Toward Area Wide Management of Asian Citrus Psyllid in Florida

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& Brandon Page CREC
Voluntary Cooperative Dormant Applications in SW Florida

<table>
<thead>
<tr>
<th>Application</th>
<th>Dec 08 – Feb 09</th>
<th>Oct 09 – Feb 10</th>
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</thead>
<tbody>
<tr>
<td>Aerial</td>
<td>71,916</td>
<td>73,180</td>
</tr>
<tr>
<td>Ground (estimated)</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Total</td>
<td>101,916</td>
<td>103,180</td>
</tr>
<tr>
<td>Sprays (no)</td>
<td>1.15</td>
<td>1.33</td>
</tr>
</tbody>
</table>

* Estimation based on survey of 27 growers in 2009 covering 106,000 acres
DPI-CHRP Field Survey Results:
Average ACP Adults per 10 Tap Samples
Before and After Dormant Sprays, 2008-2009

- Air (55) 28 x
- Ground (13)
- Untreated (1)

Adults per 10 taps

- 60% - 74% - 110% - 50% - 83%
Effect of CHMAs (2013-2015)

Significant difference in ACP population peaks
Trends over Time
Smoothed Data All CHMAs

Log10 (mean ACP)

Linear OLS Reg: $R^2 = 0.193; P < 0.001$  Significant downward trend
Linear OLS Reg: $R^2 = 0.009; \ P = 0.509$  No linear trend (apparent seasonal trend dominates)
Comparisons Among CHMAs
Average counts Mar 2012 to present

Mean ACP/ 50 Taps
Comparisons Among CHMAs
Average counts Mar 2012 to present
Counts Outside CHMAS
Average counts Mar 2012 to present

<table>
<thead>
<tr>
<th>Counties Outside CHMAS</th>
<th>Mean ACP/ 50 Taps</th>
</tr>
</thead>
<tbody>
<tr>
<td>St Lucie Co</td>
<td>A</td>
</tr>
<tr>
<td>Okeechobee</td>
<td>B</td>
</tr>
<tr>
<td>MartinCo</td>
<td>AB</td>
</tr>
<tr>
<td>I River Co</td>
<td>AB</td>
</tr>
</tbody>
</table>

\[ F_{3,207} = 3.37; \ P = 0.020 \]

SAS proc Mixed; ddfm= Satt; Bonferroni-adjusted pairwise comparisons
Variability within CHMAs

ACP for Cycles 61, 62, 63 in NW Hendry CHMA

Consecutive Hot Spots (≥10 ACP) in cycles 61, 62, 63

Legend:
- NW Hendry CHMA
- Cycle 63 ACP
- 0 - 9
- 0 - 1000
- Cycle 62 ACP
- 0 - 9
- 0 - 1000
- Cycle 61 ACP
- 0 - 9
- 0 - 1000

Map Created By J. Tansey for UF-SWFREC, 03/23/15
CHMA Results: Summary

• Early success with cooperative dormant sprays
• Lower ACP populations over all CHMAs compared to non-CHMAs
• Populations decreasing over time over all CHMAs but not in Non-CHMA blocks
• Variation among CHMAs
  — 3-year averages vary from less than 2 to 22 per 50 taps
  — Effects of leadership/cooperation
• Variation within CHMAs
  — A few hot spots can bring up the numbers significantly
• Regional Trends
  — Larger units (SW Florida) easier to manage
Future Challenges and Research Needs

• Spray material choices
  — Cost, targeting, resistance management

• Optimal timing and number of sprays
  — Thresholds?
  — ACP movement?
    • Edge effects
    • Neighbor effects
    • Alternate hosts

• Get involved!

• Acknowledgement:
  — Citrus Research and Development Foundation (CRDF)
  — FDACS Specialty Block Grant Program – Sonia Tighe