WHITEFLIES CAN SPREAD PLANT DISEASE

By Ralph E. Mitchell, Director/Horticulture Agent - UF/IFAS Extension Service, Charlotte County

One way that plants get sick is through the feeding activity of insects. Besides the obvious damage to plants caused by chewing or piercing and sucking, certain insects may also pass diseases to a plant while they are feeding. If this was not bad enough, other insects may feed and pick up the disease and spread it to other plants. One insect that does this very well is the whitefly. These tiny bits of flying talcum powder may look frail and ephemeral, but they often carry plant diseases such as viruses which can wreak havoc in your garden.

The most common whitefly in Florida is called the silverleaf whitefly. This insect is not a true fly, but is actually more closely related to aphids. They have piercing-sucking mouthparts and produce honeydew, a sticky waste product, just like aphids. Vegetable host plants of the whitefly may include tomatoes, eggplants, melons, cucumbers, squash, okra, cabbage, and broccoli. Living up to 24 days, the female whitefly lays about 300 eggs on the host plant. These eggs hatch in about seven days into tiny "crawler" baby whiteflies. This stage is able to move about the plant. The crawler then settles down to a feeding spot and becomes immobile. This nymphal, non-moving, stage looks just like a clear or yellowish scale insect. The adult stage is 1/16 of an inch long and has waxy white wings with a yellow body. Whiteflies can be seen as tiny specks of white flying about when you brush up against an infested plant.

Heavy infestations of whiteflies can kill seedling plants and reduce the health and production of mature vegetable plants simply by the loss of plant sap due to the feeding activity. Sooty mold can also grow on the deposited honeydew possibly reducing photosynthesis and overall lowering the quality of the particular vegetable. Whileflies can also cause physiological disorders such as Squash Silverleaf Disorder. The feeding caused by the silverleaf whitefly makes the new leaves become silvery white in color and lowers the resulting fruit quality.

Whiteflies are also famous for carrying and spreading viruses. One very common virus often seen in our area is the tomato yellow leaf curl virus. I have had it on cherry tomatoes two years in a row now. Several people have brought infected plants to our office for diagnosis. First seen in Miami-Dade in 1997, it has spread over various areas in Florida. This whitefly borne disease causes leaf yellowing and upward curling as well as severe stunting on young plants. The leaves show a mottled appearance with areas of light and dark green giving the plant an almost variegated look. The tops of the plants also look bushy. Fruit production on infected plants is little to none.

A 1/16-inch long Silverleaf whitefly, Bemisia argentifolii Bellows and Perring

Scott Bauer, USDA Agricultural Research Service, www.forestryimages.org

How do we deal with whiteflies and viruses such as tomato yellow leaf curl? Whiteflies are difficult to control, but may be best managed with an insecticidal soap used according to label directions and not in the heat of the day. Conservation of beneficial insects such as parasitic wasps that feed on whiteflies may also be helpful. Start with clean, whitefly-free transplants and remove and destroy any individual tomato yellow leaf curl virus infected tomato plants to help eliminate obvious reservoirs of the virus that may spread to other plants.

Resource:

McAuslane, H.J. (2007) Sweetpotato Whitefly B Biotype of Silverleaf Whitefly, Bemisia tabaci (Gennadius) or Bemisia argentifolii Bellows and Perring (Insecta: Hemiptera: Aleyrodidae). UF/IFAS Extension Service.

Pernezny K. & Momol, T. (2004) A Series on Diseases in the Florida Vegetable Garden: TOMATO. UF/IFAS Extension Service.

Webb, S.E. & Johnson, F.A. (2006) Insect Management in the Home Garden. UF/IFAS Extension Service.

Roberts, P., Muchovej, R., Kucharek, T., Pernezy, K., & Momol, T. (2007) A Series on Diseases in the Florida Vegetable Garden: Squash. UF/IFAS Extension Service.

For more information on all type of vegetable gardening and insect management topics, please contact our Master Gardeners on the Plant Lifeline at 941.764.4340 from 1:00pm-4:00pm Mondays, Wednesdays, and Fridays. Our office is located at 25550 Harbor View Road, Suite 3, in Port Charlotte. Our Plant Clinics are available across the county:

- **Demonstration Garden** (6900 Florida Street, PG) Thursdays 9:00am-11:00am.
- **Englewood/Charlotte Public Library** Thursdays 10:00am-1:00pm.
- **Mid-County Regional Library** 1st and 3rd Thursday of month 1:00pm-3:00pm.
- **Edison College Learning Resources Library** 3rd Tuesday of month 1:00pm-4:00pm.

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For more information about our Florida Yards and Neighborhoods Program, please contact our FYN Horticulture Program Assistant, Allison Steele, at 941.764.4351. Allison can help educate you about the Florida Yards & Neighborhoods Program so that you can create a beautiful, Florida-Friendly landscape that saves you time and money while conserving precious water resources and reducing pollution.

Also, our next Best Management Practices Training concerning the new Fertilizer Ordinance for Commercial Fertilizer Applicators is scheduled for September 18th at our office from 8:00am-3:00pm. There is a $25.00 fee and lunch is provided. For more information, please call 941.764.4340.
