

BIOPESTICIDE TECHNOLOGY • BIO-PROTECTION SKILL DEVELOPMENT



NTHRYS
OPC PVT LTD



Biopesticides Industrial Manufacturing Training Programs

A complete industrial catalogue of hands-on bio-protection production training modules — from microbial agents to formulation technology.

92

PROGRAMS

14

CATEGORIES

2026

EDITION

Program Categories at a Glance

This catalogue lists every biopesticide and bio-protection input our training programs are equipped to manufacture and teach, organised into 14 technology streams. Each program carries a unique product code for easy reference, enrolment and certification.

STREAM	CATEGORY FOCUS	DESCRIPTION	COUNT
NPP-BI	Bacterial Bioinsecticides	Bt-based & bacterial insect-pathogen production	7
NPP-VC	Mosquito & Vector-Control Larvicides	Public-health microbial larvicide manufacture	5
NPP-EF	Entomopathogenic & Acaricidal Fungi	Insect & mite-pathogenic fungal production	7
NPP-VB	Viral Biopesticides (Baculoviruses)	NPV & granulovirus in-vivo / in-vitro production	6
NPP-EN	Entomopathogenic Nematodes & Protozoa	EPN mass-rearing & microsporidian production	5
NPP-BF	Microbial Biofungicides	Antagonistic fungi & bacteria for disease control	10
NPP-BN	Bionematicides	Nematode-parasitic fungi & bacteria production	5
NPP-BH	Bioherbicides (Mycoherbicides)	Weed-pathogenic fungal inoculant production	4
NPP-BT	Botanical Biopesticides	Plant-extract & oil-based pesticide manufacture	8
NPP-SP	Semiochemicals & Pheromone Technology	Pheromone synthesis, lures & dispenser fabrication	6
NPP-FM	Fermentation-Derived Metabolites & Antibiotics	Secondary-metabolite fermentation & recovery	8
NPP-DE	Plant Defense Activators & Elicitors	Induced-resistance & elicitor product manufacture	5
NPP-FT	Formulation & Product-Form Technology	Carrier, liquid, encapsulated & nano product forms	10
NPP-MB	Macrobial & IPM Biocontrol Agents	Parasitoid & predator mass-rearing for IPM	6
Total training programs			92

HOW TO READ A CODE

NPP – BI – 01

NPP Nthrys bioPesticide Program BI Category stream 01 Program number

01

CATEGORY • NPP-BI

Bacterial Bioinsecticides

Bt-based & bacterial insect-pathogen production

7

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-BI-01	Bt var. kurstaki (Btk)	Bacillus thuringiensis for lepidopteran caterpillars.
NPP-BI-02	Bt var. aizawai (Bta)	Bt for armyworm & diamondback moth.
NPP-BI-03	Bt var. tenebrionis	Bt for coleopteran (beetle) larvae.
NPP-BI-04	Bt Broad-Spectrum (WP)	General Bt crystal-protein insecticide.
NPP-BI-05	Chromobacterium subtsugae	Broad-spectrum bacterial insecticide.
NPP-BI-06	Serratia / Yersinia	Grass-grub & scarab beetle control.
NPP-BI-07	Paenibacillus popilliae	Milky-disease bacterium for scarab grubs.

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-VC-01	Bt var. israelensis (Bti)	Mosquito & blackfly larvicide.
NPP-VC-02	Lysinibacillus sphaericus	Culex mosquito larvicide.
NPP-VC-03	Bti + L. sphaericus Blend	Broad-spectrum mosquito larvicide.
NPP-VC-04	Metarhizium Adulticide	Fungal adult-mosquito biocontrol.
NPP-VC-05	Larvicidal Surface Film	Monomolecular larval-suffocant film.

03

CATEGORY • NPP-EF

Entomopathogenic & Acaricidal Fungi

Insect & mite-pathogenic fungal production

7

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-EF-01	Beauveria bassiana	White-muscardine insect pathogen.
NPP-EF-02	Beauveria brongniartii	Scarab & cockchafer control.
NPP-EF-03	Metarhizium anisopliae	Green-muscardine soil-pest control.
NPP-EF-04	Metarhizium acridum	Locust & grasshopper biocontrol.
NPP-EF-05	Lecanicillium lecanii	Whitefly, aphid & scale control.
NPP-EF-06	Isaria fumosorosea	Whitefly & psyllid control.
NPP-EF-07	Hirsutella thompsonii	Mite (acaricidal) fungal agent.

04

CATEGORY • NPP-VB

Viral Biopesticides (Baculoviruses)

NPV & granulovirus in-vivo / in-vitro production

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-VB-01	Helicoverpa NPV (HearNPV)	Cotton bollworm control.
NPP-VB-02	Spodoptera litura NPV	Tobacco caterpillar control.
NPP-VB-03	Spodoptera exigua NPV	Beet armyworm control.
NPP-VB-04	Cydia pomonella GV (CpGV)	Codling-moth granulovirus.
NPP-VB-05	Plutella Granulovirus	Diamondback-moth control.
NPP-VB-06	Amsacta / Multi-host NPV	Hairy-caterpillar control.

05

CATEGORY • NPP-EN

Entomopathogenic Nematodes & Protozoa

EPN mass-rearing & microsporidian production

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-EN-01	Steinernema carpocapsae	Ambusher EPN for surface pests.
NPP-EN-02	Steinernema feltiae	Fungus-gnat & sciarid control.
NPP-EN-03	Heterorhabditis bacteriophora	Cruiser EPN for soil grubs.
NPP-EN-04	Heterorhabditis indica	Tropical root-grub EPN.
NPP-EN-05	Nosema locustae	Microsporidian for grasshoppers.

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-BF-01	Trichoderma viride	Soil-borne pathogen antagonist.
NPP-BF-02	Trichoderma harzianum	Root-rot & wilt biofungicide.
NPP-BF-03	Trichoderma asperellum	Foliar & soil disease control.
NPP-BF-04	Bacillus subtilis	Antifungal antibiosis biofungicide.
NPP-BF-05	Bacillus amyloliquefaciens	Broad-spectrum disease suppression.
NPP-BF-06	Pseudomonas fluorescens	Resistance-inducing biofungicide.
NPP-BF-07	Ampelomyces quisqualis	Powdery-mildew hyperparasite.
NPP-BF-08	Coniothyrium minitans	Sclerotinia sclerotia parasite.
NPP-BF-09	Clonostachys rosea	Botrytis & seed-rot control.
NPP-BF-10	Aureobasidium pullulans	Post-harvest disease antagonist.

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CATEGORY • NPP-BN

Bionematicides

Nematode-parasitic fungi & bacteria production

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-BN-01	Purpureocillium lilacinum	Egg-parasitic nematocidal fungus.
NPP-BN-02	Pochonia chlamydosporia	Cyst & root-knot nematode parasite.
NPP-BN-03	Bacillus firmus	Nematode-suppressing bacterium.
NPP-BN-04	Pasteuria penetrans	Obligate nematode-parasitic bacterium.
NPP-BN-05	Nematode-Trapping Fungi	Predatory Arthrobotrys nematocide.

08

CATEGORY • NPP-BH

Bioherbicides (Mycoherbicides)

Weed-pathogenic fungal inoculant production

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-BH-01	Colletotrichum gloeosporioides	Mycoherbicide for noxious weeds.
NPP-BH-02	Phytophthora palmivora	Strangler-vine mycoherbicide.
NPP-BH-03	Sclerotinia minor	Broadleaf-weed bioherbicide.
NPP-BH-04	Chondrostereum purpureum	Woody-weed & stump bioherbicide.

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CATEGORY • NPP-BT

Botanical Biopesticides

Plant-extract & oil-based pesticide manufacture

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-BT-01	Neem (Azadirachtin)	Antifeedant & growth-regulating extract.
NPP-BT-02	Pyrethrum / Pyrethrins	Fast-acting botanical knockdown.
NPP-BT-03	Karanja / Pongamia	Oil-based botanical insecticide.
NPP-BT-04	Essential-Oil Formulation	Clove / citronella / eucalyptus actives.
NPP-BT-05	Capsaicin Extract	Chilli-based repellent & deterrent.
NPP-BT-06	Ryania / Sabadilla	Alkaloid botanical insecticide.
NPP-BT-07	Quassia Extract	Soft botanical insecticide.
NPP-BT-08	Plant Soap / Hort. Oil	Fatty-acid contact insecticide.

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CATEGORY • NPP-SP

Semiochemicals & Pheromone Technology

Pheromone synthesis, lures & dispenser fabrication

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-SP-01	Sex-Pheromone Lures	Species-specific monitoring lures.
NPP-SP-02	Mating-Disruption Dispensers	Pheromone-saturation control.
NPP-SP-03	Mass-Trapping Systems	Lure-and-trap formulations.
NPP-SP-04	Aggregation Pheromones	Beetle & weevil aggregation lures.
NPP-SP-05	Kairomone / Food Attractants	Attractant-based bait systems.
NPP-SP-06	Lure-and-Kill Stations	Attract-and-kill device formulations.

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-FM-01	Spinosad	Saccharopolyspora-derived insecticide.
NPP-FM-02	Spinetoram	Semi-synthetic spinosyn insecticide.
NPP-FM-03	Abamectin / Eamectin	Avermectin insect & mite control.
NPP-FM-04	Milbemectin	Milbemycin acaricide & nematicide.
NPP-FM-05	Polyoxins	Antifungal nucleoside antibiotic.
NPP-FM-06	Validamycin	Sheath-blight biofungicide.
NPP-FM-07	Kasugamycin	Bactericidal & fungicidal antibiotic.
NPP-FM-08	Blasticidin-S	Rice-blast control antibiotic.

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CATEGORY • NPP-DE

Plant Defense Activators & Elicitors

Induced-resistance & elicitor product manufacture

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PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-DE-01	Harpin Protein	SAR-eliciting bacterial protein.
NPP-DE-02	Chitosan	Defense-eliciting biopolymer.
NPP-DE-03	Laminarin / Seaweed Elicitor	Algal defense activator.
NPP-DE-04	SAR Inducer	Salicylate-pathway resistance activator.
NPP-DE-05	Jasmonate Elicitor	Induced-resistance signal activator.

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-FT-01	Wettable Powder (WP)	Dispersible dry biopesticide.
NPP-FT-02	Water-Dispersible Granule (WDG)	Dust-free granular formulation.
NPP-FT-03	Suspension Concentrate (SC)	Stable aqueous suspension.
NPP-FT-04	Oil Dispersion (OD)	UV-protective oil carrier for fungi & Bt.
NPP-FT-05	Emulsifiable Concentrate (EC)	Botanical & oil concentrate.
NPP-FT-06	Granule / Bait (GR)	Soil & bait formulations.
NPP-FT-07	Microencapsulated (CS)	Controlled-release capsule suspension.
NPP-FT-08	ULV / Sprayable	Ultra-low-volume field formulation.
NPP-FT-09	Pheromone Dispenser Build	Lure & dispenser fabrication.
NPP-FT-10	Nano-Formulation	Nano-encapsulated bio-active delivery.

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CATEGORY • NPP-MB

Macrobial & IPM Biocontrol Agents

Parasitoid & predator mass-rearing for IPM

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NPP-MB-01	Trichogramma Parasitoid	Egg-stage caterpillar parasitoid.
NPP-MB-02	Encarsia / Eretmocerus	Whitefly parasitoids.
NPP-MB-03	Aphidius / Cotesia	Aphid & caterpillar parasitoids.
NPP-MB-04	Predatory Mites	Phytoseiulus & Amblyseius for mites/thrips.
NPP-MB-05	Ladybird Beetles / Lacewings	Aphid & soft-pest predators.
NPP-MB-06	Predatory Bugs (Orius)	Thrips & mite predators.

ENROL • CULTURE • PROTECT

Build a Career in Biopesticide Manufacturing

Every program in this catalogue is delivered as hands-on training on working laboratory and production equipment — covering strain isolation, mother & bulk culture, fermentation, in-vivo / in-vitro rearing, extraction, formulation, quality control, bio-efficacy, packaging and bio-safety compliance. Mix and match programs to design a track that fits your goals.

92 training programs

14 technology streams

Unique **product code** for every module

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