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Effects of Feeding Desert Locust Meal (*Schistocerca gregaria*) on Performance and Haematology of Broilers

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Abstract

Locust and grasshoppers have been some of the greatest agricultural pests since the beginning of civilisation. Plagues of locusts devastate crops, pastures, orchards and entire countries or even continents. At unpredictable intervals locust invasions occur, with swarms moving into neighbouring areas of Africa, Asia and Europe and occasionally beyond. Despite this fact however, locusts could have beneficial effects as a source of protein in animal nutrition like some other insects.

A study was conducted to determine the effect of replacing fishmeal with desert locust meal at 0%, 1.7%, 3.4%, and 6.8% as replacement for the equivalent protein supplied by fishmeal in the control diet of a broiler experiment, on their performance from day-old till the end of starter phase (0–28 days). Diets were formulated to contain 2980 kcal ME and 23% crude protein at the starter phase. Ninety-six day-old unsexed broiler chickens (Abor acre) were randomly distributed to the four diets.

The treatments had no significant ($P > 0.05$) effects on the weight gain, feed intake, feed conversion ratio (FCR) and the haematology of the birds.

However, the best result was obtained in the treatment with 50% replacement of fishmeal with desert locust meal. The average weekly feed intake, weight gain and feed conversion ratio (FCR) for the treatment with the best result were: 1090 g bird⁻¹, 561 g bird⁻¹ and 1.9 respectively as compared to 957 g bird⁻¹, 457 g bird⁻¹ 2.1 for the control at the starter phase.

Furthermore, the result of the average live weight, plucked weight and eviscerated weight for the same treatment were: 2360g, 2155g and 1700g respectively, which were not significantly different ($P > 0.05$) from those obtained for the control at the end of the finisher phase. This showed that replacing half the fishmeal in the control diet with locust meal gave better body weight gain, feed intake and feed conversion ratio.

The results of this experiment therefore, indicated that desert locust has great potential as a protein source in broiler starter diets without causing any physiological disorder as reflected in the haematological analysis.

Keywords: Haematology, chicken performance, broiler, locust meal