SWD Management at Omeg Family Orchards

Presented by
Mike Omeg
About Omeg Orchards

• Five generation farm established in 1908
• 23 field staff
• 2½ support staff: office and mechanics
• 2 production managers
• 260 additional seasonal staff in harvest
• Picked 3,660 tons total over 45 days in 2012
Export is our target market
2,000 tons picked in 2012

- BING: 35%
- SWEETHEART: 20%
- SKEENA: 15%
- REGINA: 12%
- OTHER FRESH: 10%
- PROCESSING: 8%
This cherry tree yielded 2034 pounds of fruit in 1908, Creswell, Oregon
Culture of conservation and innovation

- Weather stations to run degree-day models for pest and disease management.
- Soil moisture monitoring for irrigation water management.
- Nutrient management including monitoring, mulches, compost and cover crops.
- Maintain habitat for natural allies
  - Native pollinators
  - Predator/parasitoid insects
  - Winged allies- Bluebirds, Kestrels, Owls and Bats
  - Practice IPM principles
- Cooperating with Extension and our own on-farm trials to research
  - Cherry varieties
  - Pruning techniques
  - Nutrient programs
  - Pest and disease management
Soil Moisture Probes

• Monitor changes in soil moisture levels.
• Allow growers to see effects of irrigation sets.
• Let growers double check irrigation scheduling programs.
• Not all are created equal. Some are much better than others!
• Whatever you use you need to understand what the numbers mean.
• Proper installation and placement is critical.

Photo by M. Stewart
This is the new graphing page, if you wish to use the old one, it is here:
2009: 126 stations
2010: 121 stations
Pollinator Habitat at Omeg Family Orchards

- Benefits
- Getting started
- Management

Photo by Mary Stewart
1995 pest management

- ULV Malathion for CFF control
- Lorsban for Scale/Leafroller control
- Provado for aphid control
- Dimilin for leafminer control
- Sevin for leafhopper control
- Generally didn’t have mite problems unless we used Guthion for CFF or leafrollers.
Pest Management Pre-SWD

• We had a very soft and fully implemented IPM program and it was a dream. We had worked years to get the program in place.
• No OP insecticides applied for 9 years.
• Used GF 120 to control CFF
• Used Intrepid and Bt to control leafrollers
• Sometimes used Esteem for scale control- but rarely
• Sometimes used Success for thrips control
• No sprays applied for:
  – Aphids
  – Leafminers
  – Leafhoppers
  – Mites
  – All of the above controlled by beneficial insects
Impact of SWD at Omeg Orchards

- Destroyed our IPM systems
- Increased cost of production
- Increased pesticide use significantly
- Caused economic losses due to fruit damaged by larvae
History of SWD

• Fall 2010- OSU begins trapping and detects massive numbers of flies.
• 2011 Season:
  – Continued with “standard” CFF program- GF120 every 7 days
  – Added Success for SWD in the last two mildew sprays before harvest.
  – The Dalles area had no SWD, Washington had detections in fruit.
2012

• SWD larvae were detected in first fruit to ripen in the area (last week of June).
• Total of 5 sprays applied against SWD
  – Delegate/Success
  – Lambda-Cy
  – Aerial ULV malathion
• Had detections in late Sweethearts (last week of July).
• Late fruit harvested into August had larvae even when sprayed every 7 days with aerial ULV malathion.
2013?
Trapping

- Baits
- Cost effectiveness-labor vs. benefit
- False negatives
- Thresholds?
Factors affecting my management decisions

• Resistance
• Export tolerances
• Worker/food safety
• Beneficial insects & secondary pests
• Drift Issues
• Biggest issue- I can’t have worms in fruit
<table>
<thead>
<tr>
<th>Day</th>
<th>Spray</th>
<th>Early Season</th>
<th>Late Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Mildew 3-straw color</td>
<td>Delegate</td>
<td>Delegate</td>
</tr>
<tr>
<td>5</td>
<td>ULV 1</td>
<td>Malathion ULV</td>
<td>Malathion ULV</td>
</tr>
<tr>
<td>10</td>
<td>Mildew 4</td>
<td>Danitol</td>
<td>Carbaryl</td>
</tr>
<tr>
<td>15</td>
<td>ULV 2</td>
<td>Malathion ULV</td>
<td>Malathion ULV</td>
</tr>
<tr>
<td>20</td>
<td>Mildew 5</td>
<td>--</td>
<td>Danitol</td>
</tr>
<tr>
<td>25</td>
<td>ULV 3</td>
<td>--</td>
<td>Malathion ULV</td>
</tr>
<tr>
<td>30</td>
<td>Mildew 6</td>
<td>--</td>
<td>Success</td>
</tr>
<tr>
<td>35</td>
<td>ULV 4</td>
<td>--</td>
<td>Malathion ULV</td>
</tr>
</tbody>
</table>
Potential impacts of an intense SWD program

- Increased costs from spraying more often
- Secondary pests
  - Direct damage
  - Indirect damage
- Resistance in SWD and other pests
**Export Tolerances**

**CONTACT:** For additional information contact [Debbie Carter](mailto:Debbie.Carter@example.com) or [Dr. Mike Willett](mailto:Dr.Mike.Willett@example.com), Northwest Horticultural Council at 509/453-3193.

---

**Comparison of Maximum Residue Levels for Pesticides Used on Cherries**

- **a** - Established until December 31, 2014. Then 0.05 ppm unless modified by a regulation.
- **c** - Codex
- **p** - Proposed

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Trade Name</th>
<th>U.S.</th>
<th>Codex</th>
<th>EU/UK</th>
<th>Australia</th>
<th>Canada</th>
<th>Japan</th>
<th>Korea</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetamiprid</td>
<td>Assail</td>
<td>1.2</td>
<td>1.5</td>
<td>0.5</td>
<td>1</td>
<td>1.2</td>
<td>2</td>
<td>1.5c</td>
<td>1</td>
</tr>
<tr>
<td>Azinphos-Methyl</td>
<td>Guthion</td>
<td>2</td>
<td>2</td>
<td>0.05</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Azoxystrobin</td>
<td>Abound</td>
<td>1.5</td>
<td>2</td>
<td>2</td>
<td>1.5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bifenazate</td>
<td>Acramite</td>
<td>2.5</td>
<td>2</td>
<td>0.01</td>
<td>2.5</td>
<td>2</td>
<td>0.3</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
Collapse of IPM Program

• GF-120, Intrepid, Bt and Success/Delegate allowed us to have a textbook IPM program.

• SWD has destroyed our IPM program
  – Disruptive materials – Malathion & Pyrethroids (Danitol, Mustang Max, Asana, etc)
  – Many pesticide applications over a long portion of the growing season.

• We are now spraying for pests once controlled by beneficial insects- aphids, leafminer, leafhopper and mites. Maybe more??
Research Needed for Management

• At present there is very little management of SWD because we don’t know much about this pest.
• Effective traps & thresholds
• Temperature models- overwintering survival
• Spray materials – toxicity and residual activity
• IPM techniques
  – Biological control agents
  – Cultural controls
• New spray materials that are attract and kill- like GF-120
Hope for the future

• 50 years ago San Jose scale was the number one pest in cherries. It ruined entire crops and killed acres of trees at a time.
• We have many talented minds working on this pest.
• Many crops worldwide now being affected.
Protect your customers
Thank you!

• To learn more go to:
  – Omegorchards.com
  – Goodfruit.com
  – Google