

ALTERNATIVE PROTEIN SOURCES AS A REPLACEMENT OF FISH MEAL IN TILAPIA FEEDS

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ABSTRACT

A 32 day trial with Genetically Male Tilapia (*Oreochromis niloticus*) was conducted to evaluate several commercially available ingredients polymeal, concentrated peaseed meal, and Marine Protein Substitution (MPS) as alternative protein sources instead of fishmeal. Four experimental diets were formulated to contain the same levels of protein (40%) and lipid (10%) and each ingredient was the only protein source. The feeds were fed to triplicate groups of tilapia fingerlings of initially 5.7g. During the course of the trial, tilapias were fed manually to apparent satiation up to four times daily. The highest feed intake and growth performance of tilapia were obtained with tilapia fed the fishmeal, followed by the group fed polymeal and MPS where both diets achieved the same results regarding feed intake and growth rates. However, the lowest feed intake and growth rate were found in tilapia fed the peaseed meal concentrate. The other observation from the present study is fishmeal, polymeal and MPS meal had almost the same Food Conversion Ratio (FCR) that ranged between 1.22 and 1.25. Tilapia fed the peaseed meal on the other hand had the best FCR of 0.86 and the highest protein efficiency ratio of 38.5%. This suggests, peaseed meal as a protein source was used effectively by tilapia, however, feed consumption was low and thus the overall growth. Therefore, it can be concluded that fishmeal could be replaced by polymeal or MPS meal without adverse effects, however, the low palatability of peaseed meal would require an additional attractant in the feed.

KEYWORDS: Fishmeal, Polymeal, Peaseed Meal, MPS Meal, Growth Performance, Feed Intake