

RESEARCH ARTICLE

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Bioenergetics of the cashew (Anacardium occidentale L.) testa powder incorporated diet for the post larvae of Macrobrachium rosenbergii

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ABSTRACT : The study was conducted for evaluating the bioenergetics parameters in the test diet prepared by incorporating cashew (Anacardium occidentale L.) testa powder at the rate of 10 per cent by reducing the level of fishmeal for the rearing of post-larvae of freshwater prawn, Macrobrachium rosenbergii. The diet containing 30.41 per cent fishmeal was used as control diet (T₀). By following the standard procedures, the chemical analysis of control diet (T_0) and test diet (T_1) was done. At the end of experiment, the various biological parameters viz., amount of feed given, remainder feed, consumption, faecal output, assimilation, metabolism, assimilation efficiency, gross growth efficiency, net growth efficiency, consumption / unit weight / no. of experimental days, feed conversion ratio, relative growth rate, protein efficiency ratio, protein digestibility coefficient were observed. Results revealed that assimilation, assimilation efficiency, relative growth rate, consumption / unit weight / day and protein digestibility coefficient of post-larvae fed with test diet was found significantly better than control diet. The truthfulness of experiential data was verified on statistical ground. With the results obtained, it can be concluded that fishmeal can be replaced up to 10 per cent by cashew testa in the diet of post-larvae of M. rosenbergii.

Key words : Bioenergetics, Cashew testa, Diet, M. rosenbergii

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INTRODUCTION

The giant freshwater prawn (Macrobrachium rosenbergii) also known as 'scampi' is one of the potential aquaculture candidate species for freshwater bodies of different parts of Indo-pacific region. During the recent years, the farming of scampi has been expanding in India due to the setback in shrimp farming because of disease outbreaks. Freshwater prawn also has got importance in freshwater farming because of its faster growth under captive conditions, greater disease resistance, omnivorous feeding habit, efficient feed conversion and good demand in both domestic and export market.

As scampi farming continues to expand, production methods have improved from traditional extensive to semiintensive systems. These semi-intensive methods include various components for achieving better crops in freshwater prawn. Among those, feed is one of the most expensive cost items in farming system, which constitutes 40-60 per cent of operational cost in prawn production (Mitra et al., 2005). Incorporation of marine protein sources such as fishmeal, squid meal and shrimp meal to meet the protein requirements make the feed more costly. Therefore, many researches have been carried out to explore alternative protein sources as replacement of fishmeal in aquafeeds to overcome the problems of fishmeal and to lower the cost of production as well (AOUACOP, 1976; Belsare, 2004). In this context, in the present study, an attempt was made to determine the suitability of using locally available waste from cashew processing factory comprising of about 85 per cent of cashew testa along with rotten cashewnut and small pieces of cashewnut in the practical diets for the rearing of post-larvae of M. rosenbergii.

The Konkan belt, western coastal region of Maharashtra in India is famous for its cashew nut production. About 1,43,000 ha area is under cashew (Anacardium occidentale L.) cultivation in Konkan, with an average production of 1.5 tonnes per ha. During cashew processing, the nutshell and testa are the byproducts along with this rotten nut and small pieces of