



Evaluation of the Efficacy of *Asparagus (Asparagus officinalis L.)* Root Powder and Aqueous Extract on the Physiological and Immunological Performance of Broilers

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Abstract: The 315 one-day old broiler chicks (Ross- 308) were randomly assigned to seven treatments with three replication. The first treatment was fed a basal diet (control). Second, third, and fourth treatments were fed basal diet supplemented with the *Asparagus (Asparagus officinalis L.)* root powder (ARP) at 5, 10, 15 (g kg⁻¹), while aqueous extract of ARP was administered to drinking water at 5, 10, 15 (ml l⁻¹) in fifth, sixth, and seventh treatments respectively. There was significant improvement in number of RBC, WBC (ARP extract at 5, 10, and 15 ml l⁻¹), hemoglobin, PCV compared to control, and ARP (5 g kg⁻¹). Serum total protein, globulin, and albumin were improved significantly in comparison with control, ARP (5 and 10 g kg⁻¹), while a significant decrease was observed in serum glucose, cholesterol, and triglyceride compared to control. Phagocytic activity, phagocytic index, immune response, and value of antibodies titer against Newcastle and Gumboro disease were significantly better than control. In comparison with control, feeding *Asparagus* improved lymphocyte and decreased heterophils and H/L ratio. The study concluded that the best results were achieved at level 15 (g kg⁻¹) of the ARP and level 15 ml l⁻¹ of its aqueous extract in improving the physiological and immune performance of broilers.

Keywords: Broilers, *Asparagus officinalis*, Blood parameters, Immune traits
