

## **Nutritional Potential of Primary Productivity on the Shrimp Farming Industry in America**

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America represents 20% of the world shrimp production. The farming industry is typically characterized by extensive and semi-intensive pond-based grow-out culture systems (from 500 to 6,000 kg/ha/crop), where water quality and food supply are more affected by the presence of microalgae than in intensive culture systems (7,000 – 34,000 kg/ha/crop). However, in intensive systems, if there is a lack of phytoplankton, benthic algae will grow, having also a negative effect on the quality of the culture water.

The shrimp industry is experiencing continuous price variations in feeds due to fluctuations in ingredient prices, especially the natural supply-limited aquatic ingredients. Supplemental feeds may represent 20 to 50% of variable production costs, depending on the culture system. Thus, the need to develop more cost-effective feeds for shrimp culture is required. Natural productivity also plays an important role in shrimp nutrition, which should be considered when formulating shrimp feeds.

Primary productivity contributes substantially to the nutrition of shrimp aquaculture. The better understanding of the contribution of primary productivity to shrimp growth is critical to optimize feed cost, reduce shrimp production costs and achieve sustainability for commercial shrimp farming.

A review of the nutritional potential of primary productivity on the Americas shrimp farming industry will be presented.