CRDF Bactericide Field Trial Update

Stephanie Slinski, Project Manager - Bactericides Program

Citrus Expo, August 17, 2017
Bactericide Survey 2017

- 57 respondents
- Represents 131,294 acres, mostly oranges
- Half the respondents and acreage as last year
Bactericide Survey 2017

Reported Regions of Operation

- Southwest
- Ridge
- IR
- SW + Ridge + IR
- SW + IR
- SW + Ridge

- Percent of Respondents
- Percent of Reported Acreage
Bactericide Survey 2017

Reported Applications by Percentage Acreage 2016/2017

Average of 3.4 Applications
Bactericide Survey 2017

Reported Active Ingredient Applied

OTC Only

Strep Only

Both

Percent of Respondents

Percent of Reported Acreage

89%
Grower Bactericide Trials

Purpose

• To gather data to provide growers with information on the use of Mycoshield®, Fireline™ and Firewall™

• Evaluating grower bactericide programs
  • Any adjuvant, tank mix, timing etc.
  • All regions
  • Any variety

• Simple field trials
Grower Bactericide Trials

Trial Design – Not RCB

Control Rows

Treated Block
Grower Bactericide Trials

- Data collected
  - PCR (copy number or $C_t$)
  - Fruit Drop
  - Yield
  - Disease Severity

- Bactericide usage
  - FL only = 8 sites
  - MS only = 4 sites (3)
  - FL/MS = 7 sites
  - FL/FW = 21 sites (20)
  - FL/FW/MS = 28 sites (14)

- 37 of these sites with 2016/17 Yield Data
- Individual site analysis tells gives us a little information
- Grapefruit/Hamlin data were inconclusive due to small number of growers.
- Evidence suggests that multiple years of treatment are necessary
CRDF Grower Trial: Yield Data Compared to Control (FL/FW)

Yield (kg) By Site

- Valencia
- Hamlin
- Other Orange Varieties

Slide Provided by Bob Shatters, USDA ARS
CRDF Grower Trial: Yield Data Compared to Control (FL/FW/MS)

Valencia
Hamlin
Grapefruit
Other Orange Varieties

Ratio of Yield Compared to Control

Yield (kg) By Site

Slide Provided by Bob Shatters, USDA ARS
# Grower Bactericide Trials

<table>
<thead>
<tr>
<th>All Citrus</th>
<th>Recommended Adjuvant Used?</th>
<th># Sites</th>
<th>Total Trees</th>
<th>Yield</th>
<th>Relative Difference</th>
<th>P-Value</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Data</td>
<td>Yes</td>
<td>21</td>
<td>1000</td>
<td></td>
<td>+9%</td>
<td>0.0041</td>
<td>99.6%</td>
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<tr>
<td>All Data</td>
<td>No</td>
<td>18</td>
<td>850</td>
<td></td>
<td>-4%</td>
<td>0.0914</td>
<td>91%</td>
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</table>
## Grower Bactericide Trials - Valencia

<table>
<thead>
<tr>
<th>All Valencia</th>
<th>Recommended Adjuvant Used?</th>
<th># Sites</th>
<th>Total Trees</th>
<th>Yield</th>
<th>Relative Difference</th>
<th>P-Value</th>
<th>Confidence Interval</th>
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<tbody>
<tr>
<td>All Data</td>
<td>Mixed</td>
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<td>1090</td>
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<tr>
<td>All Data</td>
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<td>7</td>
<td>320</td>
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<td>+25%</td>
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<tr>
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<td>15</td>
<td>730</td>
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<td>-1%</td>
<td>0.5452</td>
<td>45%</td>
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</tbody>
</table>

**Take home:**
- These data show an improvement
- Using a recommended adjuvant appears to be important
Biopesticide Trial

**Purpose:** Evaluate the efficacy of several botanical oil products that are presently available to growers

- Thyme Guard (Agro Research International)
- Ecotrol Plus (Keyplex)
- OnGuard EO (AgXplore)
- Xplode (AgXplore)

**Application timing:** Every 60 day

**2 sites:** ~6 yo Hamlin

Year two of trial started in June
Thanks to:

• Grower Cooperators
• Bob Shatters, USDA ARS
• Kim Wood, Shatters Lab USDA ARS

CRDF is proud to provide support to the Florida citrus industry