Folsom State Prison: Food Scraps and Green Material

Introduction

In 1994, Folsom State Prison and the City of Folsom began diverting organic materials to a composting facility owned and operated by the Prison Industry Authority (PIA). Folsom State Prison no longer sells compost or mulch to the public, but this case study is presented as a guide to other jurisdictions planning to start their own composting programs.

The Folsom compost program helped the prison and City of Folsom divert a significant amount of organic material from disposal.

Program Summary

Folsom State Prison is divided into two facilities, California State Prison, Sacramento; and Folsom State Prison. The majority of feedstock comes from the City of Folsom's residential and commercial waste streams. (Food scraps and green material are now collected from both facilities and shipped off-site for composting.)

Inmates from the City of Folsom Community Correctional Facility provided the labor to run the composting facility. The food residual was mixed with ground green material and placed in windrows on large concrete pads. The windrows were turned once per week using a front-end loader. The compost process took four to six months to complete.

The final compost product was marketed by the City of Folsom, where it was used for city landscape planting projects or sold to local residents and landscape contractors. Occasionally Folsom State Prison took back some compost for use on their landscaped areas.

In addition, wood chips were used as a mulch cover in flower beds or sold as "hog fuel" to cogeneration plants.

Diversion Amounts

Each year, the Folsom State Prison Recycling Center diverts 730 tons of food waste (about 60 tons/month) and 360 tons of green material (about 30 tons/month).

Key Benefits

Folsom State Prison realized significant benefits from their organics diversion program:

- Folsom's program saved the prison $3,763 per month in tipping fees from July 2000 to March 2001.
- From July 1, 1996, to June 30, 2001, the city received $25,746 from the sale of wood chips and $60,348 from the sale of compost.

Contacts

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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 feedstocks 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 U.S. 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. CalTrans 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 *can* 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. The Board has publications that discuss compost biology, uses, and specifications. Check the Board's website at www.ciwmb.ca.gov/Organics/.
13. Bulk Density	800 lbs./cubic yard	Depends on feedstock and moisture content, typically in range of 700–1,200 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.