



Effects of canola meal substitution on growth performance and digestive enzymes activity of juvenile Nile tilapia (*Oreochromis niloticus*)

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Abstract

Considerable research has been done on finding reliably conventional plant protein substitute of fish meal in aquafeed. The present study was carried out to evaluate the effect of dephytinized MAS-washed canola meal (CPM) as fish meal substitute in juvenile Nile tilapia diet on growth performance (Wf, WG, SGR, FCR, FI and ADCprotein) and digestive enzymes activity (α -amylase, lipase and alkaline protease). Five isonitrogenously isoenergetic experimental diets containing 0% (control), 12.5, 25, 37.5 and 50% CPM replacing graded levels of dietary fish meal (ca. 0, 14.3, 28.6, 42.9 and 57.1%) were formulated. Fish with average body weight of 3.5 ± 0.1 g were fed on the experimental diets for 36 days under 12 light to 12 dark photoperiod condition. Our results indicated that those fish received control diet significantly showed the highest SGR and WG ($P < 0.05$). In addition,



those groups fed on diets containing up to 25 % CPM did not significantly differ from the control group regarding SGR and WG ($P>0.05$). Meanwhile, fish received diet with the highest CPM content showed significantly the lowest SGR and WG ($P<0.05$). Other growth performance indices (i.e., FCR, FI and ADCprotein) did not show any differences amongst experimental groups ($P>0.05$). Results revealed graded dietary fish meal replacements with CPM did not significantly affect intestinal digestive enzymes activity ($P>0.05$). In conclusion, despite containing lower glucosinolate, phytic acid, phenolic compounds and tannins well within the recommended thresholds for aquatic animal's nutrition, diets containing CPM beyond 25% negatively affected the growth performance of juvenile Nile tilapia.

Keywords: Antioxidant, processed canola meal, digestive enzymes, growth, *Oreochromis niloticus*.