

## Effect of Stocking Density on Growth, Feed Conversion and Survival of a Critically Endangered Freshwater Fish *Labeo lankae* (Sri Lankan Orange-fin Labeo) Under Captivity

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*Labeo lankae* is a critically endangered freshwater fish, captively bred very recently for conservation purposes and its larval rearing protocols are being optimized for maximum survival. This study examined the impact of stocking density on growth indices, feed conversion ratios, and survival of *Labeo lankae* fry during 42 days in captivity. A total of 1593 fry ( $0.1 \pm 0.001$ g) were collected, weighed, and stocked in 15 tanks. Each experimental tank (cement tanks) having dimension of tank  $90\text{cm} \times 70\text{cm} \times 45\text{cm}$  was filled 150L of water and fry were stocked at 5 stocking densities as 0.5 fry/L (T1), 0.57 fry/L (T2), 0.66 fry/L (T3), 0.8 fry/L (T4) and 1 fry/L (T5) in triplicates. Fry were fed with formulated feed (40% crude protein) 4 times a day. The water quality parameters were monitored and found to be within a range 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), specific growth rate (SGR) and feed conversion ratio (FCR). Survival rates were not significantly ( $P > 0.05$ ) affected by stocking densities and were ranged from 94-97% among all treatments. The feed conversion ratios were reported as  $1.42 \pm 0.021$ ,  $1.62 \pm 0.019$ ,  $1.82 \pm 0.007$ ,  $1.88 \pm 0.106$  and  $1.9 \pm 0.06$ , respectively. The results of this study revealed that the fry held at the lowest density of 0.5 fry/L obtained the highest growth rate, highest survival rates, and the lowest feed conversion ratio. Hence, 0.5 fry/L can be used as the best stocking density for the rearing fry of *Labeo lankae* in captivity.

**Keywords:** Daily weight gain, Feed conversion ratio, *Labeo lankae*, Stocking density, Survival rate

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