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Acute and Chronic Exposures of Aflatoxins in Ducks

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Thailand is in the tropical climate area. High temperature and moisture promote a fast growing of Aspergillus spp. that causes aflatoxin production. Aflatoxins contamination in poultry feeds is frequently found especially in commercial feeds. Aflatoxins (mainly AFB1) are produced by Aspergillus flavus or A. parasiticus. Various clinical signs and lesions found in poultry-intoxication depending on bird species, age, sex, quantity of toxin ingestion and exposure duration. Young birds get severe intoxication than adults. Males are more susceptible than females. Clinical signs can classify acute and chronic intoxication depending on the amount of toxin ingestion. The clinical signs of acute cases can be found within a few days after exposure, while the clinical signs of chronic cases can be found several weeks after exposure. In acute cases, birds reveal apathy, ruffled feathers, diarrhea, ataxia, opisthotonos, convulsions, bruises, and slow growth rate. In chronic cases, birds show fatigue, anorexia, lower production performances: reduced growth rate, drop in egg production and decreased hatchability. Aflatoxins mainly affect cardiovascular and immune systems. The aim of these clinical trials, we provided various doses (30, 60, 90, 120, 180, 210, 400, 800 and 1200 ppb) of aflatoxin and observed their results in experimental ducks. We found that ducks are quite sensitive to aflatoxin. At the dose of ? 30 ppb, the ducks revealed growth retardation, higher feed conversion ratio, raffled feathers, helicopter disease, ataxia, toe walk, fatty liver, abnormal egg production and higher mortality. When the higher concentration of aflatoxin, the more severe clinical signs were found such as higher degree of growth retardation, feather abnormality, fused ovary fatty liver and mortality. When the aflatoxins were withdrawn from the feed, the ducks could recover from the intoxication.