



Compost and Sustainability

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An aerial photograph of a vast agricultural field, likely a vineyard or orchard, with rows of crops stretching towards distant mountains. The image is slightly faded and serves as a background for the text.

- What is Compost?
- Temperatures
- Sampling and Testing of Compost
- Types of Finished Compost
- Why Use Compost?



What is Compost?

Is the controlled and monitored bio-thermal breakdown of organic matter. What is left after the process is completed is called Compost.

Temperature



Temperatures

- Temperatures are taken and recorded every 150 feet or fraction thereof or every 200 cubic-yards of active compost or fraction thereof during PRP
- Windrow System temps are taken from 12 to 24 inches in the pile
- Aerated Static Piles temps are taken 12 to 18 inches from the point where the insulation cover meets the active compost

Temperatures

- Active Compost is any compostable material that is over 122 F per the State of California
- LGMA states that non composted or “aged” manure, not completely composted compost or raw compost should not be applied to the ground. If so, there is a one year plant back restriction.

Compost Sampling



Composting Sampling



- LGMA takes its sampling protocol from the State of California CCR Title 14 Division 7 Chapter 3.1 Article 7
- The State requires all composters to take samples per every 5000 cubic yards of compost produced

Composting Sampling



- A composite sample shall be representative and random, and may be obtained by taking twelve (12) mixed samples as described below.
- The twelve samples shall be of equal volume.
- The twelve samples shall be extracted from within the compost pile as follows:
 - Four samples from one-half the width of the pile, each at a different cross-section;
 - Four samples from one-fourth the width of the pile, each at a different cross-section; and,
 - Four samples from one-eighth the width of the pile, each at a different cross-section.

Incorrect Compost Sampling



Correct Sampling



Compost Sampling

- All compost samples must be tested at a State certified lab
- No compost can be sold unless it passes State minimum standards for pathogens and heavy metals.
- Compost must be tested for density of fecal coli form in compost, that is or has at one time been active compost, shall be less than 1,000 Most Probable Number per gram of total solids (dry weight basis), and the density of Salmonella sp. bacteria in compost shall be less than three (3) Most Probable Number per four (4) grams of total solids (dry weight basis).
- LGMA requires the additional testing of E.C.O157:H7
- FSMA requirements have not been determined

What Can We Compost?

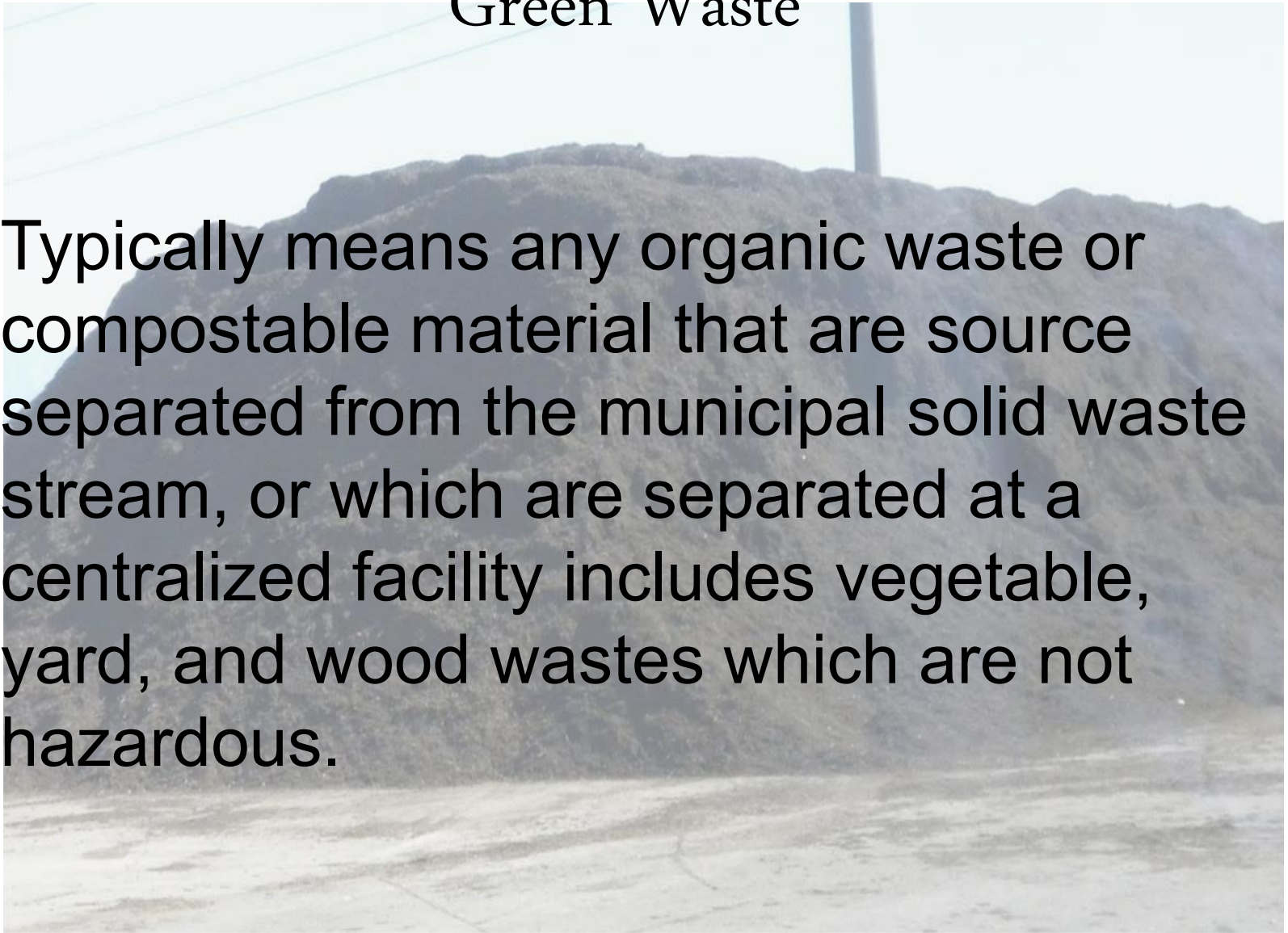


Types of compost

- Green Waste Compost
- Food Waste Compost
- Agriculture Material Compost
- Biosolids Compost- Which is prohibited by the LGMA and the NOP
- Mushroom Mulch Compost*

Green Waste

- Typically means any organic waste or compostable material that are source separated from the municipal solid waste stream, or which are separated at a centralized facility includes vegetable, yard, and wood wastes which are not hazardous.



Food Waste

- Means any material that was acquired for animal or human consumption, is separated from the municipal solid waste stream, and that does not meet the definition of "agricultural material." Food material may include material from food facilities, grocery stores, institutional cafeterias (such as, prisons, schools and hospitals) or residential food scrap collection.

Agricultural Material

A photograph of a large pile of agricultural material, possibly manure or crop residues, with a utility pole in the background. The material is dark and textured, and the background shows a clear sky and a utility pole.

- Means material of plant or animal origin, which result from the production and processing of farm, ranch, agricultural, horticultural, aquacultural, silvicultural, floricultural, vermicultural, or viticultural products, including manures, orchard and vineyard prunings, and crop residues.

Biosolids



- Means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Biosolids includes, but is not limited to, treated domestic septage and scum or solids removed in primary, secondary, or advanced wastewater treatment processes.

Types of Compost

- * Now spent mushroom mulch or compost is slightly different. It goes through a proven process that is documented and is an exempt process under California law but the spent mulch still must meet the minimum standards which means it must be tested for pathogen and heavy metals to be sold or given away.



Why Use Compost?

**Sustainable
Equals
Basic Economics**

Benefits From the Use of Compost

Compost:

- Improves soil structure or tilth, thus enhancing root development and making soil easier to cultivate
- Provides plant nutrients to soil that are more available for plant uptake
- Aids in water absorption and retention by soil
- Binds synthetic or organic agricultural chemicals and minimizes contamination of ground water
- Can substantially reduce, if not eliminates, pathogenic microorganisms in soil

Why Use Compost?

- **Tilth, an old term that needs to be re-examined. The added organic matter from compost increases the tilth of the soil, which translates into fewer passes over the field in land preparation. With a modern tractor drinking 13-17 gallons of fuel per hour, plus equipment costs of \$40.00 per hour, and a driver costing \$16-\$20 an hour with benefits; just one pass saved is significant. Saving one pass of land preparation at 5 acres an hour results in a savings of \$21.50-\$25.40 per acre***
- *13 [gal/hr@\\$3.65gal=\\$47.45/hr](#); [17gal/hr@\\$3.65gal=\\$62.05/hr](#). divided by 5 aces/hr = \$9.49-\$12.44 in fuel. Tractor and equipment @ \$40.00 /hr divided by 5 acres =

Tilth

- **Good tilth enables the grower to skip applying anti-crustant, typically 0-20-0, except during the winter months. This elimination of anti-crustant or “pop up” results in a savings of \$50-\$60 per crop acre, or \$100-\$120 per acre per year. (Based on an application rate of 30-35 gallons per acre)**
- **The savings of the anti-crustant or “pop up”, plus the saving of just one pass in land preparation equals a savings of a minimum of \$121.50 to \$145.40 per acre.**

Soil

By Increasing a Soils Organic Matter by 1% you have increased the water holding capability by 16,000 gallon per acre.

Soil

- The Use of Compost Increases the Biodiversity of Soil
- This in Turn Increases the over all Health of the Soil. Healthy Soil equals Healthy Plants.
- Decreases Disease pressure in the Soil
- Increased Biodiversity in Soil Increases the Soil Ability to fight off Human and Plant Pathogens.

Conclusion

- The Use of Compost Increases the Biodiversity of Soil
- Increases Water Holding Capacity of Soil
- Using compost Benefits the soil and your pocket book.



- Questions?

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Information Resource

- <http://www.calrecycle.ca.gov/Laws/Regulations/Title14/ch31.htm#Article1>
- <http://www.calrecycle.ca.gov/Laws/Regulations/Title14/ch31a5.htm#article7>
- <http://www.ams.usda.gov/AMSv1.0/nop>
- <http://www.caleafygreens.ca.gov/>