Response of broilers to improved and local fishmeal

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Abstract

A 42 day experiment with 204 one day old Marshal broilers was conducted to assess the nutritional quality of two imported- and two local-fishmeal using the biological response of broilers as a measure of performance. These birds were randomly distributed into four dietary treatments namely two commercially available imported fishmeal (A, B) and a commercially available local fishmeal (C). Finally, a manually prepared fishmeal from African Butter Catfish (Schible mystus) [D] was the last one. A completely randomised design was adopted for the study. The results of the proximate composition the fishmeal showed that local manually prepared fishmeal D (African Butter Catfish, Schible mystus) had the highest crude protein (47.6% CP) while the local commercially available fishmeal C had the lowest CP (15.95%). The imported fishmeal A and B have 34.3 and 28.06%CP, respectively. Dietary treatment significantly influenced the final body weight FBW (P=0.0002), weight gain WG (P=0.0002), feed intake (P=0.010) and feed conversion FC (P=0.006) of broiler chicks. Broiler starters fed African Butter Catfish, Schible mystus (D) had the heaviest FBW and WG with the best FC. Those fed commercially available local fishmeal C had the lowest FBW and WG. Starters fed manually prepared fishmeal D had significantly better FBW and WG than those fed imported fishmeal B. At finishing phase, broilers fed imported fishmeal A and B as well as those fed manually prepared fishmeal D had significantly better FBW than those fed local available fishmeal C. Broiler chickens fed fishmeal C had the heaviest kidney with elevated serum alkaline phosphatase. In conclusion, the poor quality of local commercially available fishmeal C and the consequential poor biological response of broilers in this study revealed that a number of feedstuff particularly fishmeal were often being adulterated. Hence, the regulatory institutions such Nigeria Institute of Animal Science need to regulate the quality of the feeding ingredients being sold in the markets because of its economic and health related effect on the consumers of broiler products.

Keywords: Broiler, body weight, kidney, alkaline phosphatase, African butter catfish, imported and local fishmeal