

Fusarium Decline of Queen Palms in Florida

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History

The sporadic death of queen palms in one Palm Beach County was first brought to our attention in 2003. Conversations with landscape maintenance staff throughout the southern half of the state, where most queen palms are grown, indicated the problem was observed in other counties at approximately the same time. This meant the 2004 and 2005 hurricane seasons could not be blamed for the spread of the problem. While initially less than 1% of the queen palms died in a single landscape, there are now sites where upwards of 5-10% of the queen palms have died. Until early 2007, no other palm species had been affected, even in landscapes dominated by a mixture of palm species. Most of the queen palms observed had been in the landscape for five or more years – i.e., it was affecting established palms and not newly transplanted plants.

Probable Pathogen (or Patience is a virtue!)

I have consistently isolated *Fusarium oxysporum* from diseased queen palms (mature with trunks) in the landscape since early 2004. However, it was not uncommon for other “potential” pathogens to be isolated at the same time and from the same small piece of tissue, including other *Fusarium* species. On the other hand, *Fusarium oxysporum* has been the only “potential” pathogen isolated from the petiole tissue of diseased queen palms

Symptoms

The problem has always appeared to be a disease. No insects are observed in association with symptomatic palms, nor are nutritional deficiencies implicated in the problem.

Symptoms on queen palms (a feather leaf palm) are as follows. The lowest (oldest) 2-3 leaves turn brown (leaflets and petiole) but do not break or hang. The next 2-3 youngest leaves in the canopy will turn varying shades of yellow. This pattern continues up through the canopy until the entire canopy is brown. It looks as if the canopy has been freeze-dried in place. The time between initial symptoms and palm death is only a few months. The symptoms are different from early senescence of leaves with potassium deficiency, a common nutrient deficiency of queen palms. With severe potassium deficiency, the leaflets will be brown but the petiole will be green. With the new disease, both the leaflets and the petiole are brown.

Closer examination of the yellowing leaves and the next green leaf in the canopy should reveal what is believed to be the initial target of the pathogen – the leaf petiole at the point where it is bending out of the canopy. There are areas of discoloration (brownish-red color) at this point that seem to spread in both directions on the petiole (a stripe), toward the trunk and toward the leaf tip. The petiole is not soft and rotted, but simply discolored. Cross-sections through the petiole reveal internal discoloration. Cross-sections must be made with a sharp saw and not with a crushing tool such as pruning shears or loppers, as the crushing motion will discolor tissue also. Leaflet tips, even on lower green leaves, may exhibit drought-like symptoms. I have also noted that many leaves initially exhibit one-sided death symptoms, where

the leaflets on one side of the leaf are brown (necrotic) but the leaflets on the other side of the leaf are green, with the brownish-red stripe on the petiole corresponding to the side with the dead leaflets .

Management Strategies

Palms with Fusarium decline should be removed immediately and the canopy destroyed. As long as the disease has not moved down into the trunk tissue, the trunk can be recycled as mulch. Removing the diseased palm removes a potential inoculum source of the disease. Without a laboratory test, it is not possible to know if a Mexican fan palm has Fusarium decline or petiole blight. If it has petiole blight, the palm does not need to be removed, as it is not likely to die.

Until more is known about the disease, it would not be recommended to plant a queen palm back into the site where the diseased palm was located.

No fungicides are recommended. Curative applications would not be feasible since the palms decline so quickly after the disease symptoms are observed. Also, fungicides have not been shown to be effective in controlling similar diseases such as Fusarium wilt of Canary Island date palms.

Summary

- The quick-killing disease of queen palms (*Syagrus romanzoffiana*) has spread to another
- host
- The disease has been observed in landscapes, a container nursery and a field nursery.
- Infected palms die quickly, often within a few months of the initial symptoms.
- There is no cure once a palm is infected, and no preventive fungicide treatments are recommended.
- The disease is probably spread by wind into new sites. Once established, it could also be spread by pruning tools. Pruning tools should be sterilized after each palm is trimmed.
- Palms, especially queen palms should not be replanted into a site where a palm with this disease was removed.
- The disease is tentatively called Fusarium decline of palms. The fungus *Fusarium oxysporum* appears to be the pathogen.