

## **Effects of Feeding Blends of Grains Naturally Contaminated with *Fusarium* Mycotoxins on Performance, Metabolism, Hematology, and Immunocompetence of Ducklings**

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Experiments were conducted to determine the effects of feeding grains naturally contaminated with *Fusarium* mycotoxins on performance, metabolism, hematology, and immune competence of ducklings. Four hundred sixty-four 1-d-old White Pekin male ducklings were fed starter (0 to 2 wk), grower (3 to 4 wk), and finisher (5 to 6 wk) diets formulated with uncontaminated grains, a low level of contaminated grains, a high level of contaminated grains, or the higher level of contaminated grains + 0.2% polymeric glucomannan mycotoxin adsorbent. Bodyweight gains, feed consumption, and feed efficiency were not affected by diet. However, consumption of contaminated grains decreased plasma calcium concentrations after 2 wk and plasma uric acid concentrations at the 4-wk assessment point. Mean corpuscular hemoglobin concentrations and hematocrit decreased when ducks were fed contaminated grains for 4 or 6 wk, respectively. In contrast, total numbers of white blood cells and lymphocytes increased transiently in birds fed contaminated grains for 4 wk. The antibody response to sheep red blood cells (CD4+ T cell dependent) and the cell-mediated response to phytohemagglutinin-P (also CD4+ T cell dependent) were not affected by diet, but consumption of contaminated grains for 6 wk decreased the duration of peak cell mediated response to dinitrochlorobenzene (CD8+ T cell dependent) assessed in a skin test. Feeding grains naturally contaminated with *Fusarium* mycotoxins, even at levels widely regarded as high, exerted only minor adverse effects on plasma chemistry and hematology of ducklings, and production parameters were unaffected in this avian species. Mycotoxin-contaminated feeds may, however, render these animals susceptible to infectious agents such as viruses against which the CD8+ T cell provides necessary defence. Glucomannan mycotoxin adsorbent was not effective in preventing alterations caused by *Fusarium* mycotoxins.

*(Key words: Fusarium mycotoxin, duck performance, plasma chemistry, hematology, immune competence)*  
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