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The impact of zinc oxide nanoparticles on liver enzymes and some blood parameters from hatch to 14 days of broiler age

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This trial was carried out to investigate the effect of dietary zinc oxide nanoparticles (Zno-NPs) on the liver enzymes and some blood parameters from hatch to 14 days of broiler age (1-14 days). Experimental diets were including: T1 (control and without Zno-NPs) and T2, T3, T4 and T5, provided by supplementation basal diet with 30, 60, 90 or 120 mg of Zno-NPs/kg, respectively. Three hundred one-day-male broilers (Ross-308) distributed in a completely randomized design (CRD) was composed of five experimental groups, four replicate and 60 chicks in each experimental pen. Results indicated that dietary Zno-NPs had significantly increased total antioxidant capacity (TAC) ($P < 0.05$), activity of superoxide dismutase (SOD) ($P < 0.05$) and glutathione peroxidase (GPx) ($P > 0.05$) in comparison with control group in comparison to control and other treatments. As well, malondialdehyde (MDA) concentration decreased ($P > 0.05$), although no statistically significant. The level of serum alkaline phosphatase (ALP), Aspartate transferase (AST), alanine transferase (ALT), and lactate dehydrogenase (LDH) enzymes activity decreased ($P > 0.05$), especially, in birds fed diet supplemented with 60 (T3) and/or 90 (T4) mg of Zno-NPs compared to control treatment. In conclusion, results of present research suggested that Zno-NPs may be improved oxidant state of broilers during starter stage. As well, optimum changes observed in the levels 60 and/or 90 mg of Zno-NPs per kg of basal diet.

Biography

Ahmadi F was born in Kurdistan province, Sanandaj city, Iran. He has completed his B.Sc. and M.Sc. from Tehran University and Isfahan University of Technological (IUT), and Ph.D. from Islamic Azad University. At present, he is one of the scientific members in faculty Agricultural, Department of Animal Science, Islamic Azad University, Sanandaj, Kurdistan, Iran. Some of title and activity:

1. Published further 15 scientific papers in the animal science background, major nutrient nanoparticles in poultry nutrition.
2. Participation in 12 international scientific meeting as conference, symposium etc.
3. Compilation a book entitled "Recording economic traits in Dairy and beef cattle"
4. Head of Department of Animal Science, five time from 2000 to now
5. Head of Agricultural Faculty 2004-2005.
6. Dean of Research center of poultry and dairy cattle 2005-2009 in Azad University, Kurdistan branch.
7. Member of PSA and WPSA branch of USA and IRAN, respectively.

Ph.D. thesis: Investigation dietary nutrient nanoparticles in broiler nutrition

Interest's research: Nanoparticles nutrients, Medicine plants, Immune system, Oxidative enzymes

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