NOTICE OF PUBLICATION

AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Effect of salinity on carrying capacity of adult Nile tilapia *Oreochromis niloticus* L. in recirculating systems

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Date: **3 October 2017** Publication Number: AquaFish Research Report **06-A13**

Abstract: Effect of salinity on carrying capacity of a recirculation system for Nile tilapia, *Oreochromis niloticus* L.; production was assessed. Survival, growth and feed conversion ratio of adult Nile tilapia fed 30% crude protein diet for 88 days were measured at three different salinity levels (8, 15 and 25 g L^{-1}) and two stocking densities (20 and 40 m^{-3}) in three independent recirculating systems. Highest survival (98%) and a linear growth in net biomass (Po0.01) was observed in both densities at 8 g $L^{-1}$and in 20 m^{-3} treatment at 15 g L^{-1}. Highest net biomass growth was observed in the 40 m^{-3}stocking density treatment at8g L^{-1}salinity level ($P < 0.05$). Overall biomass growth was significantly affected by salinity indicating a decrease in Nile tilapia carrying capacity with increased salinity. About 11000 kg ha^{-1} $crop^{-1}$of Nile tilapia can be obtained in recirculating systems at 8 g L^{-1} salinity, significantly higher than the net production at 15 g L^{-1} (5200 kg $ha^{-1}crop^{-1}$) and22 g L^{-1} (4425 kg $ha^{-1}crop^{-1}$).

This abstract was excerpted from the original paper, which was in the *Aquaculture Research* (2006), 37(16): 1627-1635.

CRSP RESEARCH REPORTS are published as occasional papers by the Program Management Office, Aquaculture Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The Aquaculture CRSP is supported by the US Agency for International Development under CRSP Grant No.: LAG-G-00-96-90015-00. See the website at < http://pdacrsp.oregonstate.edu/ >.