

Hands-on Training on Plant Tissue Culture

17th - 21st March, 2025 (10AM-4PM)

About the Training Program

Plant tissue culture technology has emerged as a transformative method in biotechnology and modern agriculture, offering rapid and efficient production of quality planting materials. This method offers distinct advantages over traditional propagation, including exact plant replication, seed-independent multiplication, and whole plant regeneration from cells, genetic modification capabilities, and disease-free cultivation in sterile environments. We are conducting an intensive five-day training course combining essential theory with extensive hands-on practice in plant tissue culture techniques. Participants will develop both theoretical insights and practical laboratory skills, enabling them to independently conduct tissue culture experiments.

Objectives

The training program aims to provide comprehensive hands-on experience in essential plant tissue culture techniques, encompassing laboratory safety, media preparation, application of plant growth regulators (PGRs), explant handling, culture establishment, and micropropagation methods, enabling participants to independently conduct successful tissue culture experiments.

Course contents

Introduction to Plant Tissue Culture

- * Introduction to plant tissue culture and its applications
- * Laboratory protocols and safety guidelines
- * Aseptic culture and sterile techniques
- * Overview of recent advances in plant tissue culture

Media Preparation

- * Composition and formulation of basic tissue culture media
- * Sterilization of media and equipment
- * pH adjustment and autoclaving procedures
- * Practical sessions

Sterilization Techniques and Culture Initiation

- * Surface sterilization of plant materials
- * Preparation of explant, inoculation and culture initiation
- * Practical sessions

Sub-culturing and Callus Induction

- * Techniques for sub-culturing and transferring plantlets
- * Callus induction and maintenance
- * Common issues in sub-culturing and their remedy
- * Practical sessions

Shoot Proliferation and Organogenesis

- * Methods for shoot initiation and proliferation
- * Procedures for organogenesis and shoot formation
- * Preventive measures for contamination
- * Practical sessions

Rooting and Acclimatization

- * Techniques for root induction and rooting media composition
- * Acclimatization of plantlets to ex vitro conditions
- * Factors affecting successful plantlet establishment
- * Practical sessions

Advanced Tissue Culture Techniques

- * Genomic techniques for clonal fidelity testing
- * Cell suspension culture and somatic embryogenesis
- * Micro-shoot tip grafting

No. of participants: 15 (First come first served basis)

Invited speakers



Dr. Potshangbam Nongdam Puren Meetei
Professor & Head
Department of Biotechnology,
Manipur University

Topic: "Genetic clonal fidelity assessment of micropropagated plants using molecular markers"



Dr. Keithellakpam Sanatombi
Professor
Department of Biotechnology,
Manipur University

Topic: "Secondary metabolites production in plant tissue culture"

Course Fee

The application fee for the 5-Day Hands-on Training Program on Plant Tissue Culture is Rs. 1000/- (One Thousand only) for students and research scholars and Rs. 2000/- (Two Thousand only) for academia/industry. This fee covers training materials, laboratory consumables, equipment usage, and certificates of completion for the participants.

Venue

Plant Tissue Culture Lab, BRIC-Institute of Bioresources and Sustainable Development (IBSD), Takyelpat, Imphal-795001

Accommodation

Accommodation for outstation participants can be arranged in BRIC-IBSD Hostel on payment of nominal charges.

Important Dates

Last Date of Registration : 10th March, 2025
Course Duration : 5 days (17th-21st March, 2025)
Valedictory session and distribution of Certificates : 21st March, 2025 (Afternoon)

Registration

Interested applicants are invited to register for the training course by completing and submitting the Google Form at the following link or QR Code:

<https://forms.gle/USJUNfd3S9bwHJiv6>



Registration is mandatory. Shortlisted applicants will be notified for payment of necessary course fee. The payment link / details will be provided later on.

Who can participate

Science graduates including students, researchers, officials, entrepreneurs, managers, and supervisory staff, particularly those from agriculture, horticulture, or forestry departments. Preference will be given to applicants with prior tissue culture experience.



Patron:

Dr. H. Nanaocha Sharma,
Scientist-F & Director (Additional Charge),
BRIC-IBSD



Course Coordinator:

Dr. H. Sunitibala Devi,
Scientist-E, BRIC-IBSD



Organizing Secretary:

Dr. N. Samarjit Singh,
Senior Technical Officer (2), BRIC-IBSD



Jt. Organizing Secretary:

Dr. S. Rakesh Singh, Research Associate,
PTC Lab, BRIC-IBSD

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