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Effects of Dietary Supplementation of Graded Levels of Monosodium Glutamate (MSG) on Broiler Chickens Growth Performances

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Abstract

Due to the bacterial resistance issues as well as the increasing public concern about antibiotics residues in animal products, research has been focused to find natural alternatives to antibiotics feed additives. This study was designed to evaluate the effects of dietary Monosodium Glutamate (MSG) on growth performances, intestinal microbial counts and hematological profile of broiler chickens. A total of 320 day-old Ross 308 chicks were randomly assigned to 5 treatments of 64 chicks each. Negative and positive control groups were fed on basal diet without supplement (R0-) and 1g of antibiotic (R0+) respectively and the 3 others groups were fed on diets supplemented with 1mg, 2mg and 4mg of MSG/kg of feed. Feed intake (FI), weight gain (WG), feed conversion ratio (FCR), hematological and biochemical parameters, lactic acid bacteria, Escherichia coli and *salmonella* counts, histology of liver and kidney were evaluated. Results revealed that feeding broilers with MSG significantly ($p < 0.05$) decreased FI at the starter phase with an upward trend at the finisher phase. Diet supplemented with 2mg of MSG/kg significantly ($p < 0.05$) increased LBW and WG, and decreased FCR. MSG significantly ($p < 0.05$) increased lactic acid bacteria counts as compared to *E. coli* and Salmonella. Hematological parameters and histology of organs were not affected while serum content in protein, globulin, triglyceride, total cholesterol and urea markedly increase. It was concluded that 2mg of MSG/kg can be use as feed additive to improve growth performance and mitigate the public concern about bacteria resistance issues as well as antibiotics residues in broiler chickens

Keywords: Broiler chickens, feed additive, growth promoter, monosodium glutamate

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