

Growth Performances of Tilapia (*Oreochromis niloticus*) Fed with Duckweed (*Lemna minor*)

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Food fish is the most valuable protein source and highly enriched with many nutrients. The cost of feed is the major reason for decreasing food fish production. The present study was conducted to identify the effect of duckweed on the growth of Tilapia. Five different diets (experiment, 2, 3, 4, 5, 6) were prepared with 40% crude protein while control diet. Experiment 1 contained a 0% duckweed leaf meal. Fish meal in experiment 2-5 was partially replaced with 10, 20, 30, 40, and 50% of dried duckweed leaf meal. Tilapia fry (bodyweight 0.21 ± 0.007 g and standard length 0.73 ± 0.005 cm) reared in indoor glass tanks were used for each experiment's diets ensuring three replicates. Daily feed allowance (5% of body weight of fish) was offered at 0900 h. and 1500 h. Results showed that mean weight gain recorded in fish fed with the experimental diets 2, 3, 4, 5, and 6 were significantly different from that of fish fed with the control diet ($p < 0.05$). There was a significant difference in the Specific Growth Rate of fish fed with the control diet and the experimental diets. Survival Rate of the fish fed with the experimental diets 2, 3, 4 was not significantly different ($p > 0.05$) with a control diet, when diet 5 and 6 were significantly different ($p < 0.05$) with a control diet at the end of the study period. The highest Feed Conversion Ratio was recorded in fish fed with a control diet (1.28) and the lowest ratio was recorded in diet 4 (0.98). Protein Efficiency Ratio of fish fed with every 5 experimental diets were significantly different from the control diet ($p < 0.05$) at the end of the study period. The cost of production for 1 kg of feed was considerably low for diet 6 compared to the control diet. Present results showed that 30% of dried duckweed leaf meal in a formulated diet for Nile Tilapia fish is very effective and showed the highest growth rate.

Keywords: Oreochromis niloticus, Duckweed, Crude protein, Growth performance, Fish feed