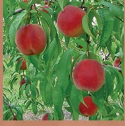




Stone Fruit IPM for Beginners

Developed by the Great Lakes Fruit Workers and funded by a working group grant from the North Central Integrated Pest Management Center



Chapter 29

Spotted wing Drosophila

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Spotted wing Drosophila

Drosophila suzukii (Matsumura)

Hosts

Sweet and tart cherries, plums.

Time of concern

In cherries, when fruit begins to color all the way until harvest. In plums, when fruit softens to 3.5 pounds of pressure through harvest.

Damage, symptoms and pest cycle

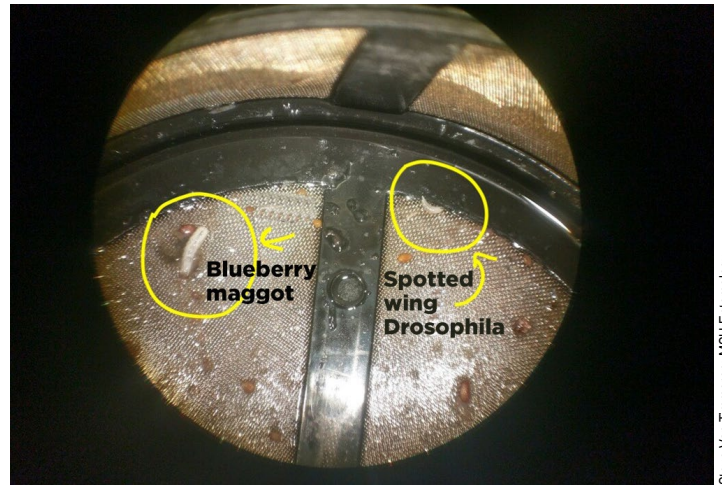
Spotted wing Drosophila (SWD) attacks all thin-skinned fruit including wild hosts common in wooded areas in the Eastern U.S. In some areas, the timing of when fruit ripens and is harvested may not overlap with when SWD populations begin to surge. Where the summer population surge does overlap with susceptible fruit, this pest reproduces quickly, more like a disease in that each female is capable of laying over 300 eggs, which develop into new adults in as little as eight days. *Multiple overlapping generations within a season make this pest the most important pest in cherry production close to harvest.* A sugar or salt test can be used to find larvae, which feed inside the fruit.

Adult SWD have several key features to help distinguish them from other flies of their size. Females have a darkened, serrated (toothed) ovipositor that allows them to saw into intact, ripening fruit. Mature males have a dark spot on each wing near the margin and a dark ring of bristles on each foreleg.



Adult on a cherry.

Danielle Kirkpatrick, MSU Entomology



SWD larva (circled on the right) compared with a blueberry maggot larva (circled on the left) in a coffee strainer after being extracted from blueberries using the salt test.

Steve Van Timmeren, MSU Entomology



Male adult fly.

Danielle Kirkpatrick, MSU Entomology



Female adult fly.

Danielle Kirkpatrick, MSU Entomology



SWD larvae emerging from tart cherries held in a sugar solution.

Karen Powers, Michigan State University

IPM steps for beginners

Spotted wing *Drosophila* is such a new pest that we are learning new ways to combat it every season. What we do know is when the summer population surge overlaps with the ripening of susceptible crops, this pest is not easily controlled and there is a high potential for infested fruit at harvest, especially in cherries.

Baited traps are used to indicate when SWD are building up in a particular area, but multiple traps per farm are needed to be able to use the 10 percent threshold. This threshold is when 10 percent of traps in a given area are catching any SWD and fruit in that area are at a susceptible stage, then the crop must be protected.

It cannot be emphasized enough the tremendous capacity of this pest for reproducing rapidly. Controlling this pest requires a robust pest management program targeting adults before they have a chance to lay eggs in fruit. Similar to managing diseases like cherry leaf spot, excellent coverage with pesticide is required when adults are active. Use high spray volumes, apply full covers, tighten spray intervals and follow up with another insecticide after a rain event. Proper sprayer calibration is essential. Post-infestation treatments will not eradicate larvae, but use a sugar or salt test to determine whether your management program was effective.

Do not delay harvesting ripe fruit—the longer fruit stays on trees, the more likely it will be infested. Since plums color before they become vulnerable to SWD, one way to reduce the risk of infestation is to harvest plums before they soften since this crop can ripen off the tree. This may eliminate need for any insecticide treatments against this pest in plums.

Some preliminary work looking at canopy manipulation in tart cherries suggests opening up the canopy with pruning does three things to reduce infestation:

- ▶ Reduces humidity, making the canopy a less favorable place for flies to hang out.
- ▶ Improves insecticide penetration into the canopy for better coverage.
- ▶ Reduces the crop load, which can make harvesting faster.

Ready for more precision

For more information on monitoring, how to use the sugar test and managing SWD in cherries, see Michigan State University's "[Managing Spotted Wing *Drosophila* in Michigan Cherry](#)." For more on sprayer calibration, see the website sprayers101.com.



A trap used to attract and capture SWD adults. A commercially available pouch-style lure is suspended over a soap, borax and water drowning solution.

Rufus Isaacs, MSU Entomology