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Formulation of cost effective grow out feeds for *Macrobrachium rosenbergii* culture in Fiji

K. Azam
The University of South Pacific, Fiji

Abstract

The change from traditional subsistence to semi-intensive is leading to an increase in the demand for aquaculture feeds. The culture of freshwater prawn, *Macrobrachium rosenbergii* in Fiji as protein source and source of income for small-scale farmers is important. However, due to the unavailability and high cost of feed ingredients and formulated feeds, the supply and quality of feeds for aquaculture development is restricted. In addition, the lack of information on cost–effective channels to deliver feeds to farmers has contributed to the poor production and profitability. A nutritional study was conducted to evaluate growth performance of *M. rosenbergii* fed iso-energetic, low cost formulated diets, using locally available ingredients in ponds for 124 days. Two formulated (MBM+MM+CP-**diet 1** and FM+Wht-**diet 2**) and two commercial (Crest tilapia pellet-**diet 3** and Pacific prawn pellet - **diet 4**) diets were fed. The study indicated no significant differences for weight gain and survival rate ($P \geq 0.05$). It was observed that **diet 2** induced highest growth rate while the lowest FCR (0.97±0.02) value was obtained for the same diet. The survival of prawns ranged between 83.43 mm ± 5.55 and 89.26 mm ± 0.40 %. The highest prawn production was obtained with **diet 2** at 0.16 kg/m^2. The economic analysis of *M. rosenbergii* production showed that **diet 2** was the least expensive (FJ$0.53) to produce 1 kg of prawn as compared to the commercial diets (Pacific Prawn feed -FJ$0.89 and Crest Tilapia feed - FJ$0.69). Therefore, this study suggests that *M. rosenbergii* growth was slightly improved when using the formulated **diet 2** although the highest survival rate (89.26±0.40 %) was obtained from the formulated **diet 1**. **Diet 2** may be recommended to the farmers for monoculture of *M. rosenbergii* in ponds in comparison to both commercial diets in Fiji.

Biography

Khairul Azam has completed his Ph.D in 1990 from the University of Strathclyde, Glagow, U.K. He did his post doctoral from the University of Hull and University of Pertanian, Malaysisa. He worked as Researcher and Faculty for the last 27 years. He is a Professor at the University of Khulna, Bangladesh but presently on lien and working as Senior Faculty, School of Marine Studies, at the University of the South Pacific, Fiji. He has numerous publications to his credit and has attended national and international seminars and workshops. He was the Dean, Life Science School at Khulna University during 2002-2004.