



Effects of Mycotoxins in Laying Hens and Breeders

Introduction

Mycotoxins are toxic metabolites produced by fungi such as *Aspergillus*, *Fusarium*, and *Penicillium*. Due to their stability during feed processing and storage, they represent a persistent threat in poultry production. In laying hens and breeders, their presence leads to significant losses in productivity, immunity, and reproductive performance.

Main Mycotoxins Affecting Laying Hens and Breeders

Aflatoxin B1 (AFB1), one of the most potent and commonly occurring mycotoxins, causes liver damage, impaired metabolic efficiency, immunosuppression, and reductions in egg production and egg quality.

Ochratoxin A (OTA) primarily affects the kidneys and liver and reduces feed intake, laying performance, and eggshell quality by interfering with calcium metabolism. **T-2 toxin**, a trichothecene known for its cytotoxicity, damages the gastrointestinal mucosa, reduces nutrient absorption, suppresses immune function, causes oral lesions, and severely impairs fertility in breeders. **Zearalenone** (ZEN), an estrogenic compound, disrupts reproductive function, impairs ovarian physiology, and may negatively affect eggshell formation.

Together, these mycotoxins can substantially impair immune response and performance parameters in laying hens and breeders.

MYCORAID – Multilayered Protection

MYCORAID is a multi-component product that combines selected minerals for adsorption, microbial mixture for biotransformation, plant extracts for liver support, and yeast cell walls for immune support. Trials have shown that it adsorbs and bioremediates mycotoxins such as AFB1, OTA, T-2, and ZEN, while nutrients such as vitamins and amino acids are only minimally affected.

Trial results in laying hens exposed to feed contamination with AFB1 and T-2 showed improved egg quality, healthier liver and kidney weights, and better blood parameters (Raj et al., 2023). **MYCORAID** was able to significantly improve the laying rate by up to 2.1% and also increase total feed intake by up to 0.8%, eggshell weight by up to 1.6%, and cumulative egg mass by up to 1.3% (Figure 1).

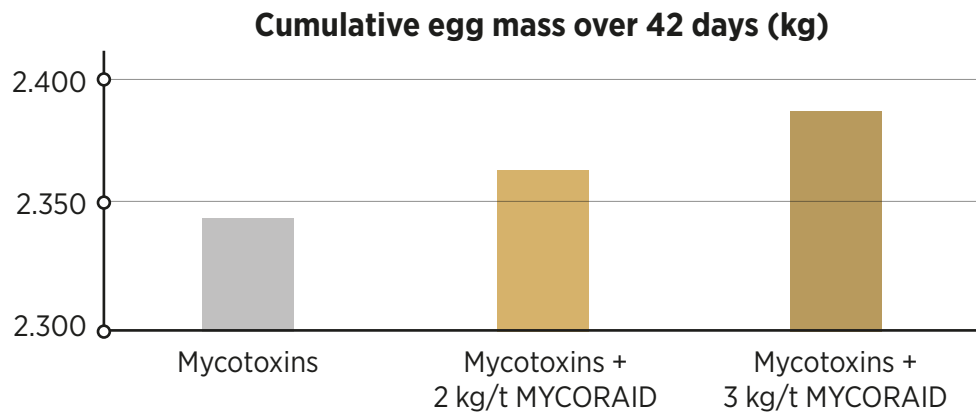


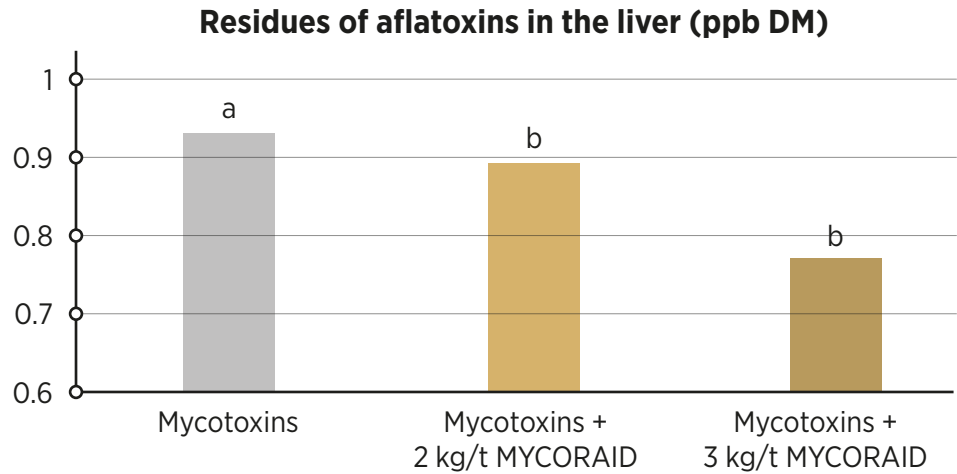
Figure 1. MYCORAID improved egg production in laying hens challenged with mycotoxins.



Although performance improvement is prioritized from a financial perspective, clear evidence of mycotoxin detoxification can only be demonstrated through the reduction of mycotoxin residues in animal tissues (see Figure 2).

Mycotoxin residues in the liver were reduced by up to 17%, confirming successful mycotoxin detoxification in this trial.

Figure 2. MYCORAID reduced residues of aflatoxins in the liver



These results demonstrate the ability of **MYCORAID** to protect internal organs and maintain productivity even under mycotoxin exposure.

Conclusion

The combined effects of different mycotoxins significantly impair poultry health, productivity, and reproduction. **MYCORAID** mitigates these effects through adsorption, biotransformation, support of liver detoxification, and strengthening of the immune system. With its proven efficacy, **MYCORAID** represents a practical solution for maintaining the performance and welfare of laying hens and breeders even under mycotoxin challenge.



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