



A giveaway clue to citrus psyllid nymph activity is the white waxy filaments that the nymphs exude (inset). This plant is a common ornamental shrub, orange-jasmine (*Chalcas*), aka, *Murraya paniculata*.

Asiatic citrus psyllid, *Diaphorina citri* vectors citrus greening disease in citrus and landscape plants.

Doug Caldwell, Commercial Landscape Horticulture Extension Agent

The citrus industry was hit with more bad news in late August 2005, another devastating disease, called huang long bing (yellow dragon disease, because of foliage symptoms), AKA, 'citrus greening' was confirmed in Miami-Dade Co. This disease has spread throughout south Florida with confirmed cases in Collier County from citrus groves near Immokalee. This is a bacterial disease that affects the vascular system of citrus. It kills the tree over time (six to eight years) and affects fruit ripening, lowers fruit production and ruins the taste of the fruit. The foliar symptoms are difficult to distinguish from several other diseases and micronutrient deficiencies. Several key characteristics are: yellowing that crosses the veins (micronutrient yellowing tends to stay between veins); only one branch or limb exhibits yellow mottling, then it spreads throughout the canopy; fruit drop; small, lop-sided fruit; and the fruit only half-ripens, that is, the bottom half of the fruit remains green, which is the symptom that sparked the common name, citrus greening.

The bacterium is spread by the feeding activity of the Asiatic citrus psyllid, *Diaphorina citri*. The Asiatic citrus psyllid is a sucking insect from southern Asia, that was first found in June 1998 on the east coast of Florida and has become widespread throughout the state. The adult resembles a miniature, 1/8 inch long cicada with mottled brown wings. Characteristically, they perch at a raised angle on the shoot or leaf as they feed. The

immature feeding stages, are called nymphs, they are yellow and can be found along with the yellow eggs on the new, tender growth. Look for little white waxy filaments (see picture) on the tip of the nymph's abdomen, these stand out and are more readily visible than the insect. What makes this pest a season-long concern is that females may deposit more than 800 eggs during their lifetime and there are nine to ten generations per year.

Favorite psyllid hosts include citrus, key lime, ornamentals(39 species on the DPI web list) including orange-jasmine(*Murraya paniculata*) and Chinese box-orange(*Severinia buxifolia*).



The adult Asiatic citrus psyllid resembles a miniature cicada with brown and white wings.

Fortunately, the disease-causing bacterium doesn't seem to survive in all of these ornamentals including the very common orange-jasmine, but it does survive in the Chinese box-orange.

Check the new growth on your citrus plants weekly. If you see the psyllids, use a 2% mixture of an appropriately labeled horticultural mineral oil on the new growth. The oil only gets what it hits, that is, there is no residual effect. If a psyllid lands on your plant an hour later it won't be killed by the oil residue. Destroy suspected infected trees to minimize spread of this disease.



Chinese box-orange(*Severinia buxifolia*).

The Division of Plant Industries has released a small wasp, *Tamarixia radiata*, which is proving to be an effective parasite according to local DPI inspector Scott Krueger. Examine host plants carefully before purchasing and if this psyllid is found at a retailer, notify the owner, as the plants, per Division of Plant Industries regulations, will have to be quarantined until the psyllids are eliminated.



Tamarixia radiata, adult parasitic wasp attacking psyllid nymph. Picture (ac1997g4) from, www.agnet.org.

For more info and pictures of symptoms and maps of outbreak areas see:

<http://www.doacs.state.fl.us/pi/chrp/greening/citrusgreening.html> .

Also, to help with diagnosing disease symptoms see, A Guide to Citrus Disease Identification, at : <http://edis.ifas.ufl.edu/CH159>.

For more information on home gardening, contact the University of Florida, Collier County Cooperative Extension Service, Master Gardener Plant Clinic, at 239- 353-2872. Extension programs are open to all persons without regard to race, color, creed, sex, handicap or national origin. For updates on southwest Florida Horticulture and more landscape information visit: <http://collier.ifas.ufl.edu>