

ABOUT THE INSTITUTE

The Uttar Banga Krishi Viswavidyalaya with its headquarter at Pundibari (Coochbehar) started functioning on and from 1st February, 2001 for the development of agriculture and for the furtherance of the advancement of agricultural education, prosecution of agricultural research and extension in the eight northern districts of West Bengal. The University took birth through bifurcation from the Bidhan Chandra Krishi Viswavidyalaya. The University has three degree programmes covering Agriculture, Horticulture and Agricultural Engineering disciplines along with the post graduate programmes in every discipline of Agriculture and Horticulture Faculties. The implementation of IVth Deans' Committee Recommendation in case of rules, regulations and syllabi in UG & PG is overwhelming and praiseworthy. The Vth Deans' Committee Recommendation for degree courses has been started from the academic year 2016-17. The University is fostering collaboration with Indian and foreign individuals and organizations for the purposes of better teaching and research prospects.

IMPORTANT DATES

1.	Last date for receipt of application :	20 th July,22
2.	Intimation of selection of participants :	25 th July.,22
3.	Last date for confirmation of participants :	30 th July,22

ALL CORRESPONDENCE SHOULD BE ADDRESSED TO

Prof. Ashok Choudhury
Director of Research
Uttar Banga Krishi Viswavidyalaya
Pundibari, CoochBehar-736165
West Bengal

Email : molbiolab.ubkv@gmail.com

Course Coordinators
Dr. Avijit Kundu
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Course Co-Coordinators
Dr. Rupsanatan Mandal
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Application proforma

Hands-on Training on DNA fingerprinting and DNA bar coding of plant species

Full Name :
Designation :
Present Address :
Host Organization :
Date of Birth :
Email :
Mobile No :
Gender :
Marital Status :

Area of research interest:

Academic qualification:

Exam/ Degree	Subjects	Passing Year	Institute/ University
Graduation			
Post-Graduation			
Ph.D			

Date:

Place:

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Signature of the Applicant

Registration Fees: Rs. 3500/- (Should be paid after the selection and confirmation of the participation)

Hands-on Training on DNA Fingerprinting and DNA Bar Coding of Plant Species

AUGUST 03-12, 2022



COURSE DIRECTOR

Prof. Ashok Choudhury
Director of Research
Uttar Banga Krishi Viswavidyalaya
Pundibari, CoochBehar-736165
West Bengal

Course Coordinators
Dr. Avijit Kundu
Assistant Professor
(Genetics and Plant Breeding)

Course Co-Coordinators
Dr. Rupsanatan Mandal
Assistant Professor
(Genetics and Plant Breeding)

Organizing Member

Mr. Sahanob Nath
Ms. Bijaya Sur
Ms. Twinkle Kumari Bhagat
Mr. Subir Dutta
Mr. Vivekananda Behera

ABOUT THE TRAINING

The development and use of DNA markers for the detection and exploitation of DNA polymorphism is one of the most important achievement in the field of molecular genetics. The most widely used markers are DNA markers, due to their hypervariability, better genomic coverage, high reproducibility, amenability to automation, being neutral and free from environmental fluctuations in the field of plant biotechnology. A molecular marker consists of specific DNA sequences, identified using primer which, in virtue of its presence, differentiates unequivocally the chromosomal trait which it represents as well as the flanking regions at the 5' and 3' extremity. The variation that arises from deletion, duplication, inversion, and/or insertion in the chromosomes can be detected by these markers. Molecular markers located only near or linked to genes governing those traits, so they do not affect the phenotype of the characters of interest. These markers are inherited both in dominant and co-dominant patterns. Different markers have different genetic qualities like dominant or codominant, can multiply anonymous or characterized loci, can contain expressed or non-expressed sequences, etc. They are stable and detectable in all tissues regardless of growth, differentiation, development, or defense status of the cell so they have advantages than conventional, phenotype-based alternatives. Additionally, they are unaffected by environmental, pleiotropic and epistatic effects. Germplasm characterization to study genetic diversity is another important area in which a lot of efforts have been put in India. DNA fingerprinting of crops like rice, wheat, chickpea, pearl millet etc. is also being carried out successfully. Similarly, genetic purity test is conventionally done to assess any deviation from genuineness of the variety during its multiplication and is a compulsion for seed certification of different categories of seeds though it is very much stringent for breeder seeds since it makes the foundation of seed multiplication chain. So, in this context, it is necessary to develop trained human resources who can develop and standardized protocols for DNA fingerprinting in their own laboratories. These trained persons will be asset to any institute for the development and use of recent markers in crops which are not touched or for which markers are not available.

MAIN CONTENT

- Basics of DNA extraction methodology
- Comparison among the different DNA extraction protocols
- Quantification and quality check of the DNA
- Basics of PCR
- Gel electrophoresis and Gel documentation
- DNA fingerprinting with Dominant markers
- DNA fingerprinting with Co-Dominant markers
- DNA bar coding of different plant specie
- Sample preparation for DNA sequencing
- DNA fingerprinting data analysis and interpretation

DETAILS ACTIVITIES OF THE PROGRAME

Date	Topic	Speaker
3.08.22	Inauguration programe	Presence of Honorable Vice Chancellor, UBKV and Honorable Director of Research, UBKV
3.08.22	Fundamentals of DNA extraction methodology for different crop species	Dr. Rupsanatan Mandal Dr. S. Sen
3.08.22	Practical on DNA extraction using Tris-HCl method	Dr. Rupsanatan Mandal
4.08.22	Practical on DNA extraction by CTAB method	Dr. Avijit Kundu Dr. S. Sen
5.08.22	Basics of DNA quantification and quality check	Dr. Avijit Kundu Dr. S. Sen
5.08.22	Practical on DNA quantification and quality check	Dr. Avijit Kundu Dr. Rupsanatan Mandal
6.08.22	Practical on DNA purification from RNA, protein and carbohydrate contamination	Dr. Avijit Kundu Dr. Rupsanatan Mandal
8.08.22	Fundamentals of PCR and primer designing	Dr. Rupsanatan Mandal
8.08.22	Practical on PCR	Dr. Avijit Kundu Dr. S. Sen
9.08.22	Basics of gel electrophoresis and gel documentation	Dr. Avijit Kundu Dr. S. Sen
9.08.22	Practical on gel electrophoresis and gel documentation	Dr. Avijit Kundu Dr. Rupsanatan Mandal
10.08.22	Brief discussion about DNA markers	Dr. Rupsanatan Mandal
10.08.22	Practical on DNA fingerprinting with dominant markers	Dr. Avijit Kundu Dr. S. Sen
11.08.22	Practical on DNA fingerprinting with codominant markers	Dr. Avijit Kundu Dr. S. Sen
11.08.22	Practical on DNA bar coding and sample preparation for DNA sequencing	Dr. Rupsanatan Mandal
12.08.22	Scoring and data analysis of the fingerprinting results and interpretation	Dr. Avijit Kundu Dr. Rupsanatan Mandal
12.08.22	Evaluation and certificate distribution	Presence of Honorable Director of Research, UBKV

ELIGIBILITY

Graduation in Agriculture/ Horticulture/ Botany/ Zoology/ Biotechnology/ Molecular Biology/ Microbiology or any other discipline related to Biological Sciences.

HOW TO APPLY

Interested candidates should filled up the application and send on molbiolab.ubkv@gmail.com before the last date.

BOARDING AND LODGING

The lodging, boarding, food and travel expenses of the selected participant will be borne by participants him/her self.

HOW TO REACH UBKV, COOCHBEHAR

The UBKV at Pundibari, CoochBehar is 16 km far from New CoochBehar Railway Station.