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The effects of different levels of raffinose on growth performance and mucosal immune parameters in common carp (*Cyprinus carpio*) fingerlings

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Abstract

In this research, the effect of dietary prebiotic raffinose was investigated on the growth performance and mucosal immune parameters of common carp (*Cyprinus carpio*) fingerlings. Carps (average weight of 6.25 ± 0.09 g) were fed diets containing various levels of prebiotic raffinose include 0 (control), 1, 2 and 4 g/kg for 8 weeks. Each treatment was repeated in triplicates. At the end of the experiment, sampling of mucus and evaluation of growth parameters were performed. The results of the study showed that mucus total immunoglobulin level in raffinose fed fish showed significant increase as compared to control group ($P < 0.05$) and the highest amount was recorded in 4 g raffinose treatment. Lysozyme activity showed non-significant elevation in prebiotics treatments compared with control group ($P < 0.05$). In addition, supplementation of diet with different levels of raffinose had no significant effect on growth parameters (final weight, weight gain, and specific growth factor), food conversion ratio and survival ($P < 0.05$). Although administration of raffinose had no effect on growth parameters, considering the results administration of 2 or 4 g/kg raffinose is recommended for elevation of some mucosal immune parameters in common carp.

Keywords: Prebiotic, Raffinose, Lysozyme Activity, Total Immunoglobulin, Common Carp (*Cyprinus carpio*)