Invasive Pests in California

Ted Batkin
Citrus Research Board
Asian Citrus Psyllid and Huanglongbing: The Glass is Half Full

The plight of the US Citrus Industry
Liberibacter appears to multiply in the psyllid

Psyllid retains the bacteria FOR LIFE!
Early Detection / Rapid Response  
Find the psyllid early  
Test every psyllid found for HLB  
Treat all populations early to prevent or suppress spread  
Remove any host plant material that has HLB causing bacteria
Brian Taylor, Field Director
Strategies for Reaching the Public in California
Mission Statement
To communicate to the general public the devastating nature of ACP and HLB, to educate the citrus and ornamental industry in the details of identification and management of the pest and disease and to provide communication linkages between Governmental agencies, the University, and the citrus industry.
Asian Citrus Psyllid

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The Asian citrus psyllid, Diaphorina citri Kuwayama (Homoptera: Psyllidae) (fig. 1) is a pest of citrus and close relatives of citrus. Asian citrus psyllid damages plants directly through its feeding activities. New shoot growth that is heavily infested by psyllids does not expand and develop normally and is more susceptible to breaking off. While direct damage is serious, there is even greater concern that the psyllid is an efficient vector of the bacterium that causes the economically devastating disease citrus greening, or Huanglongbing. 

Asian citrus psyllid is found in tropical and subtropical Asia, Afghanistan, Saudi Arabia, Reunion, Mauritius, parts of South and Central America, Mexico, and the Caribbean (fig. 2). In the United States, Asian citrus psyllid was first found in Palm Beach County, Florida, in June 1998 in backyard plantings of Murraya paniculata (orange jasmine) (fig. 3). By 2001, it had spread to 31 counties in Florida, with much of the spread due to movement of infested nursery plants (Half et al. 2002). In the spring of 2001, Asian citrus psyllid was accidentally introduced into the Rio Grande Valley of Texas on potted nursery stock (orange jasmine) from Florida (French et al. 2001). The Asian citrus psyllid could invade California at any time, with most likely sources of infestation being Florida, Mexico, or Asia. There were 170 interceptions of Asian citrus psyllid at U.S. ports on plant material (primarily Murraya and citrus) from Asia from 1985 to 2003.

CITRUS BACTERIAL CANKER DISEASE

Citrus bacterial canker disease (CC) is caused by pathotypes or variants of the bacterium Xanthomonas axonopodis (formerly campesstris) pv. citri (Xac). This bacterium is a quarantine pest for many citrus-growing countries and is strictly regulated by international phytosanitary regulations. Distinct pathotypes are associated with different forms of the disease (Gottwald et al. 2002a). All disease forms are subject to the same international phytosanitary regulations.

Citrus canker occurs primarily in tropical and subtropical climates where considerable rainfall accompanies warm temperatures, but it can also occur in drier climates. CC becomes a serious disease when wet weather conditions occur during the periods of shoot emergence and development of young citrus fruit. Pathotypes of CC may vary in their severity, host range, and location in the world. CC-A (Ataumatic) is the most severe form of the disease; it affects most citrus varieties and is the most economically
The Asian citrus psyllid, Diaphorina citri, is a small, aphid-like insect. It feeds on the new flush of citrus and very closely related plants such as orange jasmine (Murraya paniculata). Psyllid feeding causes burned tips and margins of the new leaves. More importantly, it can spread the bacterium that causes Huanglongbing disease. The pest has recently been found in Southern California, and now sits citrus growing regions of Florida, Louisiana, Mexico, Texas and Taiwan. It is very important that you do not bring plants from these other states or countries into California brevical pests such as these.

Huanglongbing or Citrus Greening Disease

Huanglongbing (HLB), also known as citrus greening disease or yellow shoots disease, is a very destructive bacterium of several citrus and closely related plants. It is spread primarily by psyllid insect vectors and through grafting with infected hibiscus. Symptoms include yellow shoots, leaf mottle, small aphid-like leaves, and lopsided fruit with a bitter flavor. Diseased trees are non-productive and must be removed and destroyed to prevent further spread of the disease. HLB is a serious threat to the California citrus industry. This disease is not yet found in California, but was discovered in Florida in 2006. It is very important that you plant only disease-free certified citrus to avoid introducing diseases.
Citrus Research Board and Nuffer Smith and Tucker flyer
In English, Spanish, Hmong, Vietnamese, Chinese, Punjabi, Khmer

No more California citrus?
That’s what is at stake if the disease-carrying Asian citrus psyllid gets a foothold.
It must be stopped – before it’s too late.

The Dangerous Pest: Asian Citrus Psyllid
- A small insect, about the size of an aphid.
- Feeds on citrus leaves and stems.
- Is a carrier of the deadly bacterial plant disease, Huanglongbing (HLB) also known as citrus greening disease.
- This insect has already been found at several sites in California.
- It threatens our locally produced citrus and Californians’ ability to grow citrus in their backyards.

The Disease: Huanglongbing (HLB)
- Destroys production, appearance and value of citrus trees.
- Causes asymmetrical yellowing and browning of leaves.
- Produces bitter, inedible, misshapen fruit.
- Is fatal to citrus trees.

The Solution: We All Play a Critical Role
- It can take years for symptoms of the disease to appear, meaning inspection for and elimination of the psyllid is our first line of defense.
- HLB is also spread through grafting with infected budwood. Be sure to plant only certified disease-free citrus trees from a reputable nursery and do not bring any plant material into California from other states or countries.
- Inspect trees monthly and whenever watering, spraying, pruning or tending trees.
- If you find the Asian citrus psyllid, act fast! Call your County Agricultural Commissioner or the CDFIA hotline at 860.401.1000. Time is critical.

To learn about the Asian citrus psyllid and HLB disease, visit CaliforniaCitrusThreat.org
Printed materials in English, Spanish and Chinese are downloadable from this Web site.

¿Se quedará California sin cítricos?
Esto podría suceder si el psíldo asiático de los cítricos y la enfermedad que transmite se establece en el estado.

Debemos detenerlo – antes de que sea demasiado tarde.
La peligrosa plaga: el psíldo asiático de los cítricos
- Un insecto diminuto (3-4 mm), del tamaño de un áfido.
- Se alimenta de las hojas y tallos de los cítricos.
- La portadora de la enfermedad Huanglongbing (HLB) la cual mata las plantas. También se le conoce como el envenenamiento de los cítricos.
- Los insectos ya se han encontrado en el Sur de California.
- Representa una seria amenaza para la producción y cultivo de cítricos en California.

La enfermedad: Huanglongbing (HLB)
- Hace que las hojas se tornen de un color amarillento con manchas. (ver foto a la izquierda)
- Produce frutos amargos, incoloros y deformes.
- Datas la aparición y reduce el valor de los árboles de cítricos.
- Es mortífero para los árboles de cítricos.

La solución: todos jugamos un papel importante
- La detección y eliminación del psíldo es la primera línea de defensa contra la enfermedad.
- Es ilegal trasladar árboles de cítricos o plantas propagadas de otros estados o países, porque podrían estar infectadas con HLB. Asegúrese de plantar sólo árboles de cítricos cultivados en California que hayan sido certificados como libres de enfermedades.
- Inspeccione sus arboles con frecuencia en busca de señales del insecto o de la enfermedad.
- Si sospecha que sus árboles tienen el psíldo asiático de los cítricos, actúe de inmediato. Llame a la línea directa de CDFIA al 800.491.1899 o comuníquese con el Comisionado de Agricultura de su condado. No pierda un minuto para intervenir.

Para conocer más acerca del psíldo asiático de los cítricos y el HLB, visite el sitio PeligroCultivosEnCalifornia.org
En este sitio se pueden descargar materiales impresos en inglés, español, chino y otros idiomas.
Is a Disease-Carrying Insect Killing Your Citrus Tree?

Stop the Asian Citrus Psyllid from delivering what could be a death sentence for California citrus trees.

The insect, which can be a carrier of a fatal citrus tree disease, can be stopped — but we need your help. Protect your citrus trees and the availability of California-grown fresh citrus by inspecting for the insect often.

The Insect

The Asian Citrus Psyllid is a sign of danger.

The Disease

Huanglongbing produces yellow, splotch leaves and kills trees.

What to Look For

Detect the insect & determine if your tree is infected.

Found the Insect? Time is Critical! Contact your local Agricultural Commissioner.
¿Está un insecto acabando con sus árboles de cítricos?

Evite que el psilido asiático de los cítricos acabe con los cítricos en California.

Podemos detener a este insecto, que puede ser portador de una devastadora enfermedad para los árboles de cítricos, pero necesitamos su ayuda! Proteja sus cítricos y los árboles de cítricos cultivados en California; inspeccione sus árboles con frecuencia.

El insecto
El psilido asiático de los cítricos es una señal de peligro.

La enfermedad
El huanglongbing produce hojas amarillas y acaba con los árboles.

En qué fíjarse
Detecte el insecto y entérese si su árbol está infectado.

¿Encontró el insecto? ¡Todo minuto cuenta! Comuníquese con la oficina del Comisionado de Agricultura cuanto antes.
Banners on cotton trailers

Stop this bug from killing California citrus.
Visit CaliforniaCitrusThreat.org or Call 800-491-1899
Communications Opportunities and Challenges

- Fresh news to retain the interest of the general public
- Addressing the cultural aspects of plant movement
- Social media: using it for education and countering anti-pesticide efforts
- Size of the audience, severity of the problem and the rapidity with which the situation changes
Thank you !!!