

HANDS-ON TRAINING PROGRAMS

Discover & Apply Practical Education

H A N D S - O N T R A I N I N G P R O G R A M S

01 Plant Tissue Culture & Micropropagation



02 Molecular Biology & Genetic Engineering



03 Cordyceps Cultivation



04 Microbial Biotechnology



05 Biochemical Analysis



About EduDAP Training Academy

EduDAP (Discover & Apply Practical Education) implements comprehensive practical industrial training and internship programs for students and researchers in Agricultural Sciences, Biotechnology, Biochemistry, Molecular Biology, Microbiology, Botany, Pharmacology, Para-medical Sciences, and Zoology at B.Sc./B.Tech./M.Sc./M.Tech./M.Phil./Ph.D. levels. Our objective is to provide industry-specific, hands-on training for skill development and enhancing job opportunities in applied biological sciences.



EXPERT FACULTY



MODERN LABS



HANDS-ON LEARNING



PROJECT REPORTS

Who Should Enroll?

B.Sc./B.Tech. Life Sciences

M.Sc./M.Tech. Students

Ph.D. Scholars

B.Pharma/M.Pharma

Agricultural Sciences

Biotechnology Students

Microbiology Students

Biochemistry Students

A comprehensive hands-on module covering the complete spectrum of plant tissue culture — from basic media preparation to advanced commercial micropropagation. Students gain practical experience in aseptic culture, callus induction, organogenesis, somatic embryogenesis, and hardening of tissue-cultured plantlets.

Detailed Curriculum

- | | |
|--|---|
| 01. Introduction to commercial plant tissue culture laboratory | 02. Introduction to tools and techniques of plant tissue culture |
| 03. Preparation of stock solutions of nutrient medium | 04. Basic tissue culture media preparation |
| 05. Selection, collection and surface sterilization of explants | 06. Callus culture and maintenance |
| 07. Micropropagation techniques | 08. Meristem culture |
| 09. Somatic embryogenesis | 10. Organ culture |
| 11. Protoplast culture | 12. Suspension culture |
| 13. Organogenesis | 14. In vitro shoot regeneration and rooting |
| 15. In vitro plantlet regeneration | 16. Hardening and acclimatization of tissue cultured plantlets |
| 17. Introduction to automated polyhouse / hardening unit | 18. Techniques of commercial plant tissue culture |
| 19. Project report preparation | |

Master the fundamental and advanced techniques of molecular biology and genetic engineering. This intensive module covers genomic DNA extraction, purification, quantification, PCR amplification, restriction digestion, gel electrophoresis, DNA fingerprinting, RNA extraction, and transcriptional profiling.

Detailed Curriculum

- | | |
|--|---|
| 01. Introduction to tools and techniques of plant molecular biology | 02. Genomic DNA extraction from leaves, bacteria and animal tissue |
| 03. DNA purification techniques | 04. Quantification of DNA using NanoDrop spectrophotometer |
| 05. DNA quality analysis | 06. Restriction digestion of DNA by endonucleases |
| 07. Restriction mapping | 08. DNA fingerprinting using Agarose Gel Electrophoresis |
| 09. PCR amplification using molecular markers | 10. DNA fingerprinting by RAPD |
| 11. DNA fingerprinting by ISSR | 12. AFLP and RFLP based DNA fingerprinting |
| 13. PCR based advanced techniques | 14. Amplified DNA analysis by Gel-Doc |
| 15. Total RNA extraction | 16. Targeted gene amplification |
| 17. Transcriptional profiling and expression of genes by RT-PCR | 18. Southern blotting |
| 19. Project report preparation | |

Cordyceps Militaris Cultivation Technique

Learn How to Grow the High-Value Medicinal Mushroom

15–20

Days Hands-On Lab

Cordyceps militaris (Keeda-Jadi or Yarshagumba) is a medicinal mushroom with anti-cancer, anti-inflammatory, antimicrobial, and immunomodulatory properties. This module teaches the complete cultivation technique from pure culture to harvesting and metabolite estimation.

Detailed Curriculum

- | | |
|--|--|
| 01. Introduction to <i>Cordyceps militaris</i> — biology, medicinal properties & market potential | 02. Potato Dextrose Agar (PDA) media preparation for pure culture |
| 03. Liquid media preparation for spawn culture | 04. Rice substrate media preparation for fruiting body regeneration |
| 05. Sterilization, inoculation & incubation processes | 06. Monitoring of photoperiodic management & laboratory environment control |
| 07. Harvesting techniques & disease control | 08. Spectrophotometric estimation of secondary metabolites |
| 09. Project report preparation | |

Key Learning Outcomes

- Understand the complete life cycle and commercial value of *Cordyceps militaris*
- Master aseptic techniques for pure culture and spawn preparation
- Independently set up and manage a *Cordyceps* cultivation lab
- Perform spectrophotometric analysis of bioactive secondary metabolites

Career Applications: *Cordyceps militaris* is a rapidly growing industry with high commercial value (₹1–5 lakh/kg dried product). Trained professionals can set up their own cultivation units or work in nutraceutical companies.

Microbial Biotechnology

Bacterial Genetics, Transformation & Agrobacterium-Mediated Techniques

15–20

Days Hands-On Lab

Explore microbial genetics and biotechnology through hands-on experiments covering bacterial growth dynamics, antibiotic sensitivity, plasmid and genomic DNA isolation, transformation techniques, and Agrobacterium-mediated gene transfer.

Detailed Curriculum

- | | |
|--|--|
| 01. Bacterial growth curve analysis | 02. Phage titration techniques |
| 03. Bacterial antibiotic sensitivity analysis | 04. Bacterial DNA isolation |
| 05. Plasmid DNA isolation and purification | 06. Bacterial transformation techniques |
| 07. Agrobacterium culture techniques | 08. Agrobacterium-mediated transformation |
| 09. Genetic analysis of microbes by RFLP techniques | 10. Project report preparation |

Key Learning Outcomes

- Analyse bacterial growth kinetics and understand microbial physiology
- Perform plasmid and genomic DNA isolation from bacterial cultures
- Master bacterial transformation and Agrobacterium-mediated gene transfer
- Apply microbial techniques in agriculture, industry, and environmental biotechnology

A comprehensive biochemistry module covering quantitative analysis of biomolecules, enzyme kinetics, antioxidant assays, spectrophotometric techniques, and chromatographic separation methods essential for any modern biology and pharmaceutical laboratory.

Detailed Curriculum


- | | |
|--|--------------------------------------|
| 01. Secondary metabolites analysis | 02. Antioxidant assay by DPPH method |
| 03. Spectrophotometric analysis techniques | 04. Enzyme activity assay |
| 05. Isozyme separation techniques | 06. Enzyme kinetics |
| 07. Quantitative estimation of proteins, lipids, carbohydrates & amino acids | 08. Chromatographic techniques |
| 09. Project report preparation | |

Key Learning Outcomes

- Perform quantitative estimation of proteins, lipids, carbohydrates, and amino acids
- Conduct antioxidant assays (DPPH) and secondary metabolite analysis
- Understand enzyme kinetics, activity assays, and isozyme separation
- Apply chromatographic techniques for compound separation and identification

Duration & Fee Structure

Program Type	Duration	Fee Range (INR)
Single Module Training	15 – 30 days	₹ 5,000 – ₹ 10,000
Multi-Module Training	30 – 60 days	Custom (based on modules)
Intensive Advanced Program	45 – 60 days	Custom (all modules)
Research Project / Dissertation	1 – 4 weeks	Based on duration

 **Merit Scholarship:** EduDAP offers free training to first merit holders from any recognized educational institution.

Research & Additional Services

Projects, Dissertations & Thesis

Supervised research for Ph.D., M.Phil., M.Sc., B.Pharm students.

Contractual R&D

Collaborative research services for NGOs and institutions.

Facility Sharing

Ph.D./M.Phil. scholars can conduct research using our lab.

Project Assistance

Professional help in preparing thesis and research projects.

Infrastructure & Facilities

Fully equipped laboratories with high-class instruments

Centrally air-conditioned classrooms and laboratories

Audio-visual teaching aids for enhanced learning

Digital library with high-speed data access

Automated polyhouse and hardening unit

Advanced molecular biology lab with PCR, Gel-Doc, NanoDrop

ENROLL TODAY • TRANSFORM YOUR CAREER

ADDRESS

WZ-10C, Asalatpur, Janakpuri
New Delhi – 110058

PHONE

+91 98183 15018
+91 95996 41214

GSTIN / MSME

07AAGFE4668N1ZV
UDYAM-DL-10-0020377

Enroll Now → +91 98183 15018