

Aim

The goal of this training workshop is to demonstrate and teach both traditional methods and advanced molecular, chemical, and immunological techniques for the rapid, robust, and user-friendly identification of mycotoxins and toxigenic fungi in the food chain. A significant portion of the workshop will focus on practical laboratory training, ensuring participants gain experience with these cutting-edge systems.

Introduction

Mycotoxin contamination of food and feed is a significant concern for food safety worldwide. In many developing countries, agriculture plays a crucial role in the economy, serving as vital sources of foreign exchange to support economic activities and essential services. However, these crops are highly susceptible to fungal contamination, leading to the production of mycotoxins. These toxic metabolites pose serious health risks to both humans and animals and can severely impact food quality, resulting in significant economic losses. The cultivation, handling, and storage of food and animal feed contribute to the proliferation of molds that produce mycotoxins, further exacerbating the threat to public health and food security.

TRAINING WORKSHOP

ON

“ADVANCED ANALYTICAL TECHNIQUES FOR MYCOTOXIN DETECTION AND BIOCHEMICAL DETOXIFICATION STRATEGIES”

UNDER

HEC NRPU PROJECT NO. 16850

(For Post-graduate students only)

January 02-03, 2025



UNIVERSITY OF VETERINARY AND
ANIMAL SCIENCES LAHORE

Organized by:

Quality Operations Laboratory
University of Veterinary and Animal Sciences
Lahore-Pakistan
www.uvas.edu.pk

Topics

- **Lectures:**
 - Application of molecular techniques for the accurate identification and quantification of toxigenic fungi.
 - Comprehensive overview of traditional and advanced methods for detecting mycotoxins and toxigenic fungi.
 - Extraction techniques and optimized sample preparation protocols for mycotoxin analysis.
 - Analysis of mycotoxins using advanced analytical techniques.
 - Biochemical detoxification strategies for mycotoxins, focusing on innovative approaches to mitigate contamination in the food chain.
- **Laboratory:**
 - Morphological identification of key toxigenic species, including *Aspergillus*, *Penicillium*, and *Fusarium*.
 - Application of molecular techniques, for the precise identification of toxigenic fungi.
 - Chemical and immunochemical analysis of mycotoxins such as Aflatoxins, ochratoxin A, and Fumonisin using advanced techniques, including Enzyme-Linked Immunosorbent Assay (ELISA), High-Performance Liquid Chromatography (HPLC), and Liquid Chromatography-Mass Spectrometry (LC-MS).

Program

Thursday 02nd January, 2025

Inaugural session

- 08:00 Registration
09:00 Recitation of Holy Quran
09:10 Welcome – Introduction Workshop Program
09:20 Refreshment

Technical Session-I

- 10:00 Fungal Contamination in Foods: Causes and Consequences
(Prof. Dr. Aftab Ahmad Anjum)
10:30 Regulations and Standards for Mycotoxin Contamination in Food and Feed
(Prof. Dr. Aamir Ghafoor)

- 11:00 Role of Probiotics for mycotoxin detoxification (Prof. Dr. Muhammad Nawaz)

- 11:30 Molecular characterization of different fungal strains (Prof. Dr. Muhammad Zubair Shabbir)

- 12:00 Traditional and Modern Techniques for Mycotoxin Detection (Dr. Mateen Abbas)

- 01:00 Lunch and Prayer break

Technical Session-II (Practical)

- 02:00 Isolation and Identification of fungi
(Miss. Ayesha Saeed)

- 02:45 Molecular detection of fungi by PCR
(Miss. Tehreem Ali)

- 03:30 HPLC Analysis: Extraction and Sample preparation (Ms. Zara Hussain/Miss. Memona Akram)



Friday 03rd January, 2025

Technical Session-I (Practical)

- 08:30 Quantification of mycotoxins by ELISA
(Ms. Zara Hussain/Miss. Attia Abdullah)

- 10:00 Quantitative estimation of mycotoxins by HPLC (Dr. Abdul Muqet Khan)

- 11:00 Estimation of Mycotoxins using LCMS
(Dr. Mateen Abbas)

Concluding Ceremony

- 12:00 Certificate Distribution Ceremony

Patron-in-Chief

- Meritorious Professor
Dr. Muhammad Younus
(DLA.I, T.I)
Vice Chancellor,
UVAS, Lahore

Patron

- Prof. Dr. Aneela Zameer Durrani
Dean, FVS, UVAS, Lahore

Chief Organizer

- Prof. Dr. Aftab Ahmad Anjum
Director, Institute of Microbiology,
UVAS, Lahore

Organizer

- Dr. Mateen Abbas (Workshop Secretary)
Coordinator, QOL
Cell No. 0333-6546752
E-mail: mateen.abbas@uvas.edu.pk

Venue

Quality Operations Laboratory (QOL)
University of Veterinary and Animal Sciences,
Lahore

Registration

Registration Link:

https://docs.google.com/forms/d/e/1FAIpQLScEaZRBvW8cBYUAV8hddKGOp0MT-8FtWf2gdDeIKae9c99YEg/viewform?usp=pp_url

Seats are limited (25 only); selected candidates will be contacted via email.