

Monitoring for Spotted Wing Drosophila

An Insect Pest of Berries and Other Fruits in Missouri

The Spotted Wing Drosophila (SWD) is a small vinegar or “fruit” fly that is about 2-3mm in length. For the past two years, it has been a problem in several areas of the U.S., including the Midwest.

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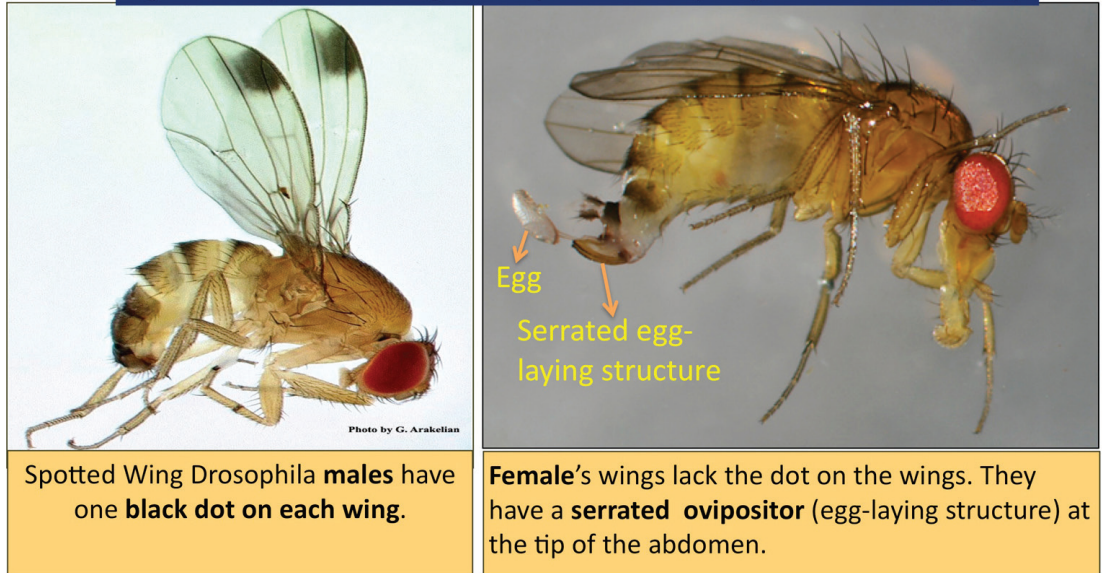
Actual view (under dissecting microscope) of male SWD (see black dots) captured in sticky card.



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LUCEFS#18-A-2013
Rev. 7/16/2013

Figure 1. Spotted Wing Drosophila male (left) and female (right)



Spotted Wing Drosophila **males** have one **black dot on each wing**.

Female's wings lack the dot on the wings. They have a **serrated ovipositor** (egg-laying structure) at the tip of the abdomen.

The Spotted Wing Drosophila (SWD) (pronounced Dros-o-fill-ah) has caused economic damage to berries, grapes and soft-fleshed fruits, such as peaches. The SWD is also able to attack some vegetables, including tomatoes and peppers. Unlike most other vinegar flies that lay eggs on damaged or fermenting fruits, SWD females can cut into healthy fruit. They do this by using their serrated (saw-toothed) ovipositor (organ for depositing eggs) to inject eggs under the skin of the fruit (see Figure 1). The adult SWD lives for about two weeks; during this time, each female can lay more than 300 eggs. The larvae hatch and feed inside the fruits, causing them to rot (see Figure 2). This insect reproduces so quickly that a few adults can become thousands of flies in just a few months.

It is very important that farmers learn how to monitor for this invasive pest. A simple trap can help you determine whether the SWD is present. The most effective and economical

Figure 2. Decomposing blueberry fruit with SWD larvae



3rd Instar Larva Relative to Blueberry size.

trap can be prepared using a clear plastic cup with a fitted lid. Bait this trap with a mixture of water, dry active yeast and sugar, as shown in Figure 3. Note that there are small holes in the sides of the trap that allow the flies to enter. A small yellow sticky card can be placed inside the cup. In that way, flies that are attracted by the bait will enter the trap and be retained by the card. This allows for easier

fly identification, which is the purpose of this trap. For small acreage (or in a high tunnel), researchers suggest setting one trap for plots up to one acre. However, for larger farms, a minimum of three traps per five acres should be used. These monitoring traps need to be placed inside the vegetation, in the shade. It is also a good idea to put a trap in adjacent woods, where activity can occur earlier if there are plants bear-

ing wild berries. Set traps just before the fruit starts to ripen. Check traps and replace yeast and sugar bait each week.

If you are interested in monitoring for this pest and need materials at no cost, please contact Dr. Jaime Piñero at PineroJ@LincolnU.edu or (573) 681-5522 or Jacob Wilson WilsonJ@LincolnU.edu 573-681-5591.

Figure 3. How to make a trap to monitor for SWD

