NUTRITIONAL STUDIES ON FISH PERFORMANCE UNDER INTENSIVE PRODUCTION SYSTEMS

By

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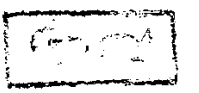

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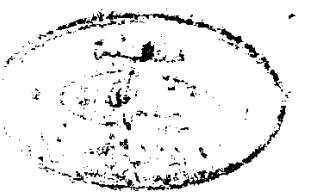

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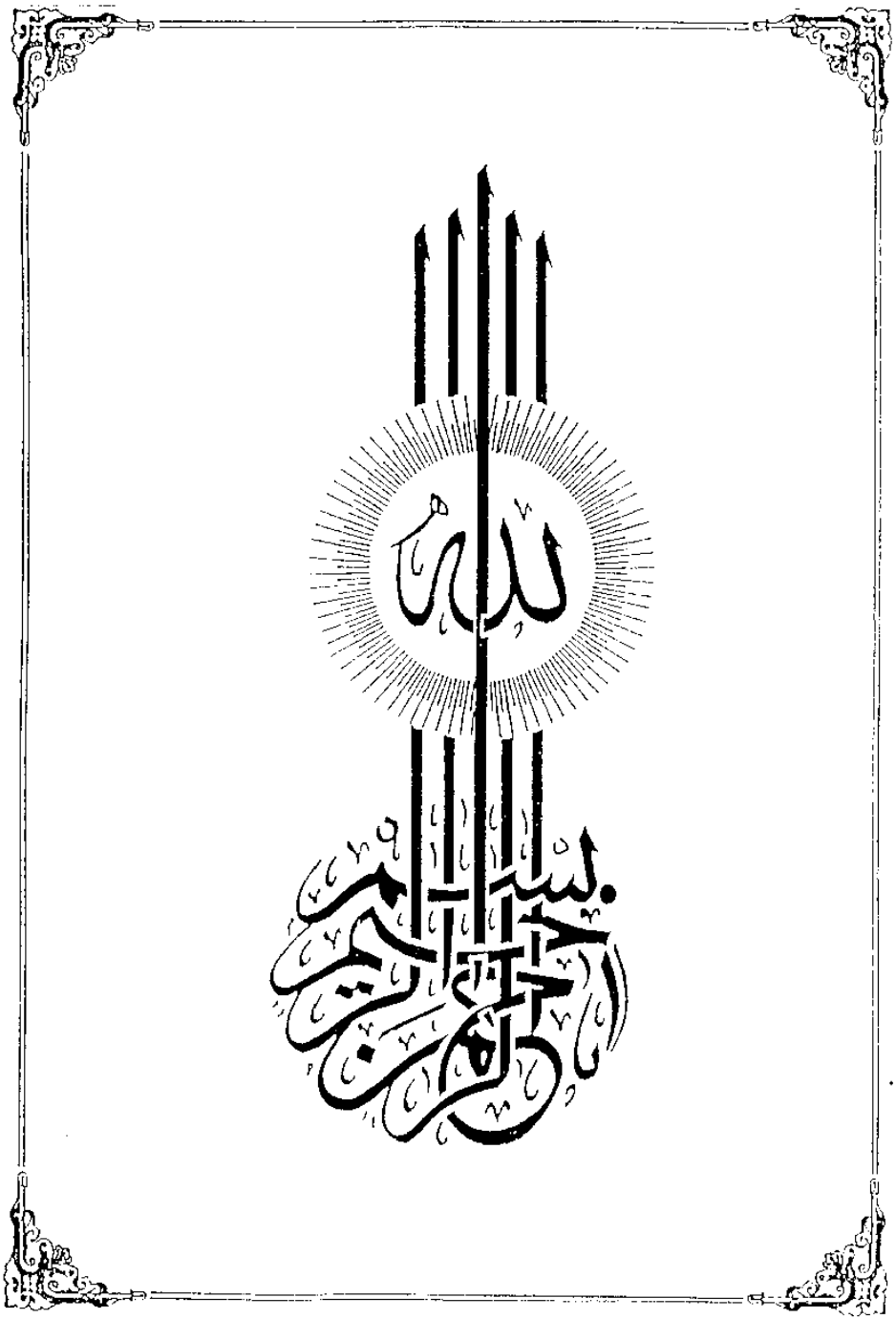

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ABSTRACT

Tarek Abo El-Makarem Ali . Nutritional Studies on Fish Performance under Intensive Production Systems . Published for Master of science- Ain Shams University, Faculty of Agriculture, Department of Animal Production, 1996.

Tilapia nilotica (Phenotypically *O. niloticus*) with an average size of 30 gram graw at two experiments were reared for 155 and 98 days in glass aquaria under recirculating water system at densities of 100, 200, 300 and 400 fish/m^3 and 200, 300, 400 and 500 fish/m^3 for the first and second experiment, respectively. At stocking densities of 100, 200, 300 and 400 fish/m^3 and feeding levels of 1 and 2% from $w^{0.8}$ fish fed pelitized diet containing 30% protein and 4366.2 kcal GE/kg. At the second experiment fish fed two feeding levels 1.5% and 1.7% of diet containing 30% protein and 4456.6 kcal GE/kg. The first experiment was conducted to determine the suitable feeding level according to metabolic body size ($w^{0.8}$) and suitable stocking density under the recirculating water system described in this thesis.

The second experiment was conducted to determine the effects of stocking density, feeding level, and their interactions on growth parameters, nutritional parameters and water quality measurements.

The results indicated that net yield increased with increasing density level. Although the growth parameters and feed utilization efficiency were inversely related to increasing stocking densities.

The results of the two experiments showed that, mortality rate was not density dependent. Stocking levels did not influence the chemical composition of the fish in the two experiments.

The lowest cost for producing 1 kg fish gain was observed at the density of 200 fish/m^3 at first feeding level in the first experiment. The lowest cost in the second experiment was observed at the density of 200 fish/m^3 at the first feeding level.

Key words: *O. niloticus*, Feeding level , Stocking density
Water quality under closed systems.

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