



Figure 1. Enlarged photo of an adult Asian citrus psyllid. Actual length is 3-4 mm.

Asian Citrus Psyllid

Diaphorina citri Kuwayama

(Hemiptera: Psyllidae)

Patrick Conant, Clyde Hirayama
Bernarr R. Kumashiro and Ronald A. Heu

Introduction. Specimens of an insect not previously known to occur in the State were found in a sample of navel orange tree foliage from Waiakea on the island of Hawaii on May 1, 2006, by a Hawaii Department of Agriculture staff member. The specimens, identified as the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama, were confirmed as that species by the USDA Systematic Entomology Laboratory in Beltsville, Maryland, on May 5, 2006.

Adult ACP are small (3-4 mm) with mottled brown wings (Figure 1) and are active, jumping insects. The eggs are bright yellow and are deposited on newly emerging plant shoots. Nymphs are green or dull orange, and feed on young leaves and stems (Floyd & Krass, 2006).

Hosts and damage. According to Floyd and Krass (2006), the host range of ACP is restricted to citrus and closely related Rutaceae, such as mock orange (orange jasmine), *Murraya paniculata*. High populations of ACP cause stunting and twisting of young shoots, and severe curling of leaves.

Distribution. In the State, ACP is found in East Hawaii Island, Maui, Lanai and Oahu. In East Hawaii, ACP has been found in Waiakea (initial

detection), Hilo, Papaikou (north of Hilo), Kaumana (west of Hilo), Pahoia and Kalapana (Puna District), and Panaewa, Kurtistown, Mountain View, and Glenwood (south of Hilo in the upper Puna area). In January 2007, ACP infestations were found on Maui at Pukalani, Wailea, Lahaina and Honokowai. In early June 2007, ACP infestations were found on Lanai near the airport. In late June, infestations were found on Oahu in Honolulu and Kaneohe. World-wide distribution includes Southeast Asia, Reunion, Mauritius, Saudi Arabia, Brazil, southern Iran, Pakistan, Venezuela, Argentina, on the island of Guadeloupe in the Caribbean, and in the U.S. (Florida and Texas) (Halbert & Manjunath, 2004).



Figure 2. Asian citrus psyllid nymph.

Vector of citrus greening. ACP is one of several known vectors of a bacterial organism which causes citrus greening disease (CGD). The other known vector is the African citrus psyllid, *Trioza erytreae* (del Guercio), not known to occur in Hawaii.

Citrus greening disease. Citrus greening disease (CGD), also known as Huanglongbing (or Yellow Dragon Disease) in Asia, has devastated citrus trees in Asia, Africa, and Brazil. The disease, caused by the bacteria, *Candidatus Liberibacter asiaticus* Garnier (Floyd & Krass, 2006), causes mottling and/or interveinal yellowing of citrus leaves and misshapen, green, and bitter-tasting fruit. Most citrus are susceptible to CGD. Mock orange is not a known host of the disease. There is no known cure for this disease and the only option is to destroy infected trees.

Samples of citrus leaves collected from Waiakea in May 2006 tested negative for the disease by the National Plant Germplasm and Biotechnology Laboratory in Beltsville, Maryland. In 2007, samples from other ACP-infested areas of the Big Island also tested negative for the disease by the USDA National Science Laboratory in Gastonia, North Carolina.

Acknowledgements. We gratefully acknowledge HDOA staff members K. Onuma, D. Kansako, J. Nozaki, M. Fukada, T. Suh, D. Cho, R. Bautista, J. Yalamar, and USDA personnel R. Tom and M. York for providing valuable survey assistance. We also acknowledge K. Teramoto and E. Killgore for providing valuable suggestions on this Advisory. This material was made possible, in part, by a Cooperative Agreement from the United States Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). It may not necessarily express APHIS's views.

References

- Floyd, J. and C. Krass. 2006. *Candidatus Liberibacter africanus*, *Ca. L. asiaticus*, *Ca. L. americanus*. Huanglongbing, citrus greening disease. In: New Pest Response Guidelines. USDA APHIS PPQ Emergency and Domestic Programs.
- Halbert, S.E. and K.L. Manjunath. 2004. Asian citrus psyllids (Sternorrhyncha: Psyllidae) and greening disease of citrus: A literature review and assessment of risk in Florida. *Florida Entomologist* 87(3): 330-353.
- Halbert, S.E. 2005. Citrus greening / Huanglongbing. Pest Alert. Florida Dept. Agric. & Cons. Services, Div. Plant Industry.