

## Cold Damage of Christmas Palms



A row of cold damaged Christmas palms. The lower and older fronds are most severely affected by record prolonged low temperatures. Fronds yet to emerge from the crownshaft will show cold damaged symptoms. February 21.



Severely cold damaged frond, south Fort Myers, January 5.



Severely cold damaged frond, Fort Myers, February 21.



Healthy palms in summer with green fronds.



Cold damaged palms with "burnt" fronds. January 5.



Crownshaft: Christmas palms have a crown shaft, which is a series of leaf bases that tightly clasp around the growing point (bud) of the palm.

Trunk



These reasonably healthy palms lost many of their interior fronds beginning in early April.



These fronds were collected over a three day period from the palms on the left. All fronds fell naturally. None were cut from the palms. Late April.



Examples of naturally fallen fronds. Most abscissions were close to the base ends of the fronds. Early April.



The point of abscission, in this case, is where the petiole begins. Late April.

The winter of 2009 through 2010 was the coldest recorded in Southwest Florida in 30 years. Practically no Christmas palms (*Adonidia merrillii*) escaped damage caused by the prolonged low temperatures. In January through March many of the reports that came into the Extension office concerned “burnt” leaves and a general dehydration of the palms. By early April, we not only began to receive numerous reports of fallen fronds from obviously cold damaged palms, but also from palms that appeared to have minimal cold damage. The fallen fronds symptom is attributed to the lingering effect of the cold weather in January through March. The fronds of Christmas palms are initiated unseen within the crownshaft. Cold temperatures can damage these fronds before they emerge from the crownshaft. When they emerge, these otherwise green fronds break at the point where the cold damage was most severe. These damaged fronds are found in the interior of the palm’s canopy.

Several samples of these fallen fronds were sent to the plant disease lab at the University of Florida in Gainesville. The fungus *Colletotrichum sp.* that causes Anthracnose was isolated. This fungus is secondary to the cold damage and is not responsible for the broken fronds. For cold damaged Christmas palms, it is best to pick up and dispose of the fallen fronds. Prune out hanging fronds from the canopy. Most palms will recover without treatment. However, an application of a liquid copper fungicide into the bud of the palm is recommended but does not guarantee successful recovery. There is no research to confirm if copper application is effective or not. The recommendation is based on what has been observed regarding cold damage to palms and our knowledge of fungicides. In most situations, it is the base of the spear leaf not yet emerged from the whorl of leaf bases that is damaged first, leading to a spear rot, which may then lead to bud rot. Thus, the goal of a copper fungicide is to prevent this spear rot from developing into a bud rot that kills the apical meristem, and thus the palm.

Pictorial of cold damaged coconut palms can be found at  
[http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Cold\\_Damage.pdf](http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Cold_Damage.pdf)

Additional comments regarding cold damage to palms can be found at  
[http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Cold\\_Damage\\_to\\_Palms\\_Jan2010.pdf](http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Cold_Damage_to_Palms_Jan2010.pdf)

### **Reference**

Elliott, M.L. and T.K. Broschat. January 31, 2010. Additional Comments Regarding Cold Damage to Palms. UF/IFAS, Fort Lauderdale Research and Education Center, Fort Lauderdale, Florida.

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