

Preliminary Studies on the Culture of Giant Freshwater Prawn, *Macrobrachium rosenbergii* in Earthen Ponds with Community Participation

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Abstract

Feasibility in culture of giant fresh water prawn (*Macrobrachium rosenbergii*) in three earthen ponds (12 m x 10m x 1m -P₁, 20m x12m x 1m -P₂, 30m x 12m x 1m- P₃) at Udukiriwila area, Hambantota District under semi-intensive culture was studied. Fifty days old post-larvae (PL) of initial weights, $0.64 \pm 0.098\text{g}$, $0.06 \pm 0.014\text{g}$ and $0.058 \pm 0.028\text{g}$ were stocked in the ponds P₁, P₂ and P₃ respectively at a stocking density of 5 PL/ m² and were reared for a period of 7 months, June 2003 to January 2004. Post Larvae were fed at a rate of 5% body weight, twice daily, with a formulated feed prepared using locally available ingredients. Total lengths (cm) and weight (g) of 25 animals were measured prior to stocking and at monthly intervals after stocking to determine the growth. Environmental parameters, temperature (C^o), pH, Hardness, Alkalinity, Turbidity and Dissolved Oxygen were also recorded at monthly intervals.

Temperature, pH and Dissolve Oxygen, in the pond water during the period of study remained within the acceptable range recommended for prawn culture. Hardness and Alkalinity were on the higher side of the acceptable range but turbidity is below the acceptable level in each pond. The percentage survival rates of *M. rosenbergii* were 7.3, 6.2 and 7.6, respectively in P₁, P₂ and P₃ and were much lower than those recorded elsewhere. Maximum growths achieved by prawn were $17.049 \pm 7.601\text{g}$, $14.9 \pm 6.30\text{g}$, and $25.152 \pm 24.44\text{g}$ and ADG were 0.078, 0.07 and 0.119, respectively in P₁, P₂ and P₃.

The results of the present study showed that it is not feasible to culture *Macrobrachium rosenbergii* under semi-intensive conditions, as the survival rates are very low. High hardness may have caused higher mortality during molting periods decreasing survival rates. Transportation stress of PL from Pambala, Chilaw may also have attributed to the low survival of *M. rosenbergii*. Production of PL in backyard hatcheries and maintenance of water quality during culture period are recommended to increase the survival rates.