

Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon

Department of Botany

Certificate Course in Plant Tissue Culture

Duration of Course: 3 months

Fees Structure: 800/.

Course Structure: 1) Paper I- Plant Tissue Culture

2) Paper II - Practical Course on Plant Tissue Culture

Eligibility for Admission: Any Science Student from UG or PG

Total Teaching Hours: 45 (Theory-25, Practicals-20)

Name of Coordinator: Taqdees G. Shaikh

Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon

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Syllabus

Course Objectives

- To introduce the students with current status and future of biotechnology in India.
- To make the student acquaint with advanced knowledge of different institutes related with biotechnology.
- To develop skill of tissue culture among the students for employment or entrepreneurship.

Theory

(25L)

1 - Plant Tissue Culture

(07L)

1.1 Introduction

1.2 History

1.3 Scope and importance of plant tissue culture

1.4 Tissue culture laboratory plan and requirements

1.5 Concept of cellular totipotency, differentiation, dedifferentiation and redifferentiation

1.6 Biotechnology in India

2 – Equipments

(03L)

2.1 structure, principle working and uses of the following Equipments

a) Laminar air flow

b) Autoclave

c) Hot air oven

d) P^H meter

3 - Techniques of plant tissue culture

(15L)

2.1 Sterilization (Physical and Chemical)

2.2 Explant preparation


2.3 Medium preparation


- a) MS medium
 - b) Growth regulators – Auxins, Cytokinins, Gibberellins, Abscisic acids, ethylene
 - c) Mixture of vegetable origin
 - d) Mixture containing nitrogen
 - e) Activated charcoal
- 2.4 Inoculation
- 2.5 Callus induction
- 2.6 Organogenesis
- 2.7 Hardening

Practicals

(20L)

1. Principle, working and uses of:
- a) Laminar air flow
 - b) Autoclave
 - c) Hot air oven
 - d) P^H meter
2. and 3. Preparation of MS medium and its sterilization
4. Embryo culture
5. Axillary bud culture


Co-ordinator
(Miss T. G. Shaikh)


Head of the Department
(Dr. S. A. Chaudhari)