

**CONTRACT RESEARCH
ABSTRACTS**

1990 - 2000

**Council for Agricultural Research Policy
114/9, Wijerama Mawatha
Colombo - 07
Sri Lanka
2003 June**

A CONTRIBUTION TO THE SHRIMP INDUSTRY OF SRI LANKA

(CARP Contract Research Project No :12/209/175)

Udeni Edirisinghe

University of Peradeniya
Peradeniya

Abstract

Shrimp industry of Sri Lanka make a significant contribution to the foreign exchange earnings from the fisheries sector. However, due to unscientific construction of shrimp farms, while removing substantial areas of mangrove vegetation has led to changes in natural ecosystems. This has led to the deterioration of water quality resulting in outbreak of infectious diseases.

This study was aimed to develop a formulated feeds for shrimps, utilizing locally available raw materials and to determine the effect of water quality parameters of shrimp farming ponds under different culture systems on the shrimp quality.

Results revealed that the incorporation of tilapia fish meal, shrimp head meal, soy flour, rice polish and wheat flour could be used as the locally available ingredients for the formulation of a shrimp feed. The feed prepared with those ingredients showed satisfactory water stability even after 6 hours and compared well with the imported shrimp feed. It was inferred that wheat flour could be used as the binder in the preparation of pellets.

Water quality parameters did not show a significant difference from the control, the commercial feed. Feed Intake, Feed Conversion Ratio and Feed Conversion Efficiency as well as the percentage (%) survival of shrimps did not show a significant difference when compared with the imported feed. It was found that the minimum dietary protein content for maximum growth could be reduced when the dietary energy content was increased for *Penaeus monodon*.

The cost of analysis of the feed indicated that formulated feed was cheap and performed better in terms of economic return. The use of the prepared feed saved 24% on the cost of feed from every kg of fed used. In addition, the technology developed was suitable for small scale farmers, who

could prepare the feed using locally available ingredients at the farm so that they could practice semi-intensive shrimp farming. Such a strategy would cause least damage to water resources and will be sustainable.

Study on water quality parameters indicated that for sustainable shrimp farming by small scale farmers, *Panaeus monodon* stocking rates should be reduced. Both medium and large-scale shrimp farmers should develop water recirculation systems for their sustainability.