

PLANT BIOTECHNOLOGY • TISSUE CULTURE SKILL DEVELOPMENT



NTHRYS
OPC PVT LTD



**Plant Tissue Culture
& Micropropagation
Industrial Manufacturing
Training Programs**

A complete industrial catalogue of hands-on plant tissue culture training modules — from meristem micropropagation to virus elimination & commercial crop production.

55

PROGRAMS

10

CATEGORIES

2026

EDITION

Program Categories at a Glance

This catalogue lists every plant tissue culture and micropropagation skill our training programs are equipped to teach and deliver, organised into 10 technology streams. Each program carries a unique product code for easy reference, enrolment and certification.

STREAM	CATEGORY FOCUS	DESCRIPTION	COUNT
NPT-MP	Micropropagation Techniques	Meristem, shoot-tip & nodal micropropagation	6
NPT-CA	Callus, Cell-Suspension & Organogenesis	Callus, suspension & indirect-regeneration culture	6
NPT-SE	Somatic Embryogenesis & Synthetic Seeds	Somatic embryos, synthetic seeds & bioreactors	5
NPT-HP	Haploid, Protoplast & Embryo Culture	Anther, protoplast-fusion & embryo-rescue culture	5
NPT-VE	Virus Elimination & Disease-Free Production	Meristem, thermotherapy & indexing for clean stock	5
NPT-CC	Commercial Crop Micropropagation	Banana, sugarcane, potato & orchid production	6
NPT-HA	Hardening, Acclimatization & Nursery	Primary/secondary hardening & nursery management	6
NPT-SM	Secondary Metabolite & Hairy-Root Culture	In-vitro metabolite & hairy-root production	5
NPT-LB	Media, Lab Setup & Aseptic Technique	Media, growth regulators & aseptic lab handling	6
NPT-QC	Germplasm Conservation, QC & Certification	Conservation, genetic-fidelity & certification	5
Total training programs			55

HOW TO READ A CODE

NPT – MP – 01

NPT Nthrys Plant-Tissue Program MP Category stream 01 Program number

01

CATEGORY • NPT-MP

Micropropagation Techniques

Meristem, shoot-tip & nodal micropropagation

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-MP-01	Meristem Culture	Apical-meristem propagation.
NPT-MP-02	Shoot-Tip Culture	Shoot-tip micropropagation.
NPT-MP-03	Nodal / Axillary Bud Culture	Node-based multiplication.
NPT-MP-04	Shoot Multiplication & Proliferation	Multiplication-stage culture.
NPT-MP-05	In-Vitro Rooting	Root-induction stage.
NPT-MP-06	Direct Organogenesis	Direct shoot regeneration.

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-CA-01	Callus Induction	Callus-initiation culture.
NPT-CA-02	Callus Maintenance & Subculture	Callus-line maintenance.
NPT-CA-03	Cell-Suspension Culture	Liquid cell-suspension.
NPT-CA-04	Indirect Organogenesis	Callus-mediated regeneration.
NPT-CA-05	Somaclonal Variation Screening	Variant selection.
NPT-CA-06	Protocorm-Like Body Culture	PLB multiplication.

03

CATEGORY • NPT-SE

Somatic Embryogenesis & Synthetic Seeds

Somatic embryos, synthetic seeds & bioreactors

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-SE-01	Somatic Embryogenesis	Embryo-from-soma induction.
NPT-SE-02	Embryo Maturation & Germination	Embryo development stage.
NPT-SE-03	Synthetic / Artificial Seeds	Encapsulated propagule production.
NPT-SE-04	Bioreactor Embryo Multiplication	Liquid-system scale-up.
NPT-SE-05	Temporary-Immersion Bioreactor (TIS)	TIS micropropagation.

04

CATEGORY • NPT-HP

Haploid, Protoplast & Embryo Culture

Anther, protoplast-fusion & embryo-rescue culture

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-HP-01	Anther / Microspore Culture	Haploid-induction culture.
NPT-HP-02	Doubled-Haploid Production	Chromosome-doubling line.
NPT-HP-03	Protoplast Isolation & Culture	Cell-wall-free culture.
NPT-HP-04	Protoplast / Somatic Hybridisation	Cell-fusion hybrids.
NPT-HP-05	Embryo Rescue	Immature-embryo rescue.

05

CATEGORY • NPT-VE

Virus Elimination & Disease-Free Production

Meristem, thermotherapy & indexing for clean stock

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-VE-01	Meristem-Tip Virus Elimination	Virus-free meristem culture.
NPT-VE-02	Thermotherapy	Heat-treatment virus elimination.
NPT-VE-03	Chemotherapy	Antiviral-media treatment.
NPT-VE-04	Virus Indexing (ELISA / PCR)	Disease-screening diagnostics.
NPT-VE-05	Certified Disease-Free Stock	Mother-stock production.

06

CATEGORY • NPT-CC

Commercial Crop Micropropagation

Banana, sugarcane, potato & orchid production

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-CC-01	Banana Micropropagation	Tissue-cultured banana plantlets.
NPT-CC-02	Sugarcane Micropropagation	Sugarcane plantlets.
NPT-CC-03	Potato Microtuber / Seed	Virus-free potato seed.
NPT-CC-04	Orchid Micropropagation	Orchid mass propagation.
NPT-CC-05	Ornamental & Foliage Plants	Ornamental plantlets.
NPT-CC-06	Fruit, Forestry & Medicinal Plants	Woody & medicinal-plant culture.

07

CATEGORY • NPT-HA

Hardening, Acclimatization & Nursery

Primary/secondary hardening & nursery management

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-HA-01	Primary Hardening	In-vitro-to-soil transition.
NPT-HA-02	Secondary Hardening	Net-house acclimatisation.
NPT-HA-03	Greenhouse / Poly-House Management	Controlled-environment nursery.
NPT-HA-04	Substrate & Nutrition Management	Potting & feeding.
NPT-HA-05	Plantlet Grading & Dispatch	Quality grading & logistics.
NPT-HA-06	Field Establishment & Transplant	Field-planting management.

08

CATEGORY • NPT-SM

Secondary Metabolite & Hairy-Root Culture

In-vitro metabolite & hairy-root production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-SM-01	Cell-Suspension Metabolite Production	In-vitro metabolite production.
NPT-SM-02	Hairy-Root Culture	Agrobacterium rhizogenes culture.
NPT-SM-03	Elicitation & Yield Enhancement	Metabolite-induction strategies.
NPT-SM-04	Bioreactor Metabolite Scale-Up	Plant-cell bioreactor.
NPT-SM-05	Metabolite Extraction & Recovery	Downstream recovery.

09

CATEGORY • NPT-LB

Media, Lab Setup & Aseptic Technique

Media, growth regulators & aseptic lab handling

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-LB-01	Tissue-Culture Media Preparation	MS / nutrient-media prep.
NPT-LB-02	Plant Growth Regulators	Hormone formulation & use.
NPT-LB-03	Explant Sterilisation	Surface-sterilisation protocol.
NPT-LB-04	Aseptic Technique & Laminar Flow	Contamination-free handling.
NPT-LB-05	TC-Lab Design & Setup	Lab layout & equipment.
NPT-LB-06	Contamination Diagnosis & Control	Troubleshooting contamination.

10

CATEGORY • NPT-QC

Germplasm Conservation, QC & Certification

Conservation, genetic-fidelity & certification

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPT-QC-01	In-Vitro Germplasm Conservation	Slow-growth conservation.
NPT-QC-02	Cryopreservation	Cryo-banking of germplasm.
NPT-QC-03	Genetic-Fidelity Testing	Clonal-uniformity (molecular) testing.
NPT-QC-04	Quality Control & Indexing	Plantlet QC & indexing.
NPT-QC-05	Certification & Regulatory Compliance	Accreditation & certification.

ENROL • CULTURE • PROPAGATE

Build a Career in Plant Tissue Culture

Every program in this catalogue is delivered as hands-on training in working tissue-culture labs and nurseries — covering media preparation & aseptic technique, meristem & shoot-tip micropropagation, callus & somatic embryogenesis, virus elimination, hardening & acclimatisation, germplasm conservation, genetic-fidelity QC and certification. Mix and match programs to design a track that fits your goals.

55 training programs

10 technology streams

Unique **product code** for every module

NTHRYS OPC PVT LTD

+91-8977624748

smo@nthrys.com

www.nthrys.com