

A comparative indoor trial study for evaluating plant based formulated feed vs non plant feed for tilapia fingerlings

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As there are no proper formulated feed for tilapia aquaculture in Sri Lanka, an experimental growth trial was conducted in 12 indoor cement tanks (1.5 x 1.2 x 0.3 m) for evaluating three newly formulated feeds for tilapia fingerlings. All treatments with three replicates and all male Tilapia fingerlings (ave. total weight = 89.96± 5.31, 98.06± 4.8, 91.7± 6.4, and 94.0± 3.4 g) were stocked at the density of 87.5/m³. Three formulated feed [feed 1- incorporated with 30% dry weight of *Pistia stratiotes* (water lettuce), feed 2- incorporated with 30% dry weight of *Eichhornia crassipes* (water hyacinth), feed 3- non plant and feed 4- a commercial feed used by some tilapia farmers as control (C)] were tested using growth parameters of the fishes. The % protein of feeds 1, 2, 3 and control feed were 27%, 25%, 35% and 38% respectively while the cost for 1 kg of 3 experimental feeds was approximately LKR. 115 and the control feed was LKR. 175. Feeding rate was adjusted to twice daily at 5% body weight and the pH, temperature, DO and un-ionized ammonia measured in all tanks were in acceptable ranges. The trial lasted for 60 days. The average final weight of the fish fed on feed 1, 2, 3 and feed-C were 181.16±1.2, 193.7±2.6, 183.86±3.9 and 183.5±2.9 g and specific growth rates were 1.17±0.10, 1.13±0.06, 1.16±0.09 and 1.11±0.03 respectively. Percentage weight gains were 102.90±13.02, 98.27±7.6, 102.06±11.08 and 95.51±4.1g (p<0.05) respectively and the Food Conversion Ratios (FCR) were 3.70 ± 0.39, 3.70±0.22, 3.6 ± 0.25 and 3.88 ± 0.16, while the Food Efficiency Ratios (FER) were 0.27±0.02, 0.27 ± 0.01, 0.27± 0.01 and 0.25 ± 0.01 (p<0.05) respectively. As all the results did not show a significant difference, these aquatic plants incorporated feeds can be suggested as economically feasible feed for tilapia food fish culture. Further, the present study revealed that, 25% crude protein is sufficient for growth of Tilapia all male fingerlings for 60 days period.

Keywords: tilapia fingerlings, plant based feed, *Pistia*, *Eichhornia*, growth

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