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Effects of Three Plant Extracts on Growth Performance, Histopathology and Sensory Properties of Broiler Birds

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Abstract

The ban on the use of antibiotics due to its deleterious effect on the consumers' necessitated the need for prophylactic use of plant extract. An experiment was conducted to evaluate the phytogenic effects of three plants extracts (Mango leaves, Pawpaw leaves and Guava leaves) on the performance, intestinal histopathology and sensory characteristics of broiler birds. A total of 128 day – old broiler chicks of Cobb strain were randomly divided into four treatment groups of 32 birds, each replicated four times with 8 birds per replicate in a completely randomised design (CRD). The groups were fed four diets. Diet 1(T1) is ordinary water, contained no extract and served as the control. Diets 2, 3, and 4 designated T2, T3 and T4, respectively, contained 100ml each of mango, pawpaw and guava leaves extract, respectively. The extract was obtained by squeezing 1000g each of mango, guava and pawpaw fresh leaves in 1litre of water. There was no form of medication given to the birds outside routine immunisation. Data were collected on growth performance organ, histopathological parameters and sensory properties and analysed using Mini Tab Statistical software. Results showed that there were significant ($p < 0.05$) differences on the body weight gain, daily water intake and feed conversion ratio. Birds fed guava and pawpaw leaves extract significantly ($p < 0.05$) had higher body weight gain with low feed conversion ratio compared to the control and group fed mango. Group fed pawpaw leaves had higher final body weight of 2623.33g followed by groups fed mango leaves, guava and control, 2400.00g, 2231.67g and 2097.57g, respectively. There were no significant ($p > 0.05$) differences in the organ and intestinal histopathology but significant ($p < 0.05$) differences occurred in the sensory properties. Meat of birds on T2 and T3 were significantly ($p < 0.05$) more tender and juicy compared to those on T4 and T1. Results from this study indicate that the extracts had no deleterious effect on the wellbeing of the broiler birds rather it improved growth performance and welfare of the bird. Therefore, the use of plants extracts especially pawpaw and guava leaves extracts should be encouraged in broiler production

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