Evaluation of yields and growth performance of Nile tilapia (*Oreochromis niloticus*), with ningu (*Labeo victorianus*) and African catfish (*Clarias gariepinus*) in earthen ponds in Kenya

D.N. Oenga*, Y.D. Mgaya1, G. Mbahinzereki2, A.P. Shoko4 and E.M. Nyanchiri1

1Kenya Marine and Fisheries Research Institute (KMFRI), Sangoro Aquaculture and Development Centre, P.O Box 136, Pap-Onodi, Kenya. E-mail: dnoenga@yahoo.co.uk
2Dares Salaam University, Department of Aquatic Sciences, Box 60091, Dares Saalam, Tanzania.
3Fisheires Resources Research Institute, Kajansi Aquaculture Research and Development Centre, Box 530, Kampala, Uganda.
4Tanzania Fisheries Research Institute (TAFIRI), Sota Station, P. O. Box 46, Shirati, Tarime, Tanzania
5Moi University, Department of Fisheries and Aquatic Sciences, Box 1125, Eldoret, Kenya.

Abstract

Hunger and malnutrition remain amongst the most devastating problems facing the majority of the world's poor and needy, more so in Africa. Polyculture of Nile tilapia, African catfish and *Labeo victorianus* is considered a management strategy with the potential to increase yields and profitability of tilapia farming and at the same time reduce malnutrition in Sub-Saharan Africa. For its ready adoption, however, more information, particularly on stocking ratios and ideal densities of different species, is required to successfully transfer this technology to farmers. Accordingly, in a 150-day experiment, mixed-sex Nile tilapia (*Oreochromis niloticus*) were co-stocked with either African catfish (*Clarias gariepinus*) or Ningu (*Labeo victorianus*) in six 120 m² earthen ponds (1.0 m depth). The mean weights at the start of the study were 5g, 5g and 50g for Tilapia, Catfish and Ningu, respectively. The Nile tilapia were stocked with each of the two other species at a density of 4 fish per m² in a ratio of 3:1 (Tilapia: Catfish or Ningu). Fish were offered a 30% protein feed and the ponds fertilized fortnightly with chicken manure, urea and DAP. Mean daily growth rates, final weights, and yields of tilapia after 150 days were significantly (P<0.05) higher in the tilapia/catfish treatment. Gross and net yields varied significantly between the treatments with the highest yields being observed in the tilapia/catfish stocking ratio.

Keywords: Polyculture, mixed-sex tilapia, Catfish, Labeo

*Corresponding author – Email: dnoenga@yahoo.co.uk