



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Enhance Project:

Aflatoxin Mitigation Through Education, Intervention, and Policy

4th Annual Innovation Platform Meeting

April 2, 2019

Kigali, Rwanda



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Rwanda FDA

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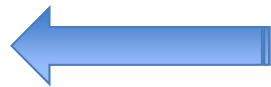


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CONTEXT OF MILK CONTAMINATION



Contaminated milk with AFM1



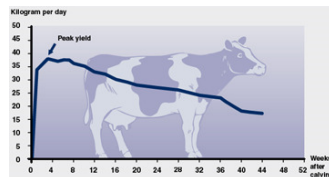
AFB1 ---> AFM1



Consequences



Consumers' exposure



Low milk production

FOCUS PROJECT

Feed Processors: ↑ Aflatoxins

Feed Vendors : ↑ Aflatoxins

Dairy Farmers: ↑ Aflatoxins

FEED VALUE CHAIN

**Milk Contamination
with AFM1**

**WHAT
TO DO?**



ENHANCE PROJECT RWANDA

Examine on-farm use of mycotoxin binders/sequesters in dairy feed as a strategy to reduce aflatoxin excretion in milk.

Document relevant seasonal fluctuations of aflatoxin contamination in feeds, feed ingredients, and milk (and contributing factors) to inform RwaFDA policy standards and their implementation.

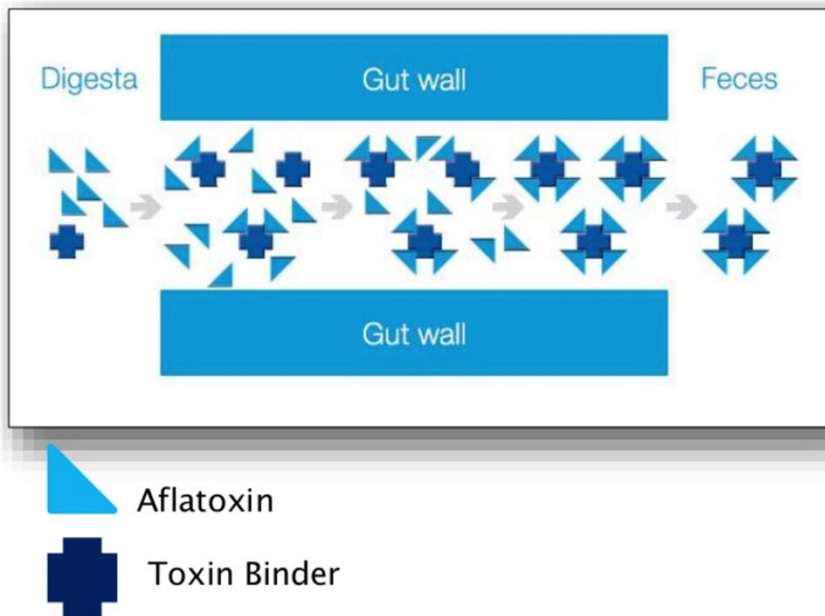
Educate consumers and dairy farmers about aflatoxin contamination and prevention in dairy feed and milk.



Dairy Producer

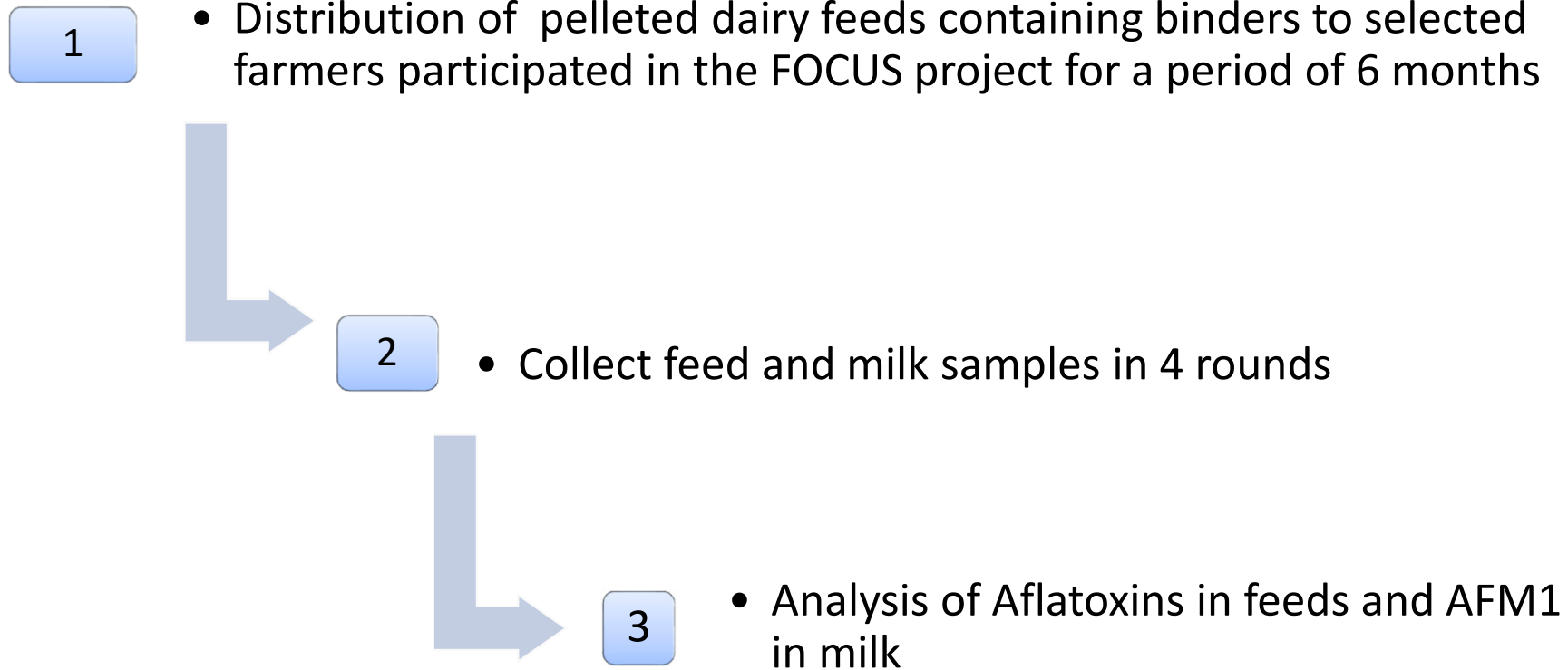


1. USE OF AFLATOXIN BINDERS/SEQUESTERS



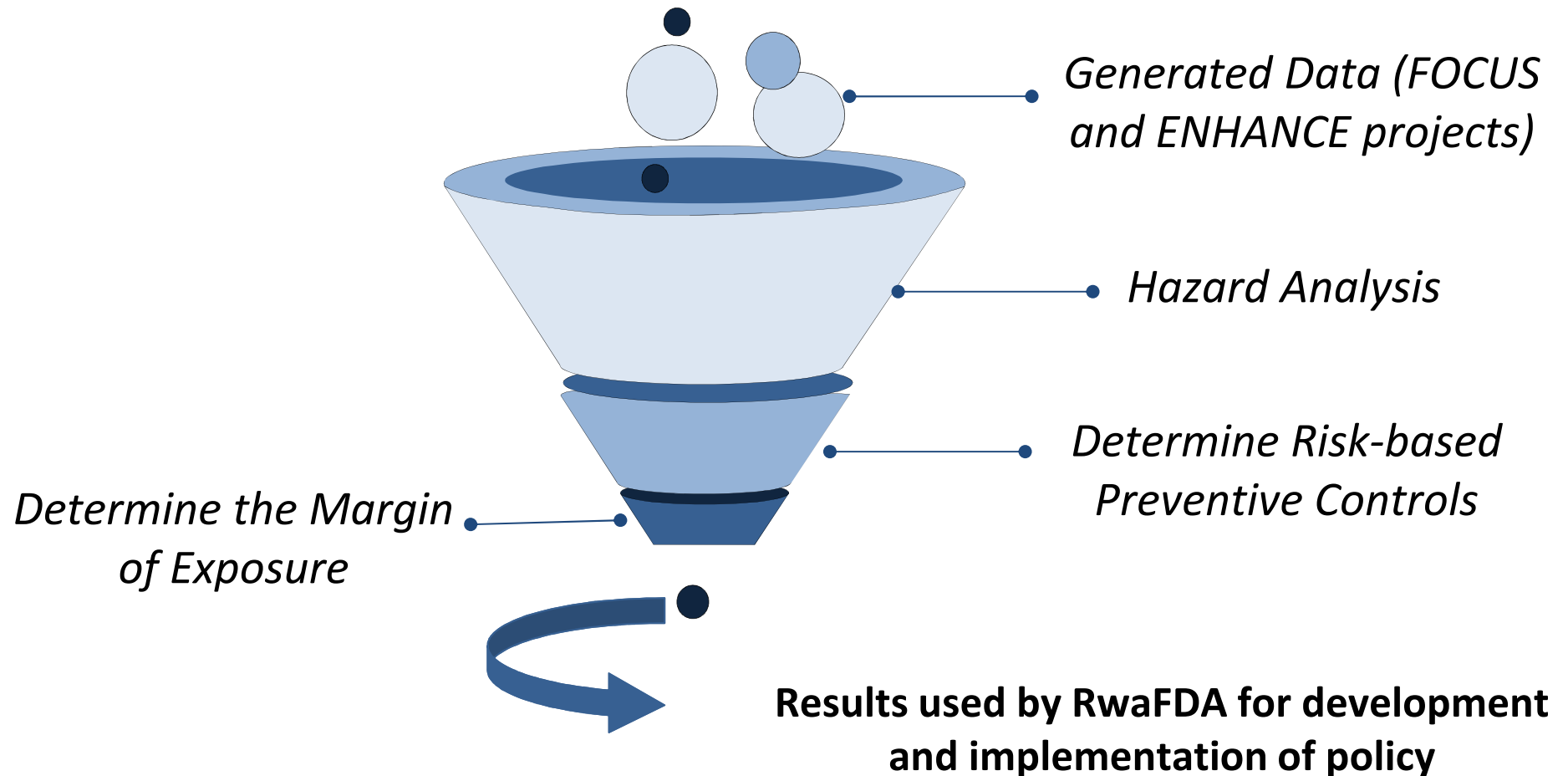
- **BINDERS:** Substances that bind to aflatoxins and hinder their absorption
- Decrease their bioavailability
- Decrease the AFM1 secretion in milk

Experimental Design



Expected Results: Evidence-based research for the application of binders and reduction of AFM1 in milk in Rwanda

2. HAZARD ANALYSIS FOR AFLATOXIN IN DAIRY FEED AND MILK



Expected Results: Identify bottlenecks to achieving control over aflatoxin contamination of dairy feeds, and subsequently milk

3. AWARENESS CREATION OF AFLATOXIN EFFECTS AND PREVENTION MEASURES



- Development of teaching materials to raise awareness of aflatoxin dangers in collaboration RwaFDA



Borozi, Twongere Umusaruro w'ibikomoka ku Matungo Turwanya Aflatoxine

AFLATOXINE NI IKI ?

- Aflatoxine ni urukomatanye rw'uburozi ruterwa n'uruhumbu mu binyampeke nko mu bigori, ubunyobwa no mu biryo by'amatungo mu gihe cy'ubuherere buri hejuru.
- Iyo ibiryo by'amatungo birimo aflatoxine bigira ingaruka ku buzima bw'abantu ndetse no ku musaruro.
 - Bishobora kugabanya umukamo n'amagi. Ku rugero rwo hejuru, bishobora gutera imfu.
 - Mikotokine ishobora kujya mu mata, mu magi no mu nyama ndetse n'umuntu ubirye.
- Aflatoxine ifite ingaruka mbi ku buzima bw'umuntu.
 - Ishobora gutera kanseri y'umwijima, igihondo no kugwingira.
 - Abagore batwite n'abonsa, bariye ibiryo birimo aflatoxine banduza abana babo.



Likaze kontanturari wita zigija

WAKWIRINDA UTE AFLATOXINE ?



Kumisha no kubika ibigori n'ibiryo by'amatungo mu buryo buboneye.

Kutagaburira abantu ibigori cyangwa ubunyobwa bifite uruhumbu n'ibikomokaho.

Kutagaburira amatungo ibigori cyangwa ubunyobwa bifite uruhumbu.

Ku bindi bisabanuro, mwagana abaveterineri babegereye.

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TUMENYE "MYCOTOXINS" (Soma "MIKOTOKINE")

Mycotoxins Ni iki?

- "Mycotoxins" ni urukomatanye rw'uburozi ruterwa n'uruhumbu bikagira ingaruka mbi ku bantu n'amatungo.
- Hari ubwoko bwinshi bwa *mycotoxins*
- Iziganje mu bihingwa muri aka karere ni *aflatoxine* na *fumonisine*.

Mycotoxins ziva he?

- *Mycotoxins* ziboneka mu mirima aho uruhumbu rwibasira ibihingwa bimwe na bimwe harimo: ibigori, ubunyobwa, umuceri n'ibindi.

Ni ryari *mycotoxins* zifata ibihingwa?

- *Mycotoxins* zikunze kuboneka mu binyampeke ndetse n'ibikomokaho.
- Mu gihe bitinze gusarurwa, gutonorwa no mu gihe bibitswe nabi (ubuherere buri hejuru, hagera imungu cyangwa imbeba), uruhumbu na *mycotoxine* biriyongera.

Ni izihe Ngaruka ziterwa na *mycotoxins*?

- *Mycotoxins* zishobora gutera kanseri y'umwijima, igihondo, kugwingira n'ibindi.
- Mu gihe abagore batwite n'abonsa bariye ibiryo birimo *mycotoxins* bigira ingaruka ku bana babo.
- Iyo amatungo agaburirye ibiryo birimo *mycotoxins* umusaruro wayo uragabanuka.
- *Mycotoxins* ziturutse ku biryo by'amatungo zishobora gukwirakwizwa mu mata, mu magi no mu nyama, bikaba byakwanduzza abantu babirye.



Ubunyobwa bifite uruhumbu



Ibigori bifite uruhumbu

Ni Gute Wakwirinda *Mycotoxins*?

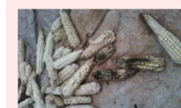
1. Sarura ku gihe.
2. Tonora ibigori ukimara kubisarura.
3. Umisha ibigori ukimara kubisarura ku rugero rw'ubuherere rungana na 13%.
4. Hunika ibigori byumishijwe neza ahantu hasukuye, mu mifuka n'ibigeza byabugenewe.

Ibyo witaho mu gasurura

- Sarura ikigori gifite ubuherere buri hagati ya 20-25%.
- Wibyumishiriza mu murima bitewe.
- Tandukanya ibirwaye n'ibizima.
- Bishishure kugira ngo byume vuba.
- Vungura ibigori ukoresheje uburyo butangiza impeke. (Impeke zangiritse zibasirwa byoroshye n'uruhumbu ndetse na *mycotoxins*).

Ni gute warinda *mycotoxins* mu biryo by'amatungo?

- Irinde kugura, kugurisha cyangwa kugabura ibiryo birimo uruhumbu.
- Pimisha ibiryo by'amatungo muri laboratoire kuri *mycotoxins*.
- Irinde kubika ibiryo by'amatungo igihe kirekire.
- Tereka ibiryo by'amatungo ku mbaho, ahantu humutse neza.
- Genzura niba bifite ibara n'impumuro y'umwimerere.



Likensye ibindi bisabanuro wahomagaye kuri id numero: 0787247248, 0782555390, 0787869675

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LEVERAGE PROJECTS

- Aflatoxin-Control Challenge in Africa Award – Efficacy of Cold Plasma in Degrading Aflatoxins – Kizito Nishimwe
 - 3rd Partnership for Aflatoxin Control in Africa (PACA) Partnership Platform Meeting
- Training and Certification Program on Sampling, Testing and Grading for the Grain Value Chain in the East African Community Region
 - USDA-FAS SCRP Project
- Enhancement of Safety and Value Addition on Agricultural Products in Rwanda
 - To reduce postharvest losses in maize for improved food and feed safety through the use of integrated management strategies
 - To reduce postharvest losses in fruit & vegetables by promoting proper handling and small-scale processing technologies
 - To improve milk and meat quality by enhancing awareness on hygiene and sanitation among the value chain actors
- Consortium for Innovation in Post-Harvest Loss and Food Waste Reduction
 - Foundation for Food & Agriculture Research and Rockefeller Foundation
 - ISU, UMD, WUR, VC, UN, KNUST, SU, ZU, SP



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