

Evaluation of aflatoxin contamination of soybean and soybean milk in Rwanda

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Project summary

Mycotoxin contamination is a problem of food and feed safety for grains and other field crops. Soybean is susceptible to the growth of mycotoxin-producing moulds which may contaminate this commodity, producing secondary metabolites including aflatoxins, trichothecenes and cytochalasins. Aflatoxins, produced by different *Aspergillus* species, have been shown to contribute to, among other health problems: liver damage and cancer, likely stunt children's development and are immunosuppressive in other mammalian systems. High levels of aflatoxin contamination that has been reported in other commodities across the region. However, little research work, which only provides scanty literature on mycotoxin contamination in soybean is available. The extent of aflatoxin contamination in soybean and soybean-derived foods is not well understood in Rwanda. To assess this, 300 soybean samples were collected from markets, households and RAB stations and analyzed for aflatoxin levels. Given the importance of soymilk as a RAB strategy to improve nutritional security in children and adults, this study provides vital baseline information.

Outputs

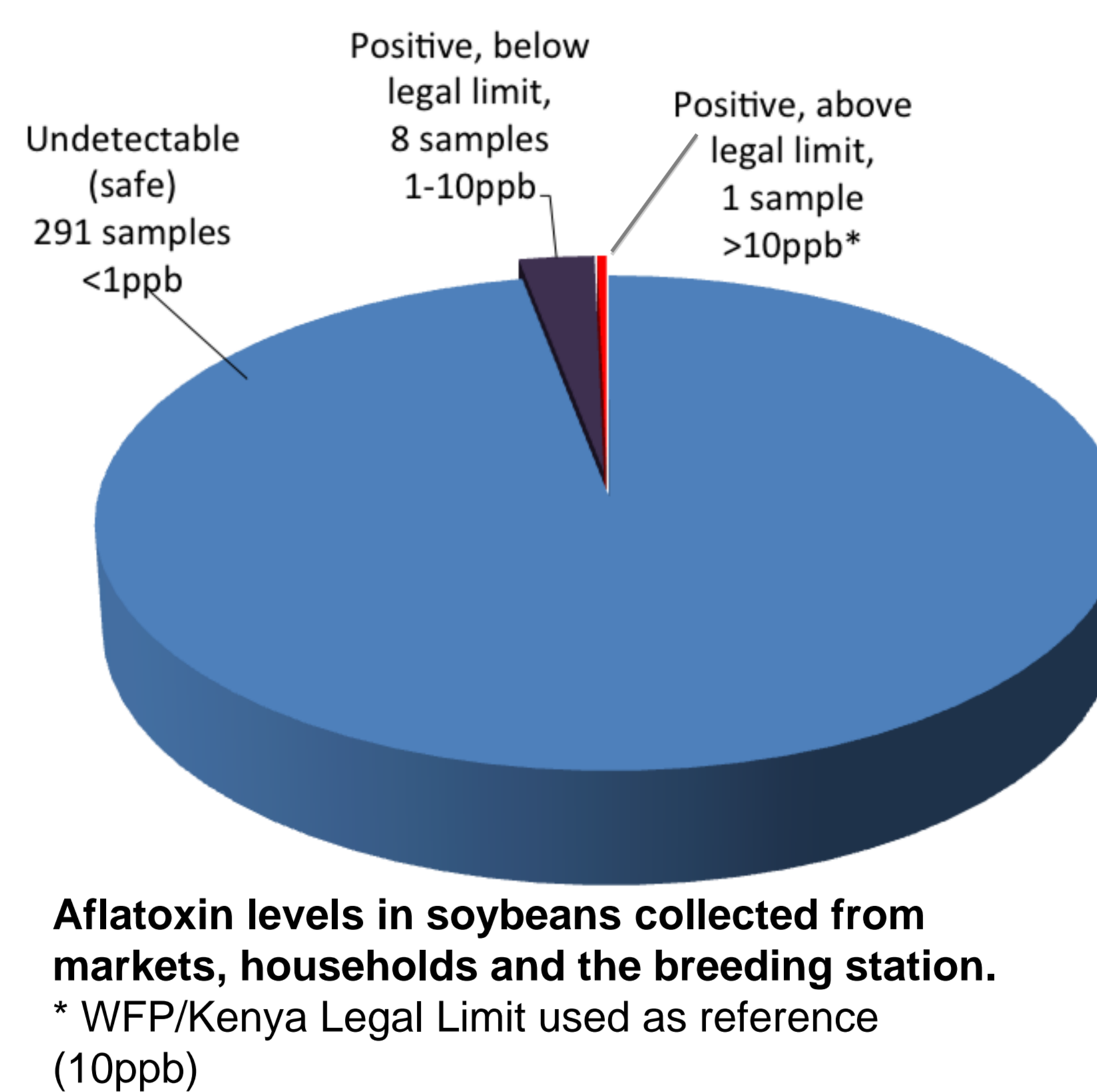
- Baseline information on aflatoxin contamination of soybean and soymilk in Rwanda; the concentrations found in this survey are low.
- Aflatoxin was undetectable in all soymilk samples (n=50).
- Capacity building in aflatoxin analysis and other skills were gained at the BecA-ILRI Hub, for transfer back to Rwanda.
- Soybean is less contaminated by aflatoxin compared to other food grains (previous ABCFs and other information).

Partnerships

- Rwanda Agriculture Board (RAB)
- Department of Food Science and Technology, Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya
- BecA-ILRI Hub



Soybean milk preparation training of women consumers, Health Center, Rubona, Rwanda by Marguerite Niyibituronsa (lead researcher and ABCF fellow).



Outcomes

- Soybean milk production and consumption will be promoted further (awareness and capacity) as a safe and nutritious food (including for weaning).
- Safe soybean milk will be consumed by more people.
- Increased soybean production for consumption and income generation to improve nutritional status and reduce poverty.
- Enhanced skills to address aflatoxin contamination in food and feeds will be transferred back to Rwanda, to contribute to the improved health status by a woman scientist with consumers including women.
- Connection between agriculture, health and nutrition research.
- Contribution to RAB deliverables to ensure food and nutrition security.

Potential to scale-up

- Existing extension to be enhanced and expanded with nutrition/food safety messaging, for more consumers.
- Relevance of identifying low risk, nutritious food (soybean) to policymakers in Rwanda and around the world (4.5 billion people estimated to be at risk of aflatoxin exposure globally).
- Communicated findings with national, regional and continental initiatives, including the African Union Commission's Partnership for Aflatoxin Control in Africa (PACA).

For more information on this project contact Marguerite Niyibituronsa (Assistant Researcher Fellow, Rwanda Agriculture Board, niyibituronsam@gmail.com), or Jagger Harvey (Senior Scientist, BecA-ILRI Hub, j.harvey@cgiar.org).

