

# Cold Injury to Palms



Every few winters, arctic fronts plunge frigid temperatures into our state, harming our landscape plants. Some of the plants most afflicted by the ravages of winter are palms, so let's think about a little first aid for these plants that add enjoyment to our landscapes.

## Selecting the Palm and Its Location

The amount of cold injury to a palm depends upon the type (or species), how well it has adapted to its landscape, the duration of the cold temperatures, and the location of plants or buildings around the palm that may offer some protection. When selecting a palm for your landscape, choose a species that is well adapted to our climate, not to central Florida's (see **Tables 1** and **2**). Secondly, try to buy locally. Trees raised here will more likely be adapted to our conditions than ones trucked here from farther south. If you must pick a cold-sensitive species, its chance of survival can be slightly improved if you plant it where it can be sheltered by buildings and other plants. Blocking our common winter winds would be beneficial.

## Unique Palm Growth

To understand cold injury in palms and how best to protect these treasures in our landscape, we must understand how they grow. Unlike hardwood trees, palms have one central growing point, the point from which the fronds (leaves) grow. This part is called the palm heart or palm bud. Located at the top of the trunk, the palm heart is in an exposed location. The primary protectors of the palm heart are the fronds, which shield it from blowing objects, hot sun, and wind and cold.

An important point of palm care to remember is that, unlike pine and hardwood tree wounds, palm wounds do not heal. Wounds caused by things such as nails, climbing spikes, or wind-blown debris will not heal and will provide areas for pathogens to enter and cause disease. Wounded plants are often weakened, and infected palms often die.

## Care of the Fronds

After a frost or cold injury, you may notice that the lower, older fronds are more damaged by cold than the younger, upper fronds. Regardless of how they appear, it is important to keep the fronds on as long as possible, at the least until there is no longer *any* green left in them and all chance of further cold is gone. Remember that the fronds also shelter the palm heart from direct sun, so retaining old fronds until new fronds have grown in is beneficial.

Palms grow slowly and commonly require 7 months to begin to re-leaf after cold injury. When they do produce new fronds, the first several are likely to be deformed or discolored. When removing dead fronds from the palm, after two or three new leaves have formed, remember not to simply pull them off and potentially wound the trunk. Cut them—a sharp linoleum knife seems to work about as well as anything.

A number of weeks after the cold event, if you can pull the spear leaf (the newly emerging frond that is still tightly rolled and sticks up straight) from the top of the palm, then cold damage has injured it. The dead plant material and wounds caused by the cold may leave the plant open to secondary decay organisms that will soften the palm and may produce an offensive smell. The base of the spear leaf is especially sensitive to cold injury and secondary infection. Since copper-based fungicides are the only ones that can fend off both bacteria and fungi, the University of Florida recommends treatment with a copper fungicide drench to the palm heart area. Follow label directions, and do not apply more than twice. Copper fungicides with some types of palms labeled include Bonide Liquid Copper Fungicide, Camelot O, Cuprofix Ultra 40 Disperss, Monterey Liqui-Cop Liquid Copper Garden Spray. Other products may also be labeled, and labels change, so be sure to read the label before buying a copper fungicide.

If the top of the palm falls over, fluid oozes out the side of the trunk, or you see reddish soft areas in the trunk, the tree is dead and needs to be cut. If your species of palm has a growth pattern called sympodial, it is possible that it will

sprout a new side bud near the ground and produce a new tree (see **Tables 1** and **2**). Cut sympodial palms several feet above the ground. A dead monopodial palm should be cut near the ground.

### **Palm Care to Minimize Cold Damage**

You can prepare your palms for a cold event by covering the top of the palm with a blanket or canvas, but do not break the fronds while placing and removing it. Do not use plastic because cold is directly transmitted through it to the plant below.

You can also help your palm survive cold periods ahead of time through proper care and maintenance. Research on coconut palms in Florida has shown that proper fertilization promotes resistance to cold injury. Using typical turfgrass fertilizers in the landscape around palms results in lush growth but depletes vital nutrients (potassium and magnesium) in the palm, creating deficiency symptoms and weaker plants. They have found that applications of a slow-release fertilizer formulated for palms and mixed in the ratio of 8-2-12-4 (nitrogen-phosphorus-potassium-magnesium) plus micronutrients benefits both palms and St. Augustinegrass (<http://edis.ifas.ufl.edu/ep261>). The same fertilizers and deficiencies may not apply to the palm-like species, such as the sago palm (and others listed in **Table 2**).

Louisiana experts recommend a single fertilization per year, in May. Fertilizing later may result in too much nitrogen too late in the year. Too much nitrogen may have three impacts:

- 1) Extra nitrogen makes the plant absorb extra water, so it will be more susceptible to cold damage.
- 2) Extra nitrogen will facilitate the growth of secondary infections.
- 3) Extra nitrogen may throw off the nutrient balance of the palm, resulting in deficiencies in potassium and the micronutrients boron and magnesium.

Mulching around your palm may help keep lawn fertilizers from being deposited around the palm, avoiding these problems. However, a fertility program would be beneficial to many Gulf Coast palms.

Proper watering is an important factor in plant growth. There are two popular but potentially damaging practices for watering palms—watering the palm's growing point and watering the crown instead of the roots. Palms have been seriously injured by fungi and secondary decay organisms associated with overwatering the growing tip. Studies in Florida have shown no advantage to watering the base of the tree where it enters the ground (the crown) rather than the roots. Watering the root area is as effective as watering the crown, and it may encourage better root growth. Irrigation is probably not needed if rainfall is adequate.

### **For More Information**

University of Florida, Ft. Lauderdale Research Station  
[http://flrec.ifas.ufl.edu/palm\\_prod/palm\\_production.shtml](http://flrec.ifas.ufl.edu/palm_prod/palm_production.shtml)

Southeastern Palm Society  
<http://www.sepalms.org/page/index.html>

**Table 1. Common palms for the Gulf Coast of Mississippi.**

<b>Common name</b>	<b>Scientific name</b>	<b>Hardy to USDA zone</b>	<b>Sympodial or monopodial</b>
Dwarf palmetto	<i>Sabal minor</i>	6	sympodial
Needle palm	<i>Rhapidophyllum hystrix</i>	6	sympodial
Windmill palm	<i>Trachycarpus fortunei</i>	7	monopodial
European fan palm/ Mediterranean fan palm	<i>Chamaerops humilis</i>	7b	sympodial
Pindo palm, jelly palm	<i>Butia capitata</i>	8a	monopodial
Sabal palm, palmetto palm, cabbage palm	<i>Sabal palmetto</i>	8a	monopodial
Saw palmetto	<i>Serenoa repens</i>	8a	monopodial
California fan palm, Washington palm	<i>Washingtonia filifera</i>	8a	monopodial
Date palm	<i>Phoenix dactylifera</i>	8b	monopodial
Sliver date palm, Indian date palm	<i>Phoenix sylvestris</i>	8b	monopodial?
Canary Island date palm	<i>Phoenix canariensis</i>	9a	monopodial
Mexican fan palm, Washington palm	<i>Washingtonia robusta</i>	9a	monopodial

**Table 2. Palm-like plants.**

<b>Common name</b>	<b>Scientific name</b>	<b>Hardy to USDA zone</b>	<b>Sympodial or monopodial</b>
Sago palm	<i>Cycas revoluta</i>	8b	sympodial
Chestnut dioon	<i>Dioon edule</i>	8b	sympodial
Coontie	<i>Zamia pumila</i>	8b	sympodial when older

## Summary

Here are some tips for treating palms after cold weather.

### *Fronds*

- Leave fronds on palms until all chance of cold weather is past *and* new fronds are present to protect the top of the tree or heart of the palm.
- The top fronds protect the palm heart from the sun and debris.
- Do not remove injured palm fronds until all green color is gone.
- Cut fronds with a sharp knife (such as a linoleum knife) or large pruners that will not tear or stress the leaf base where it attaches to the trunk. Do not twist the frond base when cutting.
  - Be careful not to wound the trunk in any way.
- The first several fronds to regrow after a cold injury will probably be discolored/distorted.

### *Palm heart*

- You may wish to apply a copper fungicide to the leaves after the cold injury. Copper reduces both bacterial and fungal growth and may slow decay, giving the palm heart a chance to regrow.

- Copper fungicides with some types of palms labeled include Bonide Liquid Copper Fungicide, Camelot O, Cuprofix Ultra 40 Disperss, and Monterey Liqui-Cop Liquid Copper Garden Spray.
- Several weeks after the injury, pull on the spear leaf.
  - If it can be pulled from the heart, then severe cold injury has occurred.
  - If the spear leaf is pulled from the palm heart, but the area does not smell of decay, an application of copper fungicide may slow decay. Do not apply a copper fungicide more than twice.
  - If the area of the palm heart smells of decay, the palm is dead.
- If new fronds have not yet emerged, keep the dead fronds sheltering the palm heart.
- If the trunk develops soft, red areas or areas of the palm start to slump or wilt, the palm is dead.

### *Dealing with a dead palm*

- If the palm is monopodial, remove the palm trunk close to the soil line.
- If the palm is sympodial, cut the palm several feet above the ground. Wait a year or so to see if a new palm will regrow from the base.

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