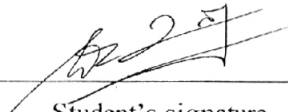


Ketsada Maneerod 2006: Effect of Betaine on Growth Performance and Nutrient Utilization in Juvenile Black Tiger Shrimp (*Penaeus monodon*, Fabricius) Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture.
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The experiment was conducted to evaluate effect of betaine on growth performance and nutrient utilization in juvenile black tiger shrimp (*Penaeus monodon*). Three type of isonitrogenous and isocaloric diet of 38% protein, 6% lipid and digestible energy of 2,830 kcal/kg were prepared with an unsupplemented control along with incorporation of non coated betaine at 1% and 2% coated betaine which was equal to 1% non coated betaine. In three month studied, growth performances and nutrient utilization on weight gain, average daily growth, feed conversion ratio (FCR) and survival rate in group of 1%, 2% betaine were in the same range as 0% betaine ($p>0.05$). Glycogen in hepatopancreas of shrimp fed 1% and 2% betaine were higher than 0% betaine ($p\leq 0.05$). There were 6.63 ± 2.67 mg/g tissue 16.48 ± 2.61 mg/g tissue and 11.94 ± 1.35 mg/g tissue in group of 0% 1% and 2% betaine, respectively. Triglyceride in hemolymph of shrimp fed 2% betaine were higher than 1% and 0% betaine ($p\leq 0.05$). There were 96.68 ± 5.27 mg/dl 107.55 ± 6.84 mg/dl and 203.02 ± 17.09 mg/dl in group of 0%, 1% and 2% betaine, respectively. White muscle RNA in shrimp fed 2% betaine were higher than 0% betaine ($p\leq 0.05$). There were 0.0011 ± 0.0001 mg RNA/mg tissue, 0.0013 ± 0.0001 mg RNA/mg tissue and 0.0016 ± 0.0002 mg RNA/mg tissue in group of 0%, 1% and 2% betaine, respectively. Phosphatidylcholine in tissue of shrimp fed 1% and 2% betaine were higher than 0% betaine ($p\leq 0.05$). There were 1.855 ± 0.088 mg/g tissue 2.675 ± 0.392 mg/g tissue and 2.417 ± 0.202 mg/g tissue in group of 0%, 1% and 2% betaine, respectively. Shrimp fed 1% and 2% betaine demonstrated better responsibility on feed attraction period than 0% betaine ($p\leq 0.05$). There were 5.69 ± 2.45 min. 3.57 ± 1.86 min. and 2.77 ± 1.29 min. in group of 0%, 1% and 2% betaine, respectively. There fore, supplemental betaine in shrimp diet showed responsibility on promoting feed utilization and feed attraction.


Student's signature

 30 / Oct. / 2006
Thesis Advisor's signature