

Dietary influence on body temperature, performance, blood parameters and carcass characteristics of broiler chickens

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ABSTRACT

This experiment was conducted on three hundred unsexed day-old Arbor acre strains of broiler chicks for 56 days. The birds were divided into 4 dietary groups with 3 replications of 25 birds each. The diets contained 20, 15, 10 and 5%, respectively of rice offal (RO) being replaced by 0, 5, 10 and 15%, respectively of cashew nut reject meal (CNM). The data obtained were subjected to one-way analysis of variance. Significant ($P < 0.05$) differences were observed in the mean weekly body temperature of the birds. The highest temperature of 41.1°C was recorded in diet 3 (10% RO and 10% CNM). Reduced digestibility of nutrients was observed in diet 4 (5% RO and 15% CNM). Reduction in dietary fibre content and increased energy density of the diet resulted in improved performance of the birds in spite of marginal rise in body temperature of the birds. The lowest feed intake (5550g) was obtained in diet 3 with the highest birds' body temperature. Highest weight gain (1790g), best protein efficiency of 1.64, comparably ($P > 0.05$) best feed: gain of 3.27 and lowest mortality (2.90%) were obtained in diet 4 (5% RO and 15% CNM). The body temperature of 41.1°C obtained in diet 3 (10% RO and 10% CNM) resulted in the highest (37%) PCV value. The Hb, WBC and RBC values of the blood were also highest at this temperature. The total protein was significantly ($P < 0.05$) influenced by increasing CNM inclusion in the diets. Carcass characteristics were statistically similar ($P > 0.05$) across the treatment groups except in the abdominal fat which was significantly ($P < 0.05$) lowest in diet 1 (control). The carcass yield ranged from 76.52 to 79.49% with diets 4 (5% RO and 15% CNM) and 2 (15% RO and 5% CNM) having the highest and lowest values, respectively. It was concluded that the nutritional intervention of using CNM to replace RO up to 15% in the diets of broiler chickens did not significantly reduce the bird's body temperature though, there were marked improvements in the performance of the birds.

Keywords: Cashew nuts reject meal, rice offal, bird's temperature, broiler chickens, blood parameters, carcass characteristics