Wilt Diseases of South Florida Palms

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Lethal yellowing (LY) and Texas Phoenix Palm Decline (TPPD) are systemic vascular diseases. Both diseases are caused by phytoplasmas. Phytoplasmas are un-culturable bacteria that have no cell walls. They colonize the phloem tissue that transport phytosynthates. Phytoplasmas are not known to survive outside their host, whether the host is plant or insect. Planthoppers, treehoppers or psyllids are the most-likely group of insects to transmit phytoplasmas. Fusarium wilt of Canary Island date palm and Fusarium wilt of queen and Mexican fan palms are systemic fungal diseases. Specifically, they infect the xylem, the water conducting tissue, which results in desiccation and death of the palms. The diseases are transmitted by cutting tools such as chainsaws, loppers, and handsaws. None of the four wilt diseases are curable.

Disease	Pathogen	Palms mostly affected	Most useful symptoms	Sample Location	Treatment/Precaution
Lethal Yellowing	*Candidatus* Phytoplasma palmae Subgroup A (an unculturable cell wall-less bacterium) Leafhopper vectored	Coconut (*Cocos nucifera*) Christmas palm (*Veitchia merrillii*)	1. Premature fruit drop. Stem end with brown to black water-soaked appearance 2. Flowers turn brown; drop 3. Foliar discoloration. Yellow leaves on most cultivars. 4. Older leaves first to droop 5. Spear (youngest) leaf dies 6. Palm dies within 6 months	Trunk	Trunk injections of Oxytetracycline HCL (OTC) every four months. Planting resistant species and cultivars
Texas Phoenix Palm Decline	*Candidatus* Phytoplasma palmae Subgroup D (an unculturable cell wall-less bacterium) Insect vectored	Canary Island date palm (*Phoenix canariensis*); Date palm (*P. dactylifera);* Sylvestris palm (*P. sylvestris*); Cabbage palm (*Sabal palmetto*)	1. Exactly the same symptoms as LY, plus 2. Root rot Phytoplasma may not be detectable until the spear leaf dies	Trunk	Trunk injections of Oxytetracycline HCL (OTC) every four months. Planting resistant species and cultivars
Fusarium Wilt of Canary Island Date Palm	*Fusarium oxysporum* f. sp. *canariensis*	Canary Island date palm (*Phoenix canarensis*)	1. Reddish-brown or dark-brown streak on the petiole and rachis of the lowest (oldest) leaves 2. One sided death of the lowest living leaves, followed by 3. Death of oldest leaves on both sides 4. Death of entire canopy as disease moves upwards	Petioles and rachis of leaves with streak	1. Use new or disinfected pruning tools on all Canary Island date palms 2. Restrict pruning to dead leaves 3. Restrict pruning to once a year 4. Diseased palms should be removes and destroyed 5. Do not replant Canary Island in the same site
Fusarium Wilt of Queen Palm and Mexican Fan Palm	*Fusarium oxysporum* f. sp. *palmarum*	Queen palm (*Syagrus romanzoffiana*) Mexican fan palm (*Washingtonia robusta*)	1. Similar symptoms as Fusarium Wilt of Canary Island Date Palm 2. In queen palm, canopy appears freeze-dried in place (not drooping) due to rapid decline 3. Death 2-3 months after symptoms first noticed 4. May be confused with another disease known as petiole (rachis) blight especially in Mexican fan palm	Petioles and rachis of leaves with streak	Follow the same pruning restrictions as indicated for Fusarium Wilt of Canary Island date palms Do not replant affected species in same location

LY of coconut palm

TPPD of cabbage palm

Fusarium wilt of Canary Island date palm

Fusarium wilt of queen palm

This fact sheet was reviewed by Monica L. Elliott, professor, Plant Pathology Department, Fort Lauderdale Research and Education Center, UF/IFAS, Davie, FL

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