LOUISIANA PLANT PATHOLOGY
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Texas Phoenix Palm Decline

Candidatus Phytoplasma palmae

Texas Phoenix palm decline is a fatal disease of palms. Also known as date palm lethal decline, the disease had only been found in Florida and Texas until recently. During December 2013, however, this disease was positively detected from Canary Island date palms in New Orleans.

Texas Phoenix palm decline got its name from the state where it was first identified from *Phoenix canariensis*. The disease causes rapid decline and kills infected palms (Figure 1).

The disease is caused by a phytoplasma, *Candidatus* Phytoplasma palmae, an unculturable bacterium with no cell wall. The Texas Phoenix palm decline phytoplasma strain 16SrIV-D is closely related to but genetically distinct from phytoplasma strain 16SrIV-A, which causes lethal yellowing of palms.

The Texas Phoenix palm decline pathogen is known to cause decline in Canary Island date palms (*P. canariensis*), edible date palms (*P. dactylifera), silver date palms (P. sylvestris),* wild date palms (*P. reclinata*), cabbage palms (*Sabal palmetto*) and queen palms (*Syagrus romanzoffiana*). The pathogen colonizes in the phloem tissue, where it spreads systemically to new plant parts. This palm decline pathogen is suspected to be spread by sap-feeding insects with piercing/sucking mouthparts, such as plant hoppers, psyllids or tree hoppers, but the exact species of insect that could be spreading the disease is not known.

Symptoms of Texas Phoenix palm decline start with discoloration of tips of the oldest leaves. Infected leaves turn reddish-brown to dark brown and eventually die. Palms infected with the disease exhibit a large proportion of discolored leaves in the lower region of the canopy (Figure 2). The spear leaf dies and turns tan colored after approxi-

Figure 1. Dead Canary Island date palm infected with Texas Phoenix palm decline.

Figure 2. This Canary Island date palm infected with Texas Phoenix palm decline shows large proportion of discolored leaves in the lower region of its canopy.

mately one-third of the lower leaves have discolored (Figure 3). Infection of mature palms leads to premature drop of the majority of fruits in a few days. Root rot also may occur in infected palms.

Management of Texas Phoenix palm decline is not possible in an infected palm after its spear leaf dies. Any symptomatic palms with a dead spear leaf must be removed immediately, because such plants might serve as sources of the pathogen for insects to transmit to healthy susceptible palms.

Successful disease management in a landscape where this disease is prevalent can be achieved by preventative treatment of healthy susceptible palms with the antibiotic to oxytetracycline hydrochloride (Arbor-OTCTM from Arborjet is registered for use on palms in Louisiana). The disease can be suppressed with this antibiotic in infected palm if the spear leaf is still alive. The antibiotic should be administered as a trunk injection every three to four months. Long-term disease management through host resistance could be achieved, but the lack of information on Texas Phoenix palm decline's complete host range prevents that technique from being widely used.

Accurate identification of Texas Phoenix palm decline in the field is required for effective disease management. Other diseases and disorders of palms may produce similar symptoms, which can make it difficult to identify the disease based solely on symptoms. Molecular detection of the pathogen from symptomatic tissue is required for positive confirmation. Samples from palms suspected of being infected with Texas Phoenix palm decline can be submitted to the LSU AgCenter Plant Diagnostic Center for positive identification, but before you collect any samples, please contact the Plant Diagnostic Center. More information about Texas Phoenix palm decline and procedures to collect and submit samples can be obtained by calling at 225-578-4562 or emailing rsingh@agcenter.lsu.edu.

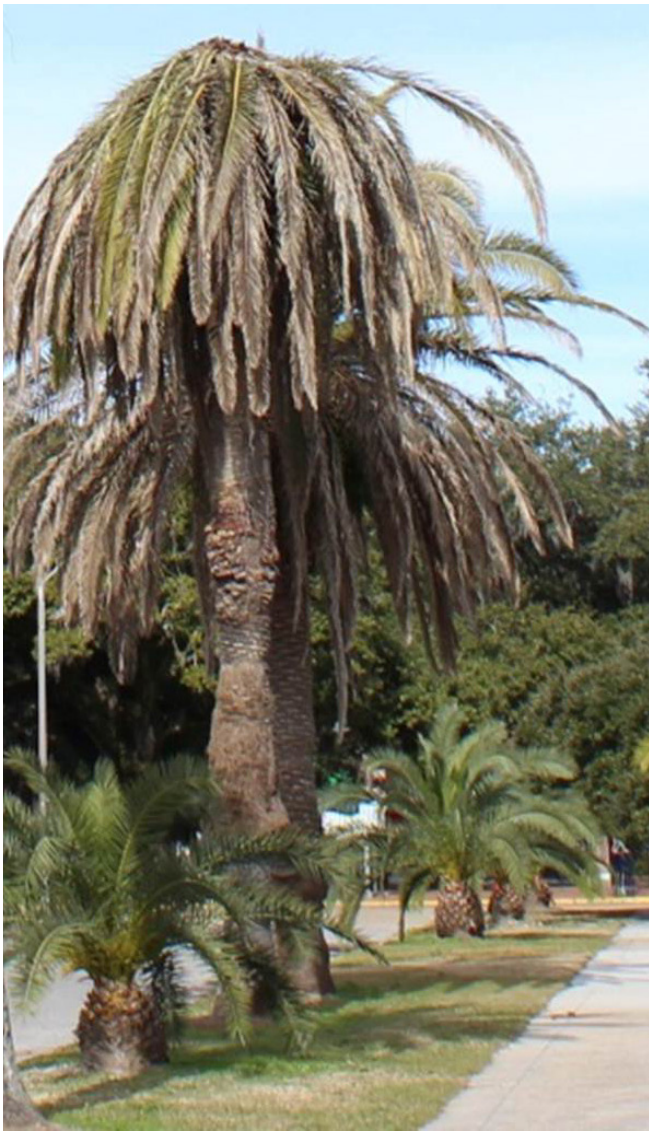

Figure 3. Declining Canary Island date palm with no spear leaf.

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Author
Raj Singh, D.P.M.
Director, Plant Diagnostic Center
Department of Plant Pathology and Crop Physiology

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Raj Singh

William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
College of Agriculture

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