



Epicore BioNetworks Inc.

EPIZYM[®]-PST **Pond Soil Treatment**

PRODUCT DESCRIPTION

EPIZYM-PST pond soil treatment is a specially formulated biological and biochemical system designed to accelerate the biological decomposition of highly fouled aquaculture pond soil. It is a natural microbial ecosystem to inoculate the soil wastes and start the bioremediation process. It also is fortified with unique accelerants to speed the microbial action.

BENEFITS TO AQUACULTURE

- Avoids the use of costly machinery for physical removal of organic matter from the ponds.
- Allows pond seeding the day after harvest thereby reducing the cost of dry-out days.
- Eliminates soil treatments of disinfectants and pH regulators.
- Mineralizes organic matter so lowers fertilizers usage and expense during the cycle.
- Improves pond soil quality so allows reduced (up to 50%) water exchange, which saves diesel and machinery repair costs.
- Reduces levels of toxic compounds in the ponds, which results in better animal growth rate.
- Improve survival rates due to an overall better environment.
- Allows increased stocking densities, which improves production efficiency.
- Creates a probiotic environment that reduces incidences of shrimp off-flavor.

MODE OF ACTION

Wastes are a natural byproduct of aquaculture farming. Uneaten feeds, animal feces, dead animals and algae and exoskeletons in the case of shrimp, contribute organic debris that collects on the pond bottom. Minor waste accumulation poses no major problem as the pond's normal ecosystem can degrade and mineralize these wastes. However, in intensive farming and in ponds where wastes accumulate in a small area, the pond's ecosystem can become overloaded. If this waste is not removed, toxicants can leach into the pond water during the growing cycle and adversely affect the crop. The farmer can live with the problem and suffer economic crop losses or physically remove the waste or biodegrade it. Waiting for the normal pond ecosystem to degrade the waste takes time and lowers annual productivity.

Bio-augmentation with EPIZYM-PST accelerates this process so increases farm productivity. The biological catalysts in EPIZYM-PST immediately start the process of breaking down accumulated organic matter. The microbes in EPIZYM-PST are specially selected for their ability to produce a wide variety of powerful enzymes to decompose all the various organic wastes produced in the shrimp grow-out cycle

INGREDIENTS

Contains non-toxic, natural microbial cultures and enzymes with added stabilizers and growth stimulants on an inert carbohydrate carrier.

PRODUCT DATA

Form	Granules
Color	Non-uniform tan
Bulk Density	Approximately 0.5 gm/ml (31 lbs./cubic foot)
Total Aerobic Count	1.0E+09 cfu/gm, minimum

Epicore BioNetworks Inc.

American Operations:

Epicore BioNetworks Inc.
4 Lina Lane
Eastampton, New Jersey, 08060
USA
Telephone: (609) 267-9118
Fax: (609) 267-9336
information@EpicoreBioNetworks.com
www.EpicoreBioNetworks.com

Latin American Operations:

Epicore Ecuador S.A.
Km 11 vía a la Costa
Guayaquil – Ecuador
Phone: (593-4)-299-0663 / 0859
lorena.vanoni@EpicoreBioNetworks.com

La Libertad Office:

Epicore Ecuador S.A.
Calle Diez y Avenida Quinta Barrio 10 de
Agosto, Diagonal al Colegio Celleri
La Libertad - Ecuador
Phone: (593-4)-278-5106
lorena.vanoni@EpicoreBioNetworks.com

IMPORTANT NOTICE TO PURCHASER

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TREATMENT SUGGESTIONS

Heavy Organic Accumulation:

- After harvest, drain the pond as per normal procedures. For very heavy waste accumulations physically remove as much as possible prior to the first EPIZYM-PST application. If possible, leave 50 cm of water in the pond.
- Activate 1 to 2 kg EPIZYM-PST bacteria by hydrating with 2 kg molasses in 100 liters of warm fresh water or clean pond water for 30 minutes with an oxygen tank or air pump running. Broadcast hydration mixture evenly over 1-hectare of pond surface. Do not let hydration mixture stand more than 4 hours.
- For best results apply before 10:00 am and wait 24 hours before pond filling to allow the PST bacteria to colonize the soil.
- Also, if possible use sticks, shovels or simply walk the area of application for better EPIZYM-PST penetration of the treated soil.
- Best results often are obtained by making two PST treatments: one with 1-kg before pond filling and one with 1-kg at day 30 after seeding.

Maintenance of Recuperated Soil and for Initial Fertilizer Reduction:

- Follow the suggestions above but use one 0.5-kg treatment before pond filling and one 0.5-kg treatment at day 30 after seeding.

Treatment for Off-Flavor Reduction:

- Apply 150 kg of calcium carbonate per hectare 45 days before harvesting.
- After 48 hours, make a 40% water exchange from the bottom water.
- Seal the inlets and outlets of the pond.
- Apply 2-kg of PST per hectare using the activation process described above.
- For best results split the PST treatment into three applications 48 hours apart.

PRODUCT PERFORMANCE

Bistefana Farm, Ecuador - Ayalan Pond #4

	Before PST Treatment	Three Cycles After PST Treatment
Stocking Density (PL/ha meter)	8	8
Cycle Days	140	120
Average Weight (gm)	10	14
Survival	28%	45%
Yield (lb/ha)	493	1,110



Before PST



After 2 PST Cycles



After 3 PST Cycles

PRODUCT STORAGE: Keep dry; do not store continuously at temperatures above 40°C; store out of direct sunlight in a well ventilated area; do not pre-mix with other products not recommended by Epicore especially biocides and harsh chemicals.

SHELF LIFE: Shelf life is two years if stored as recommended.

PACKAGING: Supplied in 20-kg fiber drums with polyethylene liners, in cases of six 1-kg (0.5 U.S. gallon) open head polyethylene pails.