

NOTICE OF PUBLICATION

AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Yields and Economic Benefits of Tilapia (*Oreochromis niloticus*) and catfish (*Clarias gariepinus*) polyculture in ponds using locally available feeds.

Author(s): E. O. Mac'Were¹, C.C. Ngugi¹, and K.L. Veverica²

¹Department of Fisheries

Moi University

PO Box 1125

Eldoret, Kenya

²Auburn University

Alabama 36849-5419 USA

Date: 19 July 2007

Publication Number: CRSP Research Report 06-A1

The CRSP will not be distributing this publication. Copies may be obtained by writing to the authors.

Abstract: Development of aquaculture in Africa is limited by cost and shortage of fish feeds, poor financial resources and knowledge base of small-scale farmers. Consequently use of on-farm resources for producing tilapia is an attractive means of developing low-cost aquaculture. This study compared yields and economic benefits of *Oreochromis niloticus* and *Clarias gariepinus* polycultured over a 180-day period in twelve 800 m² ponds limed and fertilized (5kg Phosphorus, 20kg Nitrogen per hectare) prior to receiving 1550 tilapia and 50 catfish each. Fish were fed twice daily at 2% body weight with Rice Bran, Pig Finisher, and a Formulated Diet feeds. Gross production in rice-bran fed fish was significantly lower ($P < 0.05$) with a gross yield of 4448kg, than both pig finisher (6575kg) and formulated diet (6359kg). Relative profitability analysis showed that Pig Finisher pellet was the best followed by Rice Bran at normal selling rice of US\$1.29 (Kshs 90.00) per kg of fish. Pig Finisher and Rice Bran had lower Break Even Prices than Formulated Diet. Partial and full enterprise budgeting analyses, used here as tools to compare relative profitability of nutrient regimes, are essential to fish farmers and financial institutions willing to make investment decisions in fish farming.

This abstract is excerpted from the original paper, published in *Journal of East African Natural Resources Management*, (1)(2):1-13.

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 <pdacrsp.orest.edu>.