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“Development on the margin”

Evaluating Replacement of Maize and Wheat Bran with Sweet Potato Tubers and Vines on Performance, Digestibility and Blood Chemistry of Pullet Chicks

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Abstract

This study investigated the effects of the mixed feeding of the dehydrated sweet potato tuber meal and sweet potato top meal on the performance, nutrient digestibility and blood chemistry of pullet chicks. One hundred and fifty chicks were used and this study lasted for ten weeks. There were five diets each with three replicates of ten chicks. Diet I served as control with 100 % maize and wheat bran, 0 % sweet potato meal (SPM) and sweet potato tops (SPT) Diets II - III had maize and wheat bran replaced partially with SPM and SPT, while in diets IV-V there was complete replacement.

Results show that the feed intake and body weight gain of the pullet chicks were significantly ($p < 0.05$) affected by the diet. Daily feed intake ranged from 28.02 g (100 % SPM, 50 % SPT) – 42.65 g for chicks on the control. Chicks on diet IV (100 % SPM 50 % SPT) had the least value for body weight gain. Feed conversion efficiency shows that those on control diets had the best value. The dry matter digestibilities of pullet on control were higher than others. Among the haematological parameters observed the packed cell volume (PCV), haemoglobin (HB), plasma protein (PP), mean cell volume (MCV) and MCHC were significantly affected ($p < 0.05$). The chicks fed control and partially replaced diets had similar haematological values and these were higher compared to other diets. The total protein, albumin, cholesterol, urea, serum alanine transaminase values of all the chicks were within standard range. The glucose value increased as the level of inclusion of SPM and SPT increased. Conclusively partial replacement of maize and wheat bran with SPM and SPT supported growth with no abnormality in blood.

Keywords: Chicks, haematology, performance, nutrient digestibility, serum biochemistry