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**PARTIAL AND TOTAL SUBSTITUTION OF FISH MEAL BY POULTRY  
BY-PRODUCT MEAL IN DIETS FOR MONOSEX NILE TILAPIA  
(*OREOCHROMIS NILOTICUS*).**

**BY**

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**ABSTRACT**

This study was conducted to evaluate the suitability of poultry by-product meal (PBM) as a partial or total substitution of the fish meal component of practical diets (PBM) for Nile tilapia fingerlings (mean initial fish weight 23.64g  $\pm$ 0.53 SE). PBM are waste materials of the local poultry industries, which could be used as an animal protein source in diets for some fish species. Six tested diets formulations based on a herring fish meal (HFM) as the reference protein source were used in this study. The experimental diets were designed to contain PBM at 20, 40, 60, 80 and 100% replacement of total protein content as fish meal in the control diet (100% fish meal). All diets were isonitrogenous and isocaloric in gross terms. The results showed that there were significant differences ( $P < 0.05$ ) between the final average body weight of fish at the end of a 12 weeks feeding trial. The mean final body weight of fish fed control diet, 20 and 40% PBM was 83.81, 76.71 and 73.65g, respectively, while that of fish fed 60, 80 and 100% PBM was 66.27, 63.55 and 58.63g, respectively. The poorest response was observed for fish fed 80 and 100% PBM diets. Similar trends were also observed in specific growth rate (SGR), feed conversion ratio (FCR), protein efficiency ratio (PER) and feed intake (FI). Hepatosomatic index, (HSI) did not reflex any significant differences for all fish fed the experimental diets. Economic analysis showed the possibility of using PBM as an alternative protein source in Nile tilapia feed. Diets contained the levels of 60, 80 and 100% of PBM provided the best economic efficiency of fish weight gain compared with other tested diets. The results of the present study indicated that the local poultry by-product meal (PBM) can replace at 40% of fish meal in the diets for monosex Nile tilapia without compromising growth and feed conversion.

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**Key words:** Monosex Nile tilapia, poultry by-product meal, fish meal, economic analysis.