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Effects of inclusion of guava fruit processing by-product in broiler chicken diets on performance

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Abstract

The use of fruit wastes as animal feed can contribute to meeting the feed insufficiency existing in most developing countries and simultaneously help mitigate environmental pollution and green gas emission from these wastes. A study to determine the effects of the inclusion of guava fruit processing by-product in broiler chicken diets on performance was carried out. Ripe pink guava fruits were crushed and sieved to separate the pulp from the guava by-product consisting of peels, seeds, and other fibrous content. The guava by-product was sun-dried and included in isocaloric and isonitrogenous broiler chicken diets at 4 different levels 0 %, 2.5 %, 5 % and 7.5 % in both starter and finisher rations. One hundred and sixty (160) day-old cobb-500 broiler chicks obtained from a reputable commercial hatchery were randomly allocated to the four diets and replicated four times with ten birds in each replicate. The feed intake and body weight were monitored for 42 days. The feed conversion ratio for the period was determined.

The sun-dried guava by-product had mean 88.51 % DM, 46.46 % CF, 5.41 % CP, 6.32 % EE, 3.1 % ash, and 38.71 % NFE. The 5 % inclusion level resulted in the highest average daily feed intake (62.47 g/d) compared to the 0 % (59.03 g/d) and the 2.5 % (59.21 g/d) that were similar. The ADGs were similar for inclusion levels 0 %, 2.5 %, and 5 % (56.53, 54.88, 61.02 g/d respectively). The average daily feed intake (FI) and daily weight gain (ADG) were lowest ($p < 0.05$) for the 7.5 % inclusion level (51.20 g/d, 45.68 g/d respectively) compared to the other diets. The FCR (1.58, 1.66, 1.64 and 1.72 (0, 2.5. 5 and 7.5 % respectively) was not influenced by the level of inclusion of guava processing waste in the diets. It was concluded that the guava processing waste could be included up to 5 % in broiler diets without any adverse effects on performance thus contributing to food security by reducing the food: feed competition.

Keywords: Broiler chicken, feed intake, guava by-product, performance

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