Nursery Scouting Programs

Purpose:

• To minimize the risk of pests/pathogen introduction or establishment in a nursery operation
• To ensure shipment of clean stock
What is Scouting?

- Training
- Documentation/Record keeping
- Treatment
- Diagnosis/Identification
- Monitoring
- Inspection
- Crop Damage
Documentation and Record Keeping reveals pest:

- Frequency of Occurrence
- High Risk Crops
- Environmental Triggers
- Seasonality
- High Risk Areas

More Focused Trainings and Treatment Options
When should Scouting Occur?

- Buy-Ins (Liners, bareroot, finished goods)
- Prior to taking Field Cuttings
- Upsizing or in-ground removal
- Common Carrier Trucks
- Shipping docks
- Propagation Mistbeds and prop Greenhouses
# USPPC Matrix - Scouting

<table>
<thead>
<tr>
<th>Component, site, or stage of production</th>
<th>Target pests or pathogens</th>
<th>Contamination Hazard</th>
<th>BMP-suggested by ANLA/SAF working group</th>
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<tbody>
<tr>
<td>cuttings, bareroot, tissue culture inputs</td>
<td>all pests and pathogens</td>
<td>Introduction on purchased stock or cuttings</td>
<td><strong>Inspect</strong> all deliveries and scout for leaf and root pests, vectors and pathogens upon receipt. Consider crop to determine scouting intervals. Send questionable samples to a diagnostic lab when necessary. <strong>Determine appropriate action</strong> for pest or pathogen found whether that is treatment, other cultural control, thorough composting* or destroying. <strong>Evaluate risk</strong> to determine options.</td>
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Propagation collecting cuttings from *Euonymus japonica* … approx. 100,000 pieces = 300,000 cuttings
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<td>On-site Cuttings</td>
<td>all pests and pathogens</td>
<td>Introduction from stock or cuttings</td>
<td>Propagate stock on site from <strong>healthy stock</strong> plants. If necessary, <strong>apply a broad-spectrum fungicide treatment in the field before taking cuttings.</strong> Avoid taking cuttings when wet and avoid or remove soil particles. Do not co-mingle cuttings from different stock in water. Soak cuttings in a disinfectant solution when appropriate.</td>
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<td>Production</td>
<td>all pests and pathogens</td>
<td>All</td>
<td>For known pests and pathogens, <strong>schedule scouting</strong> according to predicted emergence dates and/or key life cycle events. <strong>Schedule scouting</strong> at intervals that are frequent enough to prevent or manage outbreaks. Regularly <strong>inspect</strong> for pests and symptomatic plants. <strong>Identify</strong> pest, pathogen or abiotic problem and record. <strong>Adjust scouting frequency</strong> according to crop type. If appropriate, control or treat for pests and pathogens found and record treatment.</td>
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<tr>
<td>Processing/grading</td>
<td>all pests and pathogens</td>
<td>Introduction of pests and pathogens during processing/grading</td>
<td>Regularly <strong>inspect</strong> for pests and symptomatic plants. <strong>Identify</strong> pest, pathogen or abiotic problem and record. <strong>Adjust scouting frequency</strong> according to crop type. If appropriate, <strong>control or treat</strong> for pests and pathogens found and <strong>record</strong> treatment.</td>
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When should Scouting Occur?

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Propagation Mist house
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<tr>
<td>Propagation and Production cycle</td>
<td>all pests and pathogens</td>
<td>Introduction of pests or pathogens during propagation</td>
<td>Regularly <strong>inspect</strong> for pests and symptomatic plants. Identify pest, pathogen or abiotic problem and record. <strong>Adjust scouting frequency</strong>, according to crop type. If appropriate, <strong>control or treat</strong> for pests and <strong>Display photographs</strong> of pests, pathogens and symptomatic plants in appropriate employee areas. <strong>Label and date all traps</strong>. Inspect and regularly change traps. Send unusual or unrecognized pests and diseases to a laboratory for diagnosis and identification or consult a Farm advisor or other expert for <strong>identification</strong>. Take appropriate <strong>corrective action</strong> and treatments if pests and diseases are found. <strong>Document</strong> the corrective action. For known pests and pathogens, schedule scouting according to predicted emergence dates and/or key life cycle events. <strong>Schedule scouting at intervals that are frequent enough to prevent or manage outbreaks.</strong></td>
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Dock
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<td><strong>Shipment</strong></td>
<td>all pests and pathogens</td>
<td>packaging and shipping</td>
<td>Thoroughly <strong>inspect</strong> ALL material before shipping. Only ship material that is <strong>free from regulated pests</strong> and apparently free of other pests and pathogens. <strong>Record</strong> any pests/pathogens and symptomatic plants found. If appropriate, <strong>control or treat</strong> for pests and pathogens found and <strong>record treatment</strong>. Only ship if treatment successful.</td>
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Truck Interior
Who Should be Scouting?
(Targeted and Passive)

- Pest Control employees
- Quality Assurance personnel
- Field Workers
- Dock Checkers
- Customer Service
- Dock workers
- Those overseeing Compliance Agreements/Permits
- Everyone
Where should Scouting efforts be Focused?

- High Risk Crops
  - Quarantine pests
  - Compliance agreements
- High Risk areas of Nursery
  - e.g. Snail-free Permit
- High Risk Times of Year
- Nursery wide Common pests
- Preventative Maintenance Programs
- High Risk Events
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More Focused Trainings and Treatment Options
Glass-Winged Sharpshooter Scouting

- High Risk Crops: Focus on Oviposition crops
- High Risk areas of Nursery: Perimeter and on-site Landscape HR plants
- High Risk Times of Year: summer
- Preventative Maintenance Programs: Insecticide treatment prior to shipment
- High Risk Events: summer temperature spikes and buy-ins
- Nursery wide Survey: Yellow Stick Cards

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European Brown Garden Snail Scouting

EBGS SCOUTING
(Snail-free Permit)

High Risk Crops: Tropical crops, evergreen crops

High Risk areas of Nursery: Moist areas, drainage ditches and on-site Landscape HR plants

High Risk Times of Year: Spring, Fall

Preventative Maintenance: Baiting HR crops and HR areas

Nursery wide: on shipping docks

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Buy-ins
Phytophthora ramorum (SOD) Scouting

- **High Risk Crops**: Rhododendron, Camellia, Viburnum, Pieris, Kalmia
- **High Risk areas of Nursery**: Low spots and on-site Landscape HR plants
- **Preventative Maintenance**: Monthly inspections of HR plants
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Why is Scouting Important
CA Case Study

For a nursery owner to consider their scouting program to be cost effective, one of two beneficial outcomes or a combination of the two outcomes should occur.

Scouting efforts should:
• sufficiently reduce the risk of lost revenue caused by pest-related scrap or quarantine
• help minimize chemical treatment costs such that total pest management costs are lower
In 2012, Chemical Treatment costs for those nurseries that participated in the UCCUH, UCNFA case study ranged from $535 per acre/year to as much as $3,178 per acre/year, the latter nursery treating all crops for LBAM.
Why is Scouting Important

CA Case Study

- Chemical application labor costs were approximately three to four times the magnitude of costs for scouting labor.
- In case studies, 2-8 hrs annually were dedicated to training scouts.
- How a nursery scouts and the level of investment they put into their scouting program can determine its effectiveness in relationship to their overall pest management plan.
A robust IPM program has a Strong Scouting component; if not, more dollars are spent chemically treating pests and pathogens.