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**SOME ASPECTS OF FARM-REARING OF POST-LARVAE AND
FRY OF COMMONLY CULTURED CARPS (PISCES:
CYPRINIDAE), AND DEVELOPMENT OF METHODOLOGY
SUITABLE FOR REARING OF POST-LARVAE AND FRY BY
RURAL COMMUNITIES OF
SRI LANKA**

A THESIS PRESENTED

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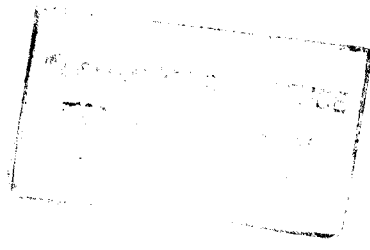
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ABSTRACT

“Some Aspects of Farm-rearing of Post-larvae and fry of Commonly Cultured carps (Pisces: Cyprinidae), and Development of Methodology Suitable for Rearing of Post-larvae and fry by Rural Communities of Sri Lanka”

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The major constraints in stocking water bodies and aquaculture ponds at present is the lack of fingerlings. As a result of the discontinuation of the state patronage for inland fisheries development in 1990, the development of a community-based method of fry and fingerling rearing became necessary more than ever before.

In the present study the feasibility of producing fish fingerlings with community participation was investigated. Most of the raw materials and feed used in the study are cheap and available locally. Cement tanks were used as the rearing vessels. Such trials could be carried out in a suitable location where water is truly available.

Tanks were cleaned, dried, disinfected and filled with screened water which was followed by fertilization with cowdung. The earlier seed production method has been modified by changing some steps and adding new steps (e.g. for control of macro zooplankton) in order to improve the survival and growth.

Cowdung was found to be a better organic manure for the rearing of post-larvae, (PL) although chicken manure could also be used. Fry rearing could be done no manuring.

In the rearing of *Cyprinus carpio* fry, a high stocking density (380 fry m⁻²) could be used in the first two weeks followed by a low stocking density (95 fry m⁻²) in the next four weeks. The suitable stocking density for the rearing of PL of *Aristichthys nobilis* and *Ctenopharyngodon idella* was found to be 600 PL m⁻², and that for the PL of *Labeo rohita* and *Cyprinus carpio* was found to be 500 PL m⁻². Higher stocking densities affected the growth and percentage survival of the PL and also increased the duration of rearing period.

Supplementary feeding was essential for the PL for better growth and survival. Rice bran showed better results than a locally formulated feed (C2) in the rearing of *Labeo rohita* PL but *Cyprinus carpio* PL showed better results with C2.

Fertilization with cowdung improved the population of rotifers in 7 - 10 days after the initial dosage. This period, therefore, is suitable for PL stocking. Subsequently application of fertilizer (cowdung) could be done on every 7th day.

In order to improve survival the following steps are recommended in PL- and fry-rearing.

- *Tanks should be suitably prepared during each rearing cycle before stocking.
- *Kerosene could be used to control the predatory insects and 0.5 ppm Dipterex could be used to control macro zooplankton.
- *A hand net with a diagonal mesh size of 3 mm made of knotless net material is suitable for fish handling.
- *If algal blooms appear, the surface algal mat should be reduced manually, and water should be kept running in order to remove the remaining algae.

The method proposed here is important because it can be used by the rural fish farming community to produce their own fish seed.