Training Course on Mycotoxin Management and Food Safety in Grain Production

Professional Development Training Course Outline

Category	Agriculture	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Mycotoxin contamination in grain production poses a significant threat to global food safety, food security, and public health. These toxic secondary metabolites produced by fungi can lead to economic losses, compromised grain quality, and serious health risks in humans and livestock. Therefore, robust mycotoxin management strategies, food safety controls, and grain quality assurance are essential to mitigate these threats and ensure a sustainable agricultural system.

Training Course on Mycotoxin Management and Food Safety in Grain Production is designed to equip stakeholders across the grain value chain with practical, science-based knowledge on mycotoxin risk assessment, post-harvest handling, regulatory compliance, and preventive control measures. Using real-world case studies and evidence-based methods, participants will gain skills to identify, monitor, and manage mycotoxins from pre-harvest to storage, improving food safety, regulatory alignment, and consumer health.

Programme Curriculum

Training Course on Mycotoxin Management and Food Safety in Grain Production

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participants will gain skills to identify, monitor, and manage mycotoxins from pre-harvest to storage, improving food safety, regulatory alignment, and consumer health.

Course Objectives

1. Understand the biological origin of mycotoxins in cereals and grains.
2. Identify common mycotoxigenic fungi and the environmental factors promoting contamination.
3. Apply good agricultural practices (GAPs) to minimize mycotoxin presence during cultivation.
4. Implement integrated pest and mold management (IPMM) in grain production.
5. Monitor and analyze critical control points using HACCP principles.
6. Conduct mycotoxin risk assessments using up-to-date detection techniques.
7. Evaluate toxin threshold levels based on international regulatory standards (Codex, EU, FDA).
8. Design post-harvest handling and storage strategies to reduce contamination.
9. Promote supply chain traceability and quality assurance systems.
10. Ensure compliance with food safety regulations and certification programs.
11. Develop emergency response strategies in the event of contamination outbreaks.
12. Integrate digital tools and sensors in mycotoxin detection and management.
13. Promote consumer education and awareness on food safety and grain hygiene.

Target Audiences

1. Agricultural Extension Officers
2. Food Safety Inspectors
3. Grain Farmers and Cooperatives
4. Food Quality Assurance Managers
5. Agribusiness Entrepreneurs
6. Laboratory Technicians and Analysts
7. Regulatory and Compliance Officers
8. University Students in Agriculture and Food Science

Course Duration: 10 days

Course Modules

Module 1: Introduction to Mycotoxins

- Definition and classification
- Major mycotoxins in grains
- Health and economic impacts
- Fungal ecology and life cycles
- Risk factors in different climates
- **Case Study**: Aflatoxin outbreak in maize in Kenya

Module 2: Mycotoxigenic Fungi Identification

- Aspergillus, Fusarium, and Penicillium species
- Environmental triggers
- Spore distribution in fields
- Visual and microscopic identification
- Detection kits and tools
- **Case Study**: Fusarium in wheat in Canada

Module 3: Pre-Harvest Contamination Control

- Crop rotation and resistant varieties

- Pest and weed management
- Timing of planting and harvesting
- Soil health and drainage
- GAP implementation
- **Case Study**: GAP adoption in Uganda grain farms

Module 4: Post-Harvest Management Techniques

- Drying and aeration
- Harvest moisture control
- Cleaning and sorting practices
- Storage temperature and humidity
- Fumigation protocols
- **Case Study**: Post-harvest maize handling in Nigeria

Module 5: Mycotoxin Sampling and Testing

- Sampling techniques
- Sample storage and transportation
- Analytical methods (HPLC, ELISA)
- Field test kits
- Laboratory QA/QC protocols
- **Case Study**: Testing facility audit in Tanzania

Module 6: Food Safety Regulations and Standards

- Codex Alimentarius
- EU and US regulations
- Local food law overview
- Threshold limits for toxins
- Certification programs (GAP, ISO)
- **Case Study**: Regulatory reform in Ethiopia

Module 7: HACCP in Grain Production

- Hazard identification
- Critical control point mapping
- Monitoring systems
- Documentation and traceability
- Corrective action plans
- **Case Study**: HACCP success in South African grain mills

Module 8: Storage Facility Management

- Construction materials
- Stack and pallet arrangements
- Monitoring pests and molds
- Ventilation and lighting
- Pest exclusion systems
- **Case Study**: Storage facility upgrade in India

Module 9: Climate-Smart Agriculture and Mycotoxins

- Climate impact on fungal growth
- Predictive weather modeling
- Agroecological zoning

- Resilient crop planning
- Sustainable land management
- **Case Study**: Climate-smart farming in Zambia

Module 10: Biotechnology in Mycotoxin Control

- Biocontrol agents (e.g., Aflasafe)
- GM crops and resistance
- Enzyme detoxification
- DNA-based detection
- Bio-pesticides
- **Case Study**: Use of Aflasafe in Nigeria

Module 11: Digital Tools and Sensors

- IoT grain monitoring systems
- Blockchain for traceability
- Mobile apps for farmers
- Satellite imaging
- Real-time alert systems
- **Case Study**: Digital transformation in Brazilian grain sector

Module 12: Risk Communication and Public Awareness

- Developing outreach campaigns
- Stakeholder engagement
- Crisis communication
- Food labeling practices
- Consumer protection laws
- **Case Study**: Community awareness project in Rwanda

Module 13: Economic Implications of Mycotoxin Contamination

- Trade restrictions and bans
- Farmer income loss
- Insurance mechanisms
- Cost-benefit of control systems
- Government subsidies
- **Case Study**: Export losses in East Africa

Module 14: Integrated Mycotoxin Management Framework

- Systemic approach to control
- Collaboration across sectors
- PPP models in food safety
- Capacity building
- Monitoring and evaluation
- **Case Study**: National mycotoxin strategy in Ghana

Module 15: Final Assessment and Action Planning

- Summary of modules
- Self-assessment quiz
- Development of action plans
- Peer group feedback
- Certification requirements

- **Case Study**: Trainee success stories and testimonials

Training Methodology

- Lectures by food safety experts and agronomists
- Hands-on practical sessions and lab demonstrations
- Case study analysis and group discussions
- Field visits to farms and storage facilities
- Interactive quizzes, assessments, and feedback sessions

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

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