



# The Prevalence of Mycotoxin Contamination of Animal Feeds and Implications on Milk Safety in Kenya

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## INTRODUCTION

Mycotoxins are metabolites of fungal contamination of animal feeds as a result of poor feeds storage or on-field infestation during plant growth. These mycotoxins are subsequently excreted in milk when dairy animals consume such feeds and therefore posing a safety risk of public health concern.

## OBJECTIVE

To conduct a risk assessment in milk from small-scale farms that form the informal dairy sub-value chains in rural system in Olenguruone and peri-urban system in Bahati, both in Nakuru County, by determining the prevalence and quantifying levels of mycotoxins in animal feeds and milk.

## METHODOLOGY

A total of 74 animal feed samples from actors in informal dairy value chain and 120 milk samples from individual cows were simultaneously collected. Feed samples were analysed for Aflatoxin B<sub>1</sub> (AFB<sub>1</sub>) and Deoxynivalenol (DON) while milk samples were analysed for Aflatoxin M<sub>1</sub> (AFM<sub>1</sub>) using ELISA method.

### Hypothesized aflatoxins pathway in intensive systems



Rotten Maize cobs used as ingredients in on-farm formulated feeds.

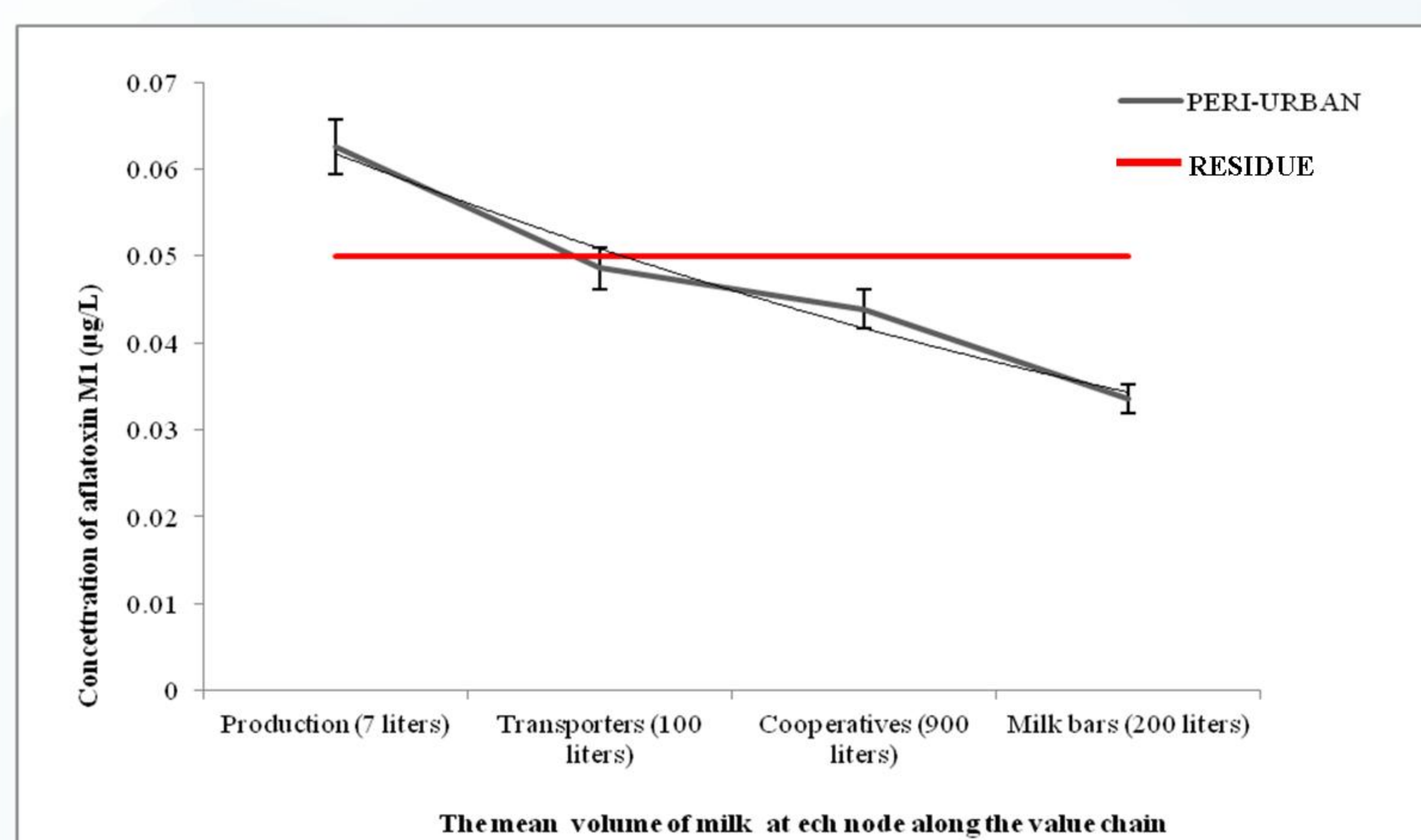


Farmer showing his on-farm formulated animal feed.

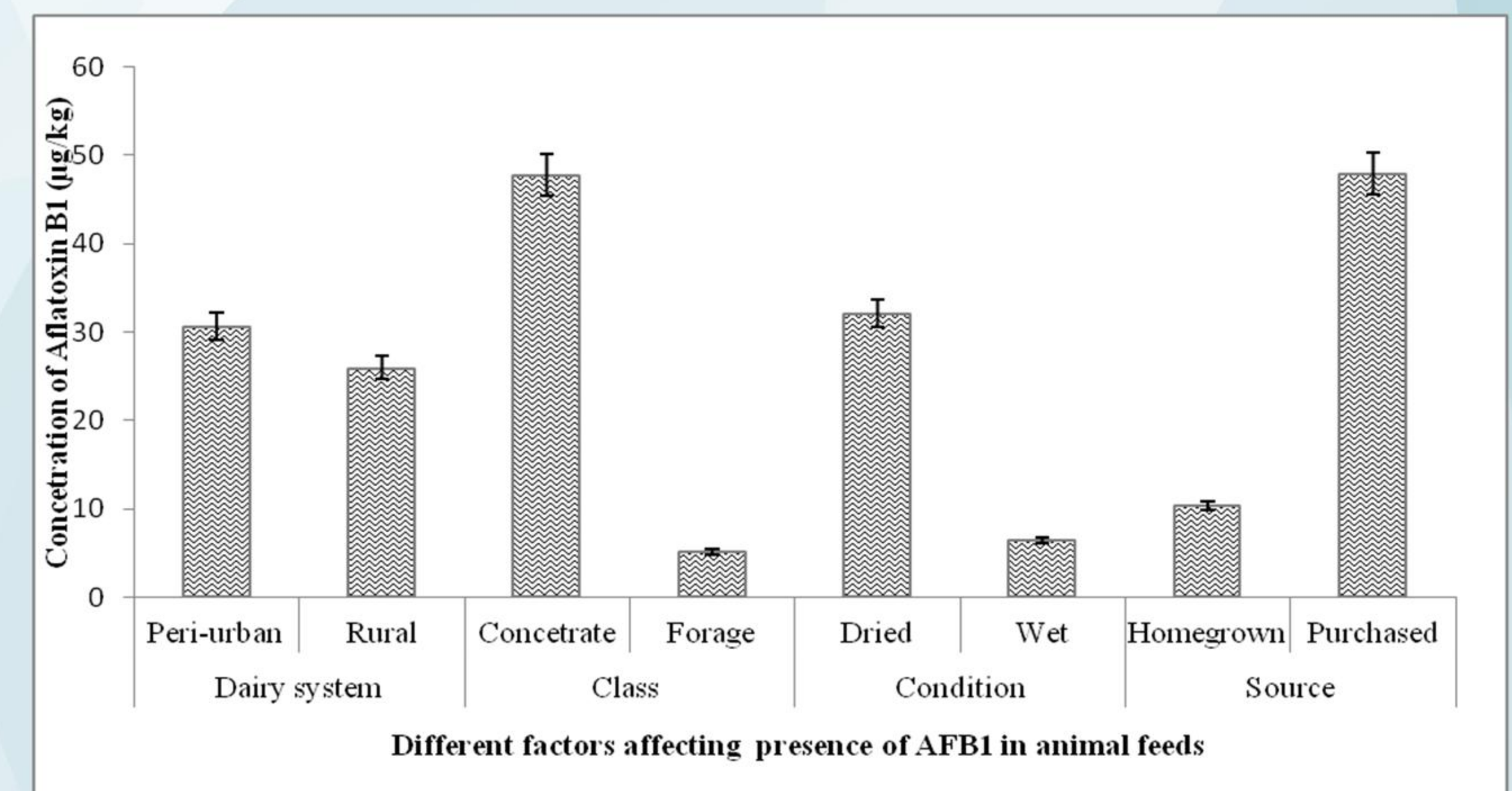


Dairy cows feeding on on-farm formulated feeds

## RESULTS



Aflatoxin M<sub>1</sub> concentrations along the peri-urban dairy system exceeded the EU limits of 0.05 µg/L.



Levels of AFB<sub>1</sub> (56%) and DON (63%) in animals feeds was significantly ( $P < 0.05$ ) high and was determined by the type of feed which was either concentrate or forage and the source of the feed which was either commercial or farm-sourced

## CONCLUSION

Therefore there was a higher public health risk of AFM<sub>1</sub> in peri-urban system. The results obtained from this study indicate that the peri-urban dairy system which is intensive faces the challenge of quality feeds and one contributing factor is the on-farm production and handling of animal feeds.

### ACKNOWLEDGEMENT

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### REFERENCE

Makau CM, Matofari JM, Muliro PS & Bebe BO (2016) Aflatoxin B<sub>1</sub> and Deoxynivalenol contamination of dairy feeds and presence of Aflatoxin M<sub>1</sub> contamination in milk from smallholder dairy systems in Nakuru Kenya. *International Journal of food contamination* 3:6 doi:10.1186/s40550-016-0033-7