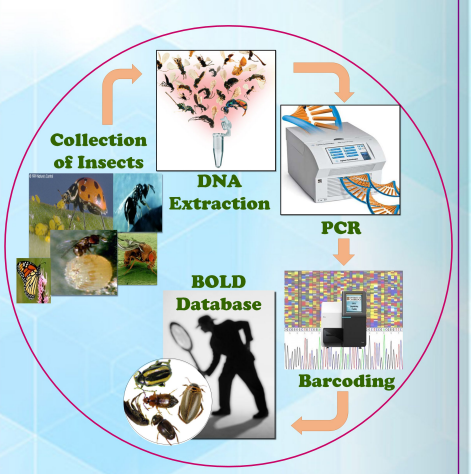
Training on "Molecular Identification and DNA Barcoding of Insect Pests and Natural Enemies including Invasive species"

18th-27th November 2019



Division of Genomic Resources
ICAR-National Bureau of Agricultural Insect Resources, P. Bag No: 2491, H. A. Farm Post, Bellary Road, Bengaluru-560024, Karnataka, India.

Objectives of the training

- To provide insights about the techniques in molecular characterization of Insects
- To generate knowledge on DNA-Barcoding and Molecular phylogeny of Insects
- To provide hands on training on bioinformatics and software analytical tools

About the training

The major objective of this training is to disseminate knowledge and to provide hands-on training for the Entomologists about the various molecular techniques and bioinformatics applications. This training gives the detailed training on DNA-Barcoding and Molecular characterization of various insects including both wet lab techniques *viz*., DNA/RNA isolation, PCR, Gel Electrophoresis, etc with well-detailed lectures from the experts. This also aimed to provide detailed hands on training on the usage of various bioinformatics tools to annotate, analyze and identify the genome sequences, generate DNA-Barcoding and also to construct molecular phylogeny.

Themes of the training

1. Introduction to schools of taxonomy and implications of conventional taxonomy
2. Molecular taxonomy and DNA-Barcoding
3. DNA-Barcoding of insects, sequence submission protocols
4. Characterization of insects using different molecular markers
5. Insect genome database, gene prediction and annotation using different bioinformatics tools
6. Phylogenetic relationship for insect genes and proteins.
7. Meta barcoding based on NGS approach

About the Institute

ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bangalore, was established in 1993, is the nodal agency in the country that organizes biological control research at the national level with 28 centres spread across the country for carrying out field studies on bio suppression of pests of crops. The Bureau has carried out basic research on the biosystematics of important groups of insect bio agents and other insects such as trichogrammatids, chrysopids, aphids, chrysopids, coccinellids, braconids, tephrids, pentatomids, tachinids, scrabaeids, thrips, scales, mealybugs, plastygastroids, mites, and spiders etc.

The reference collection maintained at ICAR-NBAIR has been catalogued in the form of a technical bulletin and also available in a retrievable, electronic format. The holdings contain 1,18,650 species under 216 families and 16 orders and a small collection of insect type material is also being maintained. Multimedia-aided and traditional identification tools have been generated for several insect pests, parasitoids predators, invasive pests and pollinators. The DNA-barcoding of Indian insects in the repository and from collections made from across the country is also in progress and 2742 insect's resources have been characterized using molecular methods. The National Biodiversity Authority (NBA) recognized ICAR-NBAIR as one of the Designated National Repositories (DNR) for various kinds of biological specimens, both dead and live.

About Division of Genomic Resources

Division of Genomic Resources is one of the three Divisions of ICAR-NBAIR. The major objective is Molecular Characterization and Genome-wide analysis of agriculturally important insects.

Facilities

Well-equipped Genomics Lab, High Performance Computer (Super Computing) Facilities with various genome analysis software and tools.

Who can Apply

Participants should be from ICAR Institutes/SAUs/CAU/Agricultural faculty of AMU, BHU, Vishwa Bharti and Nagaland University in the cadre of Assistant Professors or equivalent and above.

How to Apply

1. Visit the "Capacity Building Program" portal https://cbp.icar.gov.in and click on "How to Apply" link
2. Create account using "Create New Account" link. Login using your User ID & Password.
3. After login, click on "Participate in Training" link and fill the Performa.

After carefully filling the application, please take a printout and get it duly approved by the competent authority of the organization. Upload the scanned copy of the above said application at the CBP portal.

Travel, Boarding & Lodging

Selected participants are eligible for TA (2AC train fare by shortest route as per ICAR norms). Food & accommodation will be provided by the organizers. No DA is admissible to the participants.

Number of Participants: 25

Last Date for Receipt of Applications

20th September, 2019

Information to selected candidates

30th September, 2019

Correspondence…

Course Director
Dr. T. Venkatesan,
Principal Scientist,
ICAR-National Bureau of Agricultural Insect Resources, P. Bag No: 2491, H. A. Farm Post, Bellary Road, Bengaluru-560024, Karnataka, India.
E-mail: tvenkat12@gmail.com
Contact No: 080-23511982 (Extn) 337.

Course Coordinators
Dr. R. Gandhi Gracy,
Senior Scientist,
ICAR-NBAIR,
Bengaluru-560024, Karnataka.
E-mail: gandhi_gracy@yahoo.co.in

Dr. M. Mohan,
Principal Scientist,
ICAR-NBAIR,
Bengaluru-560024, Karnataka.
E-mail: mohan_iari@yahoo.com

Dr. Veeresh Kumar,
Scientist,
ICAR-NBAIR,
Bengaluru-560024, Karnataka.
E-mail: veeresh4279@gmail.com