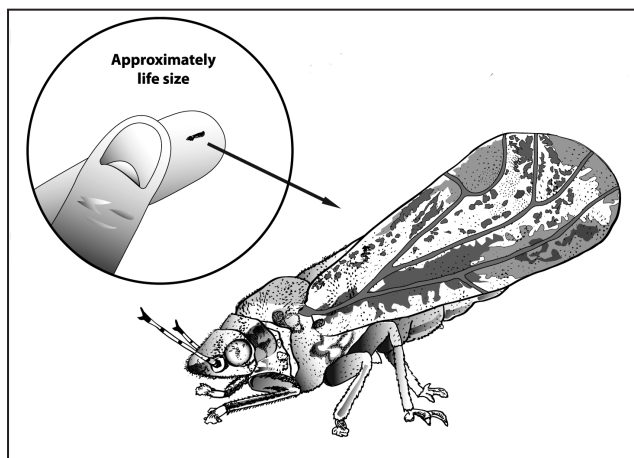


# Asian Citrus Psyllid

**Background** – Invasive species are organisms that are moved by nature, people, or animals into an ecosystem where they have not been previously found. Some of these organisms are spread naturally or accidentally by people, while others are spread intentionally, without understanding the harm they might cause. Although most of the organisms brought into our state cause no harm, a few are able to thrive in California to the detriment of native ecosystems, recreation, agriculture, including specialty crops, infrastructure, and public or animal health. These invasive species include plants and animals, insects and other arthropods, and pathogens.



when people transport infested plants or plant debris from one area to another. This can lead to infestations in entirely new regions or states.

**Why it is a problem:** The Asian citrus psyllid is dangerous because it can infect citrus trees with the bacterium that causes HLB, the worst citrus disease in the world. There is no cure for the disease and infected trees will eventually die. Homeowners and farmers must remove and destroy infected trees to prevent further spread of the disease.

**Description:** A tiny bug called the Asian citrus psyllid is a big problem for citrus growers, home gardeners, and anyone who enjoys eating citrus. The Asian citrus psyllid threatens all citrus varieties and a few ornamental plants, because it can transfer a bacterium that causes huanglongbing [hwang-long-bing] (HLB) disease, also known as “citrus greening disease.”

HLB has killed many citrus trees in Asia, India, parts of the Middle East, South America, and Florida, and is now threatening citrus production in California, which is a \$2.1 billion industry. California is the nation’s primary source of fresh market oranges, producing 80 percent, and also supplies 87 percent of the nation’s lemons.

The Asian citrus psyllid adult is as small as a sesame seed and has mottled brown wings. When the adult feeds it tilts its hind end at a 45-degree angle, making it look like a thorn on leaves and stems. Female Asian citrus psyllids lay hundreds of eggs in their lifetime, usually on new shoots and leaves. Asian citrus psyllid juveniles, or nymphs, are yellow in color and produce sugary ‘honeydew’ from the plant liquids they eat. Waxy, white tubules can be seen extending from their hind ends to move honeydew away from their bodies so they don’t drown in it.

**How it affects California specialty crops:** Many of the affected crops are California specialty crops. Specialty crops are fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops (including floriculture). Many of the fruits, nuts, and vegetables eaten in the United States are grown right here in California. The Asian citrus psyllid could destroy these citrus crops including orange, lemon, lime, mandarin, kumquat, and grapefruit.

**Habitat:** The Asian citrus psyllid and HLB came from southern Asia and citrus psyllids were first discovered in North America, in Florida in 1998. The Asian citrus psyllid has since spread through parts of the United States and Mexico. HLB is also gradually spreading along with the psyllid. Psyllids feed on leaves and stems of all citrus varieties.

**How you can help:** Only purchase citrus trees from a good nursery close to your home and do not transport citrus trees to other areas. Anyone with citrus trees should inspect young leaves whenever watering or pruning. Always bag or dry out citrus prunings before disposing of them so psyllids don’t hitch a ride to new places. Before transporting fruit, remove stems and leaves to make sure there are no psyllids. If an Asian citrus psyllid is found, report it to local agriculture authorities.

**How Asian citrus psyllid and HLB are spread:** The Asian citrus psyllid spreads by flying from citrus tree to citrus tree and HLB spreads when an Asian citrus psyllid picks up the bacteria by feeding on an infected plant, then flies to another plant and feeds again. Psyllids can travel long distances

**For Additional Information:**

California Department of Food and Agriculture  
1220 N Street  
Sacramento, CA 95814  
Pest Hotline: (800) 491-1899  
[www.cdfa.ca.gov/plant/acp](http://www.cdfa.ca.gov/plant/acp)  
[www.californiacitrusthreat.org](http://www.californiacitrusthreat.org)



# Asian Citrus Psyllid Activity Sheet

Asian citrus psyllid nymphs can be identified by the waxy tubules that they secrete.

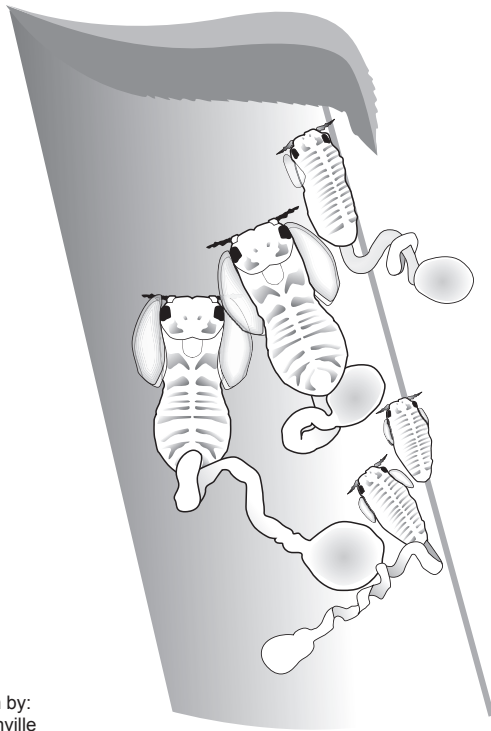


Illustration by:  
Gwen Conville

## Fantastic Facts

1. What is the Asian citrus psyllid?
2. What does the Asian citrus psyllid adult look like on leaves and stems?
3. How do you cure trees infected with huanglongbing disease?
4. What percentage of fresh oranges sold in the U.S. are grown in California?
5. Name two things you can do to help stop the spread of Asian citrus psyllid.

1) A tiny insect that threatens citrus 2) A thorn 3) No cure 4) 80% 5) Buy local plants, inspect citrus fruit and trees, wipe off fruit and remove leaves and stems, bag or dry out green waste

## Lesson Ideas

- Create a comic strip featuring the Asian citrus psyllid and its destruction of citrus.
- Research the latest psyllid appearances and mark on a map how close the psyllid is to your home.
- Write a persuasive essay on the importance of keeping pests like the psyllid out of California.
- In groups, create a psyllid model out of recycled materials. Give each creation a creative name.

## Lesson Plan: Stop the Psyllid

**Introduction:** To understand the economic impact of Asian citrus psyllid and huanglongbing disease, students will act as citrus growers managing a navel orange farm. ACP and HLB will be introduced into the orchard and students will calculate the point at which their orchard is no longer profitable.

### Materials:

- You Tube Video: "Deadly Huanglongbing Disease Threatens California Citrus" [www.goo.gl/vUczj6](http://www.goo.gl/vUczj6)
- You Tube Video: "Detecting Asian Citrus Psyllid" [www.goo.gl/sD3ccM](http://www.goo.gl/sD3ccM)
- Paper, colored pencils

### Procedure:

1. Play both videos and discuss psyllid identification and damage caused by HLB disease.
2. Have students pair up to be "farmers" who own a 100-acre orange farm.
3. Project the template found at [www.LearnAboutAg.org/resources/fact/asian\\_citrus\\_temp.pdf](http://www.LearnAboutAg.org/resources/fact/asian_citrus_temp.pdf). Students should use this template to draw their own chart to show what's happening in the citrus orchard at each stage of ACP infestation.

Chart boxes should be large enough for students to draw a picture of the orchard and write down the costs associated with ACP and HLB.

4. Students should use the following information to predict when the citrus farm is no longer profitable:
  - Trees take at least 5 years to start producing fruit.
  - HLB disease takes several years to start affecting fruit production. It can kill a tree in about five years. Diseased trees must be removed.
  - There are 100 trees per acre in the orchard
  - Profit per acre = \$2,500 (\$25/tree)
  - Annual cost of pesticides to control ACP = \$500/acre applied every year after ACP has been detected
  - Tree replacement costs = \$25/tree
  - At what point is it no longer profitable to farm citrus?
5. Why is it important to stop the spread of Asian citrus psyllid and HLB?

