Effect of Dietary Inclusion of Gum Arabic (Acacia senegal) with Different Energy Sources on Performance, Blood Chemistry and Meat Characteristics of Broiler Chicks

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Abstract
This study was conducted to determine the effect of dietary gum arabic (GA) as a natural prebiotic and growth promoter on growth performance of broiler chicks. 192 one day old unsexed broiler chicks of commercial strain (Cobb) were randomly assigned into four dietary treatments; group A contained 0% GA and 60% sorghum (control), B contain 5% GA and 57% sorghum, C contain sorghum 30% and maize 30% and D contained sorghum 28% and maize 28% and 5% GA diets were isocoloric and isonitrogenic with two sources of energy sorghum and maize. Each treatment contained six replicates (8 birds/replicate). Weekly feed intake, weight gain and feed conversion ratio were measured. Results showed that feed intake and weight gain were influenced by dietary treatment, the best Feed conversion ratio was attained by group D. Pre-slaughter weight was affected by dietary treatment. Higher pre-slaughter weight and Carcasses weight observed for group D (sorghum 28% and maize 28% and 5% GA). Dressing percentage was not affected by dietary treatment. Commercial cuts (Breast weight, backbone weight, and thigh and wings weight) significantly increased for bird fed group D (sorghum 28% and maize 28% and 5% gum arabic). There was no significant (p>0.05) difference among all groups on physical characteristic of meat (colour, water holding capacity, cooking loss and pH). Ether extract of meat for group B significantly (P<0.05) decreased. Serum glucose, total protein, triglyceride and inorganic phosphorus had not affected by treatment. However serum cholesterol, calcium and creatinine showed significantly (p<0.05) decrease for group B.

Keywords: Gum arabic, Creatinine, Commercial cuts.