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CONVENER
EFFECT OF L-DOPA ON PERFORMANCE AND SERUM CHOLESTEROL OF BROILER CHICKENS

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ABSTRACT
The L-Dopa found in mucuna seed, when present with other antinutritional factors, has been implicated on nutritional disorders of monogastric animals. It is also reputed to influence muscular development. However, information on its effect on the hydrolysis of triglycerides is scanty. Therefore, the effect of L-Dopa on growth performance and serum cholesterol in broiler chickens was investigated. Two hundred and forty one-day-old chicks were allotted to six treatments containing positive control (PC) with normal energy, negative control (NC) with high energy, NC+0.1, NC+0.2, NC+0.3 and NC+0.4% L-Dopa. All treatments had 4 replicates in a completely randomized design. Feed intake (FI), final weight (FW), body weight gain (BWG), feed conversion ratio (FCR), dressed weight (DW), serum total cholesterol (TC), triglyceride (Tg), high density lipoprotein (HDL), low density lipoprotein (LDL) and very low density lipoprotein (VLDL), were determined following standard procedure. Data were analysed using descriptive statistics and ANOVA at α=0.05. The body weight gain and final weight of birds fed PC were 1791.0 and 1830.0g, NC+0.1% L-Dopa were 1827.7 and 1866.7g and NC+0.2% L-Dopa were 1871.9 and 1910.9g, respectively, and the feed intake of PC (3231.5g), were better than other treatments. TC were 125.0, 129.4 and 131.5mg/dl of PC, NC and NC+0.4% L-Dopa, respectively, and LDL were 75.1 and 75.7mg/dl of PC and NC, respectively. The values observed were similar but higher than other treatments with lowest LDL observed in birds fed NC+0.2% (61.2 mg/dl) and NC+0.3% L-Dopa (62.4mg/dl). The VLDL values observed, 19.8, 22.0, 22.3 and 22.7mg/dl of birds fed NC+0.1%, NC+0.2%, NC+0.3% and NC+0.4% L-Dopa, respectively, were similar, lower than 26.8mg/dl of NC but higher than 15.7mg/dl of PC. The dressed weight at 1375.0g and 1357.1g of NC+0.1% and NC+0.2% L-Dopa, respectively, were similar but better than other treatments. Triglyceride and HDL were not affected across treatments. L-Dopa extract, at levels tested, had no detrimental effect on broilers, rather, the serum cholesterol profile was improved and better bird performance was observed especially at 0.1 and 0.2% L-Dopa inclusion rates. Therefore, 0.2% inclusion is recommended in diets of broiler chickens for improved performance, carcass characteristics and cholesterol profile.

Keywords: L-Dopa, Serum cholesterol, Broilers, Performance