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The impact of aflatoxins in SPF chickens rations on evaluation of poultry vaccines

A thesis presented

By

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ABSTRACT

This study was designed to highlight the incidence of fungal contaminants and aflatoxins producing molds in 105 feed samples from 84 broiler and 21 egg-laying chicken flocks in Egypt. Furthermore, the effects of feeding SPF-white Leghorn chicks on ration contaminated with 50 ppb Aflatoxin (AF) B1 on Newcastle Disease Virus (NDV)-Hemagglutination Inhibition (HI) antibody titers between the third and fourth-weeks after vaccination with the live Hitchner B1 strain vaccine was investigated. The histopathological changes in liver, kidney, bursa of Fabricius and spleen were performed at two and five weeks of exposure to AFB1. The most identified moulds were *Aspergillus* spp. (94%), *Penicillium* spp. (37%) and *Fusarium* spp. (17%). The aflatoxigenic strains *A. flavus*, and *A. parasiticus* were recovered (80%) and (9%) of feed samples, respectively. NDV-HI antibody titers were significantly ($P < 0.05$) decreased in AFB1 exposed group of vaccinated chickens than non-exposed group. The geometric mean titers of $4.9 \log_2$ and $5.7 \log_2$ were produced by sera of chicken group fed on normal ration while $3.9 \log_2$ and $3.8 \log_2$ were recorded by sera of chicken group fed on AFB1 contaminated ration 21- and 28-days post vaccination, respectively. The results concluded that a significant ($P < 0.05$) increase in mean scores of the histopathological lesions exhibited by livers, kidneys and spleens of AFB1 exposed chickens in comparison with the non-AFB1 exposed chickens while, non-significant ($P > 0.05$) increase was detected for bursae of Fabricius.

Key words: *Aflatoxins, Chicken, Feed, Vaccination, Histopathology.*
