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DEPARTMENT OF BOTANY

HANDS ON TRAINING ON PLANT TISSUE CULTURE TECHNIQUE 2022-23

PROGRAM OVERVIEW

General Introduction
Media Preparation
Sterilization Technique
Explant Preparation
Inoculation Technique
Incubation and Observation
Identification

Prof. M. P. Dhore
Principal, Shri Shivaji Science College, Nagpur.

Prof. R. N. Deshmukh
Head, Dept. of Botany, Shri Shivaji Science College, Nagpur

Trainer & Convener

Prof. Punita S. Tiwari
Dept. of Botany, Shri Shivaji Science College, Nagpur

Students are Encouraged to apply

NOTICE

All the students of B.Sc. SEM VI, Botany are here by informed that Department of Botany is organising Workshop on Plant Tissue Culture technique. Interested students can contact coordinator Dr Punita Tiwari.

Date: 3rd to 5th March 2023

Venue: Department of Botany

Head, Dept of Botany

Prof. R.N.Deshmukh

HEAD
DEPARTMENT OF BOTANY
SHRI SHIVAJI EDUCATION SOCIETY
AMRAVATI'S SCIENCE COLLEGE
CONGRESS NAGAR, NAGPUR

Science College, Congress Nagar, Nagpur
SEAL

Coordinator

Prof. P. S. Tiwari

Report On Plant Tissue Culture Techniques Training Program Academic Year 2022-23

Introduction:

In the academic year 2022-23, the Department of Botany at SSES Amravati's Science College, Congress Nagar, orchestrated a comprehensive training program focusing on Plant Tissue Culture Techniques. This initiative was meticulously crafted to cater to the educational needs of students enrolled in B.Sc. semester V and VI, aiming to acquaint them with the intricacies of modern biotechnological methodologies. Spearheaded by Professor Punita Tiwari, a seasoned academician renowned for her expertise in plant sciences, the workshop aimed to instill practical skills and theoretical insights crucial for navigating the realm of plant tissue culture with proficiency.

Program Overview:

The training program unfolded over a span of 3 to 15 days, meticulously designed to provide a holistic understanding of plant tissue culture techniques. The curriculum encompassed a blend of theoretical elucidation, practical demonstrations, and hands-on training sessions, meticulously crafted to ensure a comprehensive learning experience. The key components of the workshop included:

General Introduction:

An incisive overview delineating the historical evolution, principles, and contemporary applications of plant tissue culture techniques. Emphasis was laid on elucidating the significance of tissue culture in agriculture, horticulture, and biotechnology.

Media Preparation:

Detailed elucidation on the formulation, sterilization, and optimization of nutrient media essential for supporting the growth and proliferation of plant tissues in vitro. Practical demonstrations were conducted to familiarize participants with the intricacies of media preparation techniques.

Sterilization Technique:

Rigorous training sessions focusing on mastering the art of sterilization methodologies crucial for maintaining aseptic conditions during tissue culture procedures. Participants were acquainted with various sterilization techniques and protocols tailored for different equipment and materials.

Explant Preparation:

Comprehensive guidance on the selection, excision, and preparation of suitable plant tissues (explants) for initiating tissue culture cultures. Practical sessions enabled participants to hone their skills in the precise manipulation and handling of plant materials.

Inoculation Technique:

Hands-on training encompassing the transfer and inoculation of explants onto prepared nutrient media under sterile conditions. Participants were guided through the intricacies of aseptic techniques essential for ensuring successful initiation of tissue cultures.

Incubation and Observation:

Detailed instructions on setting up optimal incubation conditions and periodic monitoring of cultures to observe and document various developmental stages. Participants were trained to recognize and characterize key morphological and physiological changes, including callus formation, shooting and rooting, and multiple shoot induction.

Identification:

Training sessions focusing on the identification and characterization of cultured plant tissues at different stages of development. Participants were equipped with the requisite skills to discern and analyze morphological and biochemical attributes indicative of successful tissue culture propagation.

Participants and Engagement:

Thirty enthusiastic students from the Department of Botany actively participated in the workshop, showcasing a commendable zeal for acquiring knowledge and honing their skills in plant tissue culture techniques. The interactive nature of the sessions fostered a conducive learning environment, facilitating lively discussions, knowledge exchange, and collaborative learning experiences.

Field Visit:

As a culmination of the program, a field visit to MAHA Beej Biotech Lab and research laboratory in Nagpur was organized for the participants. This immersive learning experience provided students with firsthand exposure to cutting-edge plant tissue culture technologies and state-of-the-art laboratory infrastructure. Participants had the opportunity to interact with seasoned researchers and industry professionals, gaining invaluable insights into the practical applications and commercial implications of plant tissue culture technologies.

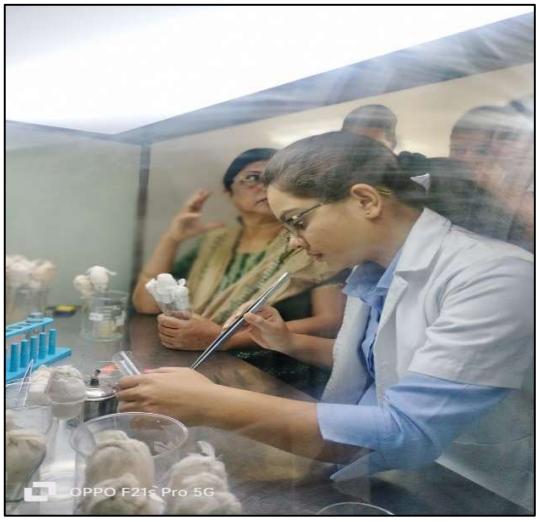
Conclusion:

The Plant Tissue Culture Techniques Training Program conducted by the Department of Botany at SSES Amravati's Science College, Congress Nagar, emerged as a resounding success,

epitomizing excellence in academia-industry collaboration and experiential learning. Through its meticulously crafted curriculum, hands-on training sessions, and immersive field visit experiences, the workshop effectively bridged the gap between theoretical knowledge and practical proficiency, empowering students to embark on a transformative journey in the realm of biotechnology and agricultural sciences.

Dr. P.S. Tiwari, Convener & Trainer of the Plant Tissue Culture Workshop, along with the Enthusiastic Participants Engaged in Hands-on Learning

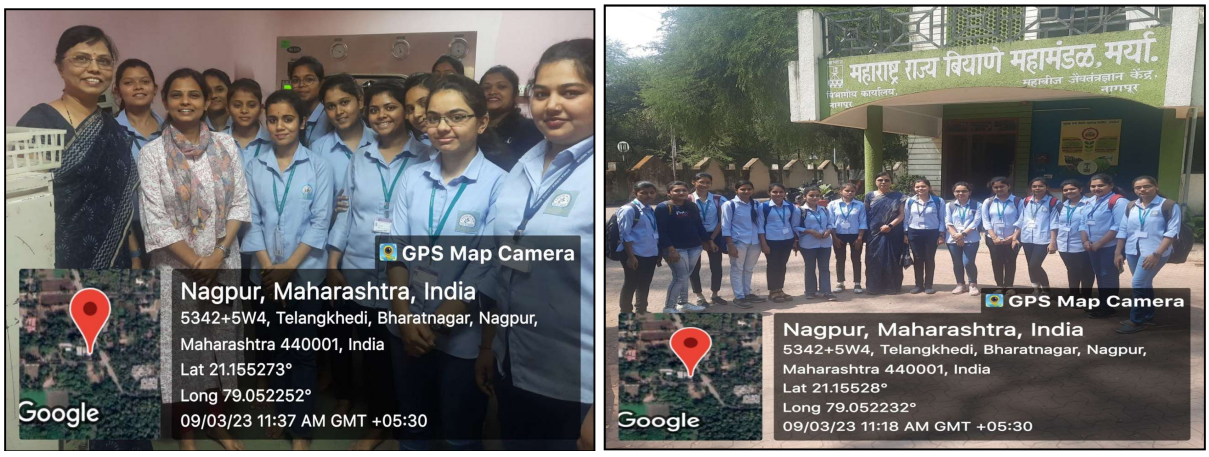
Comprehensive Guide on Plug and Explant Preparation: Essential Techniques for Plant Tissue Culture Initiatives



Mastering the Art of Inoculation: Step-by-Step Guide on the Inoculation of Explants in Plant Tissue Culture

Optimizing Growth:
Understanding the Dynamics of Incubation and Its Impact on Tissue Culture Response

Insightful Demonstration:
Mahabeej Scientist Explaining the Intricacies of the Process



Exploring Innovation: Educational Visit to MAHABEEJ Pvt. Ltd, Unveiling Cutting-Edge Biotechnological Practices

Enthusiastic Learners: Engaged and Active Participants in the Workshop

LIST OF PARTICIPENT

Ku	Agrawal	S	R	
Ku	Asolkar	V	A	
Ku	Aswale	SP	V	
Ku	Bakde	R	P	
	Bambal	A	R	
	Bansod	P	N	
	Barekar	R	R	
Ku	Burande	S	R	
Ku	Chakole	N	D	
Ku	Dahake	S	P	
	Deshpande	H	M	
Ku	Dubey	S	O	
Ku	Gaidhane	U	S	
	Gaikwad	S	H	
Ku	Gaikwad	T	A	
Ku	Ghaywat	M	D	
Ku	Hadke	R	R	
Ku	Hingnekar	D	C	

Action Taken Report

The Plant Tissue Culture Techniques Training Program for 2022-23, led by Prof. Punita Tiwari at SSES Amravati's Science College, successfully equipped B.Sc. semester V and VI students with essential skills and knowledge. Over 3 to 15 days, students engaged in media preparation, sterilization, explant handling, and more, complemented by a field visit to MAHA Beej Biotech Lab. The program effectively combined theory and hands-on experience, significantly enhancing students' proficiency in plant tissue culture techniques.

FEEDBACK FORM

Sr.No.	Question	Response		
		Good	Better	Average
1)	Overall effectiveness of the training program?			
2)	Relevance of practical sessions?			
3)	How helpful were the hands-on activities?			
4)	Faculty support and guidance?