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SCIENCE COLLEGE**

Congress Nagar, Nagpur - 440012 (M.S.) India.

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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



**Dr. O. S. Deshmukh**

Principal, Shri Shivaji Science  
College, Nagpur.

**Prof. R. S. Deshmukh**

Head, Dept. of Botany, Shri Shivaji  
Science College, Nagpur

**Trainer & Convener**

**Mr. Blyushkmas R. Sharma**

Dept. of Botany, Shri Shivaji  
Science College, Nagpur



**Students are Encouraged to apply**

**SSES'S AMT'S SCIENCE COLLEGE  
CONGRESS NAGAR, NAGPUR**

DATE: 3/09/2024

**NOTICE**

**Workshop on Plant Tissue Culture Technique**

All students of M.Sc. Sem I & II, Botany, are hereby informed that the Department of Botany is organizing a **Workshop on Plant Tissue Culture Technique**.

Interested students are invited to contact the workshop coordinator, Mr. Piyushkumar R. Sharma, for further details and registration.

**Date:** 9th & 12th September, 2024

**Venue:** Department of Botany

**Benefits for Participants:**

- Gain hands-on experience in modern plant tissue culture techniques.
- Enhance practical knowledge in the field of plant biotechnology.
- Develop skills in cell culture, micropropagation, and plant regeneration.
- Understand the application of tissue culture in plant breeding and genetic studies.
- Opportunity to interact with experts in the field and network with peers.

We encourage all eligible students to take full advantage of this valuable opportunity for academic and professional growth.



**Prof. P. S. Tiwari**  
Head  
Department of Botany

Professor and Head  
Department of Botany,  
SSES Amt's Science College,  
Congress Nagar, Nagpur-42



**Mr. Piyushkumar R. Sharma**  
Assistant Prof. (Ad-HOC)  
Coordinator

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR\***

**Department of Botany**

**Academic Year: 2024-2025**

**REPORT ON PLANT TISSUE CULTURE TRAINING PROGRAM**

**Organized by:**

Department of Botany, SSES Amravati's Science College, Congress Nagar

**Objective:**

To provide practical training in Plant Tissue Culture Techniques to B.Sc. III students and enhance their understanding of tissue culture methodologies.

**Conducted by:**

Mr. Piyushkumar R. Sharma, Assistant Professor (Ad-HOC), Department of Botany

**Participants:**

M.Sc. II-year students of SSES Amravati's Science College, Congress Nagar, Nagpur.

**Workshop Overview:**

The training program encompassed a comprehensive curriculum designed to familiarize students with various aspects of plant tissue culture techniques. Spanning over 3 to 15 days, the workshop covered the following key areas:

**1. Media Preparation:**

**Hands-on Experience:** Through practical exercises, students were immersed in the intricacies of formulating culture media tailored for tissue culture experiments. By meticulously measuring and mixing ingredients such as agar, macro- and micronutrients, vitamins, and growth regulators, participants grasped the importance of precise media composition in supporting optimal plant growth and development.

**2. Sterilization Technique:**

**Ensuring Aseptic Conditions:** Demonstrations and guided practice sessions underscored the criticality of maintaining a sterile environment throughout tissue culture procedures. Students were acquainted with sterilization techniques for laboratory equipment, culture vessels, and media, learning essential protocols to mitigate microbial contamination and safeguard the integrity of experimental setups.

**3. Explant Preparation:**

**Precision and Sterility:** Practical sessions equipped students with the proficiency to meticulously select, sterilize, and prepare plant explants for culture initiation. Through handsome demonstrations, participants honed their skills in excising healthy tissue samples

and implementing stringent sterilization protocols to minimize the risk of introducing pathogens or contaminants.

#### 4. Inoculation Technique:


**Aseptic Handling:** Practical training modules focused on refining students' abilities to inoculate explants onto prepared culture media with precision and aseptic technique. By mastering the art of handling sterile instruments and manipulating delicate plant tissues under laminar flow hoods, participants acquired the dexterity necessary to minimize contamination risks and optimize culture success rates.


#### 5. Incubation and Observation:

**Monitoring Growth Dynamics:** Participants actively engaged in monitoring the growth and development of cultures under controlled environmental conditions. Through systematic observation and documentation, students gained proficiency in recognizing and interpreting various stages of culture progression, from the initiation of callus formation to the emergence of differentiated shoots and roots, thereby reinforcing theoretical concepts with practical application.

#### Outcomes:

Enhanced practical skills and theoretical understanding of plant tissue culture techniques among participating students. Exposure to real-world applications through industrial visits, facilitating a deeper appreciation of the subject.

  
**Mr. Piyushkumar R. Sharma**  
Assistant Prof. (Ad-HOC)  
Coordinator

  
**Prof. P. S. Tiwari**  
Head  
Department of Botany  
Professor and Head  
Department of Botany,  
SSES Amr's Science College,  
Congress Nagar, Nagpur-42



## Plant Tissue Culture Workshop, along with the Enthusiastic Participants

### Engaged in Hands-on Learning



### Mastering the Art of Inoculation: on the Inoculation of Explants in Plant Tissue Culture

#### List of Participants:

S.S.E.S. AMRAVATI'S SCIENCE COLLEGE,  
CONGRESS NAGAR, NAGPUR  
DEPARTMENT OF BOTANY  
M.Sc. Botany (SEM - III)  
**Workshop On Plant Tissue Culture - 2024-25**

Date: 9th & 12th September, 2024

Sr. No.	Student Name	Signature
1	Aishwarya Bambal	
2	Megha Bangadkar	
3	Akansha Wasnik	
4	Rajshree Kowe	
5	Chaitali Patil	

Faculty In-charge  
Mr. Piyushkumar R. Sharma

Head of Department  
Department of Botany,  
Shri Shivaji Science College, Nagpur

Professor and Head  
Department of Botany,  
SSES Am't's Science College,  
Congress Nagar, Nagpur-17

## Action Taken Report

The Plant Tissue Culture Training Program led by Mr. Piyushkumar R. Sharma significantly enhanced students' practical skills and theoretical understanding of tissue culture techniques. Key areas covered included media preparation, sterilization, explant handling, and observation. The program yielded successful callus proliferation results and fostered valuable intercollegiate collaboration and industrial exposure. Overall, it provided students with essential skills for further studies or careers in biotechnology and plant sciences.

### FEEDBACK FORM

Sr.No.	Question	Response		
		Good	Better	Average
1)	Overall effectiveness of the training program?			
2)	Relevance of practical sessions?			
3)	Clarity of experimental results?			
4)	Faculty support and guidance?			

