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Effect of montmorillonite (MMT) on growth, survival, and some blood parameters of rainbow trout (*Oncorhynchus mykiss*) fingerlings

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Objective: Growth promotion by administration of MMT is also reported. However, we know little about how is the mechanism of MMT on survival and growth on fish without risking harmful effects including immunosuppression and increased susceptibility, as seen in rainbow trout. More specifically, the effect of long term administration is not fully understood. Hence, a study was undertaken to investigate the effects of prolonged application of MMT on the growth and survival of rainbow trout fingerlings.

Materials & Methods: In the present study, the effect of montmorillonite on growth performance, some blood parameters (hematocrit, hemoglobin, red and white blood cells count), lysozyme activity in rainbow trout has been evaluated. Fish were fed commercial diet for 7 days to adapt to the water environment. Then, normal fish (without malformation and fin rot) with average weight of 20 grams were divided randomly into three groups with 3 replicate. Each group was fed with a specific diet for 8 weeks. Dietary MMT was added in two levels of 20 and 40 g MMT/kg for treatment groups while control group was fed without MMT.

Results & Conclusion: It is found that all treatment groups had significantly highest increase in length and weight in comparison to control group but there were not any significant differences in feed conversion ratio (FCR). Hemoglobin concentration, hematocrit and WBC and RBC counts were significantly higher in group 3 (40 g/kg MMT) in comparison to control group. Also lysozyme activity was significantly higher in group 3 in comparison to group 1 (control) and 2. In conclusion, administration of 40 g/kg MMT diet is recommended for enhancement of survival and growth of rainbow trout fingerlings.

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