PREMIUM
AG SOLUTIONS

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Integrated Pest Management Protocol

Strategic Defense Against Common Indoor & Greenhouse Pests

Document Type	Integrated Pest Management (IPM) Protocol
Scope	Indoor cultivation & greenhouse environments
Targeted Pests	Root aphids, fungus gnats, spider mites, thrips, whiteflies
Cycle Duration	11-day repeating cycle (5 active days + 5 establishment days + restart)
Prepared by	Dutch Direct LLC

This protocol establishes a multi-layered strategy of substrate sanitation, botanical fortification, and beneficial microbial support to create a balanced, resilient growing environment where common pests struggle to establish.

Overview

Why This Method is Ideal for Controlled Environments

This Integrated Pest Management (IPM) protocol is designed to address resilience against persistent indoor and greenhouse pests through a multi-layered strategy. By combining substrate sanitation, botanical fortification, and beneficial microbial support, this protocol establishes a balanced, fortified environment that promotes plant health and makes it difficult for pests to establish.

Each step builds on the last, reinforcing plant resilience. The 11-day repeating cycle ensures continuous protection while allowing biological agents the time they need to integrate into the growing environment.

Targeted Pests

Pest	Scientific Name	Primary Concern
Root Aphids	*Phylloxera spp.*	Root zone damage; hard to detect early
Fungus Gnats	*Bradysia spp.*	Larval root feeding; spread pathogens
Spider Mites	*Tetranychus urticae*	Foliar damage; rapid reproduction
Thrips	*Frankliniella occidentalis*	Foliar & floral damage; virus vector
Whiteflies	*Trialeurodes vaporariorum*	Sap sucking; honeydew/mold buildup

Professional Product Line

01 Nano Colloidal Stabilized 50% H O

PRODUCT	Nano colloidal stabilized hydrogen peroxide at 50% concentration
WHAT TO DO	Advanced sterilizing agent
HOW TO APPLY	Apply at 100–200 ppm with a 10–20 minute contact period, then flush thoroughly with clean water. Allow the system to stabilize for 24 hours.
WHY IT WORKS	Creates a sterile growing foundation by eliminating microbial buildup. Nano colloidal stabilization ensures consistent potency and effectiveness throughout the substrate.

02 F1 IPM Root & Foliar

PRODUCT	Specialized essential oil and encapsulated sulfur blend; used with Superslick adjuvant
WHAT TO DO	Botanical IPM formula
HOW TO APPLY	Day 3: apply to root zone. Day 4: apply to foliage. Mix with Superslick at label rates. Ensure complete coverage including leaf undersides and growth points.
WHY IT WORKS	Botanical compounds create a hostile environment for spider mites, thrips, and whiteflies. Synergistic action with Superslick maximizes coverage and adhesion for full-system protection.

03 Superslick

PRODUCT	Surfactant/wetting agent for use with F1 IPM applications
WHAT TO DO	Professional-grade adjuvant
HOW TO APPLY	Mix with F1 IPM according to label rates for both root and foliar applications.
WHY IT WORKS	Improves product coverage and adhesion, ensures uniform distribution across all plant surfaces, and increases the overall efficiency of F1 IPM applications.

04 F1 Myco Shield

PRODUCT	Beauveria bassiana and complementary beneficial fungi (Verticillium lecanii 2%) in specialized carrier system
WHAT TO DO	Biological control agent
HOW TO APPLY	Mix 5 g per liter of water. Apply during the cooler part of the day. Ensure complete coverage. Maintain humidity above 65% for 8–12 hours after application.
WHY IT WORKS	Establishes a long-term biological defense layer. Beneficial fungi interact naturally with plant ecosystems, bolstering resilience against aphids, thrips, and other pests over the 5-day establishment period.

The Five-Day Protection Protocol

Each product is applied at a precise point in the cycle to maximize effectiveness and ensure compatibility between components.

01 Day One — Sterilization

PRODUCT	Nano Colloidal Stabilized 50% H O
WHAT TO DO	Establish a clean substrate foundation
HOW TO APPLY	Apply at 100–200 ppm. Maintain 10–20 minute contact period. Flush system thoroughly with clean water. Allow 24 hours for system stabilization.
WHY IT WORKS	Cleanses the substrate of microbial buildup, reducing initial pest pressure and creating an optimal base for subsequent product applications.

02 Day Two — System Stabilization

PRODUCT	No product application
WHAT TO DO	Allow the growing environment to reach optimal conditions
HOW TO APPLY	Monitor environmental parameters. Prepare equipment for following applications. Document baseline conditions.
WHY IT WORKS	The stabilization period ensures residual sterilant has cleared and the environment is receptive to botanical and biological applications.

03 Day Three — Root Zone Application

PRODUCT	F1 IPM + Superslick
WHAT TO DO	Establish root zone botanical protection
HOW TO APPLY	Mix F1 IPM with Superslick at label rates. Apply thoroughly to root zone. Monitor plant response and maintain optimal root zone conditions.
WHY IT WORKS	Root zone treatment targets soil-dwelling stages of fungus gnats and root aphids while establishing the first layer of botanical defense.

04 Day Four — Foliar Application

PRODUCT	F1 IPM + Superslick
WHAT TO DO	Strengthen protection through comprehensive foliar coverage
HOW TO APPLY	Mix F1 IPM with Superslick for foliar application. Ensure complete coverage of all plant surfaces. Focus on leaf undersides and growth points. Allow proper drying time.
WHY IT WORKS	Foliar coverage addresses spider mites, thrips, and whiteflies at their primary feeding and breeding sites on above-ground plant tissue.

05 Day Five — Biological Integration

PRODUCT	F1 Myco Shield
WHAT TO DO	Complete the system with beneficial fungal establishment
HOW TO APPLY	Mix 5 g per liter of water. Apply during the cooler period of the day. Ensure complete coverage. Maintain humidity above 65% for 8–12 hours.
WHY IT WORKS	Introduces Beauveria bassiana and Verticillium lecanii to establish a persistent biological control layer that continues working throughout the establishment period.

11-Day IPM Cycle Schedule

Day	Phase	Action
Day 1	**Sterilization**	Nano Colloidal Stabilized 50% H O — 100–200 ppm, 10–20 min contact, flush
Day 2	**System Stabilization**	Rest — monitor parameters, prepare equipment
Day 3	**Root Zone Treatment**	F1 IPM + Superslick — root zone application
Day 4	**Foliar Treatment**	F1 IPM + Superslick — full foliar coverage
Day 5	**Biological Introduction**	F1 Myco Shield — 5 g/L, apply in cool period, maintain 65%+ humidity 8–12 hrs
Days 6–10	**Establishment Period**	Allow microbial populations to establish and integrate
	Cycle Restart	

Why This Protocol Works

Each step builds on the last, creating a comprehensive, layered defense system. Substrate sterilization eliminates existing pest populations and microbial competition, giving subsequent applications the best possible conditions to perform.

Botanical fortification with F1 IPM and Superslick creates an inhospitable environment for foliar and root pests during the window between sterilization and biological establishment. The dual root/foliar application ensures no part of the plant system is left unprotected.

Biological integration with F1 Myco Shield establishes a self-sustaining defense layer that persists between cycle applications. The 5-day establishment period allows Beauveria bassiana and Verticillium lecanii to colonize the growing environment, providing ongoing suppression of target pest populations.

By repeating the cycle every 11 days, the protocol maintains continuous overlapping protection — each new cycle begins before the previous biological layer diminishes, ensuring no gap in defense.