

Feed the Future Innovation Lab for Livestock Systems

INNOVATION SUMMARY: TEST FOR ANALYSING MYCOTOXINS IN LIVESTOCK FEEDS

The innovation is a cost-effective and user-friendly mycotoxin testing method involving lateral flow technology known as CHARM-EZ-M. Feed regulatory agencies and analytical labs were given hands-on training on how to use the method to analyse livestock feeds for mycotoxins. Monitoring feeds for mycotoxins will safeguard the quality and safety of the national feed and food supply, optimize livestock production and health, and, ultimately, improve animal and human health.



INNOVATION QUICK FACTS

Lead Implementing Institution: Kansas State University



Category: Diagnostic Tool



Applied in: Ethiopia



Innovation Type: Technology



New/Adapted: Adapted



Created for: Women & Men



Nutrition Linkage: Food Safety

THE PROBLEM & ITS IMPORTANCE

Mycotoxins are naturally occurring toxins produced by molds in livestock feed and food. They threaten livestock health, reduce feed safety and quality, and could compromise human health and nutrition through consumption of contaminated animal-source foods. Determinants of mycotoxin production include environmental, climatic, crop management, and storage conditions, making the likelihood of mycotoxin contamination particularly hard to predict. This necessitates active mycotoxin monitoring and mitigation programs that use precise analytical methods and strategies to safeguard the quality and safety of the feed and food supply.

POTENTIAL BENEFITS

This innovation allows cost-effective and accurate quantification of aflatoxin contamination in livestock feed and certain animal-source foods. Combining lateral flow testing, which is a fraction of the cost of traditional methods, and strengthening the technical capacity of local partners, will increase testing for the toxins and ensure the safety of feed and food. Understanding contamination levels will allow development of prevention and control strategies that reduce the risk posed by mycotoxins to livestock and consumers of livestock products.

APPLICATION OF THE INNOVATION

Combining the cost-effective mycotoxin CHARM-EZ-M test with building the capacity of local partners to administer the test can improve mycotoxin detection in Ethiopia as well as other countries. The quantification method used in lateral flow technology relies on color changes on indicator strips that reflect competitive antigen binding. The technology is affordable and relatively easy to use in laboratories that cannot afford high-end analytical equipment. It is also a relatively versatile method suitable for analyzing a wide range of feeds and food from researchers, government officials and the private sector. The technology requires relatively low cost inputs (e.g., reagents and kits) for routine and continuous operation.