

Impact of *Moringa Oleifera* Leaf Polysaccharide on Growth Performance, Serum Biochemical Indices and Immune Functions in Broiler Chickens

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Abstract

Moringa oleifera (MO) is a versatile non-traditional feed supplement rich in bioactive compounds. The objective of this study was to examine the effects of MO leaf (MOL) polysaccharide (MOLP) intake on broiler chicken production and immune function. A polysaccharide with a molecular weight of 182.989 kDa was isolated from MOL in a previous study. Broiler chickens were allocated at random into four groups receiving varying doses of MOLP (0, 0.1, 0.2 and 0.4 g/kg feed) for three weeks. Feed intake (FI), average daily feed intake (ADFI), feed conversion ratio (FCR), and body weight gain (BWG) were monitored. Serological markers, including total protein (TP), albumin (ALB), globulin (GLO), albumin-to-globulin ratio (ALB/GLO), creatinine (CREA) were assessed. ELISA was used to measure immunoglobulin A (IgA), immunoglobulin G (IgG), interleukin-2 (*IL-2*), and tumor necrosis factor-alpha (*TNF-α*) mRNA expression. Results from days 21 to 28 demonstrated that the high dose of MOLP significantly enhanced BWG, ADFI, liver, and bursa indices compared to the control group. Additionally, blood biochemical analysis such as TP and GLO levels were elevated ($p < 0.05$). All MOLP treatments increased serum IgG concentrations and *IL-2* expression ($p < 0.01$). In conclusion, MOLP supplementation positively impacted broiler chicken growth performance and immune response, suggesting its potential as a valuable feed additive.

Key Words: *Moringa oleifera*, Polysaccharide, Broiler chickens, Growth performance, Immune response.