

Tawat Tankool 2011: Supplementation of Methionine in Low Fish Meal Diets of Nile Tilapia (*Oreochromis niloticus*). Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Orapint Jintasataporn, Ph.D. 88 pages.

Supplementation of methionine in low fishmeal diets for Nile tilapia (*Oreochromis niloticus*) was conducted by adding 0, 0.25 and 0.55% methionine in 3% fishmeal diets. Fish with average weight of 137.4 g, were stocked in 1,000 liter fiber tanks at the density of 10 fishes per tank and fed at 3% of body weight per day for 12 weeks. The results indicate no statistical differences on growth performance, specific growth rate, feed conversion ratio (FCR), protein efficiency ratio (PER), survival rate and feed cost, but weight gain and average daily gain of tilapia fed diet supplemental 0.55% methionine tended to be higher ($p=0.06$) than the other groups. The apparent net protein utilization (aNPU) of tilapia fed diet supplemental 0.25% methionine was significantly higher ($p\leq 0.05$) than the other groups. Blood protein, Immunoglobulin (IgM), and glycogen have no statistical different. Blood glucose of tilapia fed diet supplemental 0.55% methionine was significantly higher ($p\leq 0.05$) than the other groups. Percentage of fillet of tilapia fed diet supplemental methionine 0.25% (39.36%) and 0.55% (39.68%) were significantly higher ($p\leq 0.05$) than group of tilapia fed diet supplemental methionine 0% (36.81%). Therefore, supplemental methionine 0.25 - 0.55% in 3% fishmeal diets can enhance growth performance ($p=0.06$) and increase percentage of tilapia fillet ($p\leq 0.05$).

The amino acid in fish blood were determined on 1,3 and 6 hours after feeding. The results showed no significantly ($p\geq 0.05$) on amino acid level at 0, 1, and 6 hours after feeding. The amino acid level increased in one hours after feeding and decreased in six hours. Serum amino acid at 3 hours after tilapia fed diet supplemental 0.25% methionine is significantly higher ($p\leq 0.05$) than the other groups. Dietary amino acid in supplemental methionine 0.55% (14.48) and 0.25% (13.81) are significantly higher ($p\leq 0.05$) than group of tilapia fed diet supplemental methionine 0% (12.90). There were no statistical differences on blood glucose at 0, 1 and 3 hours, but blood glucose at 6 hours of tilapia fed diet supplemental methionine 0.25% (68.75) and 0.55% (68.50) are significantly higher ($p\leq 0.05$) than group of tilapia fed diet supplemental methionine 0% (49.25).

Student's signature

Thesis Advisor's signature