

CONSTRAINTS IN THE COMMERCIAL PRODUCTION OF SHRIMP FEED

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Abstract

Shrimp feed production methods are based on existing methods developed for fish and livestock feeds. However, there are a lot of differences between fish and shrimp.

Shrimp are typically fed 3-4 times/day. They are benthic. They must find the feed by chemical attraction through leaching of nutrients. They are selective feeders, nibbling on pellets and only consume more feed when palatability is OK, they are slow feeders. Shrimp can consume detritus actively or passively. Soluble nutrients will feed the phytoplankton in the pond, which in turn will feed zooplankton. The shrimp will ingest some of this plankton again. This is what we call natural production of the pond.

Crustaceans have some unique nutritional requirements such as phospholipids, cholesterol, Phosphate to Calcium ratio. Knowledge of shrimp nutrition has increased during the years, but application in business has been difficult due to cost. Semi-intensive farming is not the system that will maximise shrimp efficiency.

The slow feeding of shrimp increases the challenges of shrimp feed production, since shrimp feeds should remain water stable, even though they absorb water and loose nutrients through leaching.

The results obtained with feeding shrimp with a commercial pellet will depend on 5 groups of factors: Raw materials used, formulation, production method, handling and logistics between feedmill and farm and feed management on the farm.

Shrimp growth is directly related to protein digestibility. The replacement of fish meal is possible for some shrimp species.

Pelleting is the most widely used method for shrimp feed production, but extrusion, cold extrusion and soft extrusion offer alternatives that result in better suited feeds for shrimp.