BiOWiSHTM Manure & Odor Treatment: Beef & Dairy

Accelerates Sludge Decomposition and Reduces Odors

Benefits

- Accelerates the decomposition of organic waste (sludge)
- Reduces the need for sludge pump outs
- · Removes rather than masks odors
- Improves nutrient availability for crops
- Keeps concrete surfaces clean reducing slippage

Uses

- Lagoon Treatment
- Nutrient Management
- Odor Control

Sizes

- 1kg
- 5kg
- 10kg



How BiOWiSH™ Manure & Odor Treatment: Beef & Dairy Works

BiOWiSH™ Manure & Odor Treatment is a powerful blend of natural biocatalysts. This product is designed for high cellulose and fiber content wastewater, making it ideal for dairy farms and beef feedlots. BiOWiSH™ Manure & Odor Treatment is non-toxic and safe for everyday use.

How to apply BiOWiSH™ Manure & Odor into a lagoon?

Simply add BiOWiSH™ Manure & Odor Treatment powder directly or mix with water and apply. The powdered concentrate or water premix can be added directly to the lagoon inflow, in the pump station, in the holding tank, or wherever the effluent enters during a flow event to ensure dispersion throughout the lagoon.

A few weeks after the initial dose, the lagoon will show significant biological activity. Pump outs will be more efficient with less bottom sludge, water quality will be improved, and odor will be reduced.





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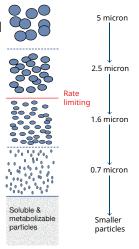
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Cal Polytechnic State University White Paper

California Polytechnic State University research revealed that periodic dosing with BiOWiSH™ improved the efficiency of solids reduction in dairy wastewater. BiOWiSH™ overcomes the rate-limiting step of breaking down organic particles.

In addition to solids reduction, significant enhancement of dentrification rates (even at relatively high dissolved oxygen levels) and higher BOD removal were

observed. The degradation of organic material and efficient dentrification is expected to result in significant odor reduction.



Schematics of Step-Wise Degradation of Particles by Bacteria

The San Antonio Stock Show & Rodeo

The San Antonio Stock Show & Rodeo is one of the largest livestock shows in the United States. Hosting more than 1.4 million visitors for 18 days in February, the annual event consists of a livestock show, horse show, livestock auctions, Professional Rodeo Cowboys Association (PRCA) rodeo, and other educational exhibits. The show started using BiOWiSH™ Manure & Odor in 2011. Participants, exhibitors, and attendees noticed a significant reduction in odor and ammonia in relation to years past. Show staff and volunteers have continued to use BiOWiSH™ Manure & Odor Treatment every year since.



Lagoon Case Study:

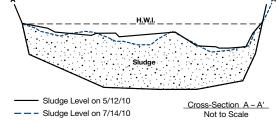
Primary lagoon's capacity: 5 million gallons, with a 50,000-gallon daily inflow.

Treatment objectives in wastewater lagoons

- Reduce sludge accumulation
- Minimize odor emanating from the lagoon
- Manage nutrient loading in effluent used for irrigation

Results

- Reduce sludge accumulation
- Minimize odor emanating from the lagoon
- Manage nutrient loading in effluent used for irrigation



RCS #1 Volume Data
Date Surveyed: 07/14/2010
SURVEYED BY: CM. RS. SS

Capacity w/out Sludge: Estimated Sludge Volume: % Change in Sludge Volume:

8.14 ac-ft 5.28 ac-ft

*Study performed by an independent third-party engineering firm.



Wastewater lagoon *BEFORE BiOWiSH™ Treatment*



Wastewater lagoon *AFTER BiOWiSH™ Treatment*



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