## Update on new spray materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Active Ingredient</th>
<th>Mode of Action</th>
<th>IRAC</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beleaf</td>
<td>Flonicamid</td>
<td>Feeding blocker</td>
<td>9C</td>
<td>Was available for Oct 2012; expected May-June 2013</td>
</tr>
<tr>
<td>Belay</td>
<td>Chlothianadin</td>
<td>Neonicotinoid</td>
<td>4A</td>
<td></td>
</tr>
<tr>
<td>Bexar*</td>
<td>Tolfenpyrad</td>
<td>METI</td>
<td>21A</td>
<td>Spray trial data</td>
</tr>
<tr>
<td>Closer*</td>
<td>Sulfoxaflor</td>
<td>Sulfoxaflor</td>
<td>4C</td>
<td>Spray trial data</td>
</tr>
</tbody>
</table>
Lygus Spray Trial

- Guadalupe trial sprayed on 8/29 and 9/12/12
- Watsonville trial sprayed 10/5 and 10/12/12
- 0.08 acres/plot, 1/3 acre per treatment, 4 reps
Guadalupe Spray Trial
Preliminary Results – Adult Lygus

Significantly less Lygus adults, large nymphs and small nymphs in Closer treatment

~ 56% average reduction in culled fruit
Spray Trial
Preliminary Results – Lygus Large Nymphs

Large Nymphs vs. Date

Bexar
Closer
Control
Spray Trial
Preliminary Results - Thrips

Guadalupe Trial

- Sulfoxaflor
- Control
- Bexar
Spray Trial
Preliminary Results

- Closer may be a more promising Lygus material
- Bexar may be a more promising thrips material
- Marketable yield was increased in both trials

Guadalupe Trial
Fruit Evaluation (N=4)

Watsonville Trial
10/19 Fruit Evaluation (N=4)
2012 Program

Monitoring Program
• 28 Scouts trained early season (March-April)
  • Santa Maria
  • Salinas/Watsonville
• 20 participants continued through season (72%)

Bioassays
• Tested 26 fields (1st and 2nd year fields)
  • 24 were program participants
  • + End of season and beginning of season
  • + Paired second year and first year fields
• Commonly used pesticides and tank mixes
• Watsonville-Salinas and Santa Maria-Guadalupe

Grower Surveys
Pre and post-season
Grower Surveys

- Lygus is the most important insect pest problem for this industry; 63% of respondents replied that their program improved this year.
  - Successful management: low pressure, monitoring
  - Unsuccessful: high pressure, low efficacy of spray materials

- Second year neighboring berries were ranked as the most important source of Lygus moving into first year fields

- Almost 89% of growers have some form of an IPM program: 74% rotate crops; 100% rotate chemicals

- Vacuums were used by 53% of respondents, those who vacuum rank it highly valuable (4.3/5)

- 84% would support restrictions on second year production
Monitoring Data -- 1\textsuperscript{st} year fields with no 2\textsuperscript{nd} year adjacent

![Graph of Monitoring Data]

- Avg Adults
- Avg Large Nymphs
- Avg Small Nymphs

**Site 27**
- 6/8 Malathion (thrips)
- 6/15 Assail
- 6/18 Bifenture
- 6/22 Brigade
- 6/29 Neemix
- 7/18 Bifenture
- 7/31 Evergreen
- 8/4 Malathion + Evergreen

**Site 4**
- 6/13 Rimon
- 7/27 Rimon
- 8/10 Malathion + Evergreen
- 8/24 Actara + Malathion
- 8/30 Malathion + Evergreen

Avg count per 20 plant sample
1st year field with 2nd year adjacency with no vacuuming

Site 3
Field with 2nd year berries adjacent – with vacuum use
Malathion 1st yr = 27.3% avg
Malathion 2nd yr = 29.5% avg

Malathion+Actara 1st yr = 79.6% avg
Malathion+Actara 2nd yr = 87.8% avg
Lygus Program Findings

- Material efficacy was highly variable by location, likely due to history of use.

- Tank mixing improved materials but does it reduce overall pesticide use?

- Some participating fields that vacuumed had fewer problems with management of large nymphs and adults in-field.

- We do not currently have a cohesive IPM strategy for Lygus bug.

- Changes in labor and production practices may shape area-wide Integrated Pest Management programs for Lygus and other pests.
Acknowledgments

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