

EFFECT OF STOCKING RATIOS OF HYBRID RED TILAPIA AND STRIPED MULLET UNDER DIFFERENT CULTIVATION SYSTEMS ON GROWTH PERFORMANCE, FEED UTILIZATION AND CHEMICAL COMPOSITION OF BODY

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ABSTRACT

This experiment was carried out to determine the effect of different stocking ratios (SR) in both cultivation systems (monoculture and polyculture) of hybrid red tilapia (*O. niloticus* males × *O. mossambicus* females) and striped mullet (*Mugil cephalus*) on growth performance, feed utilization and body composition. Hybrid red tilapia (T) : mullet (M) were stocked at seven ratios or treatments were (1:0, 0:1, 1:2, 2:1, 1:1, 3:1 and 1:3), respectively. Hybrid red tilapia and striped mullet fingerlings with initial body weights of 5.37 and 5.45 g/fish, respectively. Fish fed at the start of experiment in all treatments at the rate of 6 % biomass weights then it was reduced gradually to 4% until the end of the experiment. The results showed that, hybrid red tilapia was higher than striped mullet in the most of growth performance parameters and feed efficiency under the monoculture system. Also, the results indicated that polyculture gave the highest growth performance (biomass weight or gains) compared with monoculture. The survival rate of hybrid red tilapia and striped mullet ranged between 95 – 100 and 80 – 90 %, respectively with no significant effect by different stocking ratios. The growth performance, biomass and feed efficiency increased with increasing of red tilapia ratio in each treatment. From these results it could be recommended that the polyculture system of red tilapia and striped mullet were better than the monoculture system for growth performance traits, in addition, the best stocking ratio was 3 red tilapia : 1 striped mullet in polyculture system at a density of 40 fish/m³.

Keywords: Hybrid red tilapia, Striped mullet, Cultivation systems.

INTRODUCTION

Aquaculture plays an important role in the world fishery production. The total world fish production of aquaculture increased from about 35.5 million tones in 2000 year to about 47.8 million tones in 2005 year (FAO, 2006). In Egypt, according to (GAFRD, 2006) the production of tilapia fish was 303.31 thousand tons in 2004 year then it increased to 349.051 thousand tons in 2006 year.

Polyculture is the practice of culturing more than one species of aquatic organism in the same pond. The motivating principle is that fish production in ponds may be maximized by raising a combination of species having different food habits. The mixture of fish gives better utilization of available natural food productive in pond (El-Ebiary, 1998 and Greglutz, 2003)

Several studies indicated that polyculture system, gave the highest growth performance and survival rate compared with monoculture system (El-Dahhar *et al.*, 2006 and El-Sagheer, *et al.*, 2008). Tilapia fish produce high