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RESEARCH ARTICLE

Combined effect and amelioration of aflatoxin and citrinin in broilers: A histopathological study

C.H. PRIYADARSHINI AND Y. ANJANEYULU[1]

Members of the Research Forum

Associate Author :
[1]Department of Veterinary Pathology, College of Veterinary Science, Rajendranagar, HYDERABAD (TELANGANA) INDIA

AUTHOR FOR CORRESPONDENCE :

C.H. PRIYADARSHINI
Department of Veterinary Biochemistry, College of Veterinary Science, Rajendranagar, HYDERABAD (TELANGANA) INDIA
Email: cherukuripriyadarshini78@gmail.com

Abstract : Aflatoxin was produced from *Aspergillus parasiticus* and citrinin was produced from *Penicillium citrinum* and both were quantified using thin layer chromatography. The toxins, aflatoxin at the rate of 1ppm and citrinin at the rate of 25 ppm, were mixed in broiler feed. Activated charcoal (0.4%) and/or lyophilized yeast culture (0.2%) were added as adsorbents. Four diets for broilers were prepared – Diet 1- basal diet (control), Diet 2- basal diet added with aflatoxin (1ppm) and citrinin (25ppm), Diet 3- basal diet added with aflatoxin (1ppm), citrinin (25 ppm) and activated charcoal (0.4%) and Diet 4- basal diet added with aflatoxin (1ppm), citrinin (25ppm), activated charcoal (0.4%) and lyophilized yeast culture (0.2%). These four diets were fed for 6 weeks to four group of broiler chicks with four replications of eight birds in each group using Completely Randomized Design. The histopathological studies revealed central vein congestion, focal lymphoid aggregates, and bile duct hyperplasia in the liver, degenerative changes, intertubular congestion and hemorrhages in kidney, cystic spaces and lymphoid depletion in bursa of Fabricius, depleted germinal centres and interfollicular arteries in spleen of birds fed on diet 2. On diet 3, the lesions were moderate degree and on diet 4 the lesions were very mild.

Key words : Aflatoxin, Citrinin, Activated charcoal, Lyophilized yeast, Amelioration

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