

Effect of *Moringa oleifera* leaf powder on skin mucosal immune responses and growth performance of guppy, *Poecilia reticulata* (Peter, 1860)

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Abstract

The present study was carried out to evaluate the effects of moringa leaf powder through dietary supplementation in guppy fish (*Poecilia reticulata*) on skin immune responses and growth performance. A total number of 240 fish (average body weight of 0.13 ± 0.01 g) were equally divided into four feeding groups including 0% (T₀), 5% (MT₁), 10% (MT₂) and 15% (MT₃) concentration of moringa leaf powder. The results showed that levels of lysozyme activity and alternative complement activity (ACH50) significantly increased with increase the moringa leaf powder ($p < .05$) concentration. Regarding the myeloperoxidase activity results, 15% doses of moringa leaf powder showed the highest amount of myeloperoxidase activity as compared to

control group ($p < .05$). Total immunoglobulin content was increased significantly 10% and 15% treatments as well. In the present investigation, dietary supplementation of *Moringa oleifera* leaf powder had no significant impact on weight gain, net weight gain, specific growth rate, FCR and survival rate. The present results concluded that a dietary dose of 15% moringa leaf powder per kg of feed can significantly improve skin mucus immunity through enhanced production of mucus in the guppy.

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