

Exploring the Optimum Temperature and Diet for Growth and Gastric Emptying Time of Juvenile Malabar Blood Snapper (*Lutjanus malabaricus*)

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Abstract : In this study, we analyzed the effects of water temperature and diet on the growth properties and gastric emptying period of juvenile Malabar blood snapper (*Lutjanus malabaricus*) over a 30day experimental period. Fish were collected from a local hatchery of Pulau Ketam, Selangor, Malaysia and immediately transferred to flow-through sea water system and subjected to four different temperatures (22, 26, 30, and 34 °C) and two diets (formulated pellet and shrimp). Body weight gain, food consumption, food conversion ratio, food consumption efficiency, specific growth rate, relative growth rate, daily growth rate, and gastric emptying period were significantly influenced by temperature and diet ($P < 0.05$). The best food conversion ratio was with the shrimp group recorded at 30°C (1.33 ± 0.08). The highest growth rate was observed in the shrimp group at 30°C ($3.97 \pm 0.57\%$ day⁻¹), and the lowest was observed in the formulated pellet group at 22°C ($1.63 \pm 0.29\%$ day⁻¹). No significant difference was observed between the groups subjected to temperatures of 26 and 30°C. Similarly, the lowest gastric emptying period was detected in the shrimp group at 30°C (16h), where the proportion of meal residues in the stomach decreased from 100% to less than 8% after 12h of starvation. A significantly longer gastric emptying period was observed in the formulated pellet group at 22°C (28h). Overall, the best results were observed on shrimp group subjected to a 30°C temperature. The data obtained from this study suggest that a shrimp diet fed on *L. malabaricus* at 30°C will optimize the commercial production of this commercially important fish species.

Keywords : aquaculture, diet, digestion rate, growth, Malabar blood snapper

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