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RESEARCH ARTICLE

Efficacy of different formulated feeds on the growth potentials of tropical penaeid prawn, *Penaeus monodon*

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ABSTRACT : The aquaculture of penaeid shrimp has rapid growth to a major industry, which on a world wide basis, provides not only economic income and a high quality food product, but also employment to hundreds of thousands of skilled and unskilled workers.The hatchery raised post-larvae of *Penaeus monodon* (Fabricius) were selected and acclimatized to the laboratory conditions for 2 days. During the acclimation period, 30-50 per cent volume of water was exchanged and used for feeding trials. In the present investigation 5 diets were formulated with wheat flour, soybean meal, fish oil, fish meal, prawn meal, squilla meal, squid meal and acetes shrimp meal as principal ingredients. Wheat flour, soybean meal and fish oil were incorporated at 15, 10 and 10 per cent, respectively in the formulation of diets, where as fish meal, prawn meal, squilla meal, squid meal and acetes shrimp meal were incorporated either individually at the rate of 61.9 per cent during formulation of diets. The results of the present study indicated that the feed ingredients selected in the present study *i.e.,* fish meal, prawn meal, squilla meal, squid meal and acetes shrimp meal are highly suitable for the formulation of diets and all these ingredients are considered to be very good protein sources for *P. monodon* culture activity.

Key words : Penaeus monodon, Acetes shrimp feed ingredients, Fish meal, Prawn meal

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INTRODUCTION

The aquaculture of penaeid shrimp has rapid growth to a major industry, which on a world wide basis, provides not only economic income and a high quality food product, but also employment to hundreds of thousands of skilled and unskilled workers. By far the greatest aquaculture production in tonnage is oysters and the greatest value is shrimp with fish some distance behind. Shrimp farming is currently practiced in over 50 countries worldwide and the sector has growth at an annual average of over 18.8 since 1970 (FAO, 2001; 2006). The basic information on the biology, ecology and feeding habits of penaeid shrimps including *Penaeus monodon* is highly essential for the preparation of formulated diets which influence the growth and survival of the species. Hundreds of species of shrimp inhabit the brackish and marine waters of the globe. Smith *et al.* (2002) and Tacon *et al.*(2002) recognized that feeding strategies have been found to influence the water quality. Most of them are rare, very small or not suitable for human consumption. All farm raised shrimp and most of the shrimp caught by fishermen belong to the Penaeidae family of decapod crustaceans and are referred to as "Penaeids". The genus name is *Penaeus*. *P. monodon* exhibits the highest growth rate of all cultured penaeids and is the most valuable indigenous aquatic species in Asia and dominates production in all the penaeid species (Rosenberry, 1998).

There are more than 3,000 living species of shrimp worldwide. Many are tiny (or) inhabit niches unsuited to mass harvest. Worldwide about 40 species of shrimp meet these criteria and are harvested commercially. Each of these species has attributes that may be more suitable than others for culture in specific areas. Culturists generally agree that for the eastern hemisphere, the fast growing giant tiger shrimp, *Penaeus monodon* is the most important, while in the western hemisphere, the white shrimp, *Litopenaeus vannamei* is the leading production species. A variety of major framed shrimps and prawns which were cultured in different parts of the globe is presented in the following Table A.

Penaeus monodon or the tiger shrimp is the most