

Drosophila suzukii (Spotted Wing)

Background

Spotted wing *Drosophila* (SWD) was detected in California in the spring of 2009. Additional survey activities have determined that SWD is present in multiple counties within the southern and central portions of that State. Although the species of *Drosophila* found in California is a non-quarantine pest, it is still important for growers and producers of various fruit and berry crops to be aware of its presence in order to control and manage the insect.

SWD is a small fly that primarily affects ripe or ripening fruit of cherry, peach, plum, raspberry, strawberry, apple, grape, blueberry, and persimmon crops. This insect differs from common vinegar flies in the genus *Drosophila* because it can impact ripening fruit in the early stages of development, while the common fruit fly only damages ripe or overripe fruit.

SWD thrives at cooler temperatures (68° F) typically experienced during most of the early summer and fall—the same time at which berry and fruit crops ripen. This is a significant concern because, since different berry and fruit crops ripen at different times of the season, SWD may move from one crop to another as the season progresses. Consequently, SWD populations can damage several different varieties of ripening fruit during a single growing season.



Figure 1. Male SWD.



Figure 2. Female SWD.

Description

SWD is a small fly (2 to 3 mm) with bright red eyes, a pale brown thorax, and an abdomen with black horizontal stripes. The insect resembles common vinegar flies in the genus *Drosophila*. However, the adult males differ from other native *Drosophila* males in that they possess a dark spot along the front edge of the wing near the wingtip. SWD larvae are small, white, and cylindrical. Adult SWDs are active in warmer climates; their eggs and larvae cannot survive at freezing temperatures. SWDs have a high reproductive rate, with the potential to complete at least 15 generations each year.

Damage

SWD damage to fruit first shows up as near-microscopic scars in the fruit surface left by “stinging” (ovipositing) females laying eggs. Within 1 day, SWD

larvae hatch to begin feeding inside the fruit. In as little as 2 days, the fruit begins to collapse around the feeding site with “dents” appearing on fruits such as cherries. Thereafter, mold and infestation by secondary pests may contribute to further damage.

Distribution

SWD is present in Japan, China, Korea, Thailand, India, and Spain. In recent years, the pest was also introduced and became established in Hawaii. The discovery of SWD in California is the first incidence of *D. suzukii* in the continental United States.

Detection

D. suzukii is trapped easily in “McPhail”-type traps, bell-shaped traps that are baited with torula yeast and borax pellets dissolved in water. It has also been found in a variety of other traps commonly used to detect and control *Tephritidae* fruit



Figure 3. Damage caused by *D. suzukii* on cherries.

flies. Growers and producers of cherry, peach, plum, raspberry, strawberry, apple, grape, blueberry, and persimmon crops are encouraged to conduct their own detection activities and report their findings to their local county extension office.

Control Measures

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) is currently working with its stakeholders to identify all host species for SWD and determine the extent of its geographical distribution. The following are APHIS' preliminary recommendations for growers regarding the management and control of *D. suzukii*:

1. Apply environmentally safe toxicants (i.e., GF-120 and other products approved by the U.S. Environmental Protection Agency) across production fields and border areas to reduce any current SWD populations while

minimizing effects on predators, parasitoids, and honeybees. Over time, these materials may need to be reapplied (at weekly or bi-weekly intervals) to ensure that the treatments remain effective.

2. Use good sanitation and cultural practices to prevent further SWD spread and establishment. Infested fruit that remains in the field allows eggs and larvae to develop fully and, consequently, serves as a source for increased fly populations. All fruit showing damage and signs of infestation should be removed from the field and destroyed, either by burial or disposal in a closed container.

Implementing the most appropriate control and management strategies is critical to the overall elimination of this fly. A single, unmanaged field will serve as a source of SWD infestation to any surrounding area. In this regard, APHIS strongly encourages all growers within infested areas to participate in SWD control and management efforts.

To learn more, please contact your local county extension office. Contact information for all cooperative extension offices is available online at www.nifa.usda.gov/Extension/.

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