

Growth Performance of Endemic Freshwater Fish *Systemus spilurus* (Sri Lankan Olive Barb) Under Different Stocking Densities from Post Larvae to Advanced Fry Stage

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Systemus spilurus (Mas Pethiya) is an endemic freshwater food fish in Sri Lanka. Due to its taste and high nutritional value, *S. spilurus* has been heavily consumed and its natural population has been declined mainly due to anthropogenic reasons. Though captive breeding seems a promising method for stock enhancement, larval rearing protocols; stocking densities in particular were not tested and optimized under Sri Lankan conditions. Therefore, the objective of this study was to determine the most suitable stocking density in captivity for *S. spilurus* for introduction of them to culture-based fishery. In this study, five-day-old *S. spilurus* Post Larvae (PL) were stocked in 86 cm × 70 cm × 25 cm cement tanks, and tanks were filled with water up to the height of 10 inches (150 L). There were 4 treatments with different stocking densities of *S. spilurus* as 0.75 PL/L (T₁), 1.25 PL/L (T₂), (T₃) 1.75 PL/L (T₃) and 2.25 PL/L (T₄). All PLs were fed using Artemia & chicken egg mixture in the first two weeks followed by a formulated commercial feed (40% crude protein) at levels of 10% and 25% of the body weight, during the 56-days of experimental period. The mean final weight & length, average daily weight and length gain, and specific growth rate among treatments were significantly different (P<0.05). The highest final mean length (3.3±0.01 cm) & weight (0.464±0.013 g), the highest average daily weight gain (0.0083±0.0002 g/day) & length gain (0.049±0.0002 cm/day) and the highest specific growth rate (10.96±0.005 %/day) were observed in T₁ where the stocking density was lowest at 0.75 PL/L. The lowest growth performance was observed in the T₄ treatment where stocking density was at 2.25 PL/L. These results conclude that the stocking density of 0.75 PL/L can be used as the best stocking density for rearing *Systemus spilurus* PLs in captivity.

Keywords: Advanced fry, Growth performance, Post larvae, Stocking density, *Systemus spilurus*

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