

Avenal State Prison

Food Scrap and Green Material Collection

Introduction

Avenal State Prison's food scrap and green material collection program diverts organic materials from disposal, and produces a value-added product from recovered organic materials.

Program Summary

The Prison has a contract with San Joaquin Composting to haul food scraps and green material to the company's facility located in the city of San Joaquin. Beginning in June 2000, Avenal State Prison began sending two 40-yard roll-off containers filled with pulped food scraps, egg crates, and green material to San Joaquin Composting. The roll-off bins are collected about every ten days.

The food scraps are collected twice per day from the facility's six kitchens and then put through a "pulper" that mashes the waste and extracts approximately 25 percent of the water. The wastewater is then disposed of through the sewer system, and the pulped food is placed in the roll-off containers. In addition, the pulped food scraps in the roll-off bins are covered with a layer of sawdust collected from the furniture factory located in the prison. The sawdust provides an excellent source of carbon and helps to reduce odors and insects.

The resulting product of mixed organics is then collected by San Joaquin Composting and hauled to their compost facility where it is composted in windrows.

The final compost product is either sold in bulk or bags. A small amount of the compost is being sold to landscapers. The primary market is a large agricultural wholesale distributor. San Joaquin Composting markets the compost under the product name "Earthwise."

Diversion Amounts

For the month of July 2001, 11,286 pounds of pre-pulped and 4,044 pounds of pulped food waste

was diverted. In relation to both food and paper, there was a monthly diversion rate of 40 pre-pulped tons, and 14 pulped tons. In addition, Avenal diverted 14.4 tons of grass clippings and 9.1 tons of sawdust on a monthly basis.

Key Benefits

Avenal State Prison's contract with San Joaquin Composting has helped it reduce its disposal costs and per container fee; and also its landscape maintenance costs. Finally, Avenal's program has helped it to divert over 50 percent of the facility's waste from disposal.

- Previous disposal bills, which previously had been in the \$13,000–\$18,000 range, and are now running \$9,000–\$10,000 a month.
- Pulpers have reduced the cost of collection by \$2,000 a month.
- Approximately 480 tons of organic materials are diverted annually.

Contact Information

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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, Flex Your Power and visit www.consumerenergycenter.org/flex/index.html.

Compost Specification Elements

Characteristic	Associated Value	Comments
1. Particle Size	< 1"; 2"; etc.	Porosity affects air and water infiltration. Smaller particles have more available nitrogen.
2. Salt Concentration	Mmhos/cm	High salt concentrations, > 4.0 mmhos/cm, can be harmful to seeds and plants.
3. Stability/Maturity	Stable or mature (i.e. when the organic material stops decomposing)	In mature compost, nitrogen is available to plants; and there is less potential for odor problems. The CIWMB is currently developing a maturity index through a contract with an industry association to help define what constitutes mature compost. This index should be available by summer 2000.
4. Feedstock Materials	Specify ingredients	The type of feedstock used can help you decide what product best suits your needs. Typical feedstock's include landscape/yard trimmings; grass clippings; food scraps; bio-solids; and agricultural crop residues.
5. Nutrient Content	N-P-K; Ca; Mg; S; Bo; & others	Compost provides slow-release nutrients, more efficient plant uptake; and much lower rates of fertilizer leaching
6. Trace Contaminants	Metals (Lead, Mercury, Etc.)	Product should meet US EPA, 40 CFR 503 regulations. Compost also binds up heavy metals.
7. pH	Acid/base	Helps balance the pH of your soil. Compost helps buffer soil toward neutral (pH=7).
8. Visible Contaminants	Specify inert: Glass Plastic Paper	Amount of glass, paper, plastic, etc., visible in the final product; ideally should be none visible. Cal Trans specification requires < 0.1 % by weight or volume.
9. Moisture Content	35-55% (40-50% preferred)	If you purchase by weight, wet compost means you're paying to haul excess water. Very wet compost can cause odor problems, while dry compost can be dusty and irritating to work with.
10. Organic Matter Content	30-70% by dry wt. (50-60% preferred)	Compost improves soil structure and water holding capacity.
11. Certifications	California Compost Quality Council (CCQC)	Requires that registered suppliers disclose feedstock and specified parameters. The supplier must also have a quality assurance/quality control program. Buyers <i>can</i> have greater confidence regarding the consistency and appropriateness of the compost product they buy for intended end uses.
12. User Guidelines	Application rates Vol/area	Ask suppliers to provide guidelines on how to apply their product. CIWMB is developing informational fact sheets for specific landscaping applications; these should be available by Spring 2000. Check the Board's web site at www.ciwmb.ca.gov/organics/ .
13. Bulk Density	800 lbs./cubic yard	Depends on feedstock and moisture content, typically in range of 700 – 1200 lbs./cubic yard. Affects product handling, transportation and application.
14. Carbon/Nitrogen Ratio	C:N less than 20	C:N ratio is sometime used as a measure of stability. Ratio of less than 20:1 is likely to indicate that the compost is stable.
15. Other	Color, smell	Should have an "earthy" odor that is not unpleasant.