

## SPOTTED WING DROSOPHILA (SWD)

The Spotted Wing Drosophila (*Drosophila suzuki*), is an invasive pest native to Japan. Undetected in the US until 2009, it's now widely distributed from Fl to WA. SWD attacks a wide range of thin-skinned fruit including, but not limited to, blueberry, blackberry, strawberry, raspberry, cranberry, sweet cherry, peach, plum and grape. Last year SWD damage was noted in some Calif. cherries and some Oregon small fruit. As yet, it is unknown if it will become a pest of commercial apple or European pear. Understandably, this pest has

### LIFE HISTORY

Although SWD was first discovered in Mainland Japan in 1916, little is known about its biology. This species of *Drosophila* differs from the vinegar flies that are commonly found in homes in late summer and fall, which oviposit and feed on decaying fruit. The spotted winged *Drosophila* attacks healthy fruit before the harvest. It is believed that the fly can have up to 10 generations a year, three of which may occur in one cherry crop. A single life cycle can be as short as 8 days and females can

### FRUIT DAMAGE

Last summer Western US fruit growers were caught unprepared and major crop losses occurred. Female SWD lay eggs in healthy ripening fruit using a serrated ovipositor ("stinger"). Eggs hatch in about 1-3 days depending on fruit temperature, and maggots begin feeding inside the fruit. The only initial evidence of infestation is a small scar and

become a top research priority with studies underway to learn more about its biology and control.

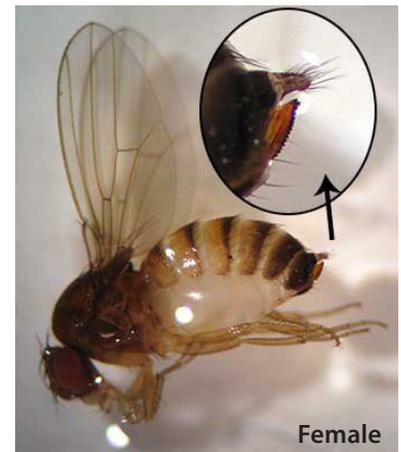
Adult SWD look like most other 'vinegar flies'. They are about 2-3 mm in length, have red eyes and a yellowish-brown body with dark brown bands on the abdomen. Males have a small dark spot on top front edge of the wing, from which they get their name. However, the female doesn't have a wing spot making her identification more difficult without examining the ovipositor. SWD maggots can be distinguished from Western cherry

lay up to 350 eggs in their lifetime. After maturing, the larvae either partially or completely exit the fruit to pupate. SWD is active from April to November. SWD has a relatively narrow temperature threshold of 10-86°F. Cold winters and hot summers may limit their ability to heavily infest fruit in central Washington. However, due to their very high reproductive potential, SWD will have the ability to reestablish damaging populations each summer. Obviously, coastal climates will support higher

soft indentations where the eggs where laid. But within a couple of days the fruit begins to collapse from larval feeding and additional tissue breakdown follows from bacterial and fungal contamination. Crop loss due to infestation and the associated rot can be severe.



fruit fly by their size (the latter being much larger) and by comparing anatomical structures.



population levels therefore, SWD may pose a more important threat to western Washington farmers.



## MONITORING

Monitoring for SWD should start just before the fruit first begin to ripen using baits and traps. There is no pheromone lure for SDW. Instead, an attractive bait is used. Tim Smith, WSU County Extension, recommends the following recipe to make a gallon of bait: 5.5 pints water, 32 fl. oz. cheap red wine, 1 fl. oz. Molasses and 1 fl. oz. apple cider vinegar.

SWD can be particular about entering traps. There are two basic trap designs: one with a wide opening that narrows, such as a large can or wide mouth jar

with a funnel placed inside to reduce fly escape; or a plastic cup or bottle with a perforated lid. The attractant is placed in the bottom. Adding a sticky card inside the trap will keep flies from escaping and make identification easier. The traps should be hung at the level of the ripening fruit. Traps need to be checked and cleaned at least once a week to determine fly presence. Care must be taken not to mistake the common vinegar flies or Western cherry fruit fly for SWD. If you are unsure if you have SWD seek help in identifying these flies before overreacting.



Unfortunately, there are no established management plans for this new pest in Oregon or Washington.

## SWD MANAGEMENT

Control recommendations to best suppress fly populations are still under development. However, two principles will be at the heart of controlling this pest regardless of crop. Control should target adult flies before they lay eggs; and reduce the fly's breeding sites by immediately removing and disposing of infested fruit. For now, cherry fruit fly insecticides applied by airblast sprayers may be the best way to protect against SWD immigration from infested hosts. ULV applications of GF-120 are not expected to be effective, although

this strategy is being investigated.

Orchards with reduced insecticide use may also provide a window of opportunity for SWD to establish a population within a commercial orchard. Insecticide products labeled for use on specific fruits may list fruit flies as pests. Check with a product representative or your local extension horticultural agent or entomologist for further information.

Visit PMTP online at:  
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