

Effect of Replacing Maize with Acha Offal in Broiler Chicken Diets on Performance, Haematology and Serum Biochemicals

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Abstract : An experiment was conducted with 240 Abor Acre broilers to determine the effect of replacing maize with acha offal (*Digitaria exilis*) on performance, haematology, and serum biochemical. Chicks were allotted to six diets (T1, T2, T3, T4, T5, and T6) with acha offal (AO) at 0.0%, 5.0%, 7.5%, 10.0%, 12.5% and 15.0% respectively as replacement of maize with 4 replicates consisting of 10 birds per replicate in a completely randomized design. They were allowed ad libitum accessed to feed and water throughout a 42 days experiment. The results showed that at the starter phase, only feed conversion ratio (FCR) was significantly affected ($p < 0.05$). Chicks fed T5 had best FCR more than those fed T1 while those fed T2, T3, T4, and T6 had similar FCR comparable with T1. At the finisher stage, final weight (FW), total weight change (TWC), average daily gain (ADG), and FCR were significantly affected ($p < 0.05$). Chickens fed T3, T4, T5, and T6 had similar FW, TWC, and ADG and higher than those fed T1; those fed T2 had similar FW, TWG, and DWG with T1. Chickens fed T6 had best FCR, followed by those fed T3, T4, and T5, while those T2 had worse FCR similar with those fed T1. Eviscerated weight was significantly affected ($p < 0.05$) by treatment. Birds fed T4, T5, and T6 had higher eviscerated weight followed by T3 while those fed T2 had least eviscerated weight comparable with those fed T1. The entire organs (Gizzard, heart, kidneys, liver, lungs, pancreas, and proventriculus) were not significantly affected ($p > 0.05$) by treatments. Packed cell volume (PCV) and red blood cell (RBC) were significantly ($p < 0.05$) affected by treatment. Birds fed T4, T5, and T6 had higher and similar PCV and RBC with those fed T1 while those fed T2 and T3 had lower PCV and RBC. The entire serum metabolites were not significantly affected ($p > 0.05$) by treatments. In conclusion, acha offal can replace maize in starter and finisher broilers' diets at 12.5% and 15.0%, respectively, without an adverse effect.

Keywords : broiler, acha offal, maize, performance, eviscerated, haematology, serum

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