



AQUACULTURE CRSP 21ST ANNUAL TECHNICAL REPORT

DEVELOPMENT OF ECONOMICALLY FEASIBLE FEEDS FOR SEMI-INTENSIVE CULTURE OF TILAPIA (*OREOCHROMIS NILOTICUS*) USING LOCALLY AVAILABLE AGRICULTURAL BY-PRODUCTS

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Abstract

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ABSTRACT

At Sagana Fisheries Station, Kenya, a study to evaluate the growth performance and economic feasibility of feeding Nile tilapia with diets made up of locally available feedstuffs was conducted in a semi-intensive pond culture system. Juvenile sex reversed male tilapia averaging 22 g each were stocked in 16 earthen ponds (800 m²) at a rate of 20,000 ha⁻¹ on 20 November 2001. Juvenile *Clarias* spp. were also stocked in each pond at a density of 1,000 ha⁻¹ to control snails. Two weeks prior to stocking and once weekly thereafter, ponds were fertilized with inorganic fertilizers at 20 and 8 kg ha⁻¹ of nitrogen (N) and phosphorous (P), respectively. The four diets consisted of two laboratory prepared diets (with and without 0.5% trout vitamin premix) formulated to contain about 25% crude protein and 6% crude fat, a pig finisher pellet, and wheat bran. These were fed to fish in four replicate ponds two times daily at a rate of 2% of tilapia biomass for approximately eight months. The average final weight gains were similar for tilapia that were fed the two formulated diets with or without vitamin premix (327 and 332 g, respectively). However, these were significantly higher than those of the groups fed wheat bran (269 g) and pig finisher (281 g). There were no significant differences between the weight gain of fish fed wheat bran and the pig finisher diet. Gross production followed the same trend as that of the weight gain and averaged from 5,190 to 6,402 kg ha⁻¹. Tilapia survival rates in all treatments were unexpectedly low and ranged from 62 to 77%. No significant differences were observed among the survival of fish fed different diets. Data on *Clarias* are currently unavailable. Proximate analyses of the experimental fish and partial enterprise budget analysis are being evaluated.

