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عنوان مقاله :

The efficacy of metal nanocomposite (Fe₃O₄/ CuO/ZnO) to ameliorate the toxic effects of ochratoxin in broilers

چکیده: حداکثر ۲۵۰ لغت

The study aimed to investigate the effectiveness of different doses of metal nanocomposite (Fe₃O₄/CuO/ZnO) lower than its cytotoxic level in order to overcome or minimize the ochratoxin (OTA) adverse effects in broilers fed on contaminated ration. The study conducted on 120 one-day old chicks which were divided into equal 6 groups; G1: negative control, G2: positive control (fed on OTA 17 ppb), G3& G4 (fed MNC only with low and high doses respectively). The rest two groups G5 & G6 (treatment groups) were fed on OTA, post induced ochratoxification, treated with low and high doses respectively. Results: Body weight gain and hematocellular elements in both treated groups increased significantly than control. Serum phagocytic nitric oxide levels were increased significantly in both treated groups than control groups. Prothrombin time (PT), Alanine aminotransferase (ALT) and gamma-glutamyltransferase (GGT) activities decreased significantly (P < 0.05) in both treated groups than intoxicated control group (G2) but still higher than non-intoxicated control group (G1). Total protein, albumin, globulin, calcium and phosphorus increased significantly in both treated groups than intoxicated control group. Kidney function tests showed significant improvement in both treated groups than intoxicated control group. Antioxidant study revealed that malondialdehyde (MDA) decreased significantly in treated groups than intoxicated control group. Ochratoxin residue decreased significantly in treated groups. Metal residues in tested liver and muscle of treated groups showed no-significant difference with non-intoxicated control group (G1) at the experiment's end. In conclusion, feeding either low or high doses of MNC to broilers were significantly counteracting the negative impacts of OTA or its residue and increase their body weight.