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EFFECT OF DIETS CONTAINING DIFFERENT LEVELS OF MANGO SEED KERNEL ON GROWTH AND SURVIVAL OF POST-LARVAE OF *Macrobrachium rosenbergii* (de Man)

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ABSTRACT

In the present study, the effect of diets containing different levels of mango seed kernel on growth and survival of post-larvae of *Macrobrachium rosenbergii* (de Man, 1879) was investigated under laboratory conditions. Mango seed kernel was incorporated in practical diets at 5, 10, 15, 20, 25 and 30%. The post-larvae measuring 0.042 $\pm$ 0.002 g by weight were fed for 42 days at 10% of the body weight. Maximum length gain (69.6%), weight gain (286.3%), specific growth rate (3.2%) and survival (93.3%) was achieved in post-larvae fed with diet T_1 (25% fish meal and 5% mango seed kernel) and it was significantly different ($P < 0.05$) from the control diet. Lowest growth was observed in diet T_6 (30% mango seed kernel). It was thus concluded that mango seed kernel could replace fishmeal at 5% level in the diets of post-larvae of *M. rosenbergii* and could significantly improve the growth rate and survival of post-larvae.

Key words: Mango seed kernel, Post-larvae, *Macrobrachium rosenbergii*, Growth.

The present trend of aquaculture is in the direction of development of sustainable and ecofriendly semi-intensive and intensive culture systems. In either case supplementary feeding is an integral part of culture system. In freshwater prawn farming today, feed accounts 60% of the total operational cost and protein constitutes a major cost of diets (Akiyama *et al*., 1992; Sarac *et al*., 1993). Fish meal is one of the most expensive protein sources, thus more research has been conducted to replace fish meal with cheaper plant proteins (Lim and Dominy, 1990; Tidwell *et al*., 1993).

Locally available feed ingredients such as acacia or copra meal, rice and rice by-products, lupin seed meal, groundnut oil cake, Wheatflour have been used in juvenile shrimp and prawn diets by AQUACOP (1976), New and Singholka (1982), Sudaryono *et al*., (1999), Indulkar and Belsare (2001), Kulkarni (2001), Gitte (2003). Omoregie *et al*. (1991) and Omoregie (2001) have used mango seeds in the diets of juvenile *Oreochromis niloticus* and *Labeo senegalensis*.

Therefore, this study was designed to study the effect of varying levels of mango seed kernel incorporated diet on the post-larvae of *Macrobrachium rosenbergii*.

MATERIALS AND METHODS

Test animals. The post-larvae of *Macrobrachium rosenbergii* were obtained from the freshwater prawn hatchery of the Marine Biological Research Station, Ratnagiri and maintained in a 500 l plastic pool. They were acclimatized for one week to the laboratory conditions and fed three times per day with the control diet (T_0) at the rate of 10% of the body weight. Faeces and remaining feed were siphoned out regularly. Aeration was provided throughout the acclimatization period to avoid stress.

Diet preparation. Locally available ingredients such as ribbon fishmeal, wheatflour, ricebran and groundnut oil cake were used for preparing the practical diet, which was referred as control diet (T_0). Mango seeds were collected from a mango canning factory and sun dried for seven days. Afterwards the kernels were removed by breaking the seeds. The kernels were sliced and dried in a laboratory oven at 60^0C for 24 h and thereafter powdered by using domestic mixer. Ribbon fishmeal from control diet (T_0) was replaced by mango seed kernel powder at 5, 10, 15, 20, 25 and 30% level in six test diets viz. T_1, T_2, T_3, T_4, T_5 and T_6 respectively. All diets were isonitrogenous (37% crude protein). The ingredients were individually dried, ground and sieved through a sieve (250 ìm) to obtain uniform size. The ingredients were weighed according to the composition of the diet (Table 1) and mixed thoroughly. 350 ml of water was added per 100 g of diet and mixed in a domestic mixer for one minute to form slurry. The slurry was steam cooked for 15 min and cooled at room temperature for 20 min. The cooled slurry