

A Lethal Yellowing Disease of Cabbage, Phoenix species and Queen Palms on Florida's Central West Coast .

Original report by Drs. Nigel A. Harrison and Monica L. Elliott

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http://flrec.ifas.ufl.edu/palm_prod/pdfs/Sabal-palmetto-Infected-with-Phytoplasma-in-Florida.pdf. The following was modified by Doug Caldwell.

The oldest leaves will appear to be a grayish-brown in color, then an unusually large number of leaves in the middle of the canopy will be a reddish-brown or bronze color with a few young, green leaves in the upper canopy, along with a dead or dying spear leaf (desiccated, off-color, etc.). Note the dead palm to the left of the taller one.

Photo by Rob Northrup UF/IFAS Hillsborough Ext.



We have recent reports of substantial numbers of our state tree, the cabbage or sabal palm (*Sabal palmetto*) dying in Manatee and Hillsborough counties. The preliminary analysis indicates the phytoplasma pathogen which causes Texas Phoenix palm decline may be responsible for decline of the cabbage palms. See <http://edis.ifas.ufl.edu/PP163> for more details about Texas Phoenix palm disease (TPPD). The palm hosts for the TPPD phytoplasma are Canary Island date palm (*Phoenix canariensis*), date palms (*Phoenix dactylifera*), wild date palm (*Phoenix sylvestris*) and queen palm (*Syagrus romanzoffiana*). A July 10 personal communication with Dr. Elliott reinforces there is still more lab work needed to confirm which phytoplasma is involved; stuff like DNA analyses by immuno-capture, polymerase-chain-reaction sequencing. But it looks as if cabbage palm may be added to this host list.

The newly identified cabbage palm disease was first confirmed in **Manatee County** by observations and laboratory analysis. Photos received from **Hillsborough County** suggest the disease is present in this county also.

To date, Texas Phoenix palm decline (TPPD) has been confirmed (in mid-2007) from Phoenix species from southern Sarasota County to Pinellas and northern Hillsborough counties and eastward to Polk County (confirmed in Lakeland). [Note: TPPD has **not** been reported in Charlotte, Lee nor Collier counties].

Based on our limited observations so far, making a field diagnosis of this new disease of cabbage palms is very difficult, especially on over-trimmed palms. We believe it will be much easier to detect in natural areas or on landscape palms with a relatively large canopy.

The **first clue** is an excessive amount of dead lower leaves; more than what is normally seen with aging (senescence) or nutrient deficiencies. The second clue is **death of the spear leaf**, prior to death of all other leaves in the canopy. Eventually, the palm canopy will collapse around the trunk as the bud decays.

As cabbage palms die (for various reasons), the leaves typically appear to have a bronze or reddish-brown appearance. Later, these discolored leaves become more gray-brown in color. Since palms infected with the phytoplasma have leaves that are often dying prematurely, the overall effect on a full, untrimmed cabbage palm canopy is as follows: The oldest leaves will appear to be a grayish-brown in color, then an **unusually large number of leaves in the middle of the canopy will be a reddish-brown or bronze color** with a few young, green leaves in the upper canopy, along with a dead or dying spear leaf (desiccated, off-color, etc.). Other symptoms are death of the inflorescence (flowers) and fruits and early drop of large quantities of green or ripe fruit. However, this symptom is only speculation with cabbage palms, as we have not yet closely observed this disease on this palm species during the flowering and fruiting season. Currently, the insect vector of the phytoplasma is unknown.

Samples will be sent to the lab for molecular diagnosis only if the following two criteria are met: Only if someone is very knowledgeable about the palm's history (i.e., if they have been monitoring it for some time and know if and what types of fertilizer or pesticide applications were made) and then samples must be from a palm with a dead spear leaf.

Laboratory diagnosis to confirm this new disease is the same as for other palm species infected with phytoplasmas and requires drilling into the trunk to obtain internal trunk tissue. See, <http://flrec.ifas.ufl.edu/pdfs/LY-TPPD-Trunk-Sampling.pdf> for sample procedures and lab addresses. We will process a limited number of lab samples at no cost, but do not have the resources to continue free analysis once the disease has been confirmed in a county.

What to do: Management options (removal of infected palms and inoculation of nearby palms three to four times per year with OTC antibiotic) are geared to suppress the spread of the disease as outlined in the Extension document listed above. There will be few, if any, management options for natural areas at this time, especially without knowledge of the vector.

Remember cabbage palms die or appear unhealthy from a variety of problems: lightning, nutrient deficiencies, over-trimming, deep planting, insects, other diseases such as ganoderma butt rot, herbicides (roadside vegetation management) and fires (natural or prescribed burns). Only palms with the symptoms described above should be sampled for lab analysis of this new pathogen. Please be on the watch for cabbage palms with symptoms described above. Hopefully the dying cabbage palms in the counties north of us are an isolated event. But, if suspect diseased cabbage palms are found please contact Doug Caldwell at the Collier County Extension office (see below).

Check <http://edis.ifas.ufl.edu/> for Dr. Elliott's pending publication (and any other topic!), Palm Problems: Field and Laboratory Diagnosis. Until then, see http://flrec.ifas.ufl.edu/palm_prod/palm_problems.shtml.

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