World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:8, No:01, 2014

Effects of Cinnamon, Garlic, and Yucca Extracts on Growth Performance and Serum Biochemical Parameters in Broilers

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Abstract : The experiment was conducted with 360 one-day-old Avian commercial broilers to study the effects of dietary cinnamon extract (CE), garlic extract (GE) and yucca extract (YE) on growth performance and serum biochemical parameters in broilers. The chickens were randomly divided equally into 4 treatment groups, each group with 3 replications, and received the same basal corn-bean diets included a starter from 1 d to 21 d and then a grower until 42 d, added with recommended dose 250 mg/kg CE, 25 mg/kg GE and 10 mg/kg YE to relevant group, respectively. The birds were kept in a stainless steel net coop each replication with 24 h light and were fed and drunk ad libitum. At 21 d and 42 d of age, 6 chicks were respectively picked out from every group and were bled to collect serum samples and intestinal samples for laboratory analysis. The results showed that the average daily gain (ADG) of CE, GE and YE group were increased by 7.20% ($P<0.05$), 3.43% ($P>0.05$) and 4.89% ($P>0.05$), feed gain ratio (F/G) was improved by 9.71% ($P<0.05$), 3.40% ($P>0.05$) and 3.40% ($P>0.05$) compared with the control, respectively. At 21 d of age, the content of serum urea nitrogen (SUN) and serum uric acid (SUA) and the activity of serum xanthine oxidase (SXO) in CE group were reduced by 35.17% ($P<0.01$), 13.73% ($P<0.01$) and 16.33% ($P<0.05$) compared with the control, respectively. At 42 d of age, SUN and SUA level and SXO activity were lowered by 24.35% ($P<0.01$), 15.49% ($P<0.05$) and 23.09% ($P<0.01$), respectively. The SXO activity in CE group was decreased by 14.86% ($P<0.01$) and 15.34%($P<0.01$) compare with GE and YE group, respectively. Also, adding CE, GE and YE into broiler diets resulted in lower UN and UA level of intestinal contents. It is clear that CE was more significantly decreased the SXO activity and SUA levels than GE and YE, especially at the latter period, thereby it may play a more important role in improving the growth performance of broilers.

Keywords : cinnamon extract, broiler, growth performance, serum uric acid, serum xanthine oxidase
Conference Title : ICABBBE 2014 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering
Conference Location : Zurich, Switzerland
Conference Dates : January 14-15, 2014

Open Science Index, Agricultural and Biosystems Engineering Vol:8, No:01, 2014 publications.waset.org/abstracts/3707/pdf