



## **Pests and Other Problems of Palms<sup>1</sup>**

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### **Insect and Mite Problems**

We are fortunate indeed that, relative to most landscape plants, a well-grown palm remains fairly free of damaging insect pests. Nevertheless, certain insects will occasionally attack landscape palms in sufficient force to warrant control measures.

#### **Palm Aphid**

(*Cerataphis palmae*). This aphid is unusual in that the female does not move and forms a distinctive ring of white wax around its body. These aphids heavily infest young leaves and excrete "honeydew," a waste product high in sugars that the sooty mold fungus feeds upon. They are sometimes tended by ants. Lady beetles are an excellent biological control, and spraying should be avoided if these aphid predators are observed on the infested palm.

#### **Scales**

A great variety of scales may turn up on palm leaves from time to time. These include thread scale, magnolia white scale, oyster scale, Florida red scale and others. The hard shell of many scales reduces the effectiveness of many chemicals. Scales are more frequently a nuisance than a menace to palms. On a

landscape-sized palm, the most effective control for an infestation on a single leaf is removal.

#### **Spider Mites**

Spider mites are particularly troublesome on palms grown indoors or in greenhouses and also on many *Chamaedorea* species. The predatory mite species, *Phytoseiulus persimilis* has been used very successfully to control two-spotted mites (*Tetranychus urticae*) on palms in the greenhouse and other interior environments. Many chemical miticides work successfully, too.

#### **Coconut Mites**

This tiny spider mite feeds on the husk of coconut fruits, causing mostly cosmetic damage but sometimes premature fruit drop as well. There is no known control for the coconut mite.

#### **Banana Moth**

(*Opogona sacchari*). The larvae of this moth has been a destructive pest in tropical areas on palm species such as *Chamaedorea*, arecas and others. Though it is more commonly a palm production pest, infestations of landscape palms have occurred.

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1. This document is ENH859, one of a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date January 1, 1998. Revised June 2004. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

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Damage occurs when the caterpillar tunnels through the stems of the palms. Parasitic nematodes have been fairly effective in controlling infestations of this insect.

### **Palm Leaf Skeletonizer**

(*Homaledra sabalella*). The caterpillars of this small moth feed on the upper and lower leaf surfaces of many palms, producing large quantities of "frass" (brown fibrous excrement) that is often the first conspicuous sign of an infestation. The tissue between the veins or ribs is usually their preferred food, but they will also feed on the leaf stems, disrupting the vascular tissue and causing the death of the entire leaf.

### **Royal Palm Bug**

(*Xylastodoris luteolus*). This bug is a troublesome pest of royal palms (*Roystonea* spp.) in Florida and the Caribbean. Infestations in south Florida tend to increase in the spring and summer following a particularly mild winter. This tiny bug feeds on the young leaves of the palms, often getting in between the folds of an emerging leaf. When the leaf unfolds, it appears scorched and brown and usually fails to mature.

### **Palmetto Weevils**

(*Rynchophorus cruentatus*). These are large beetles that are drawn to stressed palms. They most frequently attack cabbage palms (*Sabal palmetto*) and Canary Island date palms (*Phoenix canariensis*), but have been reported on Mexican fan palms (*Washingtonia robusta*), Bismarck palms (*Bismarckia nobilis*) and latan palms (*Latania* spp.). Adult females lay eggs in the leaf bases of the crown, and the large larvae quickly tunnel into the heart, destroying the palm. All efforts should be made to reduce transplant stress on susceptible species. A preventative spray of a recommended insecticide, applied at installation and again a few weeks later, has shown some success in keeping palms free of infestation. A related species of weevil, *R. palmarum*, occurs in Central and South America and the Caribbean and spreads a destructive nematode that causes red ring disease in coconuts and African oil palms.

### **Rotten Sugarcane Borer**

(*Metamasius hemipterus*). The rotten sugarcane borer is a relatively new pest of palms in south Florida. It attacks royal palm (*Roystonea* spp.), majesty palm (*Ravenea rivularis*), spindle palm (*Hyophorbe verschaffeltii*), Mexican fan palm (*Washingtonia robusta*) and possibly others. The larvae of this weevil completely riddle the stems of the palms, which then succumb to various secondary disease organisms.

### **Miscellaneous Insect Pests**

Various caterpillars and some grasshoppers feed on the leaves of palms from time to time. Small infestations can be dealt with mechanically without recourse to pesticides. If, however, these insects are on palm foliage in force, they can very quickly do appreciable damage, completely defoliating a young palm in as little as 1 to 2 days.

### **Disease Problems**

#### **Leaf Spots**

A number of leaf spot fungi cause variously shaped lesions on the leaf surface of many palm species. High rainfall or frequent overhead irrigation are often instrumental in their spread. If only a single leaf is affected, removal and disposal of that leaf is a simple and effective control. Some leaf spot fungi move in as secondary problems on palm leaves that are deficient in nutrients or have received some sort of damage.

Leaf spot diseases caused by various *Bipolaris* and *Exserohilum* fungi (often called Helminthosporium-complex leaf spots) affect a broad range of palms. The results are characteristically round, dark brown lesions that eventually merge and form large, blighted areas. The disease is easily spread by overhead irrigation. *Cercospora* leaf spot is frequently a problem on Rhapsis palms and *Cylindricladium* on kentia (*Howea forsterana*). Anthracnose caused by a *Colletotrichum* fungus can affect a large number of palms, especially where overhead irrigation is used. Stigmata (*Exosporium* fungus) leaf spot can be a particular problem on date palm (*Phoenix*) species. *Graphiola* leaf spot or "false

smut" can become a significant problem on landscape palms during periods of high rainfall. The disease becomes conspicuous when the fungus produces its greyish-black fruiting bodies which rupture through both leaf surfaces. *Pestalotiopsis* leaf spot affects a number of species. It seems to be a particular problem on date palm (*Phoenix*) species on which lesions often first appear on the rachis tissue (the leaf stem between the leaflets). Tar spot (*Catacauma* leaf spot) causes elongated, diamond-shaped lesions on the leaf surface.

**Sooty mold.** This superficial fungus, caused by *Capnodium* spp., is more a nuisance than a life-or-death problem on palms. When present, it is always associated with infestations of sucking insects such as palm aphid, scales, or mealybugs. These insects excrete honeydew, upon which black sooty mold will grow. The fungus appears on the leaf surface (and sometimes the trunk) as a conspicuous black, sooty deposit. Heavy infestations will interfere with the food-manufacturing efficiency of the leaf. The best control is to keep the palm free of honeydew-producing insects.

### **Bud, Roots or Trunk Rot and Wilts**

*Phytophthora* bud rot is one of the more common diseases encountered in palms in wet, tropical climates. It is primarily a warm-season disease. This soil-borne disease causes collapse or brown-out of the younger foliage and emerging leaf. If the bud is cut open, discoloration is evident, often accompanied by a foul smell. *Phytophthora* can also cause leaf spots. Over watering and planting too deeply aggravate incidences of *Phytophthora*. *Pythium* and *Rhizoctonia* root rots can also affect palms.

*Thielaviopsis* trunk or bud rot is increasing in frequency on palms in Florida but is not yet terribly common. This soil-borne fungus generally enters the palm through wounds and causes the disintegration of the trunk or bud. It can also infect the leaves of young palms. A cross-section through the trunk will reveal blackened fruiting bodies. Affected palms will blow over easily.

*Ganoderma* butt rot has become a serious and incurable disease of older landscape palms (usually

15 years or older). The disease progresses upward from the older leaves, which turn brown and droop from the trunk. Wounds on the lower portions of the trunk or roots favor entry of the fungus. The fruiting body of the fungus is a conspicuous bracket or "conch" found emerging from the lower portions of the trunk. These fruiting bodies should be destroyed as soon as they appear by either burning them or breaking them up and tossing the pieces into chlorine bleach. The disease spreads rapidly from plant to plant, and the fungus can persist in the soil for many years.

Affected palms must be completely removed and destroyed and the soil fumigated. Affected palm stems should not be chipped and used as mulch.

Poor air circulation around the base of the palm trunk or frequent wetting of the trunk by sprinklers may also increase susceptibility to *Ganoderma*. Avoid mounding mulch at the base of a palm, and pull mulch 2 or 3 inches back from the trunk. Make sure line trimmers and other lawn care equipment do not damage the trunks of palms planted in turf. If *Ganoderma* has been diagnosed in a landscape site, it may be best to replant with a broad-leaved tree as no palm species can yet be declared reliably resistant.

*Fusarium* bud rot and wilt, a more common problem in California, may become a serious disease in Florida. The disease frequently causes an uneven decline in the canopy of an infected palm, with leaflets along only one side of a single leaf dying first. The water-and-food-conducting tissue within the leaves is usually discolored. Canary Island and date palms have been the worst affected in California. Pruning tools are known to transfer the fungus from tree to tree and should be sterilized before using on a different tree. Dip tools into rubbing alcohol for 30 seconds before each re-use to kill this harmful fungus.

Bacterial bud rot causes a wet blight of the emerging spear leaf which can then spread downward to the irreplaceable bud. Affected spear leaves can often be easily pulled from the bud. A foul odor frequently accompanies the damage. Bacterial bud rot often follows hard on the heels of recent cold damage to a palm.

Lethal yellowing (LY) is an incurable disease of many palm species caused by a mycoplasma-like organism (a form of life sometimes described as intermediate between a virus and a bacterium) that is spread by a leaf hopper bug (*Myndus crudus*). Fortunately, the popular cabbage palm, Florida's state tree, has so far proven resistant to the disease. The disease organism is now known to reside in the Florida counties of Palm Beach, Broward, Dade, Monroe, Lee and Collier as well as in southern Texas, Mexico and parts of Africa. The disease often begins with the blackening of young flower stems on infected palms. On coconuts, developing fruits will suddenly drop off the stems. One by one, mature leaves may begin to yellow on the palm and finally all the leaves in the canopy wilt and die. On other species (and some varieties of coconut as well) the yellowing may not be conspicuous; instead, leaves collapse and the palm quickly dies. The only practical control is to avoid planting highly LY-susceptible palms (Table 1). The decline caused by the disease can be temporarily suspended (though not cured) with a program of injections of tetracycline antibiotics (but only on palms with a developed trunk). Contact your county Extension agent for further information. Injections can be maintained until a resistant replacement palm achieves acceptable size, after which the infected palm is allowed to die.

### Miscellaneous Palm Problems

Landscape palms occasionally experience other problems that are not necessarily the consequences of pests, diseases or nutritional deficiency.

#### Trunk Splits or Cracks

Some palm species (e.g. hurricane palm, *Dictyosperma album*) characteristically develop vertical fissures on their trunks. When these appear on palms that normally do not express them, it is usually an indication of water problems. Too much or too little soil moisture can result in small cracks on the trunk as can overly deep planting. Large scale trunk splitting is often associated with an over-abundance of water. Trunk cracking can also occur as a consequence of cold damage.

### Trunk Constrictions

At the point in the palm heart (bud) where active growth is taking place, palm stems increase in diameter before elongating. The optimal trunk diameter that a palm species will achieve is partially determined by the intrinsic character of the species and partially by the quality of the growing conditions at that point in time. If nutrition or water supply is limiting or if some other type of environmental stress occurs (a freeze, for example), the palm stem may fail to achieve the same increase in diameter as occurred in past years. As conditions improve, the stem will once again reach optimum trunk diameter. The result over the long term will be a constriction in the trunk at the point where the stem was actively growing when the stresses occurred. In older palms, it is sometimes possible to "read" the past history of growing conditions by the patterns of constrictions that appear along the length of the trunk.

#### Pencil-Pointing

This syndrome is often related to that of trunk constriction. "Pencil-pointing" refers to a sudden, unnatural narrowing of the stem towards the crown of the palm. It is often associated with acute nutrient deficiencies but can also be caused by continuous over-trimming of the canopy. If conditions improve, the palm will return to its normal growth in trunk diameter, and a trunk constriction will develop at the point where pencil-pointing was observed.

#### Lightning Strike

A direct lightning hit on a palm is usually fatal. Sudden collapse of the crown, trunk splitting and/or bleeding and dark streaks on the trunk are all possible symptoms of lightning damage.

#### Power Line Decline

Tall palms that have grown close to high voltage power lines have been observed to have yellowed or necrotic leaves despite regular fertilization and no evidence of pests or disease. This suggests that the electromagnetic fields around these lines may injure palms.

### **Herbicide Toxicity**

Many herbicides can cause damage to palms. Signs of herbicide injury include distorted and undersized new growth and patches of dead tissue on the leaves. Damage from some herbicides may take months to become apparent. Consequently, special care should be taken when using weed-killing chemicals around landscape palms. Avoid any contact of the chemical with new roots or any green tissue on the palm. Only herbicides labelled for use around palms should be applied.

### **After-Flower Decline**

Certain palms species (e.g. fishtail palms, *Caryota* spp.) flower and fruit once and then die. On clustering species with this habit, new stems are produced that continue the growth of the palm, but solitary palms will have to be replaced.

### **Salt Injury**

Leaf burn on the seaward side of palms planted near the shore is often indicative of salt injury. Such injury usually follows a period of high winds. A sudden intrusion of salt water into the root zone of palms can cause the overall decline and death of the plant. The best way to deal with this problem is to plant only those palms with high salt tolerance in exposed coastal locations.

**Table 1.** List of relative susceptibility to lethal yellowing of some ornamental palms

Scientific Name	Common Name	Susceptibility
<i>Allagoptera arenaria</i>	Seashore palm	SLIGHT
<i>Arenga engleri</i>	Sugar palm	HIGH
<i>Borassus flabellifer</i>	Palmyra palm	MODERATE
<i>Caryota mitis</i>	Clustering fishtail palm	MODERATE
<i>C. rumphiana</i>	Solitary fishtail palm	MODERATE
<i>C. urens</i>	Toddy fishtail palm	MODERATE
<i>Chrysalidocarpus cabadae</i>	Cabada palm	SLIGHT
<i>Cocos nucifera</i> *	Coconut	HIGH
<i>Corypha elata</i>	Gebang palm	HIGH
<i>Dictyosperma album</i>	Princess palm	MODERATE
<i>Hyophorbe verschaffeltii</i>	Spindle palm	SLIGHT
<i>Latania</i> spp.	Latan palms	MODERATE
<i>Livistona chinensis</i>	Chinese fan palm	MODERATE
<i>Livistona rotundifolia</i>	Footstool palm	MODERATE
<i>Nannorrhops ritchiana</i>	Mazari palm	SLIGHT
<i>Neodypsis decaryi</i>	Triangle palm	SLIGHT
<i>Phoenix canariensis</i>	Canary Island date	MODERATE
<i>P. dactylifera</i>	Date palm	MODERATE
<i>P. reclinata</i>	Senegal date palm	SLIGHT
<i>Pritchardia</i> spp.	Pritchardia	HIGH
<i>Syagrus schizophylla</i>	Arikury palm	MODERATE