Orchard Survey for Exotic Pests helps reveal Spotted Wing Drosophila Infestations and Identify Streptomycin-Resistant Fire Blight in New York

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NYS IPM Program
Orchard Survey Locations

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Art Agnello
Greg Loeb

apple & peach orchards

Peter Jentsch
Dave Rosenberger
Orchard Survey Target Insects

- Asian Gypsy Moth
  - *Lymantria dispar asiatica*
- False Codling Moth
  - *Thaumatotibia leucotreta*
- Light Brown Apple Moth
  - *Epiphyas postvittana*
- Summer Fruit Tortrix
  - *Adoxophyes orana*
- Spotted Wing Drosophila
  - *Drosophila suzukii*
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>700 gypsy moth submitted for molecular analysis
Spotted Wing Drosophila

Apple Orchards

Low numbers, peaked early Sept.

Both farms with high SWD numbers had berry plantings.
Spotted Wing Drosophila

Peach Orchards

High SWD numbers were trapped in peach orchards, still increasing mid-Sept.

Low crop and few to no sprays?

Infesting drops?

Fruit had high populations of fruit flies, ~35% to 50% were SWD.
Spotted Wing Drosophila

Hedgerows

In all locations trap catch peaked in early September in these unsprayed areas.

Plants in hedgerows
blackcap raspberry*
buckthorn
pokeweed
Prunus spp.*
sumac**
Tartarian honeysuckle
Virginia creeper***
wild grape**

* no fruit
** no SWD reared out
*** in process of rearing test
Spotted wing Drosophila:
2012 NY Monitoring Results as of July 6, 2012

Getting the word out with “The Map”
Mike Fargione, Hudson Valley Fruit Program
Spotted wing Drosophila: 2012 NY Monitoring Results as of July 6, 2012

SWD Monitoring Results
SWDmonitor
- No traps present
- No captures
- First detection
- Multiple detections

Miles
0 12.5 25 50
Spotted wing Drosophila: 2012 NY Monitoring Results as of July 13, 2012
Spotted wing Drosophila: 2012 NY Monitoring Results as of July 20, 2012

SWD Monitoring Results
SWDmonitor
- No traps present
- No captures
- First detection
- Multiple detections
Spotted wing Drosophila: 2012 NY Monitoring Results as of July 27, 2012

SWD Monitoring Results

- SWDmonitor
  - No traps present
  - No captures
  - First detection
  - Multiple detections
Spotted wing Drosophila: 2012 NY Monitoring Results as of August 3, 2012

SWD Monitoring Results

<table>
<thead>
<tr>
<th>SWDmonitor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No traps present</td>
<td>No captures</td>
</tr>
<tr>
<td>No captures</td>
<td>First detection</td>
</tr>
<tr>
<td>First detection</td>
<td>Multiple detections</td>
</tr>
</tbody>
</table>

- Orange
- Ulster
- Sullivan
- Dutchess
- Putnam
- Rockland/Westchester
- New York
- Long Island
- Suffolk
- Brooklyn
- Queens
- Nassau
- Richmond/Tellers

Miles

0 12.5 25 50
Spotted wing Drosophila: 2012 NY Monitoring Results as of August 10, 2012
Spotted wing Drosophila: 2012 NY Monitoring Results as of August 17, 2012

**SWD Monitoring Results**
- Red: Larvae found in fruit
- Orange: SWDmonitor
- Light gray: No traps present
- White: No captures
- Light blue: First detection
- Dark blue: Multiple detections

**Map Legend**
- Miles: 0 12.5 25 50
Spotted wing Drosophila: 2012 NY Monitoring Results as of August 24, 2012

![Map of New York state showing counties with spotted wing drosophila monitoring results, with colors indicating presence and number of detections.]

**SWD Monitoring Results**
- Red: Larvae found in fruit
- SWDmonitor:
  - No traps present
  - No captures
  - First detection
  - Multiple detections

![Scale bar showing miles: 0, 12.5, 25, 50.](miles scale bar)
Spotted wing Drosophila: 2012 NY Monitoring Results as of August 31, 2012

SWD Monitoring Results
- Red: Larvae found in fruit

SWDmonitor
- Gray: No traps present
- White: No captures
- Light Blue: First detection
- Blue: Multiple detections

Miles
0 12.5 25 50

North
Spotted wing Drosophila: 2012 NY Monitoring Results as of September 7, 2012

SWD Monitoring Results
- Red: Larvae found in fruit
- SWDmonitor:
  - No traps present
  - No captures
  - First detection
  - Multiple detections

Miles

0 12.5 25 50
Spotted wing Drosophila: 2012 NY Monitoring Results as of September 14, 2012

SWD Monitoring Results
- Larvae found in fruit
- No traps present
- No captures
- First detection
- Multiple detections

SWDmonitor
- Miles

Legend:
- Red: Larvae found in fruit
- Orange: No traps present
- Yellow: No captures
- Light blue: First detection
- Dark blue: Multiple detections
Orchard Survey Target Diseases

- Asiatic brown rot
  - *Monilinia polystroma*
- Strep-Resistant Fire Blight
  - *Erwinia amylovora*

No Asiatic brown rot was found. All was American brown rot.
## Strep-Resistant Fire Blight

<table>
<thead>
<tr>
<th>County</th>
<th>Samples</th>
<th># Ea</th>
<th># Strep Resist.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Ontario</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Ontario</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Orleans</td>
<td>10</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Wayne</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Wayne</td>
<td>10</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
<td><strong>30</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**Percent**

<p>| | | |</p>
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>71%</strong></td>
<td><strong>13%</strong></td>
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</tbody>
</table>

In 2 of 6 farms, all Ea sampled were strep-sensitive.

In 3 of 4 farms, strep-resistant Ea were newly identified.

Strep-resistant and -susceptible Ea were isolated from the same strike.
"Invasives & Exotics" fact sheets, including two from the Vineyard Survey.

nysipm.cornell.edu/invasives_exotics
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Marion Zeufle

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Questions?