

Impact of silver nanoparticles on the pathological of bursa of Fabricius, immune system indices and some of enzymes of broiler chicks in starter stage

F. Ahmadi, M. Amiri Andi, A. Zarneshan and A. Rokhzadi
Islamic Azad University, Iran

This trial was conducted to evaluate the effects of different levels of silver nanoparticles (SNPs) on the enzymes, pathological of liver and immune system indices of broiler chickens. A total of 240 one-day-old male Ross (308) broiler used; birds were randomly divided into 4 experimental groups of 60 birds and 15 birds in each pen. Trial diets were: T1 control and without SNPs, T2, T3, and T4 supplemented with 4, 8, or 12 mg SNPs/Kg diet respectively. The birds accessed *ad libitum* to feed and water throughout the study period (1-21 d). At the end of research, four birds (one bird per replicate) were selected. Blood samples were collected from bronchial vein, centrifuged and removed serum stored at -20 °C until analysis. Birds were slaughtered; immune organs and liver were removed and then liver was cleaned by PBS, stored in 10% formalin until further examination. Results indicated diet supplemented with 8 or 12 mg SNPs (T3 and T4) had significantly increased ($P < 0.05$) serum glutamic pyruvic transaminase (SGPT), glutamic oxaloacetic transaminase (SGOT), ALP, LDH, and MDA compared with control and T1 treatment. Results about bursa pathological showed that SNPs (T3 and T4) had negative effects on bursa tissue and observed lesion, hemorrhage and depletion lymphoid in comparison control group. The mention signs of bursa observed in birds, T4 that fed diet with 12 mg. Concentration of IgG and IgM had decreased significantly compared to control ($P < 0.05$). In conclusion, these results indicated birds that were exposed to SNPs at concentration > 4 mg could adversely affected enzymes indices, damage and function of bursa Fabricius and overall this condition could decrease performance and immune system function of broiler.

Biography

F. Ahmadi received a B.S. in Animal Science from Tehran University 1990. He earned M.S. in Poultry Nutrition at Isfahan University Technological (IUT) in December 1993 under the supervision of Professor Javad Pourreza. After that, he joined Azad Kurdistan University as faculty member in department of Animal Science until now. He was selected as dean of Animal Science Group, poultry farm research in Faculty of Agricultural. He has honored to receive two certificates as the elect researcher in 2008. At present, he is Ph.D. student in Shabestar Branch, Azad University.

abidar797@gmail.com