

RESEARCH ARTICLE

Growth performance of Nile tilapia, *Oreochromis niloticus* (L.) juveniles fed with diets containing soybean meal as fish meal substitute

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ABSTRACT..... The present investigation was carried out to assess the impact of substitution of fish meal with soybean meal in the diet at a rate of 25 per cent, 50 per cent, 75 per cent and 100 per cent to elucidate its impact on the growth and growth parameters of Nile tilapia. Five experimental diets were prepared utilizing fish meal, soybean meal and mustard oil cake following standard procedures for formulation of the feed. The experimental diet under the treatment (T_0 , T_1 , T_2 , T_3 and T_4) had an average crude protein percentage of ranging from 28.34 to 31.57 per cent. The gross energy (Kcal/100g) for the experimental diets under the treatment (T_0 , T_1 , T_2 , T_3 and T_4) was estimated to be 430.59, 460.64, 417.20, 416.22 and 422.5, respectively. Within 90 days of culture period, the Nile tilapias fed with control diet with no replacement of fish meal with soybean meal attended an average final weight of 23.78 ± 0.38 g. The best growth of Nile tilapia was reported when fed with the control diet under the treatment (T_0). Nile tilapia provided with the diet with 50 per cent replacement of fish meal with soybean meal (T_2) attended an average weight of 22.16 ± 0.66 g from an initial average weight of 3.40 ± 0.10 g which was reported to be at par with the control diet followed by the diet where 25 per cent of the fish meal was replaced with soybean meal. Under the treatment (T_3 and T_4) where 75 per cent and 100 per cent of fish meal was replaced by soybean meal a retardation of growth of Nile tilapia was noticed. The analysis of variance revealed a significant difference ($\alpha = 0.05$) between the treatments and a highly significant difference was reported between the days of culture. The treatment (T_2) was considered to be the best out of all other treatments with respect to different growth parameters next to the control diet.

KEY WORDS..... Nile tilapia, Soybean meal, Fish meal, Specific growth rate

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