

## Pest alert: spotted wing *Drosophila*

### Introduction

The spotted wing *Drosophila* (SWD), *Drosophila suzukii* (Matsumura) (Diptera: Drosophilidae), is Asian (China, Japan, Korea, and Thailand) and is established in Hawaii and Spain. SWD is a temperate species, and it may be able to survive in much of the US. It was detected in California during 2008 and Florida, Oregon, Washington, and British Columbia in 2009. Surveys conducted in Oregon found SWD from Portland south to Douglas County and in Umatilla and Wasco Counties. This fly is of concern because unlike most members of its family, which only attack overripe or decaying fruit, it attacks ripe, healthy fruit. Fruits attacked include blueberry, cane berries, cherry, hardy kiwi, grape, peach, plum, and strawberry.

### Potential risk

Fruit damage is caused by the larvae (maggots) of SWD. Although small (less than 1/8 inch long), just one or two maggots can render fruit unmarketable. Because female SWD can lay many eggs and there can be many generations of SWD per year, populations could rapidly build to damaging levels. Damage to cherries can be severe, and infestations of up to 80 percent of the cherries in a locality have been reported. As many as 65 adults have been reported to emerge from a single cherry. It has been reported as a significant pest of cherries, blueberries, and grapes in Japan, blueberries in China, and raspberries, strawberries, and cherries in California. Infested blackberries, blueberries, cherries, peaches, and other fruits have been found in Oregon. They have been found to attack tomatoes, but only in the laboratory.

Infested fruit has been found at a variety of sites including backyards, commercial and “u-pick” fields, and in markets featuring local produce. Not just local sales of fruit could be affected. SWD’s presence in Oregon could lead to restrictions on shipping fresh fruit to the eastern US and possibly other countries.



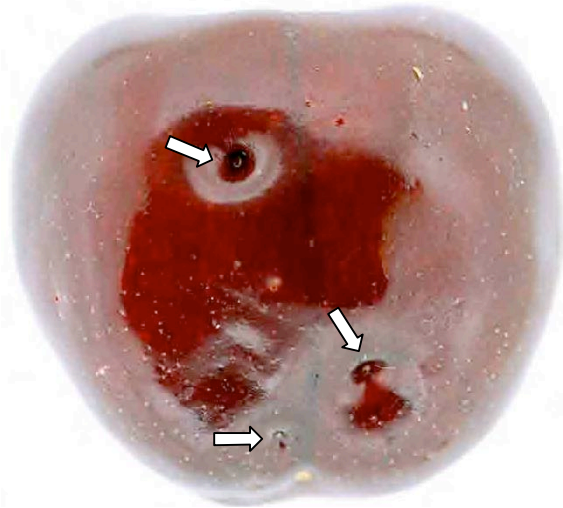
Adult male *Drosophila suzukii*

### Signs of infestation

- **Vinegar flies with a spot at the leading edge of the wing (male flies only).**
- **Small puncture (oviposition scar) wound(s) on fruit.**
- **Soft fruit, starting at puncture scar. Secondary pests may cause additional damage at this point.**
- **Small pale maggots in fruit.**

### **Pathways for introduction**

Fresh fruit, especially of preferred species such as cherries, blueberries, and cane berries, can harbor viable eggs and larvae. Because egg laying occurs near harvest and early symptoms are subtle, it is very easy for infested fruit to be transported undetected.



**Oviposition scars and larval feeding depressions in cherry.** Photo by M. Hauser, CDFA 2009.

### Detection

Adults, larvae, and other life stages are similar to other vinegar flies. Adults are small, 2-3 mm long, with straw yellow bodies and red eyes. Males usually have a distinctive black spot on the outer edge of their wing. No other vinegar flies with a wing spot are commonly associated with fresh fruit and are known to be established in the US. Flies with wing spots should be submitted to the Oregon Department of Agriculture. Females can only be identified by a trained entomologist.

Eggs are difficult to detect in fruit. Oviposition scars are very small and may be mistaken for other types of damage, including the oviposition scars of other types of fruit flies. Larvae are small and difficult to detect inside the fruit, especially in early stages of attack or in low numbers.

No specific pheromone lures are available for use in detection. Adults will come to McPhail traps baited with a general fruit fly

lure. Other trapping options may include yellow sticky cards or traps baited with ammonium carbonate, fermented fruit mixtures, or vinegar.

### Life cycle

Females oviposit in ripe fruit hanging on the tree. In cherries they typically lay only a few eggs per fruit, although many more larvae per fruit is not uncommon. The oviposition scar is a small puncture in the skin of the fruit, although larval feeding damage can quickly cause the surrounding area to collapse forming a soft indentation. Populations in Japan have up to fifteen generations per year from April to November. The adults overwinter. A female SWD can lay 7 to 13 eggs per day, averaging about 384 eggs over her lifetime.

### References

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**If you find SWD suspects or fruit that may be infested please contact the ODA.**

**Thank you for your cooperation. July 2010**

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