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Bread and Biscuit Wastes as Alternative Dietary Energy Sources in Broiler Chicken Diets

FREDERICK UGBESIA IGENE, ABIEYUWA OBIKO, MICHAEL A OKORUWA

Ambrose Alli University, Dept. of Animal Science, Nigeria

Abstract

In Nigeria, various Agro-industrial products are being exploited as substitutes for maize in non-ruminant animal feeding, but in doing so care must be taken in ensuring that the health of the animal is not compromised. In this research, eight-weeks feeding trial was conducted to assess the use of biscuit waste and bread waste on the performance of 200 day-old broiler chicks. Five experimental diets were formulated with diet1 containing maize as the control. Diets 2, 3, 4 and 5 had biscuit, bread, maize/biscuit and maize/bread wastes respectively as replacements for maize. The chicks were randomly assigned to the five dietary treatments. Each diet had 40 chicks in 4 replicates of 10 chicks each. Growth parameters were recorded weekly. Carcass characteristics and haematological parameters were evaluated at the end of the experiment. Results on the performance indices revealed that final live weight, feed intake and feed conversion ratio were not significantly ($p > 0.05$) affected by dietary treatments. However, live weight was least (1.64 kg) in the biscuit waste diet and highest (1.87 kg) in maize based control diet. Both total feed intake and feed conversion values ranged from 5.41 kg and 3.18 respectively in the control diet to 6.08 kg and 4.09 in maize/biscuit waste diet. Carcass characteristics; weight after bleeding, defeathered weight, dressing percentage and cut-up parts did not also differ significantly ($p > 0.05$) among the dietary treatments. The organ weight characteristics; full gizzard, empty gizzard and kidney were significantly affected ($p < 0.05$) by the dietary treatments. Heart, Liver and lung weights were not significantly ($p > 0.05$) different in values. Haematological indices such as packed cell volume, haemoglobin concentration, white blood cell and its differentials, mean corpuscular haemoglobin and mean corpuscular haemoglobin concentration were not significantly affected ($p > 0.05$) by dietary treatments. The serum biochemical indices revealed that total protein, albumin, globulin and cholesterol were not significantly different ($p > 0.05$) among the dietary treatments. In conclusion biscuit and bread waste could be used to replace maize wholly or partially in diets of broiler chickens especially in times of maize scarcity in order to reduce feed cost without any adverse effect on growth and health performances of the birds.

Keywords: Bread and biscuit waste, broiler chickens, dietary energy