

Abstract

The soybean meal replacement with corn meal and chestnut meal was evaluated on growth performance, feed utilization efficiencies, nutrient digestibility, organosomatics and body composition of *Oreochromis niloticus* fingerlings. Seven experimental diets were categorized into groups containing 0 (control), 5, 15, and 25 % of corn and chestnut meals. The experimental diets were given to triplicate groups of Nile tilapia ($7.31 \pm 0.12\text{g}$) at a rate of 3% of body weight for 12 weeks. Similar growth performance and feed conversion ratio was observed in control group and groups fed corn gluten meal and chestnut meal based diets. There was no significant difference ($P>0.05$) in feed efficiency ratio and protein efficiency ratio in control group and treatment groups. The hepatosomatic index values were not significantly different ($P>0.05$) in control group and other treatment groups. The viscerosomatic index values differed significantly ($P<0.05$) among experimental groups. The highest value was obtained in group fed diet containing 5% corn meal and lowest for group fed diet containing 15% chestnut meal. The substitution of soybean meal had no significant impact ($P<0.05$) on moisture, protein and fat contents in fish whole body composition. The apparent digestibilities of protein, fat, fiber, carbohydrates and ash were significantly different ($P<0.05$) for groups fed control, corn meal and chestnut meal based diets. The ADC value for protein was highest in group fed 5% chestnut containing diet and lowest value was exhibited by group fed 15% chestnut meal diet. The ADC values of crude fiber and crude fat were highest for diets containing 15% chestnut and 15% corn respectively and lowest in control group. The apparent digestibility of crude ash was highest for group fed diet containing 15% corn and lowest for diet containing 5% chestnut meal. It can be concluded that up to 25% of corn and chestnut meal can be used to substitute soybean meal in diet for Nile tilapia fingerlings on basis of weight gain without any negative effect on growth and feed utilization efficiency.