

Effect of L-Dopa on Performance and Carcass Characteristics in Broiler Chickens

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Abstract : Pure form of L-Dopa is used to enhance muscular development, fat breakdown and suppress Parkinson disease in humans. However, the L-Dopa in mucuna seed, when present with other antinutritional factors, causes nutritional disorders in monogastric animals. Information on the utilisation of pure L-Dopa in monogastric animals is scanty. Therefore, effect of L-Dopa on growth performance and carcass characteristics in broiler chickens was investigated. Two hundred and forty one-day-old chicks were allotted to six treatments, which consisted of a positive control (PC) with standard energy (3100Kcal/Kg) and negative control (NC) with high energy (3500Kcal/Kg). The rest 4 diets were NC+0.1, NC+0.2, NC+0.3 and NC+0.4% L-Dopa, respectively. All treatments had 4 replicates in a completely randomized design. Body weight gain, final weight, feed intake, dressed weight and carcass characteristics were determined. 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. The dressed weight at 1375.0g and 1357.1g of birds fed NC+0.1% and NC+0.2% L-Dopa, respectively, were similar but better than other treatments. Also, the thigh (202.5g and 194.9g) and the breast meat (413.8g and 410.8g) of birds fed NC+0.1% and NC+0.2% L-Dopa, respectively, were similar but better than birds fed other treatments. The drum stick of birds fed NC+0.1% L-Dopa (220.5g) was observed to be better than birds on other diets. Meat to bone ratio and relative organ weights were not affected across treatments. L-Dopa extract, at levels tested, had no detrimental effect on broilers, rather better bird performance and carcass characteristics were 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 and carcass characteristics.

Keywords : broilers, carcass characteristics, l-dopa, performance

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