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“Bridging the gap between increasing knowledge and decreasing resources”

Aflatoxins: Serious Threats to Food Safety and Food Security. But Is it Related to Livestock?

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Abstract

Globally, crops are being infested with molds. In tropical regions, *Aspergillus* species commonly occur, some of which produce aflatoxins. Aflatoxins are hepatotoxic, nephrotoxic and carcinogenic to different degrees in livestock as well as humans, causing acute fatal disease as well as chronic illness. Cattle are relatively resistant due to metabolism of toxins in the rumen, while poultry is highly susceptible. Chronic exposure to aflatoxins may cause reduced growth and immunosuppression and is associated with stunting in children and reduced production in livestock. In addition to exposure from crops, metabolites are transferred to breast milk and animal products, especially dairy.

Thus, aflatoxins pose health risks to humans when consumed through crops or animal-source food. The impacts of aflatoxins on animal health have consequences on food production and livelihoods of farmers. However, since some animals are less sensitive than humans, feeding contaminated crops to animals diverts it from humans. Livestock may therefore be considered simultaneously as suffering from the toxins, as a way to utilise contaminated products and save humans, and as a potential risk for humans.

How does the International Livestock Research Institute (ILRI) approach this complex topic?

- Carrying out extensive literature-based reviews and mapping of aflatoxins.
- In collaboration with the International Food Policy Research Institute (IFPRI), a series of 2020 policy briefs by leading experts were released in 2013.
- The Biosciences eastern and central Africa (BecA)-ILRI Hub has established a shared mycotoxin-research platform in Nairobi, Kenya, that is widely used by partners in the region and beyond.
- The BecA-ILRI Hub is working with Kenyan, Tanzanian, other African, Australian and US partners to develop better sampling and diagnostics, develop models and maps of risk and breed, for less susceptible maize varieties.
- Projects assessing health risks and economic costs of aflatoxins in the feed dairy chain are underway in Kenya
- In collaboration with the International Institute of Tropical Agriculture (IITA), technical packages on aflatoxins and livestock for the East Africa region are being prepared.
- Carrying out assessments of the knowledge of, and attitudes to, aflatoxin among milk traders and consumers, and willingness-to-pay for aflatoxin-free milk.
- Conducting surveys of aflatoxins in marketed dairy products.
- Assessing aflatoxins in commercial pig feed in Uganda and possible effects on growth.

With this research portfolio, the complex problem of aflatoxins as a threat to animal and human health, and to food production, security and safety, will be better understood.

Keywords: Aflatoxins