Growth, carcass and sensory traits of broiler chickens fed graded levels of extruded sesame seed meal

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Abstract

The study was conducted to determine the effect of graded level of sesame (Sesame indicum L.) seed meal on growth, carcass and sensory traits of broiler chicken. One hundred and eighty (180) 4weeks old Abhor acre broilers were randomly allotted into respective four (4) dietary treatments [T1 - control diet with 0% inclusion level of extruded sesame seed meal (ESSM) while T2, T3 and T4 had 25%, 50% and 75% inclusion level of ESSM respectively] in a complete randomized design. Each treatment had three (3) replicates with fifteen (15) birds per replicate. At 28-day feeding trial, the birds were slaughtered for carcass analysis and sensory traits (colour, appearance, flavor, texture, taste and overall acceptability). The data on growth, carcass and sensory traits were collected and analyzed using ANOVA and means separated using the Duncan's Multiple Range Test. Result on growth traits showed no significant (P>0.05) difference for final weight, weight gain and feed intake between T1 and T2. The significant (P<0.05) highest value in weight gain (1.55kg) was observed in T2 while the significant (p<0.05) least value in weight gain was in T4 (1.12kg). There were no significant (p>0.05) differences in percentages (%) of the carcass traits measured across the treatments with reference to the drumstick, neck, back, head, heart, liver and spleen. The dressing weight % was not significantly (p>0.05) different between T1 (71.34%) and T2 (70.59%) but both T1 and T2 were significantly (p<0.05) higher than T3 (66.70%) and T4 (65.90%). The eviscerated weight percent (EW%) and breast weight percent (BW%) had similar trend with no significant (p>0.05) difference between T1 and T2 [EW%: T1 (94.43), T2 (93.77) and BW%: T1 (20.82), T2 (20.59)] and significantly (p<0.05) higher values in both T1 and T2 than T4 (EW%: 92.35 and BW%: 17.9). The thigh weight percent (TW%) had no significant (p>0.05) difference between T1 (12.96) and T2 (12.84) but T1 was significantly (p<0.05) higher than T3 (11.96) and T4 (11.63). The broiler chicken meat was assessed for sensory traits after cooking using a 9-point hedonic scale with reference to colour, texture and overall acceptability there were no significant (p>0.05) preferences observed across the treatments. The taste of the meat had least preference value in T3 (5.55) which was significantly (p<0.05) different from T1 (6.10) and T2 (6.35) but not significantly different from T4 (5.80). Flavour of the chicken meat from the treatments was significantly (p<0.05) higher in preference in T1 (5.65) than in T2 (5.00), T3 (5.05) and T4 (3.85) but between T2 and T3 no significant (p>0.05) difference in preference was observed and both T2 and T3 had significantly (p<0.05) higher preference than T4. It can be concluded that extruded sesame seed meal can be better used in partial replacement for full fat soya (protein for protein) at 25% inclusion in the diet of broilers for better growth response, carcass and sensory meat quality traits of broiler chicken.

Key words: Broilers' performance, meat quality traits and sesame seed meal