



Cornell University

## Spotted Wing Drosophila

### Berry topics:

- Production
  - IPM
  - Post Harvest
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- Food Safety
  - Enology
  - Value-Added
  - Marketing
  - Business Mgt.
  - Labor

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 Pest Alerts
 

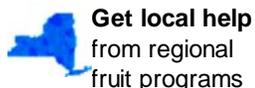
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 Label Alerts
 

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 Cornell Berry Team
 

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Network for Environment & Weather Applications

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**Genus species:** *Drosophila suzukii*

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**Distribution:** Becoming established throughout Northeast; first detected in NY in 2011

**Background:** Originally from Asia, spotted wing drosophila (SWD) first showed up in California in about 2005 and has spread north into Oregon, Washington, and western Canada, south into Florida and recently was reported at significant numbers in North Carolina and Michigan. In 2011 SWD was reported throughout the Northeast. SWD looks superficially like your everyday Vinegar Fly *Drosophila melanogaster* of genetics fame, but vinegar flies are generally not a serious economic threat to fruit growers. Female vinegar flies typically lay eggs in damaged and/or overripe fruit and hence, are mostly just a nuisance. On the other hand, female SWD have very robust ovipositors (the rear end portion of the fly used for egg laying) and lay their eggs in ripe, marketable fruit leading to damage and contamination with maggots. SWD appears to have the capability to survive winter conditions in the Northeast. They are found in similarly cold areas of Japan. However, populations at the start of the growing season tend to be quite low indicating high mortality over the winter.

- Plant Protection and Quarantine Pest Alert - *Drosophila suzukii* (Spotted Wing) - USDA
  - Regional Pest Alert - Spotted Wing Drosophila - Northcentral IPM Center
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**Crops of Concern:** Brambles are of particular concern, especially fall-bearing cultivars. Also blueberries with later-maturing varieties more vulnerable. June-bearing strawberries may escape injury, although day-neutral varieties, during late summer, are vulnerable. Elderberries are also susceptible.

**Potential for Economic Impact:** There is potential for significant impact from this pest, especially for mid-summer and later-maturing fruit, when populations tend to increase. Risk of marketing fruit contaminated with SWD larvae is high resulting in rejected shipments and consumer complaints. In areas where SWD has

## SWD Alerts 2012

NYS Distribution Map for Spotted Wing *Drosophila* now available courtesy Hudson Valley Fruit Program.

New York Berry News Spotted Wing *Drosophila* Special Edition.



**Important SWD Update!** Larvae are being found in fruit in the following counties; although the species identity of these larvae has not been determined, it is likely at least some of them are SWD.

**Tioga County** August 28, 2012. Larvae reported in high tunnel fall raspberry fruit by Cathy Heidenreich, Cornell University.

**Oneida County** August 24, 2012. Larvae reported in late season blueberry fruit by Jeff Miller, Oneida CCE.

**Steuben County** August 22, 2012. Larvae reported in blueberry fruit; adult fruit flies also reported present in the same planting by Stephanie Mehlenbacher, Steuben CCE.

**Schuyler County** August 21, 2012. Larvae reported in fall raspberries by Eve Farm Service.

**Chautauqua County** August 21, 2012. Larvae reported in late season blueberries by CCE Chautauqua personnel.

**Onondaga County** August 20, 2012. Larvae reported in fall raspberries by C. Heidenreich, Cornell University.

**Columbia, Rensselaer, Schenectady, Saratoga, and Schoharie Counties** the week of August 13th 2012. Larvae reported in day neutral strawberries, blueberries, blackberries, tunnel fall raspberries by Laura McDermott, Cornell CCE Capital District Vegetable and Small Fruit Program.

**Montgomery County** the week of August 20th, 2012. Larvae reported in day neutral

been established longer (e.g. Michigan) some growers have resorted to frequent pesticide applications thereby increasing economic and environmental costs as well as potentially disrupting established IPM programs.

**Identification:** SWD appear similar to other vinegar flies. Adult flies are 2-3 mm in length, with red eyes, tan-colored body with darker bands on abdomen. Males have characteristic single spots at the leading edge of the tip of the wing and two dark spots on their front legs. Females lack wing spots and leg spots, but are distinguished by a robust, serrated ovipositor (visible under magnification). Larvae are white, nondescript and legless maggots.

- Identifying *Drosophila suzukii* - Oregon Department of Agriculture
- How to Identify the Spotted Wing Drosophila Fly - Oregon State University (video)
- Recognizing Fruit Damaged by Spotted Wing Drosophila (SWD), *Drosophila suzukii* - USDA
- Recognize Fruit Damage from Spotted Wing Drosophila (SWD) - Oregon State University

**Monitoring and Management:** Monitoring is very important for this pest. Traps baited with vinegar have proven successful in capturing sometimes large numbers of adult SWD. Traps should be frequently checked, adding fresh vinegar. Research is ongoing to improve trap efficiency and develop a better early warning system. Fruit should also be inspected for evidence of larval feeding.

- *Monitoring*
  - Making a Spotted Wing Drosophila Trap - North Carolina State University (video)
  - Checking a Spotted Wing Drosophila Trap - North Carolina State University (video)
- *Cultural Management* - Good sanitation is very important. Try to prevent the buildup of ripe and over-ripe fruit. Fruit crops that mature earlier in the season may likely escape major damage.
- *Chemical Management* - A few insecticides have recently been granted 2ee label exemptions for control of SWD. SWD adults appear sensitive to several different chemistries, although their high reproductive rate, short generation time, and mobility may necessitate multiple applications for control. See listings under specific crops in the Cornell Pest Management Guidelines for Berry Crops.

strawberries as reported by growers.



### **Washington County SWD Alert!**

**August 6-17, 2012.** We have trapped SWD in Washington County in berry crops. Trap catch numbers have rapidly increased over this two-week period. Laura McDermott, Cornell CCE Capital District Vegetable and Small Fruit Program.

**Ontario County SWD Alert! August 9, 2012.** 1 male SWD caught in ACV trap from fall raspberries, 2 males and four females from woods sites. Loeb Program, Cornell University.

**Wayne County SWD Alert! August 7, 2012.** 1 male SWD was caught in an ACV trap in a woods site and one female and 2 males SWD were trapped from summer raspberry. Loeb Program, Cornell University. **August 9, 2012.** 1 female SWD was caught in a Wayne County peach orchard. From Art Agnello, Dept of Entomology, Cornell University.

**Suffolk County SWD Alert! July 24, 2012.** Spotted Wing Drosophila (SWD) numbers in traps are up in Suffolk County. Four apple cider vinegar traps in raspberry caught over thirty SWD in the past seven days (last checked on 7/24/12). A couple of SWD were also found in traps set on peach, blueberry, and grape. The numbers in raspberries at this time of the season are higher than the numbers we found in late September last year (2011). Last two week's high trap catches potentially placing raspberries and blackberries at risk for possible infestations. Most of the blueberries in Eastern Long Island will likely be harvested by this week, so there will be less chance of contamination in blueberries. Fruit damage assessment is in progress.

**Albany County SWD Alert! July 24, 2012.** 2 male SWD caught at an Albany County farm - traps located in black raspberries and blueberries.

**Ulster County SWD Alert! July 23, 2012.** 1 male SWD was caught at a farm in Ulster County this week in a vinegar trap in

**Additional Resources:** There are several web sites now dedicated to SWD biology and management in the west and eastern USA.

- Getting Ready for Spotted Wing Drosophila: Understanding Risks for Small Fruit Crops and Current Management Options - *webcast with Dr. Greg Loeb, Cornell University*)
- Spotted Wing Drosophila - *Michigan State University*
- Spotted Wing Drosophila: A New Threat To Tender Fruit And Berry Crops - *OMAFRA*
- Spotted Wing Drosophila - *Oregon State University*

a blackberry planting.

**Monroe County SWD Alert! July 16, 2012.** 1 male Spotted Wing Drosophila (SWD) was caught over store-bought mushrooms in a sweep net in Monroe County in a wooded back yard. **June 27, 2012.** 3 female Spotted Wing Drosophila (SWD) were reared out of strawberries collected from a field in Monroe County. From John Jaenike, Professor, Department of Biology, University of Rochester

**Orange County SWD Alert! July 16, 2012.** 2 male SWD were caught in an apple cider vinegar trap in Orange County in a stone fruit orchard. No SWD larva have been observed in fruit from this orchard.

**Orleans County SWD Alert! July 16, 2012.** 1 male and 1 female SWD were caught in an apple cider vinegar trap in Orleans County in a peach orchard. No SWD adults have been reared out of the peach fruit from the orchard.

**Tompkins County SWD Alert! July 12, 2012.** 1 male SWD was caught in an apple cider vinegar trap in Tompkins County near a wood where a wild host species (Twinberry) was present this week. No SWD larvae were found in the twinberry fruit nor any adults or larvae found in a nearby blueberry crop.

**SWD in NY - First Alert!** July 6, 2012. 1 male and 1 female adult SWD were caught in an apple cider vinegar trap in a **Yates County** cherry orchard (non-fruiting) during the past week. This first confirmed 2012 trap catch comes much earlier than last year's first confirmed catch on September 17, 2011, potentially placing summer raspberries and early blueberries at risk for possible infestations. Growers should be monitoring for adults in small fruit plantings and keeping plantings as clean harvested as possible. For more information visit the SWD pest alert page.

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