

Citrus Greening (Huanglongbing)

Citrus Greening, also known as Huanglongbing (HLB), is a devastating disease of citrus. The disease affects the production and quality of the fruit. There is no cure for greening and the infected trees eventually die (Fig. 11). Greening, or HLB, can be initially diagnosed by symptoms but confirmation is based on results of specific molecular diagnostic tests.

Causal Agent

Greening is caused by *Candidatus Liberibacter* spp, bacteria transmitted by psyllids. The psyllid that vectors the disease in the USA is the Asian citrus psyllid, *Diaphorina citri*. The adult psyllid (Fig. 13) can be easily recognized by the 45 degree angle that forms with stems and lower side of leaves while feeding (Fig. 12).

Although the vector is already present in Texas, the state remains disease free. The disease apparently originated in China in the early 1900s, and it spread from there to citrus growing areas of Asia, Africa, the Arab peninsula, and Brazil. In 2005 greening was detected for the first time in the USA; in 2008 in Cuba and Dominican Republic; in 2009 in Belize and Mexico. In the USA, South Florida is where HLB was first found. In 2008 Louisiana was added to the list of “greening” states. By the end of 2009, HLB has spread to most of Florida, and has also been found in

Georgia and South Carolina. States, other than the above mentioned, remain free of Citrus Greening.

Symptoms

1. Leaf mottling and blotching
 2. Leaf indentations, and yellowing
 3. Vein Corking
 4. Rabbit ears
 5. Vein yellowing
 6. Green islands
 7. Greening of fruits
 8. Lopsided fruits and vein discoloration
 9. Small fruits
 10. Blight
1. Leaf mottling and blotching



“Citrus Greening PLPA-Cit-010-01” Prepared by Dr. Diana Schultz¹ and Dr. Ronald D. French²

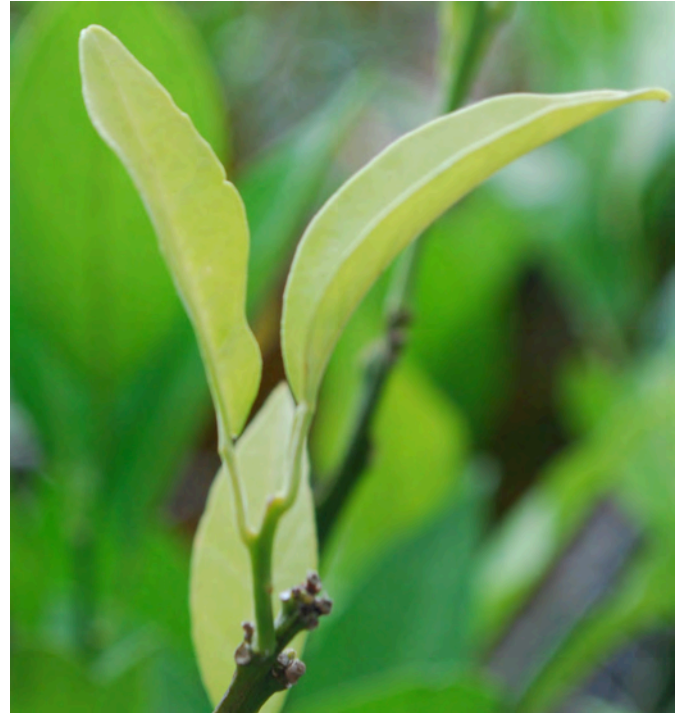
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2. Leaf indentations, and yellowing



4. Rabbit ears



3. Vein Corking



5. Vein yellowing



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6. Green islands



7. Greening of fruits



8. Lopsided fruits and vein discoloration



9. Small fruit



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10. Blight



Fig. 11 Moribund tree



Fig. 12 Adult asian citrus psyllid



Management

There is no cure for greening. The only effective measures are preventive, primarily by controlling the vector. Once established, eradication of infected trees combined with psyllid control is the only effective mean of avoiding spreading of the disease. Other measures, as nutritional amendments to sustain the life of infected trees, antibiotics to control the pathogen, and induction of systemic resistance, are being studied.

Public awareness is the best measure in hand to keep Texas free of the disease. It is important for the public to:

1. Familiarize with the symptoms;
2. Educate family and friends about Citrus Greening and how it affects citrus;
3. Inspect their own citrus trees;
4. Immediately inform the Texas Department of Agriculture if greening symptoms are found. A sample should be sent to a lab for molecular diagnostic.

Samples from Cameron, Hidalgo, Willacy, Starr, Zapata, Jim Hogg, Brooks, and Kenedy counties should be sent to Texas A&M Kingsville –Citrus Center in Weslaco. Samples from the rest of Texas should be directed to the Texas Plant Disease Diagnostic Lab in College Station. <http://plantclinic.tamu.edu>

For updates and more information please visit:

<http://texascitrusgreening.org>
<http://sickcitrus.tamu.edu>

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