

Asian Citrus Psyllid and Huanglongbing

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<http://ucanr.org/blogs/strawberries-vegetables> and <http://ucanr.org/blogs/pestnews>

ACP, *Diaphorina citri* Kuwayama (Homoptera: Psyllidae) looks like a miniature cicada. Psyllids are similar to aphids except that they have longer antennae and strong jumping legs hence the name jumping plantlice.



Asian citrus psyllids, *Diaphorina citri* in its characteristic posture

Origin and distribution: Although native to Asia, ACP has worldwide distribution in tropical and subtropical regions. After its first discovery in Florida in 1998, it has now spread to Texas and California as well as neighboring Bahamas, Cuba, Jamaica, Mexico, Puerto Rico and other areas. With its recent detection in La Conchita and Santa Paula areas, the entire Ventura County along with southern Santa Barbara and western Riverside Counties are now considered as quarantined areas.

Biology: Adults are 3-4 mm long insects with mottled brown wings and have a characteristic angular posture. Eggs are almond-shaped, bright yellow to orange and are deposited on developing shoots or feather flush. Adults lay up to several hundred eggs that hatch in about 4 to 10 days. Nymphs are 0.25 to 1.7 mm long and are yellowish orange. There are five nymphal instars which take about 13 to 39 days to mature into adults. Nymphs produce waxy tubules from their posterior end that help divert the honeydew away from their body. Eggs develop into adults in 14 to 49 days depending on temperature. Average longevity of adult female varies between 29 and 88 days at different temperatures. Optimum temperature for development is 25-28°C (77-82°F) and life cycle can be completed in 29 days at 28°C (82°F).

Host range: Citrus and closely related species like orange jasmine are susceptible both to ACP and citrus greening. *Citropsis*, *Citrus* and *Murraya* are preferred genera in the Rutaceae family.

Damage: ACP is a phloem feeding insect that consumes copious amounts of phloem sap and secretes large quantities of honey dew resulting in sooty mold growth. Nymphs feed exclusively on young leaves and shoots.



Nymphs with developing wing pads and white wax tubules
(Photo by Michael Rogers, UC)

Feeding damage includes cessation of terminal growth and malformation of developing parts. Mature plants can withstand feeding damage to some extent, but it is severe in nursery stock and developing young trees.

Additionally, ACP transmits an endocellular, phloem-limited bacterium, *Liberobacter asiaticum* that causes [citrus greening](#) or huanglongbing (HLB) or yellow dragon disease. It is also called citrus Likubin or dieback or leaf mottle in different Asian countries. Native to China, citrus greening was first detected in Florida in 2005 and is a more serious threat than the feeding damage. This disease is transmitted when ACP feeds on a healthy plant after feeding on a diseased plant. Disease stays latent for sometime before symptoms appear in an infected plant. Typical symptoms include mottling and yellowing of leaves. As the disease progresses, small and narrow leaves, short stems, stunted growth, poor flowering and dieback can also be seen. Infected fruit is small, hard, lopsided with dark seeds and bitter juice.

Management: Due to its extensive distribution in Florida it is not expected to be eradicated in that state, but eradication is possible in its new home, California. [Chemical control](#) is possible with neonicotinoids like imidacloprid and dinotefuran, pyrethroids like bifenthrin, deltamethrin and fenpropathrin, the organophosphate, chlorpyrifos, the carbamate, carbaryl, and the ketoenol, spirotetramat. [Biological control](#) is possible with several generalist predators like spiders, lacewings, syrphids, minute pirate bugs, coccinellids (lady beetles) and several

parasitoids. *Harmonia axyridis* and *Olla v-nigrum* are abundant and effective coccinellid predators and imported hymenopteran, *Tamarixia radiata* is a well established parasitoid in Florida. Microbial control is possible with entomopathogenic fungi like *Beuveria bassiana*, *Metarhizium anisopliae*, *Hirsutella thompsonii* and *Isaria* spp. which were found pathogenic to ACP. Several formulations of these fungi are commercially available.

Additional information: More information about ACP, HLB, tracking, control and quarantine areas can be found at the following web sources:

http://www.aphis.usda.gov/plant_health/plant_pest_info/citrus_greening/index.shtml
<http://www.cdfa.ca.gov/phpps/acp/>

What to do: Southern Santa Barbara Co is currently under quarantine. If you have citrus or related host plants, periodically examine the newly developing leaves for ACP feeding damage, waxy substance, honey dew and sooty mold. You can also look for leaf mottling, a symptom of citrus greening. If you find ACP in a new area, please secure the specimen, note the location, and send or bring in the specimen. You can reach me at 805-781-5940 or

skdara@ucdavis.edu. You could also report the pest or disease occurrence by calling the CDFA hotline at 800-491-1899.

References:

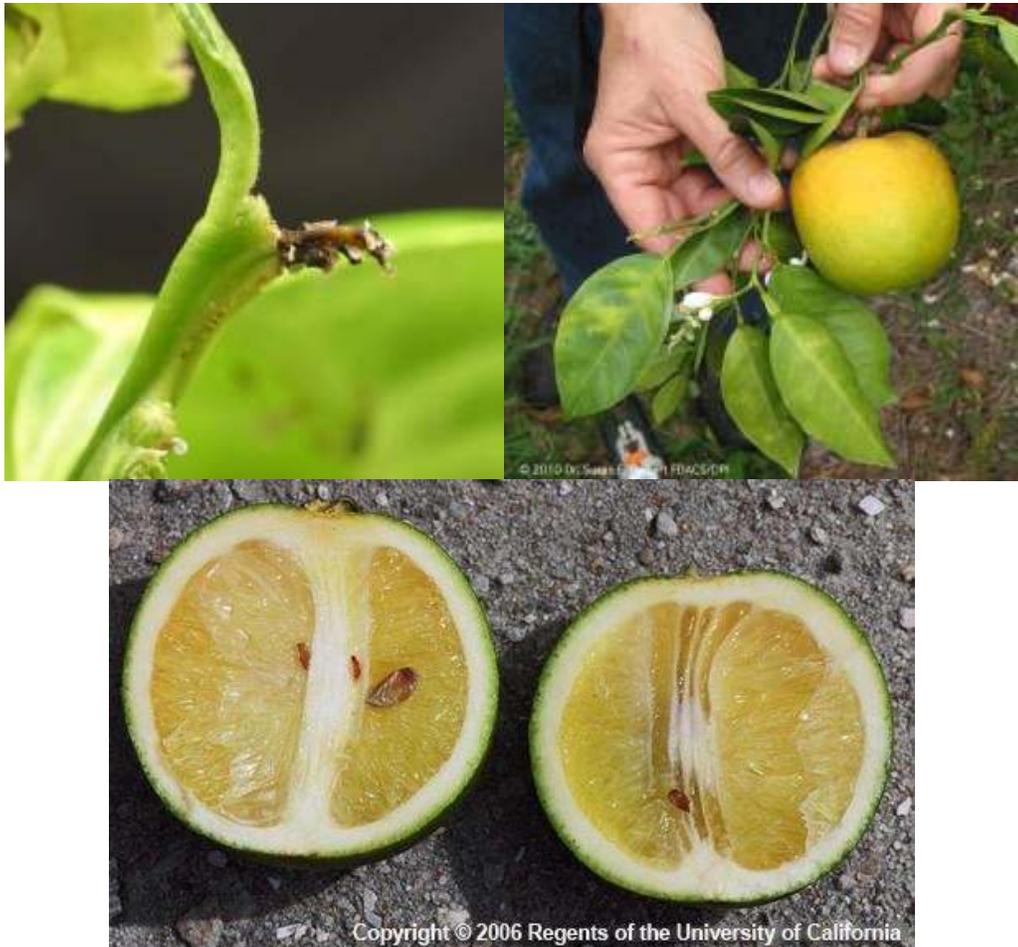
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Top left: Burnt tip of feather flush due to ACP feeding damage (Photo by Michael Rogers, UC). Top right: Yellowing of leaves due to citrus greening disease (Photo by Susan Halbert, FDACS/DPI). Bottom: Lopsided fruit with dark seeds due to citrus greening (Photo by Michael Rogers).