

## Dairy Production

### BiOWiSH™ Manure and Odor (Beef and Dairy)

BiOWiSH™ Manure and Odor (Beef and Dairy) is a revolutionary product that breaks down organic waste and eliminates odor causing compounds at the source. It is highly effective in digesting waste products comprising fats, proteins, carbohydrates and cellulose, and is suitable for most manure treatment systems. BiOWiSH™ Manure and Odor (Beef and Dairy) is ideal for digesting sludge, managing nutrient loads and reducing odor from manure lagoons.



### Key Benefits

- Accelerates the decomposition of organic waste (sludge)
- Reduces the need for pump outs
- Removes rather than masks odors
- Reduces Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)
- Reduces fly numbers by removing organic attractants
- Improves quality and health of bedding
- Improves nutrient availability if effluent is used to irrigate pasture

### About BiOWiSH™

The result of over 18 years of research and development, BiOWiSH™ technology provides a solution to some of the most complex problems of our time, from food production to environmental pollution.

BiOWiSH™ is a powerful blend of biocatalysts that breaks down complex organic molecules to help eliminate waste, reduce odors, improve soil fertility and enhance water quality, among other uses.

100% natural and non-toxic, BiOWiSH™ is safe for everyday use in a wide range of consumer and industrial products. It has been proven to solve problems in environmental management (including wastewater, solid waste, soil and water remediation and industrial emissions), as well as agriculture.

BiOWiSH™ products are used extensively and available in Asia, Australia, Europe, North America and Latin America.

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## Site Specific Data Collection

Collection of the following site-specific information will assist in developing the most appropriate application program for use of BiOWiSH™ in a dairy operation.

### *Lagoon:*

- Type of facility, wastewater treatment and characteristics of effluent (composition)
- Volume of the lagoon in cubic feet or gallons OR lagoon length, width, depth & side slope calculation
- Design: Liner, aeration, mixing apparatus, flow through to other lagoons etc
- Daily inflow: Estimated daily inflow to the lagoon from the dairy
- Number of dairy cattle
- Number of times milked per day

### *In-Barn:*

- Major issues of concern (e.g. Odor, pathogens, Ammonia)
- Composting practice: Solid separation, windrow creation, composting time, inoculation used, turning & frequency etc.

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## Applications and Dosage

### Dairy Effluent Lagoons

#### *Application Rate*

- Refer to BiOWiSH™ Dairy Dosing Calculator

#### *Pre-activation*

Follow these basic directions for the proper pre-activation of each dose of BiOWiSH™ Manure and Odor Treatment (Beef and Dairy).

- Mix the prescribed amount of BiOWiSH™ in water.
- Leave the container uncovered and exposed to ambient air—or use a mechanical aerator.
- Keep the container in a warm place above 15°C.
- Let the mix activate for a minimum of 12 hours.

#### *Note:*

- *The BiOWiSH™ carrier material may clog fine spray nozzles. This can be avoided by decanting the activated solution, using a filter bag of appropriate micron or using a larger nozzle.*
- *To reduce the risk of accidental pre-activation of the product always re-seal bags and avoid exposure to moisture.*

#### *Application Method*

The use of BiOWiSH™ Manure and Odor Treatment (Beef and Dairy) in a dairy lagoon should begin with a series of (weekly) relatively high “shock” doses designed to quickly stimulate large amount of biological activity. It is recommended that shock doses be applied weekly for the first 4 weeks, with the dose incrementally stepped down.

After 4 consecutive weekly shock doses it is necessary to continue to apply a weekly dose. To optimize the effectiveness of BiOWiSH™ Manure and Odor Treatment (Beef and Dairy), each dose should be allowed to “activate” as outlined above.

As each lagoon will differ in size and other parameters, the BiOWiSH™ Dairy Dosing Calculator should be used to determine the optimal dosing regimen. Application methods are outlined below.

- Mix the required amount of BiOWiSH™ in water. (Refer to BiOWiSH™ Dairy Dosing Calculator )
- Allow 12 hours (overnight) for activation and add to the lagoon inflow. The dose should be applied directly to the inflow pipe, to a pump station, holding tank or at the site where the effluent enters the lagoon. A simple gravity fed drum, pod or tank system with outlet valve and hose is ideal for this purpose.

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## Dairy Bedding

### Application Rate

- 1 kg per 500 m<sup>2</sup>

### Pre-activation

Follow these basic directions for the proper pre-activation of each dose of BiOWiSH™ Manure and Odor Treatment (Beef and Dairy).

- Mix the prescribed amount of BiOWiSH™ in water.
- Leave the container uncovered and exposed to ambient air—or use a mechanical aerator.
- Keep the container in a warm place above 15°C.
- Let the mix activate for a minimum of 12 hours.

### Note:

- *The BiOWiSH™ carrier material may clog fine spray nozzles. This can be avoided by decanting the activated solution, using a filter bag of appropriate micron or using a larger nozzle.*
- *To reduce the risk of accidental pre-activation of the product always re-seal bags and avoid exposure to moisture.*

### Application Method

- Dilute 1 kg into a minimum of 500 L to achieve optimal dispersion of BiOWiSH™.
- Activate as above.
- Spray directly onto bedding material as it is laid
- Re-apply as necessary.

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## Dairy Composting

### Application Rate

- 1 kg per 50 tonne of organic material

### Pre-activation

Follow these basic directions for the proper pre-activation of each dose of BiOWiSH™ Manure and Odor Treatment (Beef and Dairy).

- Mix the prescribed amount of BiOWiSH™ in water.
- Leave the container uncovered and exposed to ambient air—or use a mechanical aerator.
- Keep the container in a warm place above 15°C.
- Let the mix activate for a minimum of 12 hours.

### Note:

- *The BiOWiSH™ carrier material may clog fine spray nozzles. This can be avoided by decanting the activated solution, using a filter bag of appropriate micron or using a larger nozzle.*
- *To reduce the risk of accidental pre-activation of the product always re-seal bags and avoid exposure to moisture.*

### Application Method

- Dilute 1 kg into 1,000 L of water.
- Activate as above.
- Spray through compost and mix well to achieve good dispersion. Application during shredding or establishment of windrow is ideal.
- Re-apply every 4 weeks if extended composting is required.

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## How will I know that BiOWiSH™ is working?

The collection of data is critical to tracking the progress of BiOWiSH™ in meeting key objectives. We recommend that before implementing a program of dosing, first establish a thorough baseline to measure against. You should consider tracking the following parameters dependant on the application:

### Lagoon:

- Anecdotal odor measurement
- Total Suspended Solids (TSS)
- Biological Oxygen Demand (BOD)
- Total Kjeldahl Nitrogen (TKN)

### In-barn:

- Pathogens (Klebsiella etc)
- Rate of composting

## Contact Us

For further advice and assistance please contact:

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