PREVENTION AND MANAGEMENT OF AFLATOXIN IN ZAMBIA

A presentation made at the Aflatoxin Challenges Workshop
Lilongwe, Malawi
March 11 - 13
Population of Zambia: approx. 14 million with almost 57% of its population living in urban areas.

• **Highly Urbanised**

Zambia, like many African countries, **poverty, poor nutrition and food insecurity are widespread**

- In rural areas - food insecurity is highly linked to failure of crop production
- While in urban areas it linked to unemployment, and increases in food prices.

Provision of safe food is high on the government’s agenda
STATUS OF AFLATOXIN RESEARCH IN ZAMBIA

Biocontrol - IITA/ZARI/NISIR/USDA –UA

- Aflatoxin biocontrol laboratory equipped, fully functional
- Aflasafe application in its year 2
- This season over 165 ha treated by aflasafe to by the Project
- A further 500 – 600 ha by collaborating partners – COMACO, ADRA, Profit, ETG

- Zambia Aflasafe registration process this year

Other management option – ICRISAT/ZARI

- Over last two year more than 1200 Small-scale farmers participated in various aspects of the project and exposed/trained in the best agronomic and postharvest practices
- Aflatoxin testing lab at Msekera-Chipata, equipped and near completion
- Two technician trained in India and ICRISAT-Malawi last year
Food safety system in Zambia

- Food control services in Zambia are distributed across the following stakeholders namely,
  - Ministries of Health (MOH),
  - Ministry of Agriculture and Livestock (MAL),
  - Ministry of Commerce, Trade and Industry (MCTI),
  - Ministry of Community Development, Mother and Child Health (MCDMCH)
  - Ministry of Local government and Housing (MLGH).
  - Ministry of Education, Science and Vocational Training, and Early Education (MESVTEE)
  - Zambia Bureau of Standards (ZABS)
  - Zambia Consumers Association (ZCA)
  - Zambia Competitive Commission (ZCC)
• **MOH**: responsible for policy formulation, development and review of legislation pertaining to food safety and implementation at National level, done through Department of Public Health. As from last year - houses the National Food Safety Committee (NFSC). The committee is not funded and works on an ad-hoc basis.

• **MCDMCH** ensures policy implementation through its District Community Health boards

• **MAL** provides the same service through the plant quarantine and the livestock development services whose responsibilities are for protection of plant and animal diseases respectively.

• **MCTI** responsible for registration of food industries.
- **MLGH** enforces food safety regulations through local authorities (Councils).
- **MESVTEE** responsible for co-ordination of all issues related to generically modified organism.
- **ZABS**: Agency responsible for the development of voluntary standards for industries and certifications of products.
- **ZCA**: handles consumers and food related complaints, which are later, referred to the appropriate authority.
- **ZCC**: Promotes fair competition in trade and handles consumer’s complaints.

- The Ministry of Health is the Codex Focal Point in Zambia.
A comprehensive Food and Drugs Act exist.

However, the regulations that govern the food component of this act are yet to be implemented efficiently and effectively to ensure the Safety and Quality of Food.

The Laws include:

- Food and Drugs Act and Public Health Act Cap 295. Food regulations of 2001
- Environmental protection and pollution control Act Cap 204.
- Plant Pests Disease Act Cap 233,
- Stock Disease Control Act Cap 252,
- Cattle Slaughter Control Act Cap 250
- Competition and fair trading Act Cap 416
Existing maximum accepted tolerable limit for Aflatoxin in Zambia (Source ZABS):

<table>
<thead>
<tr>
<th>Commodity</th>
<th>ZABS Standard</th>
<th>Year</th>
<th>Aflatoxin (ppb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilseed</td>
<td>ZS 234</td>
<td>2005</td>
<td>5</td>
</tr>
<tr>
<td>Wheat flour</td>
<td>ZS 435</td>
<td>2006</td>
<td>12.5</td>
</tr>
<tr>
<td>Wheat flour</td>
<td>ZS 435</td>
<td>2006</td>
<td>12.5</td>
</tr>
<tr>
<td>Peanuts</td>
<td>ZS 723</td>
<td>2008</td>
<td>15</td>
</tr>
<tr>
<td>Pig feed</td>
<td>ZS 018</td>
<td>2010</td>
<td>20</td>
</tr>
<tr>
<td>Poultry feed</td>
<td>ZS 017</td>
<td>2011</td>
<td>10</td>
</tr>
</tbody>
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Limitation of current laws and regulations:

- Inadequate legislation e.g. doesn’t cover other products such as milk and maize
- Does not provide penalties for offenders
Laboratory services for aflatoxin testing

There are five (5) laboratories that can carry out aflatoxins testing

5 Labs are:

- Two at Mount Makulu Central Research Station, Chilanga
- Zambia Bureau of Standards
- Food and Drug Control Laboratory, MOH
- Private owned Lab (Eastern Province Farmer Cooperative Ltd), Chipata
- Food and Drug Control Lab
  - quality (Present/Absent)
- Two Labs at Mount Makulu
  - One dedicated to Biocontrol work
  - Other lab conducts demand driven testing and reference for the aflatoxin biocontrol lab
- ZABS Lab - confirmatory purpose
Laboratory services are accessible by farmers

**Groundnuts**
- Only challenge - distance; most labs located in Lusaka/Chilanga and not in major groundnut producing areas
- Due to high cost associated with testing, farmers groups don’t bother rather leave it to the would-be exporter/processor

**Maize and maize by products**
- Aflatoxin testing not regular unless as a trade requirement i.e., the case with AFGRI whose export permit to Namibia required a free aflatoxin certification
Aflatoxin monitoring and surveillance

- Not consistent
- Demand-driven
- No lab dedicated to this activity as consequence no data generated; Any policy formulation that may be there is based on individual studies or stand-a-lone research projects by research or academia
Public awareness on Aflatoxin contamination and Its Implications

- Very little;
- Any awareness activity consequence of being requirement for a specific project mandate
- No institutionalized campaign done
- Also as result of Individual scientists’ research activities
- Though policy on food Safety exist and aflatoxin mentioned but not given the importance it deserves

*Due to recent awareness of aflatoxin as a consequence of the FtF program - The Zambia Government Citizen Economic Empowerment Commission recently ran an advert that it would finance Aflatoxin control business in Petauke (EP) but this has not taken off*
Challenges

- Lack of cost effective testing - farmer or wholesaler of raw maize and groundnuts not motivated to spend on aflatoxin testing rather leave it to the exporter/processor
- Inadequate coordination and communication among the various food regulatory agencies in the food safety system.
- Inadequate capacity/or resources to enforce food regulation effectively
- Very little public awareness about aflatoxin contamination and its implications (huge information gap in the farming communities)
• Laboratories not yet accredited for aflatoxin analysis hence does not guarantee international recognition to certification made in respect to consignments groundnut or processed peanuts destined for the international market. This also affects access to target market.