



Bio Logical Solutions



BactZyme - Manure Pit Treatment

THE 14 MOST ASKED QUESTIONS BY DAIRYMEN

Specifically What Will the BactZyme Do?

Through accelerated digestion, Bactzyme will liquefy solid material so that it's easier to agitate, pump and irrigate. Treated lagoons can be pumped lower than ever before with fewer plugging problems. Once transferred to cropland and because it's already predigested, this manure will soak into the soil faster with less chance of caking on the field surface. Bactzyme treated manure will also be less offensive to the nose and neighbors. By increasing the level of bacterial activity in the lagoon, Bactzyme actually prevents bad odors from forming in the first place.



What Type of Bacteria is BactZyme?

Technically they are known as facultative. Facultative bacteria will function under both aerobic (oxygen rich) and anaerobic (oxygen poor) conditions. Although it prefers aerobic conditions for optimum performance, it can still thrive in those areas of the lagoon that are anaerobic.

Is BactZyme Genetically Engineered?

No. The bacteria used in Bactzyme is found naturally, isolated and reproduced into a dry, powdered and concentrated form. They are selected for their desirable properties and specific for the type of waste to be treated. They are not genetically altered in any way.

Is BactZyme Safe?

Yes. The bacteria in Bactzyme is all naturally occurring. Specifically, Biosafety Class 1. This means they are non-pathogenic (to humans, animals, wildlife or plants) and free of

any strains of Salmonella, E. coli or anthrax. Bactzyme causes no short or long-term detrimental environmental effects.

What's the Purpose of Putting BactZyme in Water Soluble Packs?



Safety and Convenience. Since the packs can be tossed directly in, nobody will ever have to risk a fall into a lagoon while trying to apply our product. The packs will dissolve completely in less than a minute. These unique packs are pre-measured (to save time), pre-portioned (to prevent wasteful use and money) and packaged in a simple to apply manner (just throw them in). By making the packs convenient to apply, this helps to insure that the correct amount will be used on schedule every week.

So we don't need to be concerned with the size of lagoon?

Correct. Although determining the application rate based on acre-feet or capacity can be done, this is a poor method that is confusing to the dairyman and dealer alike. First of all, few dairymen actually know the true dimensions of their lagoons in length, width and depth. Even if they did, determining the REAL volume of manure in their lagoons would be nothing more than a guess. However, the main problem in viewing lagoons in this manner is that the volume is always changing. Lagoons start out empty and fill up over time. Periodic irrigation of manure liquids also causes the volume to change throughout the year. HOWEVER, the one constant that changes very little (although easily identified if it does) is the number of cows present. The application rate of Bactzyme is related to the manure production and associated volume of wash water used per cow. Treatment can begin anytime. Whether the lagoon is empty or full, irrigating or not, the application amount is based solely on the waste produced per cow.

How often do I apply the Bactzyme packs?

Every week – without fail. To apply it an other way can easily lead to disappointing results. Establish a schedule and stick to it. When a week is missed, it is easy to forget the next and completely lose track after that. Many dealers want to sell the product by the pack and apply it to lagoon themselves as a weekly service to their customers. This allows them to monitor the lagoon on a weekly basis and assures them that the packs are being used weekly.

Where do I apply the packs?

Application can vary depending on the lagoon system. This will need to be determined prior to 1st application. Most of the time the Bactzyme are put in the settling lagoon; however, it depends on how many lagoons the dairy has and whether they are using the water to flush alleyways or through a sprinkler system. The bacteria spreads from one lagoon to another as fine solids are transferred through the overflow system.



What about manure separators?

Great question. These fall into one of two categories – earthen or concrete separators and mechanical separators. Without going into the operational details of each, they are designed to catch and prevent solid material from reaching and entering the lagoon. However, the dairymen that have them still need to use Bactzyme because the small manure fines pass right through these systems and accumulate on the bottom of the lagoon just the same. In many cases, these fines are actually more difficult to deal with because their small size tightly packs them in the bottom of the lagoon. When manure separators are used, the Bactzyme packs need to be tossed into the liquid flow AFTER it has passed through the separator. By applying it to this location, you'll avoid removal and loss of our product and minimize any disruption of the separation process.

Do sanitation chemicals have any effect on Bactzyme?

Generally this is not a problem. Although true that most parlor wash chemicals are disinfectants and antibacterial, these compounds are fairly well diluted once they've mixed with the water in the lagoon. However, it is always a good idea to apply to the Bactzyme at a time and a location when chemical wash water is not flowing.

How do I know if Bactzyme is working in the lagoon?

Within one to two weeks after starting, an increase in biological activity will be noticed. This is nothing more than harmless carbon dioxide gas from the digestion process that will form bubbles, bubbling or foaming on the surface of the lagoon. The amount and degree of this activity will vary due to a number of physical and environmental factors. If a crust

is present and you can poke hole through to the liquids underneath, foam will rise out to the surface.

Does aeration or agitation help?

Yes, it can help but it is not necessary. Once the Bactzyme are applied and continually applied each and every week, the bacteria in them will be at work in the lagoon 24 hours a day. However, if a dairy has already invested in this equipment and they operate it constantly, they can reduce the weekly application amount of Bactzyme.

What about winter and cold temperatures?

Like fish in a lake that freezes over during the winter, the bacteria in Bactzyme will remain active in a lagoon as well. There are a lot of factors that contribute to this. Ground temperature, daily inflow of wash water and the heat generated by the bacteria themselves all help to maintain a warmer lagoon temperature than might be imagined. Although bacterial action will increase as lagoon temperature goes up, it is critical that the proper number of Bactzyme be applied year round to treat the volume of waste produced every week by each cow.

Does manure treated with Bactzyme have any value in crop production?

Absolutely. As a result of the digestion process, much of the nitrogen in the manure is bound up in the bodies or cells of the bacteria that have been thriving in the lagoon. This is an organic form of nitrogen that will be released slowly to a growing crop as the bacteria degrade in the soil. Untreated manure can easily burn crops if over applied because the levels of ammonia and other fast acting nitrogen are so high. This is what we are referring to when we say Bactzyme stabilizes waste nutrients. This is also the principle reason why odors are prevented from forming.

BACTZYME SUMMARY:

- Speeds up digestion
- Reduces odor
- Easy application
- Stabilizes ammonia nitrates and other micro-nutrients
- Increases the fertilizer value of the wastewater
- Economically inexpensive to the dairyman



For More Information on BactZyme, please call 1-800-798-9204