

SCD Probiotics®

Case Study Summary – Composting yard and food waste with SCD Probiotics® in Guatemala

Composting Yard and Food Waste (CSS-021-2009)

Industry:	Composting - Private Industrial Company
Application:	Products applied to compost yard and food waste
Where:	Quetzaltenango, Guatemala
When:	April-May 2009
Products:	Customized solution using SCD ProBio Balance™ Plus
SCD Customer:	Agrocosta

Background

Municipal waste were composted using SCD Probiotics Technology. Results showed high nutritional value on compost and less time to acquire composting material.

Introduction

Municipality or private companies should compost all yard and food waste garbage. Some composting companies already operate in several cities; however, its management is very difficult due to a variety of reasons; no garbage separation practices in individual households, the presence of inorganic garbage, high operation cost of heavy machinery to prepare compost, bad odors, unpleasant animals, lots of time to get a compost, and low nutritional value of compost.

The customer wanted to reduce time in making compost from yard and food waste with SCD Probiotics formula, to control the odor in composting process, and to get high nutritional value of compost at a very affordable cost.

Methodology

The raw materials to be composted were mostly from food and yard waste. It was 100% segregated and the following was removed: plastic, metal, glass, debris and textiles. Things remaining in the pile included organics, paper, and carton. The pile was inoculated with a customized solution using SCD ProBio Balance™ Plus, keeping a ratio of material and moisture.

During the composting process, for size reduction and homogenization, large pieces of paper, cardboard, food, and yard waste were broken down slowly to 1.2-5 cm, using a bobcat. The materials were mixed, formed, and the windrows were shaped. Windrows were 1.5-3 m in height and 3-6 m wide. During autumn, the height was increased to 2.5 m and width to 5 m.



winter, height was further increased to 3.5 m.

Windrows were turned on Day 0, 8, 15, 23, 30, and 37. Then they were left for 10 days before being sieved on Day 50 or 60.

Optimal compost conditions are as following:

- Oxygen: >10%
- C/N ratio: 30:1
- Moisture: 40-60%
- Temperature: 32-43°C

Results

The goals of the project were achieved, with significant improvement in time required to get compost, quality of the final product, and total odor control since the beginning of the process.

The odor of the composting process was significantly less when it was compared with the time before this project. The parameters of the compost showed a great success when it was compared to the general good quality compost standards (Table I).

Table I. Nutritional value of composting yard and standards

	SCD- treated compost	Well mature – Good quality compost standards
	YEAR 2009	
PARAMETER	(Public market)	
Appearance	Solid brown	Solid brown
pH	8.1	6.5 - 7.5
Total Available Nitrogen (N)	2.14%	1.0 - 2.5%
Total Available Phosphorous (P ₂ O ₅)	0.92%	0.75 - 1.5%
Total Available Potassium (K ₂ O)	4.56%	1.0 - 4.0 %
Total Organic Carbon	30.0%	Min 20.0%
C/N Ratio	14.0	< 25
Total Organic Matter	54.0%	
Total Calcium (CaO)	5.04%	
Total Magnesium (MgO)	1.43%	
Total Iron	0.27%	
Manganese (ppm)	229	
Zinc (ppm)	185	

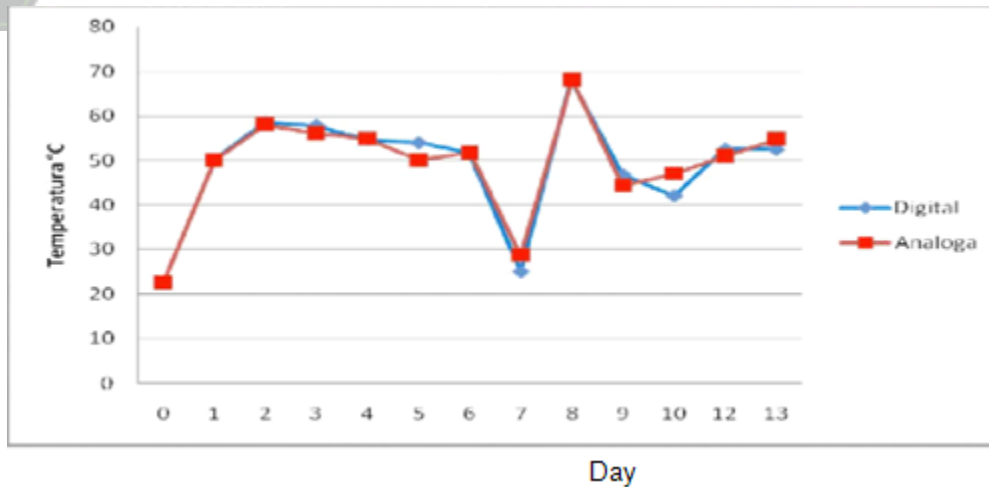
TECHNICAL DOCUMENT

SCD Probiotics specializes in manufacturing all-natural probiotic products for human-health and environmental sustainability



The temperature of the process stated at 20°C on day 0 and it increased to 58°C in only two days. At the end of the first week, the pile was turned and a second thermophilic stage started. The temperature of compost was around 50°C on the end of 2nd week that shows the quality of the composting process.

Table II: Temperatures of the Process



Conclusions

SCD Probiotic showed significant improvements in time required to get compost, quality of the final product, and total odor control.

Email customerservice@SCDProbiotics.com for additional information.

