

Efficacy of a Zeolite as a Detoxifier in Broiler Feed Contaminated with Aflatoxin B1

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Abstract : The objective of this study was to determine the efficacy of zeolite in preventing the adverse effects of aflatoxin B1 (AFB1) in broilers. A total of 540 one-day-old Ross chicks were randomly divided into nine treatments, with four replicate pens per treatment and 15 chicks per pen. The treatments included 3 Levels of AFB1 (0, 1 and 2 mg/kg diet) and 3 levels of zeolite (0, 1.5 and 3 %) in a 3 × 3 factorial arrangement. The experimental treatments commenced on d 7 post-hatch. A starter diet was provided from d 1 to 14, a grower diet from d 15 to 28 and a finisher diet from d 29 to d 49. Diets were based on corn and soybeans and formulated to meet the bird's requirements. The evaluated parameters were as follows: Bodyweight, daily gain, feed intake (FI), feed conversion (FC), relative weights of organs (carcass, liver, heart and abdominal fat) and clinical biochemistry parameters: alanine aminotransferase (ALT) and aspartate aminotransferase (AST). Bodyweight, daily gain and FC were significantly ($P < 0.05$) impaired by aflatoxin. Relative weights of the liver and heart were also affected. The addition of zeolite (1.5 and 3 %) to the contaminated diets ameliorated the effects of aflatoxin, especially at the higher level of inclusion. These data demonstrate that this specific sorbent (zeolite) can protect against the toxicity of AFB1 in young broiler chicks.

Keywords : aflatoxin, broiler, toxicity, zeolite

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