

EFFECT OF DIETARY FISH MEAL REPLACEMENT IN THE
FORMULATED FOOD BY HEAT PROCESSED SOY BEAN MEAL
ON GROWTH, SURVIVAL AND CRUDE PROTEIN LEVEL
OF FINGERLINGS OF GENETICALLY IMPROVED FARM TILAPIA(GIFT)

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Abstract

A feeding trial was conducted to evaluate the effect of dietary fish meal replacement in the formulated food by heat processed soybean meal on growth, survival and crude protein level of fingerlings of Genetically Improved Farm Tilapia (GIFT).

Six experimental diets were formulated to be isonitrogenous approximately. Fish meal was replaced by 0%, 10%, 25%, 30%, 40% and 50% of heat treated soybean meal (Diet 1-6). The diet with 100% fish meal and 0% soybean meal was used as control. Early fingerlings of GIFT tilapia (Body weight $1.92g \pm 0.10$) were reared in 164 l indoor fiber glass tanks and 3 replicates were arranged for each experimental diet; each tank was provided with continuous mild aeration. Feed ration was 10% of total fish biomass over the first 30 days which was divided and offered at 9.00, 12.00 and 16.00 hours daily and the amount was reduced up to 8% of total fish biomass for the rest of 30 days.

Percentage weight gain recorded for the experimental diet 4, 5 and 6 (where fish meal was replaced by 30%, 40% and 50% soybean meal respectively) were not significantly different from that of the control diet ($p < 0.05$). There was no significant difference in specific growth rate of fish fed with the control diet and any of the experiment diet ($p < 0.05$).

Hundred percent survival was observed for the fish fed with the control diet and for the fish that received the diet 5. The lowest feed conversion ratios were recorded for the control diet (1.44) and for the experimental diet 5 (1.49). The fish fed with the diet 5 had the highest percentage of crude protein (59.35%), which was significantly higher ($p < 0.05$) than that of the fish fed with diet 1 (control diet), 2 and 4. Cost of producing 1 kg of feed also was considerably low for the diet 5 compared to the control diet (diet 1).

These results show that the 40% of fish meal in a formulated diet for early fingerlings could be replaced by heat processed soybean meal with no adverse effect on growth, survival, FCR and crude protein level of young GIFT tilapia at the end of 60 day of experimental period.