

hatchery,feeds.txt

Hatchery Feeds:

Hatcheries utilize a combination of live feeds, such as microalgae and brine shrimp nauplii (*Artemia*), with one or a number of prepared diets, either purchased commercially or prepared at the hatchery.

The principal algal species employed are *Skeletonema*, *Chaetoceros*, *Tetraselmis*, *Chlorella* and *Isochrysis*. Again, dry formulated feeds are popular, but they don't work on a 100% replacement basis.

In the April 2000 issue of the *Global Aquaculture Advocate* researchers from Belgium and Ecuador discussed dry artificial diets for penaeid shrimp broodstock.

They said:

We recently conducted a survey on the use of commercial diets in shrimp hatcheries with maturation facilities. The survey included 13 hatcheries in Ecuador, 2 in Mexico, 3 in the USA, and 1 each in Colombia and Brazil.

Eighty percent of the hatcheries surveyed used some artificial broodstock diets. In 15% of the hatcheries, artificial diets represented more than 25% of the total feeding regime. Hatcheries used Breed S (INVE Aquaculture NV, Belgium), Higashimaru (Higashimaru Co., Japan), MadMac-MS (Aquafauna Biomarine, Inc., USA), Nippai (Japan), Rangen (Rangen, Inc., USA) and Zeigler (Zeigler Bros., Inc., USA). One hatchery had its own diet made by a feed manufacturer. The most popular diet was a dry premix because it allowed mixing with other nutrients, minced fresh food and medications.

Preliminary results of our joint research effort were presented last year at the 5th Ecuadorian Aquaculture Conference in Guayaquil (October 1999). We found that an experimental dry diet could replace 50% of the fresh food in hatchery diets without loss of reproductive output or larval quality. We also found that *Artemia* meal (freeze-dried *Artemia* biomass) in the diet formulation improved diet ingestion rate, ovarian maturation and fecundity.

Artificial dry diets for shrimp broodstock offer many advantages, but they are still not effective in completely replacing fresh foods. A survey of commercial shrimp maturation facilities indicated that dry maturation diets are widely utilized, but they comprise only a minor share of the total feeding regime. Information: Roeland Wouters and Patrick Sorgeloos, Laboratory of Aquaculture and *Artemia* Reference Center, University of Ghent, Rozier 44, B-9000, Gent, Belgium; and

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