Hematological and Biochemical Indices of Starter Broiler Chickens Fed African Black Plum Seed Nut (Vitex Doniana) Meal

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Abstract : An experiment was conducted to determine the efficacy of utilizing African black plum seed nut (ABPNBD) meal on hematological and biochemical indices of broiler chicken ration formulated to substitute wheat offal. A total of 150- 1day-old, male Agrited birds were reared for 28 days of the experiment. The birds were assigned to five dietary treatments, with ten birds per treatment replicated 3 times. Experimental diets were formulated by supplementing the milled African black plum nut at (0, 5, 10, 12.5, and 15%) inclusion levels in the starter broiler's ratio designated as T1 (control diet containing no ABPBD), Treatments (T2, 3,4 and 5) contained ABPNBD at 5, 10, 12.5, and 15%, respectively, in a completely randomized design. The hematological and biochemical indices of the birds were determined. The result revealed that all hematological parameters measured were significant ($P < 0.05$) except for WBC. Increasing inclusion levels of ABPNBD decreased the PCV, HB, and RBC of the birds across the treatment groups. Birds fed 12.5 and 15% ABPNBD diets recorded the least of the parameters. The result of the serum biochemical indices showed significant ($P < 0.05$) influence for all parameters measured except for alanine transaminase (ALT), (AST), and creatinine. The total protein (TP), albumin, globulin, and glucose values were reduced across the treatment group as ABPNBD inclusion increased. Birds fed above 10% ABPNBD recorded the lowest value of TP, albumin, globulin, and glucose when compared with birds on a control diet and other treatments. The uric acid ranged from 3.85 to 2 .13 mmol/L, while creatinine ranged from 62.00 to 53.50 mmol/l. AST ranged between 8.50 u/l (5%) to 7.90 u/l (10%). ALT ranged between 7.50 u/l (12.5%) to 5.50 u/l (5 and 10%). In conclusion, dietary inclusion of African black plum up to 10% has no detrimental effect on the health of the starter chickens. Meanwhile, inclusion above 10% revealed a negative effect on some blood parameters measured. Therefore, African black plum should be supplemented with probable probiotics or subjected to different processing methods if to be used at a 15% inclusion level for optimal results.

Keywords : African black plum seed, starter broiler chickens, hematological and serum biochemical indices, (Vitex doniana)
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