

Feed the Future Innovation Lab for Livestock Systems

INNOVATION SUMMARY: ANALYTICAL METHOD FOR QUANTIFYING MYCOTOXINS IN FEED

The innovation consists of technologies for the quantification of mycotoxins (aflatoxin and fumonisin) in animal feeds. This includes use of an enzyme-linked immunosorbent assay (ELISA) and fluorometry mycotoxin quantification and detection technique, which can make the routine testing of animal feeds more affordable, ultimately resulting in higher quality and cheaper feeds. Better quality feed will result in better quality animal-source foods benefitting human nutrition.



INNOVATION QUICK FACTS

Lead Implementing Institution: Iowa State University

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|  | Category: Diagnostic Tool |  | Applied in: Rwanda |
|  | Innovation Type: Technology |  | New/Adapted: Adapted |
|  | Created for: Women & Men |  | Nutrition Linkage: Food Safety |

APPLICATION OF THE INNOVATION

The mycotoxin assessment and mitigation innovation can be applied at different stages of the livestock feed value chain (production, transportation, processing, storing, or trading). This application can be used to create awareness on risks associated with contaminated feeds and understanding what mitigation measures can be taken in the event that samples test positive. The application can be used by researchers, government agencies, feed mills, and feed companies. Building the capacity of possible adopters through training on the ELISA and fluorometry techniques will allow for production of safer feeds. Additionally, creating awareness sensitively will encourage animal-source food producers to take appropriate precautions to prevent or reduce contamination of their feeds with mycotoxins.

THE PROBLEM & ITS IMPORTANCE

Aflatoxin and fumonisin are types of mycotoxins, naturally produced by molds, which can contaminate crops and end up in animal feeds. Aflatoxins can be passed from feeds to humans through consumption of animal-source foods, potentially posing a public health risk. Data on the presence of mycotoxins in animal feed are not available in several countries, nor is awareness on the presence of aflatoxin and fumonisin in the feed and food value chains. Therefore, generating objective information on the presence of mycotoxins, introducing affordable analytical methods, and creating awareness among the public are of paramount importance to allow for its control.

POTENTIAL BENEFITS

Sampling and analysis of feed for mycotoxins through the use of ELISA and fluorometry quantification and detection techniques together with improved and more affordable laboratory capacities can lead to improved livestock feed safety throughout Rwanda and other countries. Understanding where the mycotoxin contamination problem is along the feed value chain will help target mitigation measures to reduce the issue. As a result, livestock productivity and animal-source food safety will both improve.