



Growth Performance of Genetically Improved Farmed Tilapia under different Stocking Densities in a Cage Culture System in Sri Lanka

M.P.K.S.K. De Silva^a, W.A.R.K. Senaarachchi^b and N.P.P. Liyanage^c

^{a,b}*Department of Zoology, Faculty of Science, University of Ruhuna*

^c*Department of Animal Science, UvaWellassa University*

^akumududs@zoo.ruh.lk

^bruwan.sena@yahoo.com

^cnpvsr@yahoo.com

Abstract

Stocking density is one of the important factors that affect the growth of fish reared in cage and pond culture. Information related to effect of stocking density on growth performance of cage cultured Genetically Improved Farmed Tilapia (GIFT) under the ecological conditions of Sri Lankan reservoirs is limited. Aim of the present study was to compare the growth performances of GIFT reared in cages at three different stocking densities and to determine a suitable stocking density for cage culture in Sri Lankan waters. GIFT fingerlings having initial mean weights 1.44 ± 0.14 g and mean standard length 3.44 ± 0.11 cm were stocked in cages, at 50 m^{-3} , 75 m^{-3} and 100 m^{-3} fish, in three replicates making a total of 6750 fingerlings in nine cages. Study was conducted for 120 days and length, weight and physico-chemical parameters were recorded monthly. Stocking density of 50 fish m^{-3} indicated the highest value for mean final weight and length (65.67 g, 11.87 cm). Mean daily growth rate (MDG) in weight, Specific Growth Rate (SGR) and Gross yield were significantly different among three stocking densities. The highest MDG was recorded in density class of 50 fish m^{-3} ($0.52 \text{ g} \pm 0.06$). Specific Growth Rate was highest in 75 fish m^{-3} and was closely followed by 50 fish m^{-3} . Survival rates were not significantly different in three stocking densities. Accordingly higher stocking densities show a negative effect on growth performances of mixed sex GIFT fingerlings and a density of 50 fish m^{-3} can be considered as the most suitable stocking density for cage culture in Sri Lankan Reservoirs.

Keywords: cage culture, GIFT, growth performances, stocking density