

Industries:

- All Aquaculture
- Fish Farming
- Fresh water shrimp
- Salt water shrimp



Benefits:

- Increased shrimp larval survival
- Increased nursery fish survival
- Increased grow-out survival
- Increased feed conversion rates
- Increased average daily weight gain
- Increased stocking densities*
- Reduced off-flavor at harvest
- Increased market value

Water Quality Maintenance:

- Improved water clarity & quality
- Reduced bottom sludge
- Reduced ammonia
- Reduced nitrite
- Reduced nitrate

Improved Yield, Stock Health & Efficiency

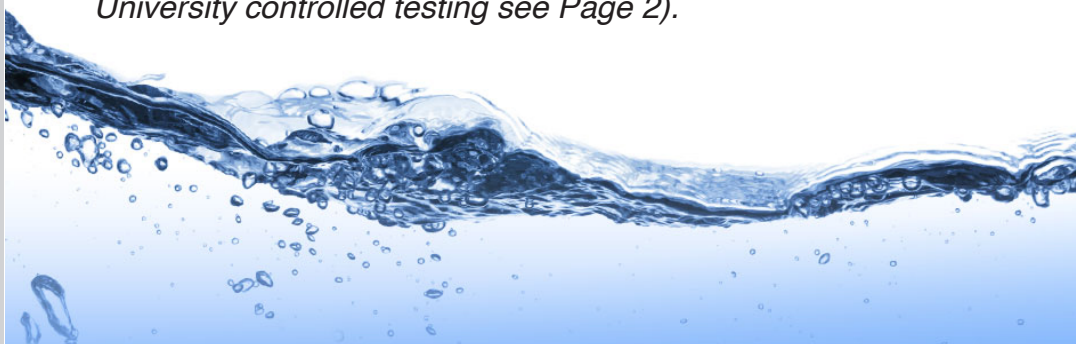
JCW-MS is an aqueous based propriety technology solution that functions as a biostimulator which increases microbiological activity in water. It contains no foreign active bacteria, enzymes, nutrients or other biological components in itself but instead relies on stimulating these biological elements found in the locations where JCW-MS is applied to deliver increased activity.

As a “next generation” biological stimulant, JCW-MS is designed to provide increased profitability in existing aquaculture operations.

Rarely has any such technology undergone such rigorous evaluation by a Government University, to quantify benefits to existing fish and shrimp farming operations (*See Evaluation studies on page 2*)

JCW technology increased survival rates, feed conversion, growth rates and stocking rates whilst improving water quality.

One of the greatest indicators of JCW-MS ability to safely grow healthier tilapia fish, faster, is our results in “off-flavor” testing.... **“Zero off-flavor characteristics, that were detectable by smell or taste”** (*Measured and validated by University controlled testing see Page 2*).



JCW-MS

NEXT GENERATION MEDIUM STIMULANT

Case Study Testing for JCW-MS in Aquaculture

Brazil has a large and growing Aquaculture Industry which is a major employer in rural communities. It thus engenders Federal Government's encouragement to develop competitive and sustainable operations.

JCW-MS independent case studies were undertaken in Brazil by the Federal Institute of Education, Science and Technology of CEARA-IFCE ARACATI CAMPUS. The testing was supervised by Professor Glacio Souza Araujo, assisted by Undergraduates in Aquaculture namely, Cicero Silva Rodrigues De Assis and Bruno Araujos Dos Santos.

Below are a number of the tests performed and summary outcomes vs control. Detailed test reports may be viewed upon arrangement with a JCW technical representative.

*Larviculture of Marine Shrimp *Litopenaeus vannamei* with the application of JCW-MS

Summary Results: **Average Final Survival Rate UP 17%, Final Weight UP 8.4% . Total Final Harvest Weight UP 27.8%**

*Nursery Phase *Oreochromis niloticus* Cultivation in Low Salinity Water Dosed with JCW-MS that Stimulates Microbiological Activity in Aquatic Environments

Summary Results: **Major Reduction in Bottom Sludge Increased Water Quality**

*The Effect of Stocking Density on *Tilapia* Pisciculture During The Nursery Phase While Applying JCW-MS to Stimulate the Activity of Microorganisms that Consume Organic Matter

Summary Results: **Increased Stocking Density, Decreased Biomass, Increased Feed Conversion**

*The Effect of Stocking Density on The Zootechnical Performance of Nile *Tilapia*, *Oreochromis niloticus*, During the Fry Stage in Association with the Application of JCW-MS that Stimulates the Microorganisms that Consume Organic Matter in Water

Summary Results: **Increased Stocking Density, whilst Maintaining Increased Food Conversion with Increased Dissolved Oxygen and Water Quality**

*Off-Flavour Detection in *Tilapia* Cultivated in Conditions in which JCW-MS Stimulates the Activity of Microorganisms that Reduce Organic Matter.

Summary Results: **Off-Flavor scores of ZERO from Sensory Analysis**

*Aquaculture Live Fish & Shrimp Transport

Summary Results: **Supports increases in freight time for live produce. Fish/Shrimp arrives in similar condition as live harvest Ability to provide fresh harvest after transport for premium prices**

Test Results:

17% 
INCREASED
SURVIVAL RATE WITH JCW

27.8% 
INCREASED
FINAL HARVEST WEIGHT

LARGE 
INCREASE
IN PRODUCT MARKET VALUE

JCW 
INCREASED
STOCKING DENSITY

JCW 
INCREASED
FEED CONVERSION

JCW 
INCREASED
WATER QUALITY & DISSOLVED OXYGEN

ZERO 
OFF-FLAVOUR
SCORE RESULT WITH JCW

MAJOR 
DECREASE
IN BOTTOM SLUDGE & BIOMASS

Driving profitability in Aquaculture