Effect of Selenium Incorporated In Feed on the Hematological Profile of Oreochromis Niloticus

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Abstract

Present study was conducted to evaluate the effect of selenium (Se) supplemented in feed on hematology of Tilapia (Oreochromis niloticus) and variations in different physico-chemical parameters. Three doses of Se i.e. 2, 4, and 8 mg Se/kg of fish feed were prepared and each dose was considered as an independent treatment. Four cemented rectangular tanks (2.896x0.762x0.914 m, length x width x depth) with three equal partitions were used to maintain the fish. Tank 1, 2 and 3 were designated as treatment tanks whereas the 4th one as control. Fifteen fish per tank (5 fish/replicate) were stocked having weight between 10 to 25g. The fish were fed at the rate of 3% body weight (BW) twice a day. Variations in different hematological parameters viz. red blood cells (RBC’s), total leucocyte count (TLC) and hemoglobin (Hb) were noted. However, physico-chemical parameters were recorded fortnightly. The results were statistically analyzed by using one way ANOVA. WBC’s were non-significant in treatment 1, 2, 3 and control. Whereas, neutrophils, RBC’s, and Hb were higher in treatment-1 (2mg Se/kg). Hb level and neutrophils and RBC’s count was lower in treatment-3 (8mg Se/kg) and WBC were lower in treatment-2 (4mg Se/kg). Lymphocytes and monocytes were significantly higher in treatment-3 (8mg Se/kg). However, differences in physico-chemical parameters were not significantly different among the treatments of this study and were within the recommended ranges for Tilapia (Oreochromis niloticus). In conclusion, supplementation of selenium did not altered any hematological parameters however, had significantly improved the physio-biochemical factors and productivity in Tilapia (Oreochromis niloticus).

Keywords: Selenium, hematology, WBC’s, RBC’s, Physico-chemical parameters, Tilapia