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Feed Efficiency of Three Protein Levels on Growth Performance of Nile Tilapia (*Oreochromis niloticus*)

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Summary

Experimental trial was carried out to investigate the feed efficiency of three formulated diets from local commercial ingredients with three dietary protein levels (25, 30, and 35% protein level) on growth performance of Nile Tilapia fingerlings (*Oreochromis niloticus*).

The results showed that the best growth rate and food conversion ratio (FCR) was obtained with 25% dietary protein level followed by 35% and 30% respectively, while the poorest growth rate and (FCR) was recorded for fish on the diet of 30% protein level.

The protein efficiency ratio (PER) and apparent net protein utilization (NPU) were directly proportional to the protein level. Thereafter, in this study, further increase in the dietary protein level led to decline in growth rate.

Introduction

The importance of aquaculture for the supply of animal protein to humans is constantly increasingly, being particularly viable in regions and the recent associated problems with the production of animal and poultry.

Feed represents the largest expenditure item in fish culture and protein is the most expensive nutrient in the diet in fish farming (Tacon, 1987). The natural food contributes considerable amount of nutrient with compound feeds formulated for increased yield (Tacon, 1987). In contrast to intensive and semi-intensive farming systems where the cultured species derive all or a substantial part of their nutrient needs from naturally available pond food organism, fish maintained under intensive clear-water culture conditions are totally dependent on the external provision of a nutritionally "complete" diet throughout their culture cycle (Tacon, 1987).

Studies on finfish nutrition have been described mostly towards developing low-cost, especially by substitution of the animal protein ingredients with plant protein substitutes (Cruz and Landencia, 1977; Jauncey, 1982; Vevericaeta, 1999). In aquaculture the cost of fish feed is often the highest recurring cost. Apart from providing a suitable diet and reducing the ingredients cost, proper husbandry practices also could provide a considerable saving (De Silva, 1985).