

Extension Plant Pathology

“Bacterial Leaf Scorch of Chitalpa”



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The Heat of Summer brings on Symptoms of Bacterial Leaf Scorch Symptoms on Chitalpa.



Figure 1: Flowers on healthy chitalpa trees. (Photo N. Goldberg NMSU-PDC)

Chitalpa trees (a hybrid between catalpa and desert willow) are susceptible to a xylem-limited bacterium called *Xylella fastidiosa* (Fig 1). The bacterium invades the plant and plugs up the water conducting vessels, known as the xylem vessels, making it difficult for the plant to get enough water to the leaves. The result on the plant is symptoms of water and nutrient stress - chlorosis and leaf scorch. Other symptoms include leaf spotting, small leaves, thin canopy, branch dieback, and eventually, tree death (Fig 2, 3, 4, 5). This disease was first discovered in New Mexico in 2006. It was also confirmed in grapes the same year. In grapes, the disease is known as Pierce’s Disease. In 2010, the disease was also confirmed in catalpa and peach.

The disease is transmitted from one plant to another through xylem-feeding insects, most notably sharpshooters. While New Mexico has some native sharpshooters, the most efficient vectors for *Xylella*, the glassy-winged sharpshooter and the smoke-tree sharpshooter (Fig. 6), are not known to occur.



Figure 2: Leaf scorch and spotting symptoms on chitalpa leaves. (Photos: N. Goldberg NMSU-PDC)



Figure 3: Dieback symptoms on chitalpa. (Photo N. Goldberg NMSU-PDC)

Research at New Mexico State University has shown that the bacterium is nearly identical in chitalpa, grape and catalpa. This indicates transmission, probably by native sharpshooters, between these hosts. Research has also shown that nearly all chitalpa trees are infected with this bacterium. The disease is particularly common in chitalpa because this hybrid is vegetatively propagated. When an infected mother plant is used for cuttings, the newly propagated plants will be infected.

Unfortunately, there is no cure for plants infected with the bacterium. Reducing plant stress by making sure the plants are adequately watered and fertilized will help to reduce the impact of the disease on the plant and may prolong the life of infected trees. Pruning out dead and dying limbs will also help to improve the appearance of the plant. Ultimately, however, infected plants will become unsightly and will die if they are not removed from the landscape.

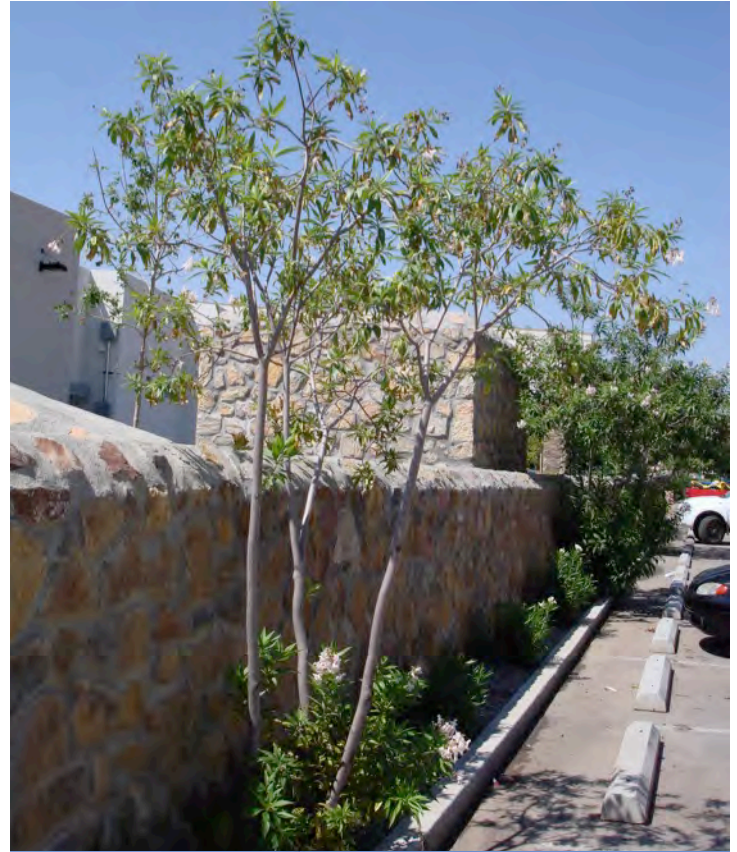


Figure 4: Disease Progression - the sample tree photographed in August 2006 and October 2006 (Photos: N. Goldberg NMSU-PDC)



Figure 5: Thinning canopy on chitalpa (Photos N. Goldberg NMSU-PDC)



Figure 6. Glassy-winged sharpshooter (top) and smoke-tree sharpshooter (bottom), two efficient vectors of *X. fastidiosa* (Top photo: Johnny N. Dell; bottom photo: Bill Johnson). Although not known to occur in New Mexico, these two vectors have been found in neighboring states.

For more information, contact: Natalie Goldberg, Extension Plant Pathologist (ngoldber@nmsu.edu), or Jason French, Plant Diagnostician (jfrench@nmsu.edu).