# EFFECT OF STOCKING DENSITY ON GROWTH AND SURVIVAL OF CRITICALLY ENDANGERED FRESH WATER FISH *Labeo lankae*. Deraniyagala, 1952 (SRI LANKAN ORANGE-FIN LABEO) UNDER CAPTIVITY

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*Labeo lankae* is a critically endangered freshwater fish, captive bred very recently for conservation purposes and larval rearing protocols are being optimized for maximum survival. It is believed that stocking density has an impact on the growth rate and survival of fish. This study examined the impact of stocking density on growth indices and survival of *Labeo lankae* post-larvae during 42 days in captivity. A total of 21600 post-larvae were collected, weighed, and stocked in 16 tanks (each (10 ft. X 5 ft. X 1.5 ft.) sizes). Each experimental tank was filled with an equal amount of water (900 L) and post larvae were stocked at four stocking densities i.e. 0.75 PL/L(T1), 1.25 PL/L(T2), 1.75 PL/L (T3), 2.25 PL/L(T4). 07 Days old initially stocked larvae were fed using chicken egg mixture and artemia. After one week of stocking 14 days old post larvae were fed with formulated powdered feed (Crude protein: 49%, Gross energy: 3500 kcal) fed 4 times a day at an initial rate of 10% of their body weight for another four weeks. The water quality parameters were observed and found to be within a range that is suitable for freshwater aquaculture. Significant differences (P<0.05) between the various treated groups were seen at the end of the experimental period, with T1 exhibiting the best performance through all parameters studied, including final body weights, final body length, daily weight gain (DWG), and specific growth rate% (SGR%). The final body weights (±S.D.) of the fish stocked at densities of 0.75 PL/L(T1), 1.25 PL/L(T2), 1.75 PL/L (T3), 2.25 PL/L(T4) reached 2.99 ±0.0415, 1.82±0.0532, 2.36±0.0297 and 2.074±0.0467 respectively while the daily weight gain (DWG) values were, 0.0711, 0.0433, 0.0561, and .0493 respectively. The corresponding SGR% values were 2.60%, 1.42%, 2.04%, and 1.73% on day-1, respectively. The highest survival rate (60%) was in T1 compared to all other treatments. The results revealed larvae held at the lowest density of 0.75 PL/L exhibited the highest growth rate and the highest survival rates. Hence, 0.75 PL/L can be used as the best stocking density for rearing post-larvae of *Labeo lankae* in captivity.

**Keywords:** *Labeo lankae, Larvae, Stocking density, Survival rate, Daily weight gain*