



How to Manage Pests

UC Pest Management Guidelines

| [All cherry pests](#) | [All crops](#) | [About guidelines](#) |

Cherry

Spotted Wing Drosophila

Scientific name: *Drosophila suzukii*

(Reviewed 11/09, updated 3/13)

In this Guideline:

- [Description of the pest](#)
- [Important links](#)
- [Damage](#)
- [Publication](#)
- [Management](#)
- [Glossary](#)

DESCRIPTION OF THE PEST—[MALE/FEMALE IDENTIFICATION CARD](#) (PDF)

Spotted wing drosophila has recently been found in many California counties infesting ripening [cherry](#), raspberry, blackberry, blueberry, and strawberry crops; it has also been observed attacking other soft-flesh fruit such as boysenberry, varieties of Japanese plums, plumcots, and nectarines. Adults and maggots closely resemble the common vinegar fly, *Drosophila melanogaster*, and other *Drosophila* species that primarily attack rotting or fermenting fruit. The spotted wing drosophila, however, readily attacks undamaged fruit.

Adults are small (2-3 mm) flies with red eyes and a pale brown thorax and abdomen with black stripes on the abdomen. The most distinguishable trait of the adult is that the males have a [black spot](#) towards the tip of each wing. [Larvae](#) are tiny (up to 3.5 mm), white cylindrical maggots that are found feeding in fruit. One to many larvae may be found feeding within a single fruit. After maturing, the larvae [partially](#) or completely exit the fruit to pupate.

The spotted wing drosophila can be distinguished from the western cherry fruit fly, *Rhagoletis indifferens*, by comparing anatomical features of the [maggots](#) and wing patterns of adult flies. Western cherry fruit fly adults are much larger (5 mm) than the spotted wing drosophila adults and have a dark banding pattern on their wings. The western cherry fruit fly, which is a quarantine pest, occurs in Washington and other states but has not established in California. If you suspect you have a western cherry fruit fly, take specimens to your local agricultural commissioner's office.

At this point not much is known about the life cycle in California; however, like other vinegar flies it appears to have a short life cycle (one to several weeks depending on temperature), and may have as many as ten generations per year. This rapid developmental rate allows it to quickly develop large populations and inflict severe damage to a crop.

In Japan and in coastal California the adult flies may be captured throughout much of the year. They are most active at 68°F; activity becomes reduced at temperatures above 86°F, and adult males become sterile.

DAMAGE

Unlike other vinegar flies that occur in California, spotted wing drosophila attacks healthy ripening fruit as well as damaged or rotting fruit. The female ovipositor is very [large and serrated](#), so it is able to penetrate the skin of soft-skinned fruit and lay eggs just under the skin, creating a [small depression](#) ("sting") on the fruit surface. Each clutch of eggs is from one to three, and the female will oviposit on many fruit. Multiples of larvae within a single fruit are quite possible because many females may visit the same fruit to oviposit. As fruit integrity is compromised by spotted wing drosophila's activities, common vinegar flies (i.e., *Drosophila melanogaster*) may also oviposit in the damaged fruit.

Eggs hatch and the maggots develop and feed inside the fruit, causing the flesh of the fruit to turn brown and soft; [sunken areas](#) that exude fluid often appear on the fruit surface. Damage can provide an [entry site for infection](#) by secondary fungal and bacterial pathogens, but this is not always the case.



MANAGEMENT

Spotted wing drosophila may be monitored with a variety of traps. Any liquid bait style traps, such as the Rescue Fly Trap, can be filled with about one inch of apple cider vinegar to monitor for this pest. Do not use apple-cider-flavored distilled vinegar. The most successful traps are described in more detail in the [2013 Recommendations for Sweet Cherry](#) (PDF). Because these traps may also capture other species of *Drosophila*, check the trap captures to confirm the presence of spotted wing drosophila. The male has a single dark spot on the tip of the wing and the female has a large ovipositor. Use the [Male/Female Identification Card](#) (PDF) and a hand lens or dissecting scope to aid in identification.

Because this pest is new, there is only limited research-based management information available. Please refer to the 2013 Recommendations for Sweet Cherry for detailed information on management options.

IMPORTANT LINKS

- [2013 Recommendations for Sweet Cherry](#) (PDF)
- [Male/Female Identification Card](#) (PDF)
- [Key to Identifying Spotted Wing Drosophila, *Drosophila suzukii*](#) (PDF)
- [Susceptibility of small fruit and cherries to SWD](#) (PDF)

PRECAUTIONS

PUBLICATION



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[Top of page](#)

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