



Bioremediation tools for the hatchery

AQUAculture INFORMATION TECHNOLOGY

Biotechnology Benefiting Aquaculture

Our bacterial products are blends of microbes (primarily *Bacillus* species) that can prevent colonization of surfaces and water by *Vibrio* species. They have been selected for their abilities to digest organic matter in tanks and ponds which is their primary mode of action.

Our products are the highest titer products in the market place. Providing the best environment for them to grow ensures that you will gain the greatest impact from their use.

Note that there is no one correct way to use these products. **You determine what works the best for you.**

We sell a powdered material (AquaPro B or PRO 4000X powder) and a tableted material (PRO4000X tablets).

The bacteria in this product have been specifically selected for their ability to utilize organic material and will grow the best when they have sufficient organic material to feed upon. In low organic (nutrient) load systems they will not thrive. They out compete vibrios by more effectively utilizing the same nutrients thus causing the vibrios to starve. Unlike many other bacteria they do not produce antibiotics. They should be used as a part of an overall program geared towards the prevention of disease problems and are not intended to substitute for water quality management and Artemia and Algae bacterial control programs. They work best when used in conjunction with these husbandry tools.

Use of the tablets: One tablet can be used per 5 to 20 MT of water. We suggest you start out with 1 tablets per 10 MT daily for the entire production cycle and note the impact. You cannot hurt the shrimp or fish by adding too many tablets, provided the water is amply aerated. You will notice some discoloration of the tank water. This is normal and is an indicator that the tablets are working. You should not need to add any additional carbon to stimulate growth as in a hatchery tank there should be plenty of this material.



Use of the powdered material: Heat about twenty (20) gallons (50 liters) of clean (sterilized by ozone, UV or Chlorine) seawater to 33 to 35 C. Make sure that all residual chlorine has been removed. Add 100 grams of the powder. Aerate for 12-18 hours. Filter the suspension through a 100 to 200 micron mesh filter (or smaller) to remove any particulates and add to tanks. Optimizing the use of the product for your particular system should be determined experimentally. Each system is unique in terms of water quality, nutrient loads and management. In general 0.5 to 1 ppm of this suspension is adequate. This is equivalent of 10 to 20 liters of this suspension per 20 MT tank. Repeat daily.

The bacteria in our products are *Bacillus* species with a long history of use in bioremediation on farms and in wastewater.



These bacteria should colonize the tanks, though depending upon water exchange rates there will be some flushing out of the bacteria and daily replacement is advised. The bacteria are harmless to shrimp and you can not overdose them. You can also add this mix to any dry feeds to ensure ingestion of the bacteria. Mixing with algal suspensions and Artemia are also viable methods for ensuring this. Our product can also be incorporated as a custom component into our larval diets.

Want more information? Click or go here: www.bioremediationaquaculture.com

Caution: Inadequately (as with all other similar products) filtered suspensions can foul the gills. Make sure that you filter the suspension with small enough micron filters to ensure that this cannot happen.

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