

KEEP IT GREEN

CORPUS CHRISTI CALLER TIMES

BY MICHAEL WOMACK

JULY 21, 2001

LETHAL YELLOWING - Know the facts

Lethal yellowing is a devastating plant disease that affects multiple palm species including the stately Canary Island date palm. There are palms near the intersection of Hewit and Ocean Drive that have been identified with many of the symptoms of this disease; however, the disease-causing agent has not been positively identified to date. Homeowners need to understand the facts about this disease and control options in order to reduce fears stemming from misinformation.

Lethal yellowing is caused by a phytoplasma-like organisms (PLOs), single-celled organisms that have characteristics of both viruses and bacteria. This disease-causing agent is transferred from palm to palm by a flying planthopper (*Myndus crudus*) that feeds on palm sap. When the insect feeds on palm sap, the disease is transferred into the phloem, sugar conducting tissues of the plant.

The PLOs organism can only be spread by the insect since the insect's body metabolizes the organism into a transferable state. The disease has never been seen in healthy palms that scientists have directly injected with the lethal yellowing phytoplasmas, bypassing the insect. Their findings demonstrate that lethal yellowing cannot be transmitted mechanically through pruning equipment.

The first symptom is fruit or nut drop followed by browning and death of the fruiting structures. In the Canary Island date palms, the brightly colored orange branches that are usually covered with dates would turn brown and die.

In the next stage, date palms show browning and drying of lower leaves that quickly progress until all of the leaves are dead. These symptoms in date palms are slightly different than the characteristic yellowing of leaves from which the disease gets its name in coconut palms. About halfway through the this stage, the crown or growing point will die. At that point, the palm is dead.

The dead leaves will initially collapse against the tree trunk producing a "closed-umbrella" effect. Later, they will fall leaving only the trunk of the trees as they enter the final, "telephone pole" stage. The entire process typically takes three to six months.

Once a tree is infected, there is no cure. Repeated treatments of the antibiotic oxytetracycline hydrochloride (OTC) will usually result in remission of symptoms if applied in the early stages of the disease. These injections must be repeated every three to four months or the symptoms will return. OTC is actually considered to be more effective as a preventative measure in regions where lethal yellowing has been identified.

The preventative successes of OTC are attributed to observations made over twenty years ago in Florida according to Richard Maxwell, owner of TreeSaver, Inc. of Royal Palm Beach, Florida. He noticed that planthoppers did not feed on fronds of OTC injected palms. He believes the observation might be attributed to the sap possibly becoming undesirable, but admits that scientific testing has not confirmed this belief.

Once the disease is discovered in an area, it usually progresses until it kills all the susceptible palms in the vicinity. Removing infected palms also helps to avoid the further spread of the disease. Oxytetracycline injections are actually antibiotics. In the case of lethal yellowing, they do not kill the causative agent, they simply suppress it temporarily; as soon as injections are terminated, infected palms will die within 3-6 months. Dr. Tom Isakeit, an Extension plant pathologist out of College Station referred to using the injections on infected trees as a way of putting off the inevitable.

It is important that confirmation be made since declaration of lethal yellowing could result in a the prevention of transporting susceptible palm varieties out of Nueces County under USDA guidelines currently in effect in parts of Florida. Furthermore, if lethal yellowing is not the cause of the palm decline, then the oxytetracycline hydrochloride injections will have no beneficial effects. For those reasons, the Extension Service has sent in samples to Agdia, Inc. to determine if lethal yellowing is present in the county.

Lethal yellowing was first reported in Jamaica about a century ago in coconut palms (*Cocos nucifera*). It entered the U.S. through Key West and had a significant presence in mainland Florida by the mid 1950's. Lethal Yellowing was introduced into Brownsville in 1979, probably on infected palms shipped in from Florida. It killed a significant number of Canary Island date palms (*Phoenix canariensis*) and true date palms (*P. dactylifera*) in the Rio Grande Valley before it was brought under control in the 1980's.

The Canary Island date palm is the most susceptible species found in abundance in the Corpus Christi area; however, there are still some true date palms (*P. dactylifera*), and windmill palm (*Trachycarpus fortunei*) that are also moderately susceptible. Other Coastal Bend palms that are classified as slightly susceptible are Senegal date palm (*Phoenix reclinata*), wild date palm (*P. sylvestris*) and Chinese fan palm (*Livistona chinensis*).

Fortunately, not all palms are affected. Mexican Fan Palm (*Washingtonia robusta*) and California Fan Palms (*W. filifera*), Texas sabal palms (*Sabal texana*) and Florida sabal or cabbage palms (*S. palmetto*) are all resistant. These species make up the majority of the palms in our region. Other resistant palms include the pygmy date palm (*Phoenix roebellinii*) and queen palms (*Syagrus romanzoffiana*).

Do we have lethal yellowing in Corpus Christi? That is still to be determined, but I'll let you know when the results are in. In the meantime, understanding the disease will help you decide which steps you need to take to protect the majestic date palms that grace your landscape in case we do receive confirmation of the disease.

Michael Womack is a horticulturist with the Texas Agricultural Extension Service.

Got a question?

Michael Womack will answer landscaping and gardening questions. Call 886-4648, category 3025 to record your question. Write Keep It Green, Corpus Christi Caller Times, P.O. Box 9136, Corpus Christi 78469 or e-mail wm_womack@tamu.edu

Extension programs serve people of all ages regardless of socioeconomic level, race, color, sex, religion, disability or national origin.