Two-Spot Cotton Leafhopper (TSCL) IPM Guide Across Hibiscus Supply Chain

Wholesale Grower Version (Including Retailer & Consumer Steps)

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Step 1: Early Detection & Prevention

Regular Program:
Inspect incoming liners carefully.
Reject or isolate any lots showing leafhopper adults, nymphs, or hopperburn symptoms.
Apply flupyradifurone (IRAC 4D) as a systemic foundation spray.
Use bifenthrin (IRAC 3A) or tolfenpyrad (IRAC 21A) for adult knockdown. Begin sticky-card monitoring immediately.
Pollinator-Safe Program:
Inspect liners thoroughly.
Reject infested lots.
Apply flupyradifurone (4D) only on non-pollinator stock.
Use tolfenpyrad (21A) for adult suppression.
Avoid neonicotinoids (IRAC 4A) on pollinator-friendly plants.
Why this step matters:
Starting clean prevents early population establishment and reduces the need for heavy mid-season sprays.

Step 2: Stop the First Wave

Regular Program:
Target early leafhopper generations using tolfenpyrad (21A) for adults and buprofezin (16) for nymph development suppression.
Apply during Weeks 2–4. Maintain label rates and ensure full leaf coverage.
Pollinator-Safe Program:
Use 21A + 16 on non-blooming stock.
Avoid spraying during peak pollinator activity.
Prevent early population buildup without harming beneficial insects.
Why this step matters:
Leafhoppers multiply quickly; breaking the first generation prevents exponential growth.

Step 3: Maintain Control During Active Growth

Regular Program:
Use flupyradifurone (4D) or afidopyropen (9D) for residual suppression.
Add novaluron (15) if nymphs persist.
Deploy sticky cards weekly.
Remove fallen buds and damaged terminals to reduce pressure.
Pollinator-Safe Program:
Use 21A + 16 on non-blooming stock.
Avoid spraying during peak pollinator activity.
Prevent early population buildup without harming beneficial insects.
Why this step matters:
This is the period when leafhopper pressure peaks; consistent suppression prevents hopperburn.

Step 4: Prepare Clean Blocks for Retail

Regular Program:
Apply bifenthrin (3A) or tolfenpyrad (21A) for final knockdown.
Document scouting and treatments for compliance.
Ensure plants are free of hopperburn before shipping.
Pollinator-Safe Program:
Use tolfenpyrad (21A) only on non-pollinator stock.
Avoid 4A entirely.
Maintain strict sanitation and documentation.
Why this step matters:
Retailers reject infested plants; clean blocks protect your reputation and reduce callbacks.

Step 5: Protect Plants on Benches

Regular Program:
Place sticky cards above hibiscus benches.
Train staff to recognize hopperburn.
Remove and bag infested plants immediately.
Communicate IPM steps to customers and regulators.
Pollinator-Safe Program:
Same monitoring steps.
Avoid broad-spectrum sprays near pollinator-friendly displays.
Remove infested plants promptly.
Why this step matters:
Retail environments can reintroduce pests; monitoring prevents spread and customer complaints.

Step 6: Simple Consumer-Friendly Instructions

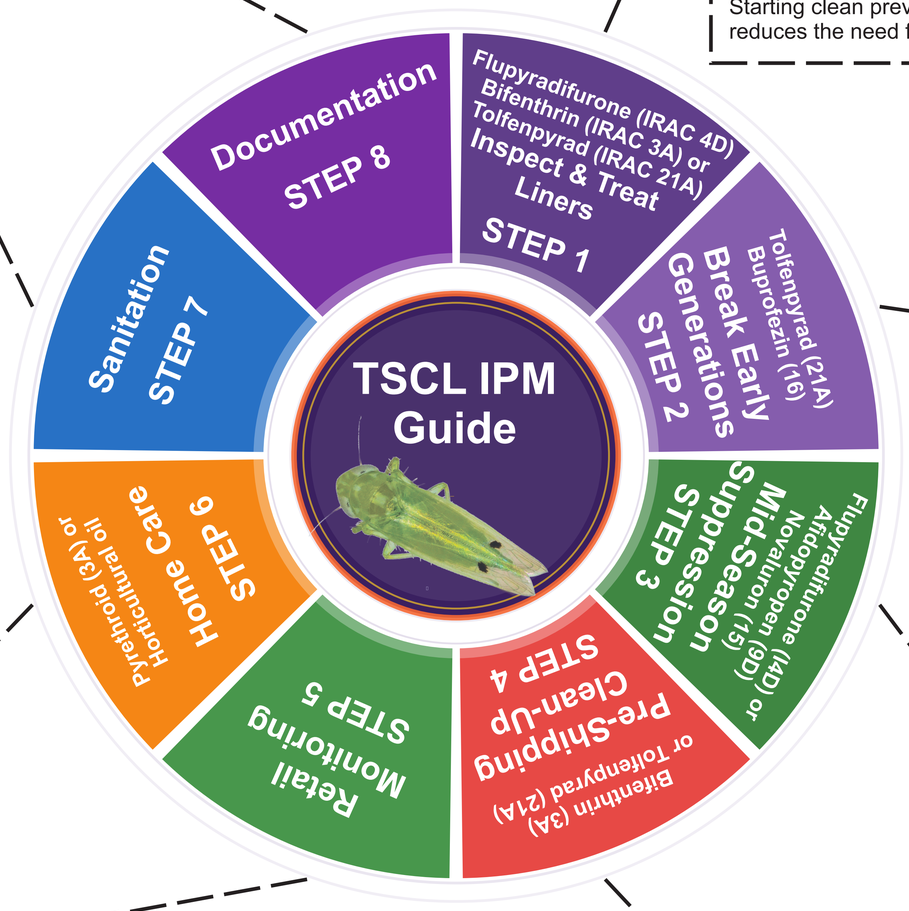
Regular Program:
Scout leaves for yellow margins, bronzing, and curling. Treat with labeled pyrethroid (3A) or horticultural oil.
Repeat in 7–10 days.
Bag and dispose infested leaves.
Pollinator-Safe Program:
Scout for hopperburn.
Use horticultural oil only.
Repeat in 7–10 days.
Avoid systemic products on flowering plants.
Why this step matters:
Clear instructions reduce customer frustration and improve plant survival.

Step 7: Remove Sources of Reinfestation

Regular Program:
Remove fallen buds, damaged terminals, and infested leaves.
Maintain clean floors and benches.
Reduce alternate hosts nearby.
Pollinator-Safe Program:
Same sanitation steps.
Avoid spraying during peak pollinator activity.
Maintain clean production zones.
Why this step matters:
Sanitation reduces pest pressure and improves spray effectiveness.

Step 8: Recordkeeping for Compliance & Improvement

Regular Program:
Record scouting dates, pest counts, treatments, and outcomes.
Maintain compliance logs for audits and shipping.
Pollinator-Safe Program:
Record pollinator-safe decisions, spray timing, and product choices.
Document avoidance of 4A and bloom-time sprays.
Why this step matters:
Documentation supports regulatory compliance, improves future IPM decisions, and protects your operation.



How to Use This TSCL IPM Guide Across the Supply Chain: This TSCL IPM Guide summarizes management responsibilities across the hibiscus supply chain. Each stakeholder enters at a different point, so the steps do not represent a continuous cycle. Growers use Steps 1 through 4, 7, and 8 because they manage liners, early pressure, active growth, finishing, sanitation, and documentation. Retailers use Steps 5, 7, and 8 because they receive finished plants and focus on bench protection, sanitation, and basic recordkeeping. Homeowners use Step 6 only because they have access to limited products and require simple care instructions. Step 1 includes insecticides because growers must inspect and treat liners early to prevent population establishment and reduce mid season outbreaks. Grower operations vary. Some propagate their own liners, some purchase liners and finish them locally, and some buy nearly finished plants and shift them up. These groups share early detection and quarantine responsibilities but enter the workflow at different points. Retail growers and retailers rely on clean incoming stock and focus on monitoring and sanitation. Homeowners require only basic guidance. Readers who need the full explanatory text for each step can access the complete version online.

Disclaimer: This guide is for educational purposes only. Product options listed here reflect insecticides evaluated in research trials conducted at Clemson University and the University of Georgia. Additional chemistries may be effective, but formal evaluations for those products are still underway. Application outcomes depend on crop systems, environmental conditions, and user practices. Always read, follow, and comply with the pesticide label and all state and federal regulations. The pesticide label is the legal authority.