

SCD Probiotics®

Case Study Summary – Commercial composting with SCD Odor Away™ by Missouri Organic

Odor Reduction in Commercial Composting (CSS-023-2010)

Industry: Commercial composting
Application: Odor control at a composting facility
Where: Kansas City, Missouri
When: July 2010 – Dec 2010
Product: SCD Odor Away™
Customer: Missouri Organic

Background

Missouri Organic, located in Kansas City, Missouri, is a 10-acre composting facility that accepts a variety of municipal waste. The goal of the company is to transform waste into organic fertilizers and mulches. Missouri Organic needed a solution for its odor problem, caused by regulatory pressure, and decided to use SCD Odor Away.

Introduction

In 2010, weeks prior to the application of SCD Odor Away, complaints were made to the Missouri Department of Natural Resources (MDNR) by neighboring businesses, due to foul odor emissions. These complaints resulted in fines and the potential for further financial penalties if the odor was not managed. The goals of the trial were to reduce odor, meet regulatory standards, and improve the compost quality.

Methodology

Missouri Organic, which accepts 15,000 metric tons of organic waste yearly, has the composting capacity of 20 windrows. Each windrow consists of 175 tons of material; of that, 125 tons are organic food waste.

Data was taken at least twice a week, from six areas around the facility, beginning at three weeks prior to the application (between 24th June – 22th August) to test the odor of the compost material with a scentometer (olfactometer) (Nasal Ranger®).

In scentometry, the air from the site is diluted with filtered, odorless air until the tester can no longer sense the initial odor. The values that the scentometer read are as follows: 2, 4, 7, 15, 30, and 60, where 60 is the highest dilution value.



SCD
probiotics
inside

TECHNICAL DOCUMENT

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



Prior to applying SCD Odor Away, the average of readings was 7.4, which is above the regulatory limit of 7 in the state of Missouri.

On August 23rd, each windrow was sprayed with SCD Odor Away directly on the organic waste as it was incorporated into the windrow. A second application was sprayed during the first turning of the windrow (7-10 days later) (see the Pictures I, II and III).

Pictures

Picture I: Arial view of Missouri Organic. **Picture II:** Organic waste incorporated into rows.

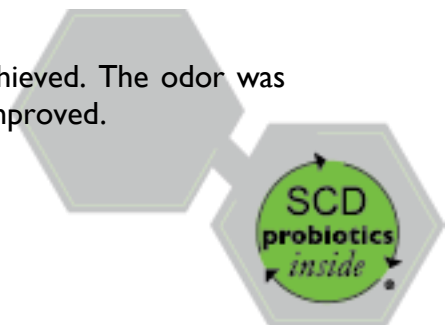


Picture III: Shifter



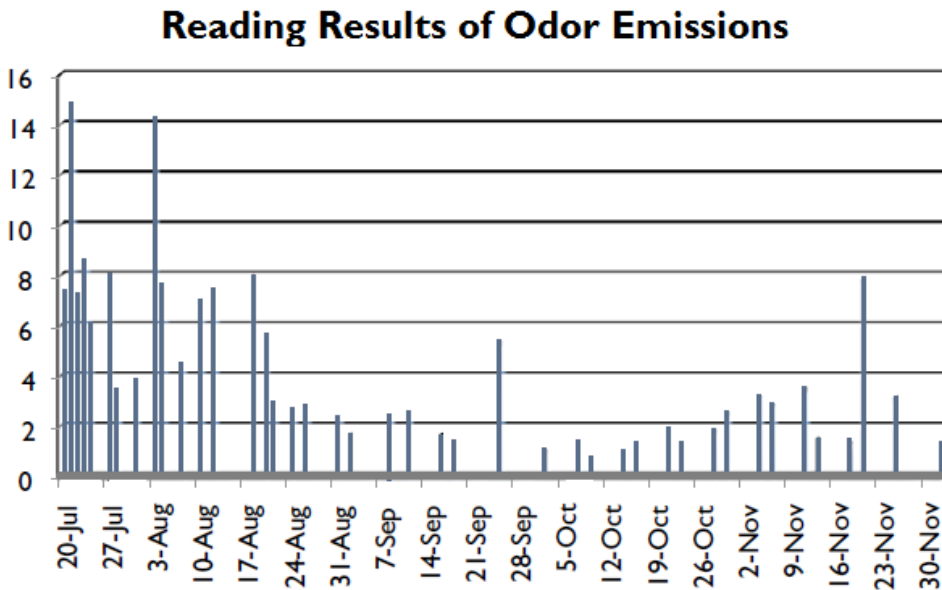
Results

At the end of the 4 months of trial, all of the goals of the trial were achieved. The odor was reduced under to the required limit and the quality of the compost was improved.



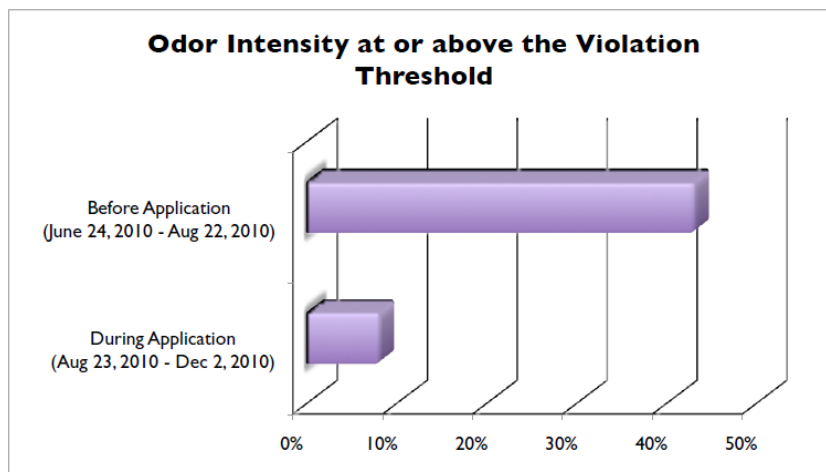
Between July 20, 2010 to August 22, 2010 prior to the first application of SCD Odor Away, the average results of scentometer readings were above 7. After the first application on 23rd August, results were below 7, even mostly less than 4 (Table I).

Table I: Reading results of odor emissions – July 19, 2010 – Nov 29, 2010.



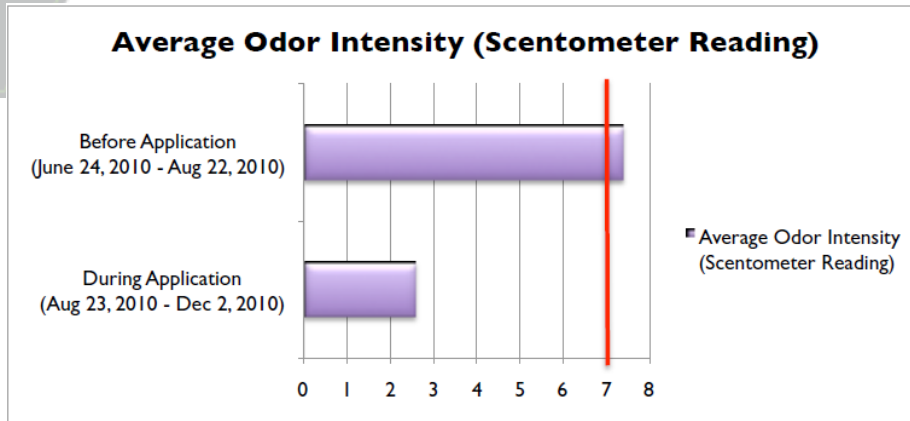
Before Application of SCD Odor Away, odor emissions were over the regulatory limit at a 43% rate. During application, on average, the odor emissions were over regulatory limits at the rate of 8% (Table II).

Table II: Odor intensity at or above the Level Violation



The application of SCD Odor Away greatly diminished the odor being produced. The average odor intensity went from 7.4 to 2.6, bringing the odor well under regulatory limits (Table III).

Table III: Average odor intensity

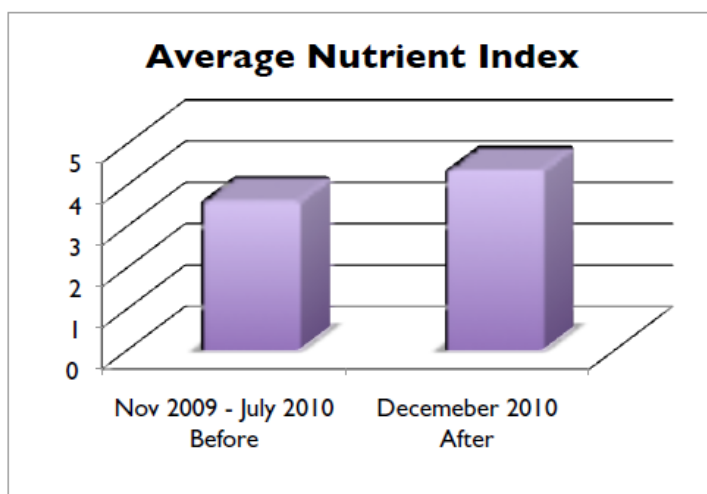


*Red Bar: Regulatory odor limit (with scentometer reading)

While the input of waste is important, there is evidence to support improvement in the quality of compost.

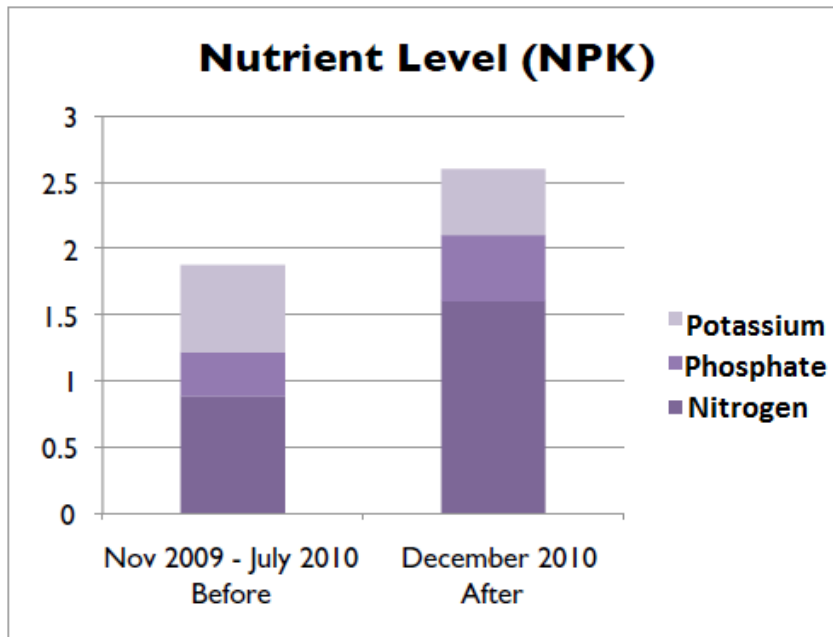
The Nutrient Index is obtained by dividing the total nutrients Nitrogen, Phosphate, and Potassium (abbreviated as NPK) by the amount of salt (Sodium and Chloride). The higher the Nutrient Index, the less chance of having a toxic buildup of Sodium (salt) in the soil. During treatment with SCD Odor Away, the results showed an increase in the Nutrient Index (Table IV).

Table IV: Average Nutrient Index



Compost data is most commonly expressed in amount of NPK. If a compost result has the rating 1-2-2 it means that the compost has 1% Nitrogen, 2% Phosphate, and 2% Potassium. Most compost tests will have an average nutrient level (N+P+K) of <5%. As shown below, the average NPK levels increased after the application of SCD Odor Away.

Table V: Nutrient Level (NPK)



Testimonial

“We want to openly express that the application of SCD Probiotics (products) indeed produced remarkable results...both in the odor control and the product quality.” – Kevin Anderson VP for Missouri Organic

Kevin Anderson, Vice President for Missouri Organic, reported complete satisfaction with the trial and has integrated the use of SCD Probiotics products into their foul emissions-control program and plans to continue use indefinitely. He went on to highlight that there was an improvement in odor at the facility, overall odor of the product is no longer rotten but earthy and sweet, and that they were recognized by the Missouri Department of Natural Resources (MDNR) as taking proactive measures towards ending the issue of emissions.

Mr. Anderson said, *“We now consider SCD Probiotics a value added ingredient to our final products.”* Missouri Organic is advertising SCD Probiotics Technology by including the technology logo on their retail bags of compost.



TECHNICAL DOCUMENT

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



Photo IV: Missouri Organic retail packaging for compost with SCD Probiotics Inside technology logo.



Photo V: Bagged Compost.



Conclusions

SCD Odor Away offers a sustainable option for controlling foul odors associated with commercial composting. In addition to odor control, SCD Probiotics enhances the nutrient level of the compost. For Missouri Organic, probiotics have delivered the following results:

- On average, a 35% reduction in foul odor emissions
- Increase in quality of compost including Nutrient Index
- Compost is much more marketable
- Reduction of fines and pressure from MDNR
- Fines can be as much as \$ 2,000 per violation
- Fines assessed to Missouri Organic have been waived upon further use of SCD Probiotics

Additional information is available upon request; contact customerservice@SCDProbiotics.com for details.

**Data received from Midwest laboratories Inc.*

