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Popular Article

Aqua mimicry- A revolutionary concept for shrimp farming

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Aqua mimicry is a concept that strives to simulate natural estuarine conditions by creating zooplankton blooms (mainly copepods) as supplemental nutrition to the cultured shrimp and beneficial bacteria to maintain water quality.

What is aqua mimicry in India?

Aqua mimicry is an innovative new concept of creating blooms of zooplankton mainly copepods, as which provided a good source of nutrition as supplementary form for the cultured shrimps and enhancing the growth of helpful bacteria to maintain optimum level of water quality parameter, which will simulate the estuarine condition.

Aqua mimicry is an innovative technology can be efficiently employed to achieve sustainable aquaculture. It is mimicking the natural environment of organisms in a confined water condition. The technology utilized the heterotrophic fauna rather than autotrophic organisms. In this system suitable carbon ingredients (energy source) along with probiotics are added, which helps to utilize the unutilized nitrogen, generated through feed and excreta and finally converted to floc and help to maintaining the population of copepod as a source of proteinaceous feed. Aqua mimicry is more or less similar to bio floc technology except few differences like the quantity of carbon source and the dominated communities are zooplanktons like copepod that will serve as supplemental nutrition to the cultured shrimp or fish and less feed input compare to bio floc technology. Further Aqua mimicry



can be adopted in extensive and intensive system of farming with in the limited supply of aeration whereas, bio floc technology required a specialized management and heavy aeration provisions and mainly used in intensive systems. Feed accounts for more than half the production cost in most aquaculture practice and in Aqua mimicry system live feed (copepods) are generating within the system by adding suitable carbon sources which not only reduce the dependency on the supplementary feed but also help to maintain the good water quality and health of the organisms. Therefore, Aqua mimicry can be considered as an efficient technology which can reduce the production cost more sustainable manner and give better yield to the farmers.

Aqua mimicry simulates natural conditions

Aqua mimicry is a concept that strives to simulate natural estuarine conditions by creating zooplankton blooms (mainly copepods) as supplemental nutrition to the cultured shrimp and beneficial bacteria to maintain water quality. This is done by fermenting a carbon source, such as rice or wheat bran, with probiotics (like *Bacillus* sp.) and releasing their nutrients. This method is in some ways similar to bio floc technology, but there are some key differences.

Firstly, the amount of added carbon is reduced and not strictly reliant on ratios to nitrogen input. Secondly, rather than encouraging and suspending high amounts of bio flocs, sediments are removed in more intensive systems to be reused by other animals.

Ideally, the water mimics the appearance and composition of natural estuarine water that includes microalgae and zooplankton. When such a balance is met, pH and dissolved oxygen fluctuations are minimized, and there is no need for antibiotics or chemicals because the rice bran provides nutrition for the zooplankton and bacteria (as a prebiotic) to create “symbiotic,” which are dietary supplements or ingredients that synergistically combine prebiotics and probiotics.



What are the benefits of aqua mimicry?

- Water quality fluctuation is not seen and parameters lie at optimal level.
- Improvement of overall nutrition as shrimp feeds on FRB and also on copepods as live food.
- Bottom soil is rectified microbial.
- The production cost is reduced.

Conclusion

Adopting Aqua mimicry in shrimp farming offers more sustainability than conventional farming. The inputs in production are nontoxic to shrimp and humans. There is no use of harmful chemicals, antibiotics in Aqua mimicry concept. Production cost to can be reduced by adopting this technology. These advantages give Aqua mimicry economic and environmental sustainability. Aqua mimicry is a revolutionary concept to effectively provide a sustainable rival to the shrimp farming industry. It is an excision of aquatic technology interactively working together in mimicking the nature of aquatic ecosystems to made live food organism for the fish or shrimp. Shrimp produced this technology are red in color due to (astaxanthin, amino acids and poly unsaturated fatty acids) which will increase the marketing value as “Organic shrimp”. Organic coastal shrimp culture means farmer are manage practices of an organic standard for shrimp culture. It is mainly based on the holistic aquaculture management, eco-friendly and sustaining biodiversity.

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