Dietary Vitamin B₆ Requirement of Juvenile Grass Carp (Ctenopharyngodon idella)

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Abstract

We evaluated the effects of dietary vitamin B₆ levels on growth, survival, and serum biochemical parameters in juvenile grass carp (Ctenopharyngodon idella). Fish were fed one of seven purified diets containing 0.12 (control), 1.16, 2.37, 4.82, 9.20, 17.51, or 36.52 mg/kg B₆. We observed abnormal swimming behavior in some fish fed the control diet after 17 days. The survival rate (24.44±1.92%) was low in the control group. Supplementation with vitamin B₆ resulted in significantly higher (P<0.05) weight gain, specific growth rate, final weight, and weight gain rate. Feed efficiency was significantly lower in the fish fed the control diet than the remaining groups (P<0.05). Dietary vitamin B₆ levels had no significant effect on fish body composition or serum albumin and total protein content. Dietary vitamin B₆ supplementation caused a decrease in serum triacylglycerol content and an increase in total cholesterol content, high density lipoprotein cholesterol content, and α-amylase activity levels (P<0.05). Broken-line regression analysis of SGR, HDL-C content, and α-AMY activity, showed that the optimum dietary vitamin B₆ requirement for juvenile grass carp was 1.13, 3.73, 1.57 mg B₆/kg, respectively.

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