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Effects of Phytogetic Feed Additive on Growth Performance, Feed Utilisation and Nutrient Digestibility of Nile Tilapia (*Oreochromis niloticus*) Fingerling

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Abstract

Potential benefits of phytogetic feed additive (PFA) as a natural alternative growth promoter to antibiotics have been gaining interest worldwide to improve fish health and productivity in aquaculture. Specifically, a study was carried out at Fish Research Center, Suez Canal University to evaluate the effects of Digestarom® P.E.P. MGE as PFA on growth performance, feed utilisation and nutrient digestibility of Nile tilapia (*Oreochromis niloticus*) fingerlings. A total of 300 all male Nile Tilapia (mean body weight ca. 10 g) were randomly divided to 5 dietary treatments. Each treatment was conducted in three replications with 20 fish each. Diet without PFA was performed as control. Diets 2 to 5 each contained Digestarom® at levels of 100, 200, 300 and 400 mg kg⁻¹, respectively. The fish were fed on diets containing 30% crude protein and 410 GE kcal/100 g. The experiment lasted for 56 days. Generally, growth performance of Nile tilapia was not significantly different ($p > 0.05$) in all treatments receiving Digestarom® but were different from control. Feed conversion ratio, protein efficiency ratio and protein retention efficiency were improved ($p < 0.05$) for tilapia fingerlings fed on diets supplied with Digestarom® as compared to fish fed on the control diet. The apparent protein and lipid digestibility were improved significantly ($p < 0.05$) for tilapia fingerlings fed on diets supplied with Digestarom® compared to fish fed on the control diet. In terms of blood measurements, no significant differences were detected in plasma total protein, plasma albumin and plasma total globulins of fish fed on the experimental diets. In conclusion, this study demonstrated that the inclusion of Digestarom® in feed was effective in improving growth performance, as particularly feed conversion and nutrient digestibility of Nile tilapia fingerlings improved.

Keywords: Feed additives, feed utilisation, growth performance, phytogetic, tilapia