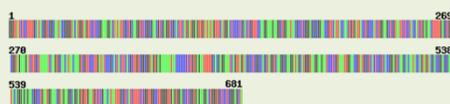




## National Training on

# Current approaches in fungal biology: Diversity analysis, identification and taxonomy of Oomycetes and Deuteromycetes fungi

4-13 November, 2019



**Programme Director**  
Anil K Saxena, Director  
**Course Coordinator**  
Alok K Srivastva  
**Course Co-coordinators**  
Sanjay K Goswami  
Hillol Chakdar  
Arjun Singh

### Introduction

Fungi cause many important and devastating plant diseases in different crop plants. Among these fungi Oomycetes (*Pythium*, *Phytophthora*, *Albugo*, *Sclerospora*) and Deuteromycetes (*Alternaria*, *Fusarium* and *Helminthosporium*) are of great economic importance. Many important diseases like damping off of seedlings, late blight of potato, white rust of crucifers and downy mildew are caused by Oomycetes fungi, while, blights, leaf spots, blast, anthracnose and wilt are caused by Deuteromycetes. Accurate detection and diagnosis of plant pathogens is very important for the effective management of plant diseases. Identification of Trichoderma and dark septate fungi is also important, which are effective bio-control agents and PGPF. A number of identification keys and methods are available for the proper and precise diagnosis of fungi in crop plants. However, some fungi like Oomycetes and Deuteromycetes need more detail studies for the accurate identification of these pathogens. There is a need of continuous and advanced studies to update the information on detection and diagnosis of these fungi, which further will be helpful for developing strategies for the effective management of the pathogens. Along with standard, conventional and classical methods, modern molecular biology tools based on PCR and DNA sequencing are being used to study fungal taxonomy and diversity. This training programme has been designed with an aim to deliver vital practical working knowledge on various classical as well as modern advancements in the area of diversity analysis, identification and taxonomy of Oomycetes and Deuteromycetes fungi e.g. *Pythium*, *Phytophthora*, *Albugo*, *Sclerospora* and *Alternaria*, *Fusarium* and *Helminthosporium* respectively. The training programme will be beneficial for Ph.D. students, scientists and faculties working in this area.

### Objectives

- To acquaint the trainees with the conventional methods of identification of Oomycetes and Deuteromycetes fungi i.e. *Pythium*, *Phytophthora*, *Albugo*, *Sclerospora* and *Alternaria*, *Fusarium* and *Helminthosporium* respectively. Trichoderma and dark septate fungi will also be covered in detail.
- To provide fundamental expert knowledge, experimental skills and techniques in diversity analysis and taxonomy of fungi.

**ICAR-National Bureau of Agriculturally Important Microorganisms (NBAIM)**  
Kushmaur, Mau Nath Bhanjan, Mau-275101, UP

## Methodology and content

Training would focus mainly on important Oomycetes and Deuteromycetes fungi e.g. *Pythium*, *Phytophthora*, *Albugo*, *Sclerospora* and *Alternaria*, *Fusarium* and *Helminthosporium* respectively. *Trichoderma* and dark septate fungi will also be covered. Hands-on training will be given on morphological, biochemical and physiological characterization of fungi. Practical and theory classes on different techniques i.e. PCR, fingerprinting and sequencing will be conducted to study identification and taxonomy of fungi. Hands-on training will also be given on the modern tools to study the fungal diversity and evolution. Use of computational tools and techniques for the study of diversity will be discussed.

A total of 16 sessions will be held consisting of lectures and hands on practical sessions which will personally be monitored and handled by the resource experts from Bureau and other reputed institutes.



ICAR-NBAIM

## About NBAIM

National Bureau of Agriculturally Important Microorganisms (NBAIM) is one of the premier institutions of Indian Council of Agricultural Research (ICAR) for microbiological research in India. The Bureau is aimed to work for the collection, conservation and preservation of agriculturally important microorganisms. The Bureau since its inception is dedicated to decipher and utilize microbial diversity of agricultural importance existing across the country. The Bureau also works in molecular microbiology, genomics, meta-omics and bio-informatics. Human Resource Development (HRD) is also an important mandatory activity of the Bureau. NBAIM successfully organized several national and international training programmes on different areas of microbial identification, characterization, molecular taxonomy, bio-control, plant-microbe interactions and the applications of bio-informatics. Microbial research at NBAIM basically focuses in the areas of microbial diversity analysis from extreme habitats, biological control of plant diseases, microbe mediated plant growth promotion, plant-microbe interaction, quality microbial management system with special emphasis on bio-systematics, DNA fingerprinting, microbial genomics and proteomics, meta-bolomics, stress tolerance in microbes and bio-informatics.

## Eligible participants

Research scholars, Post docs, Students, Technical officers, Scientists/Assistant Professors/Lecturers or above, from any university/institute/organization working in the area of biological sciences.

## Fees for the training

Rs. 5000.00 per trainee for students, research scholars, Technical officers, Scientists, Lecturers, Assistant Professors or above from Universities or Govt. Institutions. Rs.10000.00 per trainee for researchers from private or non-government organizations.

## How to apply?

Participants may write to the Director, ICAR-NBAIM in the given application forms along with their brief resume latest by October 15, 2019. The selected candidates will be notified on October 16, 2019 by email.

## Applications should sent to

1. Director ICAR-NBAIM, email id: [nbaimicar@gmail.com](mailto:nbaimicar@gmail.com)
2. Dr Alok Kumar Srivastava, email id: [aloksrivastva@gmail.com](mailto:aloksrivastva@gmail.com)