Spotted Wing Drosophila; Monitoring, Identification and Recommendations for Control

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Fear the Turtle
Spotted Wing Drosophila

- Invasive pest from Asia
- 2008 California
- 2009 Western Washington, Oregon and British Columbia
- 2010 Eastern Washington in June.
- 2010 Utah, Michigan, Florida, North and South Carolina in late summer/fall
- 2011 Northeast
Fruit affected by SWD

• Cherries • Raspberries
• Blackberries • Strawberries
• Blueberries
• Peaches • Grapes
We need to be ready for 2012
Spotted Wing Drosophila

LARGE SERRATED OVIPOSITER ALLOWS SWD TO LAY EGGS IN IMMATURE FRUIT

FRUIT MAY COLLAPSE

WORSE, IT MAY GO HOME WITH THE CUSTOMER
Up to 13 generations/year in Japan. Prefer cooler wetter weather. 68 F optimal, inactive above 86 F

Michigan State University http://www.ipm.msu.edu/SWD.htm
SWD Identification – key characters

Male
- Black spot on wings
- 2 black combs on front legs

Female
- She inserts saw-like device (ovipositor) into fruits and lays eggs

D Biddinger 2011
Drosophila suzukii

Pictures from bugguide.net

Scaptomyza

Chymomyza amoena

Leucophenga sp.

D Biddinger 2011
Adams County SWD adult male trap captures 2011

![Graph showing the number of male SWD trap captures from June 28 to September 29, 2011, for different fruit types such as apricot/plum, raspberry, blueberry, grape, and cherry.]
Central Md. SWD adult male trap captures 2011

# = no. of traps/ type of fruit

≈ 2 wk trapping period
Cumulative no. male SWD trap capture, 2011
Central Md. 24-Sep through 17-Nov

<table>
<thead>
<tr>
<th>Trap #</th>
<th>no.</th>
<th>Fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>292</td>
<td>blackberry</td>
</tr>
<tr>
<td>5</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>108</td>
<td>plum</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>blueberry</td>
</tr>
<tr>
<td>4</td>
<td>575</td>
<td>grape</td>
</tr>
<tr>
<td>7</td>
<td>254</td>
<td>cherry</td>
</tr>
</tbody>
</table>
Adams County SWD adult male trap captures 2011

Dates shown are the date traps were set and were collected approximately one week later.
Adams County SWD adult male trap captures in (late varieties) raspberry and blackberry 2011

First collection date for blackberry was 27-Sep
Dates shown are the date traps were set and were collected approximately one week later

(#) = no. of traps/ type of fruit

Mean no. adult male DSW/ type of fruit

Temperature (°F)

21-Sep 27-Sep 4-Oct 11-Oct 18-Oct 25-Oct
r raspberry(2)
blackberry(2)
avg. weekly temp (°F)

986
284
36
81
65
143
0 10 20 30 40 50 60 70 80
0 200 400 600 800 1000

3 9 149 241 261 143
# Insecticides for SWD control in raspberry and blackberry

<table>
<thead>
<tr>
<th>Class</th>
<th>Trade name</th>
<th>Active ingredient</th>
<th>PHI (days)</th>
<th># Days of residual activity</th>
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</thead>
<tbody>
<tr>
<td>Organophosphate</td>
<td>Malathion</td>
<td>malathion</td>
<td>1*</td>
<td>5-7</td>
</tr>
<tr>
<td>Pyrethroid</td>
<td>Mustang Max</td>
<td>zeta-cypermethrin</td>
<td>1</td>
<td>7</td>
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<tr>
<td></td>
<td>Danitol</td>
<td>fenpropathrin</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Asana</td>
<td>esfenvalerate</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Brigade</td>
<td>bifenthrin</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Spinosyn</td>
<td>Delegate</td>
<td>spinetoram</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Entrust (organic)</td>
<td>spinosad</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Pyrethrum</td>
<td>Pyganic (organic)</td>
<td>pyrethrum</td>
<td>0</td>
<td>2</td>
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</table>
Possible Option for SWD Management in Raspberries

<table>
<thead>
<tr>
<th>PYO</th>
<th>Clean up-</th>
<th>Spray-</th>
<th>PYO-</th>
<th>Clean up</th>
<th>Spray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>Wednesday</td>
<td>Wednesday</td>
<td>Friday</td>
<td>Saturday</td>
<td>Saturday</td>
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http://groups.hort.oregonstate.edu/content/commercial-grower-information-about-spotted-wing-drosophila
Special Thanks To:
Dr. Dave Biddinger, Biocontrol Specialist,
Penn State University, Biglerville, PA