



# EFFECT OF STOCKING DENSITIES ON SURVIVAL RATE AND GROWTH PERFORMANCE OF ENDEMIC OLIVE BARB (*Systemus spilurus*) POST-LARVAE IN CEMENTED TANKS

Susanthi D. <sup>1</sup>, Varthani Susruthan <sup>1,\*</sup> and Mudalige A.R. <sup>2</sup>

<sup>1</sup> Department of Biosystems Technology, Faculty of Technology, University of Jaffna, Sri Lanka.

<sup>2</sup> National Aquaculture Development Authority, Sri Lanka.

\* Corresponding author email: vsusruthan@gmail.com

**Abstract:** Certain Sri Lanka's fishes are currently considered as endangered due to increased anthropogenic pressure on natural ecosystems. The present study aimed to study the effect of stocking density on survival and growth performance of endemic food fish *Systemus spilurus* (Olive barb) from larval stage to fingerling in cemented tanks (72 cm × 88 cm × 20 cm) and under semi-intensive conditions in Dambulla, Sri Lanka from February to May 2022. The experiment was conducted as different stocking densities were categorized into six treatments, and three replicates were arranged for every treatment (T1; 1PL/L, T2; 1.25PL/L, T3; 1.5PL/L, T4; 1.75PL/L, T5; 2PL/L and T6; 2.5PL/L). Free-swimming larvae fed chicken eggs every 2 hours during the day and every 4 hours at night for 5 days. Then Artemia was then fed every two hours. Complete Randomized Design was used to design the experiment and water quality parameters were maintained and every ten days after, growth performance and end of the culture, survival rate were recorded. One-way ANOVA used to analyse the data. Among treatments, T1, on the weight basis (0.32±0.001g) and survival rate (91.00±0.02%), whereas the length, the T4 (3.07±0.001 mm) showed the best result and the T2 having the highest condition factor (2.12±0.002). Gradually increasing stocking density, increase the mortality rate, however, no significant different on survival rate of *Systemus spilurus* observed in selected stocking densities. The instantaneous mortality rates were modest, and the daily instantaneous growth rates did not vary significantly. Overall results of the study revealed selected stocking density was not significantly influenced by growth performance and survival of fish.

**Keywords:** Condition factor, Freshwater fish, Larval stage, Stocking density, Survival rate