

The Repercussions of Mold Growth inside the Industry of Animal Feed

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Introduction

Mycotoxin contamination affects a wide range of raw materials and finished products used in animal production. The economic impact on livestock production includes the cost of removing contaminated feed as well as a decrease in animal productivity. As a result, veterinary care costs have risen, as have technical efforts aimed at reducing mycotoxins' negative effects. Cereals and byproducts are the primary components of finished feed in livestock. Mycotoxin distribution and concentration are affected by food processing. Mycotoxin distribution in cereal processing procedures is a worldwide issue due to the severe economic and health consequences. The use of a safe diet, in which the risk of mycotoxin contamination is minimised and the cost/benefit is accurately quantified, should allow herd productivity to be maximised [1].

In general, mycotoxin contamination affects a wide range of raw materials and finished feed intended for animal production. The economic impact on livestock production includes the cost of removing contaminated feed as well as the reduction in animal productivity. As a result, the increase in veterinary care costs and technical efforts are aimed at reducing the negative effects of mycotoxins. With the control of infectious diseases, metabolic disorders became the primary problem in the sector, and mycotoxins began to play an important role due to their negative effects, both economically and in terms of animal health, posing a risk to public health. In this regard, mycotoxins can have an impact on human health through animal by-products such as meat, eggs, and milk as a result of consuming contaminated animal feed [2].

Many fungal species can produce mycotoxins in feed during crop growth, after harvesting, storage, transportation, and processing. Environmental factors such as temperature, humidity, and insects can all contribute to the spread and growth of the fungus as well as the production of mycotoxins. According to the Food and Drug Administration (FAO), mycotoxins contaminate more than 25% of the world's food production. Recent surveys have been conducted to assess the prevalence of mycotoxin contamination. Cocontamination affects 30% to 100% of food and feed samples worldwide. Cereals are given special attention because of the frequency with which they are contaminated as well as their widespread consumption [3].

Fungal contamination reduces the nutritional value and palatability of feed and poses toxicities risk. The most economically significant mycotoxins in terms of prevalence and negative animal effects. Mycotoxicoses are diseases caused by short or long exposure to mycotoxins. Mycotoxin toxicity and deleterious effects vary depending on many factors, including the route of administration, the time and amount of exposure, the administered dosage, and the age, sex, and overall animal health, in addition to the presence of other mycotoxin. Mycotoxins are extremely toxic to poultry, pigs, and aquatic

vertebrates. They are exposed to cereal mycotoxins and chronic contamination as a result of their high consumption. Because the rumen microbiota partially degrades mycotoxins, ruminants are usually more resistant to their negative effects [4].

Discussion

Food safety is a top priority not only for government agencies, but also for the feed industry. Mycotoxins have a massive economic impact; it is estimated that toxigenic fungi affect nearly 25% of crops worldwide each year. They cause problems by lowering nutritional value, increasing production costs and mortality, and increasing susceptibility to infectious diseases, resulting in massive agricultural and industrial losses in the billions of dollars.

Mycotoxins and their control have a significant economic impact not only on feed producers, but also on intermediaries such as elevators, grain buyers, and food processors. Producers and consumers of livestock are also included. As a result, various cultural practises (harvesting and storage technologies, insecticide and fungicide use) are impacted. Despite the wide range of economic effects, quantifying them is a difficult task. The greatest impact on the producer is due to yield losses as well as production, harvest, and marketing costs. Distributors and food processing plants that purchase contaminated food, whether knowingly or unknowingly, face the same issues as producers in terms of costs and extra care in drying and storage, market restrictions, discount prices, and the like [5].

Conclusion

Constant vigilance and on-going research on mycotoxins contamination prevention and mitigation are required. Mycotoxins must be controlled and managed through a series of critical activities. Everything begins with defining a monitoring programme, which includes defining the sampling process, going through a series of analyses and controls, and concluding with a decision. The use of a safe diet, in which the risk of mycotoxins contamination is minimised and the cost/benefit is accurately quantified, should allow herd productivity to be maximised.

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Conflict of Interest

There is no conflict of interest by author.

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