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Effect of Dietary Nanosilver on Broiler Performance

Kout Elkloub, M. El. Moustafa , A.A. Ghazalah and A.A.A. Rehan 1 2 1
nstitute of Animal Production Research, Agriculture Research Center, 1 Ministry of Agriculture, Dokki, Giza, Egypt Department of Animal Production, Faculty of Agriculture, Cairo University, Giza, Egypt

Abstarc :

This study was carried out to investigate the effect of silver nanoparticles (AgNPs) on broiler growth performance, carcass traits, blood constitutes and counts of E. coli and lactobacillus. A total of 180 seven day old un-sexed broiler chicks (Hubbard) were allocated into six groups each group containing three replicates (10 birds in each replicate). Basal control diet was supplemented with different levels of AgNPs (2, 4, 6, 8 and 10 ppm/kg) throughout growth trial period (7-35 days). The results showed that the heaviest final body weight and the highest body weight gain recorded by adding 4 ppm AgNPs/kg. There were no significant differences in overall feed intake at different levels of nanosilver. The best feed conversion ratio (1.5) obtained by using 4 ppm AgNPs/kg compared with all treatments studied. Serum total lipids were significantly decreased in all treatments compared to control. Cholesterol was significantly decreased at 2, 4 and 6 ppm AgNPs/kg diet compared to control. All levels of AgNPs had significantly decreased AST except 6 ppm AgNPs. Total serum antioxidant capacity significantly increased in all supplemented levels of dietary AgNPs compared to control, while 4 ppm AgNPs recorded the highest value. In addition, nanosilver had increase the European production efficiency index (EPEI) in all treatments compared to control and 4 ppm AgNPs recorded the best EPEI compared to all treatments. Broilers fed different levels of AgNPs had decreased the number of harmful bacteria represented as E. coli compared to control and had no effect on microflora represented as lactobacillus. It could be concluded that the best productive performance of broiler occurred by supplementing 4 ppm AgNPs/kg in broiler diets. More studies should be done in this new area of researches in the future.

Key Word :
Silver nanoparticles, performance, blood constituents, bacteria count, broiler

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