



Effect of vitamin C levels on growth performance, feed conversion rates, survival rates, and histopathology of gill, liver, and kidney of Nile tilapia, *Oreochromis niloticus*

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Abstract

Nile tilapia (*Oreochromis niloticus*) with an average weight of 1.13-1.20 g were experimentally reared in 100 l. glass aquaria for 14 weeks. There were eight treatments with three replications each. Fish in treatment 1 were fed a basal diet without vitamin C supplementation, whereas fish in treatment 2, 3, 4, 5, 6, 7, and 8 were fed a basal diet supplemented with 30, 60, 90, 120, 150, 180, and 210 mg/kg vitamin C, respectively. Growth performance, weight gain, FCR, and survival rate of fish did not show significant differences among treatments. Furthermore, there was no change of behavior and morphology of fish in each treatment. On the other hand, fish receiving the diet without vitamin C supplementation showed histological changes of gill, including hyperplasia of primary and secondary lamellae, and detachment of epithelial cells from the underlying tissues of secondary lamellae. Some lamellae were distended by rounded masses of blood. Livers and kidneys of fish in each treatment showed no pathological changes.