



Bringing Scientific and Technical resources to the African Continent (NITA/TRN/875)

## **QUANTITATIVE DETERMINATION OF AFLATOXIN (B1, B2, B3, G1&G2) IN FEED STUFFS CEREALS AND PEANUTS & MILK (24<sup>th</sup> – 28<sup>th</sup> JULY 2023)**

### **Course Overview:**

Validated method for determination of four major aflatoxin B1B2G2G2 will be adopted using high precision detection techniques for quantification i.e. TLC, HPLC-FLD and LC-MS. Participants will be undertaken through the principles of sampling, sample preparation, clean up, Hazards, safety precautions and testing

### **Who is this course for?**

This course is ideally tailored towards either the experienced user who is looking for a refresher course, or towards a new user who is looking for an introduction to the analytical technique for Aflatoxin analysis.

### **Previous knowledge**

Background knowledge of TLC, HPLC or Mass Spectrometry may be useful but not necessary, as all the essentials are covered in the course. Previous experience using TLC, HPLC-FLC & LC-MS equipment can be beneficial.

### **ANNEX**

- **SCOPE & FIELD APPLICATION**
- **REFERENCES**
- **PRINCIPLE**
- **HAZARDS**
- **SAFETY & PRECAUTION IN TESTING**
- **REAGENTS AND APPARATUS**
- **SAMPLING & SAMPLE PREPARATION**
- **QUALITY CONTROL CHECKS**
- **PROCEDURE FOR SPIKING SAMPLES**
- **METHOD FOR CALCULATION**
- **VALIDATION OF LOD/LOQ**



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Day	Morning	Afternoon
<b>Monday</b>	<b>Welcome and opening remarks</b> Opening Remarks <ul style="list-style-type: none"> <li>• Introduction of facilitators and meeting participants</li> <li>• Objectives of the training, expected outcomes and review of the agenda</li> </ul> Introduction <ul style="list-style-type: none"> <li>• Principles of Aflatoxin analysis</li> <li>• Principles &amp; operation of TLC,HPLC&amp;LC-MS</li> </ul>	<b>Laboratory session</b> <ul style="list-style-type: none"> <li>• Sampling</li> <li>• Sample preparation, reagents and apparatus</li> <li>• TLC Set up</li> <li>• UV light set up</li> <li>• HPLC-FLD</li> <li>• LC-MS</li> </ul>
<b>Tuesday</b>	<b>Sample preparation techniques overview</b> <ul style="list-style-type: none"> <li>• For TLC</li> <li>• For HPLC</li> <li>• For LC-MS</li> <li>• Post Column derivatization</li> <li>• Pre Column</li> </ul>	<b>Laboratory session</b> <ul style="list-style-type: none"> <li>• Preparation of Cereals sample</li> <li>• Preparation of feeds samples</li> <li>• Preparation of peanuts samples</li> <li>• Sample preparation of Milk Samples</li> <li>• Clean up procedure</li> <li>•</li> </ul>
<b>Wednesday</b>	<b>Calibration methods&amp; Preparation of standard working solutions</b> <ul style="list-style-type: none"> <li>• Internal standard</li> <li>• Standard addition</li> <li>• Calibration curve</li> </ul> Use of quality controls <ul style="list-style-type: none"> <li>• Internal QCs – spiking, HRM, replicate testing</li> <li>• External QCs – CRM, PTs, ILC</li> </ul>	<b>Laboratory session</b> <ul style="list-style-type: none"> <li>• Preparation of standards</li> <li>• Preparation of QCs</li> <li>• Method development</li> <li>• Sample analysis using TLC</li> <li>• Sample analysis by LC-MS</li> </ul>
<b>Thursday</b>	<b>Interferences &amp; Validation of uncertainty</b> <ul style="list-style-type: none"> <li>• Matrix interferences</li> <li>• interferences</li> </ul> Data analysis <ul style="list-style-type: none"> <li>• Results comparison</li> </ul>	Analysis of data & Calculation of concentration  Method Validation
<b>Friday</b>	(Discussion)	Course overview Conclusion & Certificate presentation
	<b>Dates:24<sup>th</sup>– 28<sup>th</sup> July 2023</b> <b>Deadline:12<sup>th</sup> July 2023</b> <b>Cost;</b> <b>Ksh. 78,880.00 or USD 800.00</b>	<b>Nairobi</b>