

Growth Performance, haematological And Serum Biochemistry Of Broilers Fed Graded Levels Of Cocoyam (Xanthosoma Sagittifolium)

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Abstract : The study was investigated to determine the growth performance, haematological and serum biochemistry of broiler fed graded levels of cocoyam (*Xanthosoma sagittifolium*). One hundred and twenty (120) day old broiler chicks of Anak strain were used for the study. The birds were randomly divided into 4 treatment groups of 30 birds per group, and each group was further divided into 3 replicates of 10 birds per replicate in group. Cooked cocoyam was used to formulate diets at inclusion levels of 0.00% for T1 (control), while T2, T3 and T4 contained 10.00%, 20.00% and 30.00% inclusion of cocoyam in partial replacement of maize in a Completely Randomized Design (CRD). At the end of the research, the haematological indices of broiler showed that packed cell volume (PCV) of birds fed diets 1 (42.26%) and 3 (42.42%) were significantly ($p < 0.05$) higher than birds fed diets 2 (39.72%) and 4 (38.78%). The Haemoglobin (Hb) of birds fed diets 3 (12.58g/dl) and 4 (12.26g/dl) were significantly ($p < 0.05$) higher than birds fed diets 1 (11.60g/dl) and 2 (11.42g/dl). The values of the white blood cell (WBC) of the broiler chickens placed on cocoyam diet increased significantly ($P < 0.05$) compared with the values obtained in the control (T1). The serum protein value for birds fed diet 1 (5.45g/dl) were statistically ($P > 0.05$) similar to those fed diets 2 (5.10g/dl) and 3 (5.38g/dl) but differ significantly ($P < 0.05$) from diet 4 (4.97g/dl) which had the least protein value. Final weight of the birds showed that diet 4 (2370.85g) had the highest ($P < 0.05$) value which was followed closely by diet 3 (2225.55g), while birds fed diets 1 (2165.70g) and diet 2 (2145.00g) recorded the least values. Similar pattern was observed in the weight gain of the birds. Birds fed diet 4 (2270.30g) had higher ($P < 0.05$) value, followed by birds on diet 3 (2125.45g), while birds fed diet 1 (2065.15g) and 2 (2044.90g) had the least values. This study showed that birds fed diet 3 (50.60g) and diet 4 (54.05g) gave significantly ($P < 0.05$) higher weight than the control diet (49.17g). There was significant ($P < 0.05$) difference among the treatments for feed conversion ratio (FCR), where birds fed diet 4 (1.74) performed better, having the least feed conversion ratio. Economics of broiler chickens showed that Cost/kg of feed favored diet 4 (₦158.65) followed by diets 3 (₦165.95), 2 (₦178.52) and control diet 1 (₦197.14). From the result, the higher weight recorded in T4 4 showed that cocoyam meal can successfully replace maize up to 30% in the diet of broiler chickens. The low cost recorded in cocoyam based diets showed that the diets were more economical and beneficial compared to control diet 1. Therefore, feeding diet 4 (30%) cocoyam meal as replacement of maize in broiler chickens is recommended.

Keywords : cocoyam, growth, haematology, serum biochemistry

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