



Report of Motivational session on Cultivating Innovation: The Future of Plant Tissue Culture



EXPERTS



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MOTIVATIONAL SESSION On Cultivating Innovation: The Future of Plant Tissue Culture

**Date :08th November, 2024
at 03:00 PM**

Venue:
Plant Tissue Culture Lab
(Department Of BT and BI), JUIT

www.juit.ac.in



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The Institution Innovation Council (IIC) in collaboration with Gender Champions Club and the Technology Incubation and Entrepreneurship Development Cell (TIEDC) and Department of Biotechnology and Bioinformatics organized **Motivational session on Cultivating Innovation: The Future of Plant Tissue Culture** on 8th November 2024 in Plant tissue Laboratory of the Department, Jaypee University of Information Technology, Solan, Himachal Pradesh.

The session's objectives were to share different innovative technologies for growing commercially important medicinal and ornamental plants and motivate the participants to use innovative techniques for the sustainable growth of plants.

Key Insights:



- **Nov 8, 2024:** Professor Hemant Sood and Dr Saurabh Bansal oriented the participants with different techniques of growing commercial important plants. The theory part was covered in class followed by experimental demonstration in plant tissue culture lab and final applicative demonstration in greenhouse.



Topics Covered: Plant Tissue Culture

1. Introduction

Plant tissue culture is a technique used to grow plant cells, tissues, or organs under sterile conditions on a nutrient culture medium. This method leverages the totipotency of plant cells, which is their ability to regenerate into a whole plant.

2. Basic Requirements

- **Aseptic Conditions:** The tissue culture laboratory must be free from pathogens to ensure healthy cultures.
- **Control of Temperature:** Typically, temperatures between 18-25°C are maintained.
- **Proper Culture Media:** The medium contains essential nutrients, carbohydrates, vitamins, and hormones.
- **Sub-culturing:** Regular transfer of growing tissues to fresh media to promote growth.

3. Important Steps



- **Selection of Explant:** Choosing the plant part to be cultured (e.g., leaf, stem, root).
- **Sterilization:** Ensuring the explant and culture media are free from contaminants.
- **Initiation:** Placing the explant on the culture medium.
- **Multiplication:** Promoting the growth of multiple shoots or callus.
- **Rooting:** Inducing root formation in the cultured shoots.
- **Acclimatization:** Gradually adapting the plantlets to external conditions before transplantation.

Benefits of the session

It helps them to understand how the plant tissue culture techniques can be applied for accomplishing followings :

- **Commercial Plant Production:** Rapid multiplication of plants for horticulture and agriculture.
- **Conservation:** Preservation of rare and endangered plant species.
- **Research:** Studying plant diseases, genetics, and development.
- **Crop Improvement:** Developing plants with desirable traits such as disease resistance and higher yield.

Conclusion: Plant tissue culture is a powerful tool in modern botany and agriculture, enabling the rapid propagation and genetic improvement of plants. Its applications are vast, ranging from commercial production to scientific research.

Participants :

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