Foliar Spray Programs for ACP and other Citrus Pests in SW Florida
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Insecticidal Control: Considerations

- **When to spray**
  - Dormant vs growing season
  - “On demand” vs Calendar
    - Thresholds, risk-cost/benefit

- **How to spray**
  - Low Volume vs High Volume
  - Air vs Ground

- **What to spray**
  - **Efficacy**
    - Adults/nymphs
  - Resistance management
    - Frequency of use
    - Rotation MOAs
  - Secondary pests
    - Leafminers, mites, scales
  - Conservation beneficials
    - Broad-spectrum vs Selective
Foliar Insecticides Against ACP Nymphs
Ranked by Average number of days counts were significantly less than the check.

Average Days of Activity

Number of times tested

0 5 10 15 20 25 30 35 40 45

Mustang Max
Lorsban
Imidan
Voliam Flexi
Nexter
Dibrom
Movento
Grandeo
Agriflex
Actara
Danitol
Delegate
Agri-mek
Dimethoate
Provado
Portal
Supracide
Mpede/addit
435 oil
Vydate
Micromite
Requiem
Sevin
Envidor
Assail
AZA-direct
Foliar Insecticides: Reduction of ACP Adults

Ranked by average number of days counts were significantly less than the check. Does not imply that adults were controlled directly.
**Example Insecticide Programs for ACP and other pests in Florida**

<table>
<thead>
<tr>
<th></th>
<th>Insecticide Sprays per year (excluding oil alone)</th>
<th>Other pests Controlled</th>
<th>MOA**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One</td>
<td>Two</td>
<td>Four</td>
</tr>
<tr>
<td>Jan</td>
<td>Pyrethroid</td>
<td>Pyrethroid</td>
<td>Pyrethroid</td>
</tr>
<tr>
<td>Feb</td>
<td></td>
<td></td>
<td>Movento[^]</td>
</tr>
<tr>
<td>Mar</td>
<td></td>
<td>Oil</td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>Oil</td>
<td>Oil</td>
<td>Oil</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td>Delegate[^]</td>
<td>Delegate[^]</td>
</tr>
<tr>
<td>Jun</td>
<td>Delegate[^]</td>
<td>Delegate[^]</td>
<td>Abamectin[^] or (AgriFlex)[^]</td>
</tr>
<tr>
<td>Jul</td>
<td>Oil</td>
<td>Oil</td>
<td>Oil</td>
</tr>
<tr>
<td>Aug</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sep</td>
<td></td>
<td></td>
<td>Micromite[^]</td>
</tr>
<tr>
<td>Oct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov-Dec</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
</tbody>
</table>

*Generally applied with oil or another surfactant  † May not be necessary due to low populations  ^ Primarily for control of nymphs  ** www.irac-online.org
# Spray Calendar for Pest Management

<table>
<thead>
<tr>
<th>Months</th>
<th>Nov-Dec</th>
<th>Jan</th>
<th>Feb-Mar</th>
<th>Apr</th>
<th>May - June</th>
<th>July - Aug</th>
<th>Sep-Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td>OP</td>
<td>Pyrethroid</td>
<td>Movento Portal Micromite Intrepid Delegate</td>
<td>OIL</td>
<td>Delegate Movento Abamectin AgriFlex Knack</td>
<td>Oil</td>
<td>Micromite Delegate Portal Movento</td>
</tr>
<tr>
<td><strong>Pests</strong></td>
<td>ACP</td>
<td>ACP Weevils</td>
<td>ACP Mites Leafminer Weevils Scales</td>
<td>Everything</td>
<td>ACP Rust mite Leafminer Scales</td>
<td>Everything</td>
<td>ACP Leafminer Rustmite Scales Mealybugs</td>
</tr>
</tbody>
</table>
Future Objectives

- Development of online graphing, & mapping programs for ACP pest management.

- Development of spray app to help with selection of chemicals to spray, AND to correlate with Gulf CHMA data.
Conclusions and Final Thoughts

• Many factors involved in the decision of when, what and how to spray

• The objectives of the present recommendations are to maximize efficacy, limit collateral damage to beneficials and not repeat any MOA in a particular year
  − Hard chemistry during dormancy to kill overwintering adults
  − Selective chemistry during growing season directed at particular pests

• Not all factors can be anticipated or generalized
  − Market Issues
  − Weather conditions
  − Pest pressure

• Spray recommendations are only guidelines to be adapted to local conditions.

• Our goal is to help you make the best decision for your situation
Acknowledgements

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- SWFREC Citrus Insecticide Team

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