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How to Differentiate Silverleaf Whiteflies (*Bemisia tabaci*) From Other Whiteflies

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Florida has about 65 of the 1,200 species of whiteflies found worldwide. The silverleaf whitefly (*Bemisia tabaci*) has a number of genetically different types called “biotypes.” They all look identical, but are genetically different enough to create differences in the effectiveness of insecticides used for their control. Currently, our greatest concern is with the insecticide resistant Q-Biotype, followed by the B-Biotype. B-Biotype is suspected of also developing some insecticide resistance. The Q-Biotype originated from the Mediterranean region, where it is believed that intensive European vegetable production techniques may have selected for it. We can easily differentiate a silverleaf whitefly from other Florida whiteflies. However, biotype can only be determined through genetic testing called “biotyping.” See the UF Schall factsheet on how to submit silverleaf whitefly specimens for biotyping.

Silverleaf whitefly are the most common whiteflies found on your tomato and cucurbit plants, and are the primary vector for insect transmitted viruses on tomatoes in Palm Beach County. The whitefly transmitted virus has destroyed hundreds of millions of dollars worth of food production worldwide. The adult insects are very tiny and look similar to size of the ficus whitefly, but much smaller than the rugose spiraling whitefly.

The three things that will help you differentiate silverleaf whiteflies from other whiteflies are:

- 1) **Tiny Size:** They are less than 1/25th of an inch in length, and narrower in width.
- 2) **Sharp Angle of Wings to the Sides of the Body:** Many of the whiteflies we see have 2 wings that are on the same flat plane across their top surface. The silverleaf whitefly wings each angle downward on the sides to about a 45 degrees. They also have **no** dark or grayish coloring on them. Magnification is needed to see this.
- 3) **Yellowish Coloring of the Insect Head and Body:** This coloring, coupled with the size and wing orientation is very distinctive for this species. Magnification is needed to see this.



Size (1)
Photo: UF Schall







Adult (2 & 3)
Photo: UF Osborne

Another new whitefly in Florida that might be confused with the silverleaf whitefly is the solanum whitefly (*Asiothrix antidesmae*). The solanum whitefly is slightly larger, ranging from about 1/25 inch to 1/12 inch in length (compared to 1/25 inch for silverleaf whitefly), and the wings are not tilted downward as sharply when resting. The final nymph stage of the pepper whitefly has “fringe” around it, while the silverleaf whitefly does not. The body color is similar between the two.

Only silverleaf whiteflies need to be biotyped. See the characteristics below for differentiating between these two whiteflies.

Silverleaf Whitefly (biotype)

Solanum Whitefly (do not biotype)

<p>Wings sharply angled downward when resting – look on the leaf underside</p>		<p>Wings not as sharply angled downward when resting – look on the leaf underside</p>	
<p>Final nymph stage (no fringe) – look on leaf underside</p>		<p>Final nymph stage (fringe) – look on leaf underside</p>	

Photos: UF Osborne