

## **Growth and Immune Response of Giant Freshwater Prawn *Macrobrachium rosenbergii* (De Man) Postlarvae Fed Diets Containing *Chlorella vulgaris***

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**Abstract :** A 50-day growth trial was conducted to evaluate the efficacy of *Chlorella vulgaris* (Beijerinck) as an ingredient in the diets of giant freshwater prawn *Macrobrachium rosenbergii* (De Man) postlarvae (PL30). Immune response (total haemocyte count and prophenoloxidase activity) was also assessed by subjecting postlarvae to a challenge test against *Aeromonas hydrophila* (Chester) for 14 days. Isonitrogenous and iso-lipidic test diets were prepared using a fishmeal-based-positive control diet (D0) and four basal diets with inclusion levels of 2% (D2), 4% (D4), 6% (D6) and 8% (D8) *C. vulgaris*. Postlarvae of *M. rosenbergii* were randomly stocked (mean initial body weight of  $0.19 \pm 0.02$  g) in 30-L tanks in three replicates per dietary treatment for evaluation of growth performance. Another set of postlarvae (mean initial body weight of  $1.25 \pm 0.02$  g) was randomly distributed in 95-L tanks in three replicates per dietary treatment for the assessment of immune response. Results showed that specific growth rate was significantly higher ( $P < 0.05$ ) in postlarvae fed D4 and D6. Variations in values for carcass protein, lipid, moisture, and ash were also evident. Postlarvae fed diets with *Chlorella* showed increased prophenol oxidase activity and total haemocyte counts. Moreover, the survival rate after challenge with *A. hydrophila* was significantly increased ( $P < 0.05$ ). Inclusion of *C. vulgaris* in diets enhanced immune response and resistance of *M. rosenbergii* postlarvae against *A. hydrophila* infection.

**Keywords :** *Chlorella vulgaris*, haemocyte count, *Macrobrachium rosenbergii*, prophenoloxidase activity

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