Krissana Tebsun 2012: Supplemental Lysine and/or Methionine in Striped Catfish (*Pangasianodon hypophthalmus* Sauvage, 1878) Diets Composed of Soybean Meal as Protein Source. Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Orapint Jintasataporn, Ph.D. 101 pages.

The activity of enzyme protease, amylase, cellulase, pectinase, and xylanase in striped catfish found that the activity of protease was highest in the intestine at pH 8 (0.41 units /mg protein/min). The highest activity of amylase presented in the liver at pH 8 (0.064 units /mg protein/min). The highest activity of cellulase exhibited in the liver at pH 7 (0.032 units/mg protein/min). The activity of pectinase was highest in the liver at pH 8 (0.028 units/mg protein/min) and the activity of xylanase was highest in the liver at pH 6 (0.036 units/mg protein/min).

The research on supplemental lysine and/or methionine in striped catfish diets composed of soybean meal as protein source was conducted to evaluated the effect on growth performance, fish health and carcass composition. The research was assigned in CRD with 5 treatments and 3 replicates. Five isonitrogenous (30%CP) and isocaloric (GE.4,500 Kcal/Kg) were formulated. Diet 1 was control diet with 5% fish meal and methionine 0.3%. Diet 2, 3, 4 and 5 were soy base diets without fishmeal and supplemental lysine 0.05, 0.65, 0.05 and 0.65% incorporated with methionine 0.38, 0.38, 0.8 and 0.8%, respectively. Catfish with average weight of 8.5±0.5 g/fish, were stocked in 1,000 L fiber tank at density of 25 fish/m^2. Fish were fed at 3% body weight for 12 weeks. The results showed significantly difference (P<0.05) on growth performance. Fish fed diet without fishmeal in treatment 3 and treatment 4 exhibited the better performance than other treatments. Feed utilization was significantly difference among treatments (P<0.05). The treatment 3, treatment 4, and treatment 5 exhibited the better performance than treatment 1 (control) and treatment 2. The feed cost for produce fish to 1 kg was significantly difference (P<0.05). The feed cost of treatment 1 (control) higher cost than the other treatments but was not significantly difference when compared with treatment 2, and treatment. Carcass composition in term of percentage of fillet and hepatosomatic index were not significantly differences (P>0.05). Total carotenoid in fillet was significantly difference among treatments (P<0.05). Serum protein and blood glucose were not significantly differences (P>0.05). Glycogen in liver was significantly difference among treatments (P<0.05). The fish were fed the treatment 3 had the highest but was no significant difference in fish fed on treatment 4. Therefore, striped catfish diets of soy based with supplemental lysine 0.65% or methionine 0.8% present the higher growth performance and animal health than fish meal based diet (5% fish meal).

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