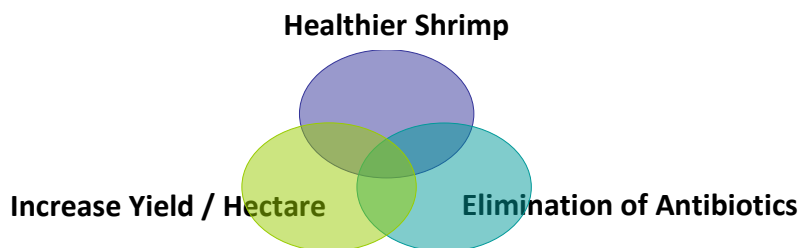


## VITOXAL® THE PREMIUM SHRIMP FEED ADDITIVE

Mionix Corporation is dedicated to providing quality products to the aquaculture industry. Patented and manufactured in the United States of America under the strictest quality standards Vitoxal® is a highly effective shrimp feed additive that helps increase shrimp survival rates, increase biomass yields, and reduces the need for shrimp feed probiotics and antibiotics. Vitoxal acts on shrimp gut microbiota and systemically on the immune system thereby significantly improving the health of the animal, ensuring sustainability in shrimp production and leading to:



### Mechanism of Action:

Vitoxal is comprised of a clay carrier and an acidifier. When added to shrimp feed this environmentally friendly product promotes the acidification of the gastrointestinal tract and stimulates growth of gram positive bacteria, i.e., bacteria that competitively exclude and/or secrete products that suppress and/or inhibit development of microbial pathogens (e.g. *Vibrio spp.* and *Pseudomonas spp.*). In general, gram negative bacteria, such as *Vibrio spp.* and *Pseudomonas spp.* are more sensitive to pH changes than gram positive bacteria. Mechanistically, lowering the pH has been shown to facilitate a change in cellular membrane structure of pathogens leading to microbial stasis and/or death. In addition, Vitoxal, added to shrimp feed has an anti-parasitic effect in that it suppresses gregarine trophozoite levels. Little is known about gregarine membranes but trophozoites become extracellular and during this exposure to the outside of the gut epithelium the trophozoites are exposed to the Vitoxal pH change.

Vitoxal:

- Improves the shrimp immune defense system.
- Reduces gregarine trophozoite levels.
- Remains effective without the possibility of “immune resistance” commonly seen with antibiotics.
- Is non-toxic when used as recommended.

- Remains effective even after exposure to heat during the pelleting process.
- Supports high density “Post Larva seeding”.
- Produces an increase in bio-mass yields by 3-10%, depending on the geographic location and the continued application of the product throughout grow-out.

### **Field and laboratory Trials:**

Vitoxal has been shown to be highly effective in both field and laboratory trials. Field experiments conducted in Ecuador during the past two years under varied production conditions and in the United States, at the Texas AgriLife Research Mariculture Laboratory at Port Aransas, Texas A&M System have demonstrated the effectiveness of Vitoxal by:

- Improved assimilation of nutrients fostering optimization of feed conversion rates.
- Significantly reducing shrimp pathogens such as *Vibrio* spp, and *Pseudomonas* spp.
- Leaving no chemical residue in the flesh of the animal.

### **Packaging:**

Vitoxal is sold in 20 kg pails.

### **Directions for Use:**

Vitoxal should be added during the manufacturer of the shrimp feed when mixing action is good.

### **Dosage:**

Apply at the rate of 1.0 to 1.5% of feed (or 10 kg to 15 kg per metric ton of feed) and is recommended for use throughout the growth cycle.

### **Storage:**

Unopened, the product can be stored at ambient temperatures in a dry environment for a minimum of one (1) year.