



## **EPICIN<sup>®</sup>-D**

### **Biological Aquaculture Treatment**

#### **PRODUCT DESCRIPTION**

**EPICIN-D** is a natural microbial ecosystem with added stabilizers and growth stimulants for detoxifying aquaculture hatchery water. It eliminates water-fouling waste products such as ammonia, nitrites and hydrogen sulfide, thereby lowering stress and providing a healthier environment for aquatic animal growth. It also improves animal health and disease resistance by creating a probiotic environment.

#### **BENEFITS TO AQUACULTURE**

- Effectively reduces dangerous levels of ammonia, nitrite and sulfide pollutants from hatchery water.
- Establishes a strong natural bacteria culture in the water that suppresses the growth of harmful bacteria such as *Vibrio sp.*
- Significantly reduces Zoea Syndrome problems.
- Increases PI survival and yields.
- Allows higher stocking densities.
- Reduces need for water exchanges providing a more bio-secure environment.
- Leaves behind cleaner water reducing pollution from discharge water.
- Disperses in water with no coarse residue that needs filtering.

#### **MODE OF ACTION**

Treatment of aquaculture hatchery water with specially formulated products based on carefully selected, natural bacteria provides a natural way to eliminate pollution and to create a beneficial microbial environment that inhibits the development of harmful organisms. Bacteria have a powerful capacity to utilize pollutants such as ammonia, nitrates and nitrites in their normal metabolism. Additionally, a thriving culture of the right natural bacteria provide a “probiotic” environment which suppresses the growth of harmful organisms. Through these two mechanisms, a healthier aquatic creature is raised that has greater vitality and immunity to disease.

#### **INGREDIENTS**

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

#### **PRODUCT DATA**

Form	Off-white powder with brown particles
Odor	Sweet
Bulk Density	Approximately 0.8 gm/ml (52 lbs./cubic foot)
Total Aerobic Count	4.0E+09 cfu/gm, minimum

#### **REGULATORY STATUS**

The US Food and Drug administration and the Association of American Feed Control Officials have published a list of microorganisms that are GRAS (generally recognized as safe) in direct-fed microbial products. All the microorganisms in EPICIN-D are on this list.

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### IMPORTANT NOTICE TO PURCHASER

"Epicore BioNetworks, Inc. ("Epicore") warrants that the product conforms to its compositional description and is reasonably fit for the purpose stated on the label when used in accordance with the label instructions under normal conditions of use. There are no other express or implied warranties, whether as to merchantability, fitness for any use, or otherwise, given in respect of the product. Neither Epicore nor its agents shall be liable for any damage, loss, or injury, whether the same arises directly or consequentially, by reason of any matter whatsoever relating to the use of the product, and any buyer's or user's exclusive remedy in any instance shall be limited to a refund of the purchase price paid."

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## TREATMENT SUGGESTIONS - Continued

- A preventative program is strongly recommended over a remedial one. Applying EPICIN-D before problems develop consistently protects animal health and minimizes the impact of problems on survival and yield.
- Hydrate the EPICIN-D bacteria by diluting 100 gm in at least 1 liter of fresh water that is free of chlorine or disinfectants. Shake vigorously to break up clumps of bacteria. Broadcast water and microbe mixture evenly over hatchery tank surface. Do not let hydration mixture stand more than 4 hours.
- When adequate organic carbon is present, EPICIN-D will digest ammonia in 24-48 hours. If in doubt about carbon levels use 10-50 ppm molasses each day of larval culture; use the higher level if high ammonia levels are expected.
- The following preventative treatment rates are suggested as starting points:

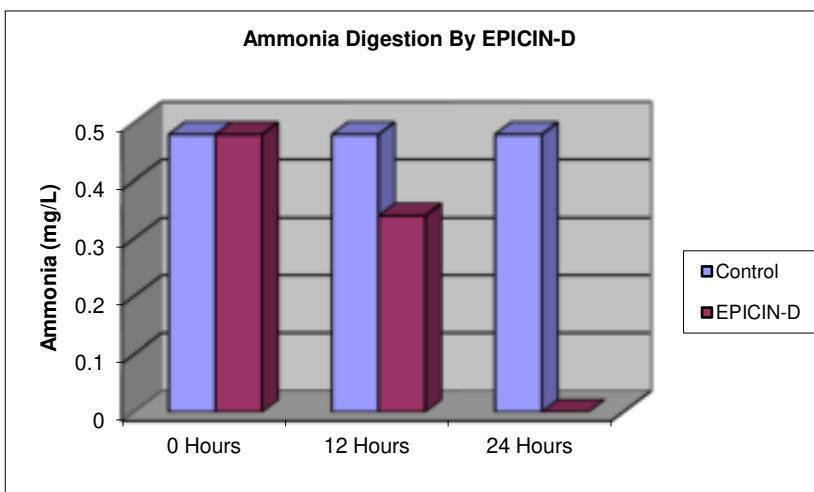
Timing	Application Rate
3 hours after passing N5/Z1	2 ppm
12 hours after passing Z1	2 ppm
After passing Z2	2 ppm/5 ppm*
Z3	2 ppm
Z3/M1	2 ppm
M2 and M3	3 ppm per day
PL1 to PL5	4 ppm per day
PL6 to PL10	5 ppm per day

\* If water exchange is necessary, use 10-ppm

- For a heavy *Vibrio sp.* infestation, add 10-ppm EPICIN-D per day until eliminated.
- For high ammonia, add 10 ppm EPICIN-D per day until reduced to normal.

## PRODUCT PERFORMANCE

The following laboratory ammonia digestion results were obtained in Epicore's Ecuadorian laboratory. The test was conducted at 27°C and supplemental carbon (50 ppm molasses) was added to the raceway water.



**PRODUCT STORAGE:** Keep dry; do not store continuously at temperatures above 45°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 40-kg fiber drums with polyethylene liners, in 10-kg (5 U.S. gallon) open head polyethylene pails and in 0.75-kg resealable plastic bags.