Managing Spotted Wing Drosophila in Florida Blueberries

Spotted wing drosophila (SWD), *Drosophila suzukii* (Matsumura), is an invasive pest that was introduced into Florida in 2009. As of June 2015, it had spread to most of the fruit-producing states in the US and more than 30 counties in Florida. The highest numbers in Florida have been found in Citrus, Alachua, Marion, Orange, and Hillsborough Counties. Surveys of this pest from 2015–2018 indicate that the pest has historically been active throughout the year with peak activity from April to May when blueberry production is highest, although some growers in central Florida began to observe SWD on their farms during March 2024.

Drosophila flies are small (1/8 inch or 2–3 mm) and have prominent red eyes. The male spotted wing drosophila can be recognized by a single, dark spot on the wings that is lacking in most other *Drosophila* flies. (Fig. 1a). The female spotted wing drosophila possesses a dark, serrated ovipositor (egg-laying device) that is used to cut into ripe, undamaged fruit in order to lay eggs inside (Fig. 1b and c). Spotted wing drosophila eggs (Fig. 2a) that hatch produce white maggots that feed on soft fruit tissues before harvest (Fig. 2b).

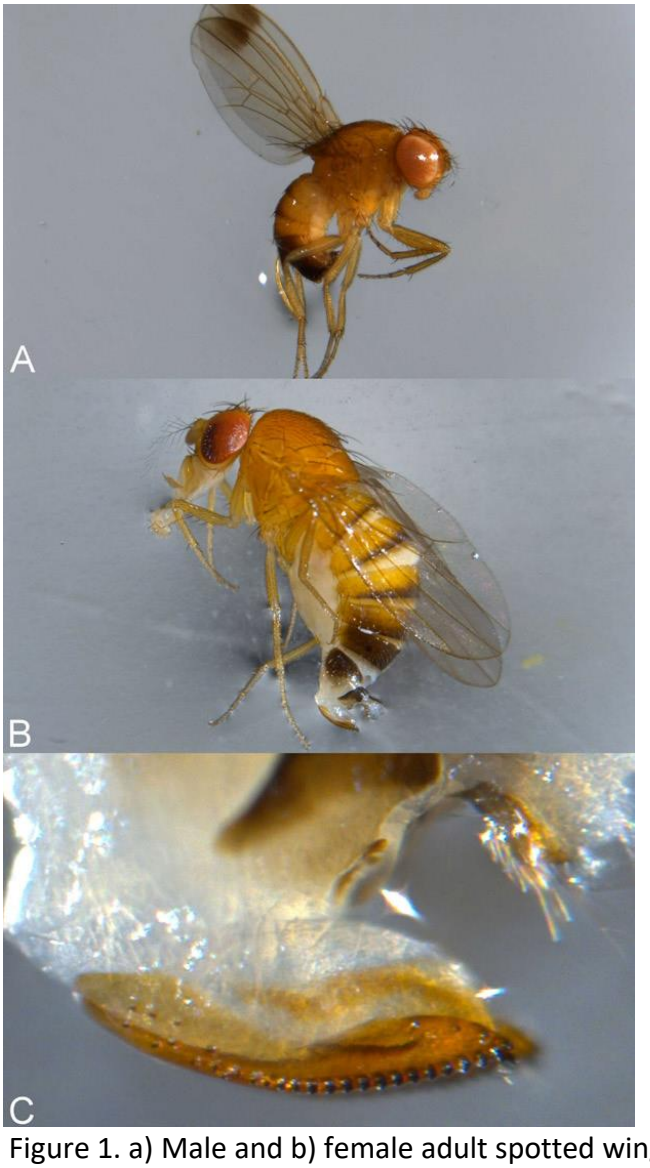

Figure 1. a) Male and b) female adult spotted wing drosophila. c) Female ovipositor.
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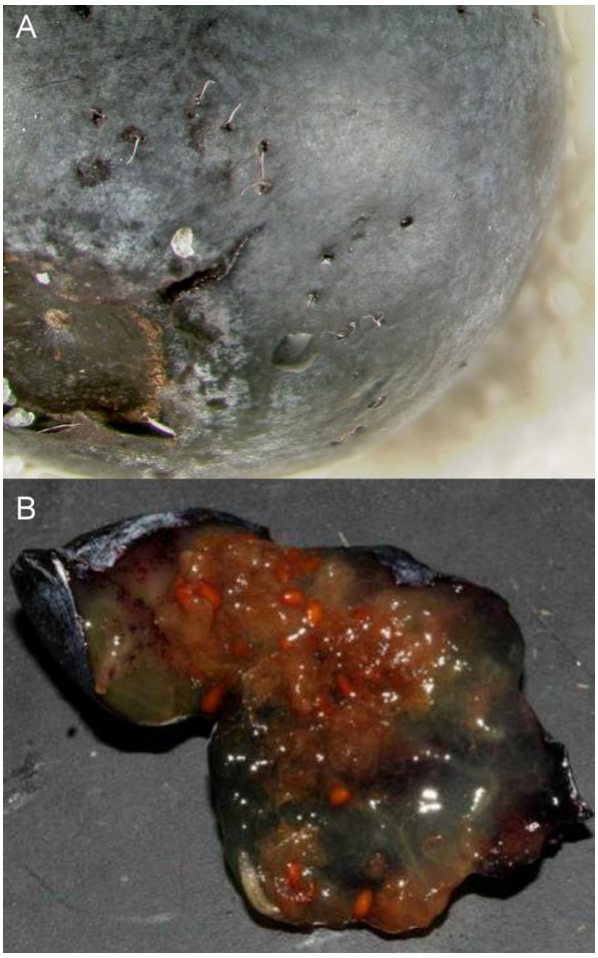

Figure 2. a) Spotted wing drosophila eggs deposited under the skin of a blueberry fruit. Breathing tubes can be seen protruding from the blueberry surface. b) Spotted wing drosophila larva inside blueberry fruit.

Losses are due to larva-infested fruit and/or puncture holes in the fruit from egg-laying activity that can lead to secondary fruit infections by fungal and/or bacterial pathogens. The presence of spotted wing drosophila on a farm can be determined by observing adult flies captured in baited traps. Historically the Scentry trap with Scentry lure has been used to trap SWD adults, which still catches the most flies. There is a new trap, a red sticky trap with a Trece lure. This trap catches adult SWD earlier but does not catch as many as the Scentry trap. In blueberries, traps can be hung throughout the field and along the field border, in the center of the bush in the shade and away from the morning sun. Monitoring for spotted wing drosophila should start as soon as fruit begins to ripen.

Cultural techniques that can reduce SWD breeding sites include shorter harvest intervals (every 2–3 days when possible) and properly disposing of damaged fruit. Damaged fruit should be buried at least 6 inches (15 cm) deep or sent to municipal disposal sites.

Applications of insecticides labeled for spotted wing drosophila should be made when flies are first detected on the Trece' traps baited with Trece' lures. No action thresholds have been established for this pest as of yet. Products with good effectiveness on SWD include Malathion, zeta-cypermethrin (Mustang Maxx®), and fenpropathrin (Danitol®) among others. These insecticides target adult flies; there are no insecticides available for egg or larval control inside fruit. If flies are absent as indicated by a rigorous monitoring program, sprays for spotted wing drosophila should be reduced. Organic growers are at a higher risk of spotted wing drosophila infestation due to the limited number of chemical tools available for its control. Insecticides should be applied using all recommended label rates and in rotation with different classes to delay insecticide resistance.