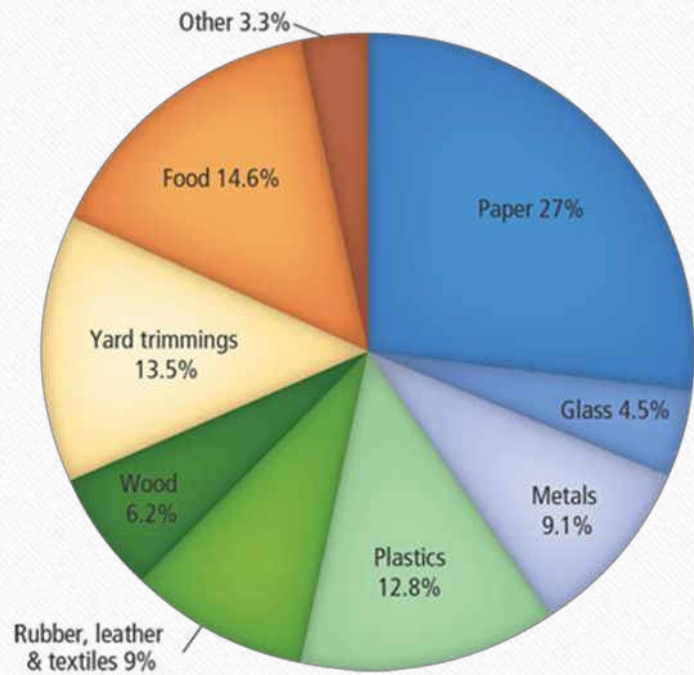
Humus

- The final product of the microbial decomposition.
- Humus contains carbon, nitrogen, and plant nutrients.
- It is very water absorbent.
- The biochemically active particles of plant nutrients exchange in the root zone of plants.



A Reason for Composting

EPA – Municipal Solid Waste 2013, Before Recycling



According to the EPA report for 2013, roughly 70% of solid waste was compostable.

By composting, we can do our part to help reduce the growth of landfills, and the negative effects they have on our environment.

In addition to being beneficial to the environment, humus should help increase the yields of your plants, and provide other benefits.

Discussion



Thank You
