

Determination of an optimum stocking density for carp fingerling transportation

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Food-fish fingerlings are almost exclusively produced by few fish breeding stations in Sri Lanka and transported around the country for stocking. Considering the distance to be covered for delivering the required fingerlings, transportation plays a key role in the vigor, survival of these small fish and the cost of stocking. Eventhough few self-imposed stocking densities (15,000 fingerlings per 900 liter tanks) are adapted, ideal stocking densities for Sri Lankan conditions for various transportation times are not yet validated. The present study was therefore aimed at determining an optimum stocking density for fingerling transportation in aerated tanks. Pre-conditioned carp fingerlings were loaded into trucks containing continuously aerated 6 tanks of 900 l. Stocking densities of 12,500, 15,000 and 17,500 in 900 liter tanks were used in 21 transportations. Transport duration (h), mortality (%), dissolved oxygen (DO in ppm), un-ionized ammonia (ppm), nitrite (ppm), pH and water temperature, before and after transport were measured. No mortalities on arrival were recorded during the experiment. Results revealed that at all stocking densities and time durations tested, oxygen levels were above the accepted limit of 4 ppm (minimum recorded was 4.4 ppm). There was no significant difference between the three stocking densities for nitrite levels. Ammonia levels however, showed a significant, increasing trend with the stocking density and time of transportation, yet the levels were kept below the critical limit for transportation (0.1 ppm up till 13 hours). In conclusion, transportation stocking density of fingerlings can be raised at least to 17,500 / 900 liter without having adverse effects on survival and water quality up to 13 hours transportation time.

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