

# Discovery of Deadly Citrus Disease Threatens California Citrus



## Protect Your Citrus Trees by Inspecting for Huanglongbing (HLB) Disease and the Asian Citrus Psyllid

### The Disease: Huanglongbing (HLB)

- Also called citrus greening disease and yellow shoot disease.
- It kills citrus trees and there is no cure.
- Diseased trees produce lopsided, bitter fruit, and eventually die.
- HLB was found in a backyard lemon tree in Southern California in March 2012.

### The Dangerous Pest: Asian Citrus Psyllid

- A small insect, about the size of an aphid.
- It can spread HLB from tree to tree as it feeds on the stems and leaves of citrus plants.
- Eggs are laid on young, new growth of citrus, where small, yellowish orange nymphs feed and develop.
- This insect has been in California since 2008.
- The best way to protect against the disease is to find and stop the pest from spreading.

### The Solution: We All Play a Critical Role

- Inspect your citrus trees monthly.
- Do not move citrus plants, plant material or fruit in or out of quarantine areas or across state or international borders.
- Plant trees from reputable, licensed California nurseries.
- Use only registered budwood that comes with source documentation.
- Dry out or double bag plant clippings prior to disposal.
- If you suspect your tree has the psyllid or the disease, act fast! **Call the California Department of Food and Agriculture Hotline at 1-800-491-1899**, or contact your county agriculture commissioner.

To learn about the Asian citrus psyllid and HLB disease, visit

**CaliforniaCitrusThreat.org**

Download the *Save Our Citrus* smartphone app to help you identify and report the pest and disease.



Printed materials in other languages are downloadable from [CaliforniaCitrusThreat.org](http://CaliforniaCitrusThreat.org). Photos provided by Beth Grafton-Cardwell and Mike Rogers.



Citrus Pest & Disease  
Prevention Program

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**Keep the psyllid out of your backyard?**

Get breaking news and important information about keeping the insect out of California.

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## Deadly Citrus Disease Threatens California Citrus



Protect your citrus trees from a plant disease called Huanglongbing (HLB) and the Asian citrus psyllid, a pest that can spread the disease.

HLB was discovered in Los Angeles in 2012. The best way to protect your citrus from the disease is by inspecting for the Asian citrus psyllid often.

### The Insect



The Asian Citrus Psyllid is a sign of danger. >

### The Disease



Huanglongbing produces yellow, splotchy leaves, inedible fruit 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. >



# Citrus Pest & Disease Prevention Program

## A Death Sentence for Citrus

The Asian citrus psyllid is a dangerous citrus pest that can carry Huanglongbing, also known as HLB and citrus greening disease. The pest and the disease are a death sentence for California citrus trees.

## Protect Your Citrus

Learn more at [CaliforniaCitrusThreat.com](http://CaliforniaCitrusThreat.com)

## Think You Have the Pest?

Act fast! Contact your local agriculture commissioner or call **1-800-491-1899**



## CPDPP

@CitrusThreat

A plant disease called Huanglongbing has been found in California and is threatening our state's citrus. Learn how to protect your citrus from this disease.

<http://www.californiacitrusthreat.com/>

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### Tweets


 **CPDPP** @CitrusThreat 20h  
Do you work in a nursery or garden center? Order free materials to educate customers on the Asian citrus psyllid & HLB: [bit.ly/R9Djmh](http://bit.ly/R9Djmh)  
Expand


 **CPDPP** @CitrusThreat 2 Nov  
Florida has lost more than 6,000 jobs due to HLB, also known as citrus greening disease. Protect CA from this threat. [bit.ly/Mq9Dj4](http://bit.ly/Mq9Dj4)  
Expand


 **CPDPP** @CitrusThreat 31 Oct  
To many growers, citrus isn't just a business, it's a lifelong passion. Help protect them by not bringing plant material into CA.  
Expand

 **CPDPP** @CitrusThreat 29 Oct  
Thanks for the good reminder. RT @kgun9: U.S. Customs and Border Protection warns against citrus greening disease [ow.ly/2st7Bp](http://ow.ly/2st7Bp)  
Expand

 **CPDPP** @CitrusThreat 29 Oct  
The Asian citrus psyllid has infested backyards in Southern California. Have you seen this pest on your citrus tree? [bit.ly/RTZ5ID](http://bit.ly/RTZ5ID)  
Expand

 **CPDPP** @CitrusThreat 26 Oct  
It's estimated nearly 100 million trees are affected by HLB worldwide. Learn how you can protect CA's citrus trees: [bit.ly/Mq9Dj4](http://bit.ly/Mq9Dj4)  
Expand

 **CPDPP** @CitrusThreat 24 Oct  
RT @hungrypests: USDA tightens its regulations to fight citrus greening. [fb.me/2h62X8y4p](http://fb.me/2h62X8y4p)  
Expand

 **CPDPP** @CitrusThreat 23 Oct

# Save Our Citrus

## Hungry Pests

WHAT ARE THE DISEASES

AFFECTED AREAS

LEARN MORE

IS YOUR CITRUS SICK?

SEARCH...

SAVE OUR CITRUS IPHONE APP

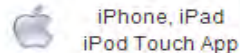
### Save Our Citrus FREE Mobile iPhone App

#### Identify and Report Citrus Diseases

The Save Our Citrus app is a free iPhone application from the United States Department of Agriculture (USDA) that makes it easy to report and identify the four leading citrus diseases: citrus greening, citrus canker, citrus black spot and sweet orange scab. Report your symptoms, upload a photo and receive a response back from citrus experts. Make sure your citrus is healthy and help stop the spread of these incredibly destructive citrus diseases.

Free Save Our Citrus App Enables You to Help Stop the Spread of Citrus Diseases. [Watch the how-to video](#) and/or [download the app](#).

**FREE DOWNLOAD**  
From Your Mobile Device  
Save Our Citrus App



Visit the Apple iTunes Store

### HELP PROTECT CITRUS DON'T MOVE CITRUS

Watch and listen to the "Deadly Game" tv and radio spots.



tv



radio

### CITRUS SAFETY TIPS



**Keep Homegrown Citrus at Home.** Help reduce the spread of citrus diseases by not moving your homegrown citrus fruit or plants across state lines. Enjoy your fruit with friends, but be sure to obtain a federal certificate if you transport citrus outside of your state. For more info, contact your [USDA State Plant Health Director's office](#).





## HAVE YOU SEEN THIS INSECT? Asian Citrus Psyllid

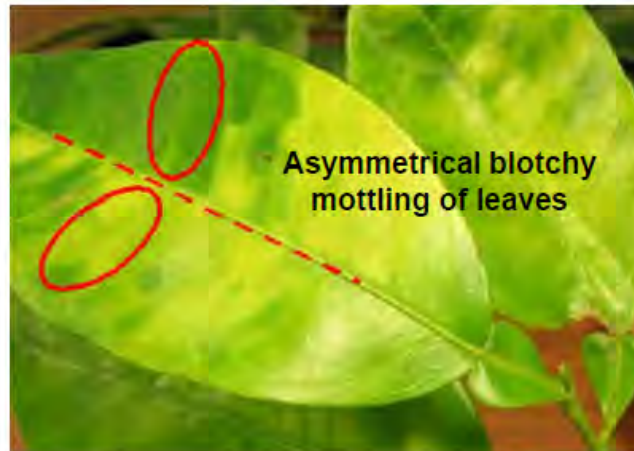


The Asian citrus psyllid, *Diaphorina citri*, is a small, aphid-like insect. It feeds on the new flush of citrus and very closely related plants such as orange jasmine (*Murraya paniculata*). Psyllid feeding causes burned tips and twisting of the new leaves. More importantly, it can spread the bacterium that causes Huanglongbing (HLB) disease.

## HAVE YOU SEEN THIS CITRUS DISEASE? Huanglongbing or Citrus Greening Disease



Lopsided bitter, hard fruit with  
small dark aborted seeds



Asymmetrical blotchy  
mottling of leaves



Yellow shoots

Huanglongbing (HLB), also known as citrus greening disease or yellow shoot disease, is a very destructive bacterial disease of citrus and closely related plants. It is spread primarily by psyllid insect vectors and through grafting with infected budwood. Symptoms include yellow shoots, leaf mottle, small upright leaves, and lopsided fruits 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.

**IF YOU SUSPECT YOU HAVE SEEN THIS INSECT  
OR DISEASE CALL THE CALIFORNIA DEPARTMENT OF FOOD AND  
AGRICULTURE HOTLINE: 1-800-491-1899**

*E. Grafton-Cardwell and G. Vidalakis, University of California Riverside  
University of California ANR Core Grants Program  
Photos by M. Rogers and M. Keremane*



# Save Our Citrus

A deadly plant disease called Huanglongbing (HLB), also known as citrus greening disease, has been found in your area and could be a death sentence for backyard citrus trees. The disease is spread by a pest called the Asian citrus psyllid. In order to save our citrus, you should:

- **Keep Homegrown Citrus at Home.** Your area is under quarantine. Reduce the spread of citrus diseases by not moving your homegrown citrus fruit or plants out of quarantine areas.
- **Inspect Citrus Plants Regularly for Huanglongbing and the Asian citrus psyllid.** Symptoms of the disease include yellow mottling of the leaves, lopsided fruit and excessive fruit drop. Psyllids and eggs are typically found on new shoots.
- **Check Citrus Plant Suppliers.** Only buy citrus plants from a reputable, licensed California nursery. Follow instructions on the tag regarding the Asian citrus psyllid or HLB.
- **Be Aware of Quarantines.** It's important to not move citrus from quarantine areas. Doing so puts citrus at increased risk of disease and is against the law.
- **Avoid Fines and Penalties.** If you knowingly purchase citrus in violation of quarantine regulations and requirements, the penalties could range from \$1,100 to \$60,000 per violation.

Visit [SaveOurCitrus.org](http://SaveOurCitrus.org) to learn more. If you think you have Huanglongbing or the Asian citrus psyllid, call the CDFA hotline at 1-800-491-1899.



[SaveOurCitrus.org](http://SaveOurCitrus.org)



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Download the Save Our  
Citrus iPhone App at  
[SaveOurCitrus.org](http://SaveOurCitrus.org)

## Asian Citrus Psyllid and Huanglongbing Disease

**The Asian citrus psyllid and the deadly Huanglongbing (HLB) disease that it spreads threaten citrus trees in backyards and on farms.** The psyllid arrived in Southern California in 2008, and the HLB disease was first detected in Los Angeles in 2012. All types of citrus—including oranges, grapefruit, lemons, and mandarins—are affected as well as a few closely related ornamentals.

### What is the concern?

- ◆ HLB disease will kill trees in as little as five years.
- ◆ There is no cure or effective control method for HLB.
- ◆ HLB disease is caused by a bacterium carried from tree to tree by the Asian citrus psyllid.
- ◆ Reducing the psyllid population helps to slow the spread of the disease.
- ◆ Although the psyllid can damage leaves, it doesn't kill trees by itself, and fruit is safe to eat.

### Inspect your citrus trees for psyllids.

- ◆ From spring through fall, look for psyllid eggs, nymphs, and adults on newly forming leaves.
- ◆ Adults are about the size of an aphid with brownish mottled wings. They feed with their heads down and their "tails" in the air.
- ◆ Nymphs are tiny and yellowish, and they excrete white waxy tubules.
- ◆ Psyllids feed on plant sap and produce sticky honeydew that may be covered with black sooty mold. However, other citrus pests (e.g. aphids, soft scales) may cause this symptom, too.

### What are the symptoms of HLB disease?

- ◆ Leaves show an asymmetrical yellow mottling with patches of green.
- ◆ Fruit is small, lopsided, and falls off the tree easily, while the juice tastes bitter.

### What should you do if you think you have the Asian citrus psyllid or HLB?

- ◆ Call the California Department of Food and Agriculture (CDFA) Exotic Pest Hotline at 1-800-491-1899 to confirm a find.
- ◆ Don't move plants or clippings out of psyllid-infested areas, because they can spread the insect and disease.



# Save YOUR Citrus!



The Asian citrus psyllid can carry a disease that kills citrus trees. "Like" California Citrus Threat to learn more about how to protect your citrus trees from this dangerous pest.



Citrus Pest & Disease  
Prevention Program

## Visit

[www.CaliforniaCitrusThreat.org](http://www.CaliforniaCitrusThreat.org)  
to learn more about the Asian  
citrus psyllid, see photos and to  
find an agricultural commissioner  
near you.



## Follow @CitrusThreat

on Twitter to stay up to date  
on Asian citrus psyllid news in  
California.





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Keep the psyllid out of your backyard?

Get breaking news and important information about keeping the insect out of California.

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### Protect Your Trees From the Asian Citrus Psyllid



Dangerous Citrus Pest Explained in KMPH Interview



Ted Batkin Discusses Asian Citrus Psyllid in KPSP Interview



California Citrus Threatened by Dangerous Pest



Ted Batkin Warns of a Dangerous Citrus Pest in KTXL Interview



Asian Citrus Psyllid Threatens San Diego Citrus



KSEE Covers Asian Citrus Psyllid Threat in Fresno



Proteja sus Árboles de el psÁlido asiÁtico de los cátricos



Details of a Dangerous Citrus Pest on KERO



Citrus Growers Discuss Asian Citrus Psyllid



Protect Your Trees From the Asian Citrus Psyllid



Agriculture Officials Warn Homeowners of the Asian Citrus Psyllid



Threat of Citrus Greening Disease Looms in California



Fresno Citrus Threatened by Asian Citrus Psyllid



Deadly Effects of the Asian Citrus Psyllid



Dangerous Insect Threatens Valley Citrus



Asian Citrus Psyllid Threat in Bakersfield



KBFX Covers Dangerous Citrus Pest



KEYT Covers Threat of Asian Citrus Psyllid



Asian Citrus Psyllid Details in KEYT Interview





## Citrus Pest & Disease Prevention Program

### Asian Citrus Psyllid: A Death Sentence for Your Region's Citrus

#### Overview:

The Asian citrus psyllid, which has been found throughout Southern California, can carry one of the most devastating citrus diseases in the world – Huanglongbing (HLB), also known as citrus greening disease. **On March 30, 2012, the citrus industry's worst fear came true. For the first time in California, an HLB-infected tree was found in a Los Angeles-area backyard.**

Once a citrus tree becomes infected with HLB, there is no cure and the tree will die. While this tiny insect and HLB are not harmful to humans or pets, HLB is a death sentence for backyard citrus and our state's \$2 billion citrus industry. If HLB takes hold, it could mean not only the destruction of the California citrus industry, but also the end of the backyard citrus trees that help make up the fabric of communities.

The economic consequences resulting from the Asian citrus psyllid and HLB are staggering. For example, HLB has infected 40-60 percent of all citrus trees in certain areas of Florida. As a result, Florida's citrus industry is losing approximately \$300 million annually.

The best way to protect against HLB is to control the spread of the pest.

The Citrus Pest & Disease Prevention Program is determined to prevent Florida's citrus epidemic from happening in California. As such, the Citrus Pest & Disease Prevention Program wants to ensure government officials are informed about the issue and are prepared to answer questions from residents and/or direct them to accurate sources of information. The best source for immediate information is [www.californiacitrusthreat.org](http://www.californiacitrusthreat.org).

#### Citrus Industry and Government Action

California's citrus industry has been working closely with federal, state and local officials to detect, quarantine and suppress the spread of the Asian citrus psyllid and HLB.

- In 2009, AB 281 (De Leon) established the Citrus Pest & Disease Prevention Committee (CPDPC), an industry-funded program to assist in combating citrus-specific diseases, vectors and pests, when found in California.
- At the December 2011 meeting of the CPDPC, members of the body adopted a plan that establishes an aggressive buffer detection and treatment program around the Asian citrus psyllid population in the greater Los Angeles metropolitan area. The goals of this plan are to prevent natural HLB spread from northern Mexico via the psyllid and to prevent psyllid spread into commercial citrus producing

regions in our state.

- A major public outreach campaign involving state and federal entities and the citrus industry is taking place throughout quarantined areas in California. Citizens are being asked to inspect their citrus trees monthly and if the Asian citrus psyllid or HLB symptoms are found, to contact the California Department of Food and Agriculture (CDFA) hotline at **1-800-491-1899**.
- Quarantines remain in effect in all counties where the Asian citrus psyllid and HLB have been discovered – thus mitigation steps are being employed continuously in these areas by producers and county officials in partnership with state and federal entities.
- CDFA is placing traps around Southern California in residential areas to detect and react to the spread of the Asian citrus psyllid and HLB. Should a psyllid be found in a residential tree within high-priority areas, CDFA will treat the tree and surrounding areas.
- The citrus industry, USDA and CDFA are working together to suppress the spread of the psyllid and will continue efforts to save California's \$2 billion citrus industry and 14,000 jobs.

#### What Elected Officials Can Do About the Spread of the Asian Citrus Psyllid and HLB

- Add the Citrus Pest & Disease Prevention Program link to your website:
  - English - [www.californiacitrusthreat.org](http://www.californiacitrusthreat.org)
  - Spanish - <http://peligrancitricosencalifornia.com/>
- Provide Citrus Pest & Disease Prevention Program education materials where residents can access information.
- Share Citrus Pest & Disease Prevention Program Asian citrus psyllid information to email distribution lists and include in newsletters.
- Stay informed – have your office follow the Citrus Pest & Disease Prevention Program on Facebook and Twitter, and share important updates provided by the Citrus Pest & Disease Prevention Program.
  - Twitter: <http://twitter.com/citrusthreat>
  - Facebook: <http://facebook.com/californiacitrusthreat>

- On your website or YouTube site, add the Asian citrus psyllid awareness Public Service Announcement (PSA). Please contact Katie Rowland at (619) 296-0605 to obtain the PSA.

#### Frequently Asked Questions

**What can residents do to protect their citrus trees?** Inspect for the psyllid and HLB symptoms monthly and if found, act fast! Citizens should immediately contact the California Department of Food and Agriculture (CDFA) hotline at **1-800-491-1899**. Agriculture inspectors will then visit the find site to confirm.

**What happens if the Asian citrus psyllid is found on a citrus tree?** Trapping and treatment of psyllids is occurring within the buffer zone previously described. If psyllids are found on a citrus plant in these areas – either through the detection program or as a result of a resident calling the hotline number – all citrus plants within a 400-meter radius are treated by agriculture officials with two pesticides. Cyfluthrin (trade name Tempo) and Imidacloprid (trade name Merit) are commonly used pesticides by CDFA to protect citrus orchards from the psyllid and other pests.

**Are these pesticides harmful to people or pets?** No. Pesticides used to treat the Asian citrus psyllid are applied safely, and have been evaluated for safety by the Environmental Protection Agency and the California Department of Pesticide Regulation.

**Can the citrus fruit that is treated with these pesticides be eaten?** Yes. Fruit is edible immediately after treatment. It is always wise to wash produce and hands prior to eating, whether it's bought at the local store or picked from the backyard.

**What happens if the psyllid is found in a non-treatment area?** Homeowners should talk to their local nursery or home and garden center for help identifying products that can protect against the Asian citrus psyllid.

**What happens if HLB is found in a citrus tree?** All plants found to be infected with HLB will be removed in order to stop the spread of the disease. The removal of HLB-infected trees helps protect other citrus trees, the community's citrus and the quality of life for future generations.