



## PALM PROBLEMS THAT AREN'T

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When trying to diagnose problems in any plant, know the growing conditions as well as the species of the plant. This is especially true with palms. At different times of their lives, many palms have what look like insect, disease, nutrient or other problems.

This guide will help identify conditions that look like true problems but are not.

### LEAVES

**Spotting** on palm leaves (fronds) might be a concern. It could be a variety of problems, depending on the palm's species. These leaves are very similar and could be those of the windmill palm (*Trachycarpus fortunei*) or the Mediterranean palm (*Chamaerops humilis*). If these were the fronds of the windmill palm, the spotting would indicate a problem, but this waxy coating is normal on the Mediterranean palm (Figures 1, 2, 3). It is more prominent on the blue *Chamaerops humilis* var. *argentea* (*Cerifera*) form. The spotting may be more noticeable on newer or younger leaves. On some palms this will disappear with age.



Figure 1



Figure 2

Figure 3



Although this leaf (Figure 4) looks like it is covered in mealy bugs or scale, it is a *Washingtonia* frond with a fuzzy substance called scurf on its leaves, a normal condition for this palm.



Figure 4



Figure 5

**Small filaments or reins** are normal on *Washingtonia* palms (Figure 5) grown in the Southwest. They are considered old connective tissue that hold the leaflets together until they open up or unfold. They can fall off with age, but some may persist.

**Shredded leaves**, Although most of us will never have leaves that have been shredded by giraffes (Figures 6, 7), this reminds us that we need to think out of the box when diagnosing problems. Leaves can be shredded by feral parrots (Figure 8), or other animals, harvesting for nesting materials. So look around and see if you can find what is causing the problem.



Figure 6



Figure 7



Figure 8

**Birthing or crumpled new leaves.** Multi-trunked palms, especially *Phoenix dactylifera*, will produce new leaves on emerging offshoots that are deformed. At first it looks like severe boron deficiency. But with each new leaf, there is less and less deformity and the symptom disappears quickly. Some people harvest these birthing leaves, dry them and use them in floral arrangements (Figures 9, 10, 11).



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14

**Cabbage heading**, Although these *Washingtonia* palms (Figures 12, 13) look like they have either boron deficiency or birthing leaves, this is a different condition. These palms were topped in cool weather. The bud, or growing point, was not killed and now they are trying to re-grow. Palms should never be topped.

These palms need to be removed because of this condition and being planted too close to the building.

The effect of topping a palm is even more apparent on this *Phoenix Canariensis* (Figure 14). Topping is the harmful removal of large branches and/or the trunk of trees near the top of the canopy. In palms it is the removal of a portion of the trunk.

**Sun burning** (Figure 15) can occur in the desert on both newly planted palms and those that have had overhead shade pruned off, especially during the summer. When planting new palms in the landscape or moving containerized palms, acclimatize them slowly to the brighter area. It can take months to go from full shade to full sun. When pruning trees that shade under-story palms, remove small amounts of leaves and limbs over a period of time gradually to acclimatize them to the higher light intensity. This allows the palm to produce sun-grown leaves.



Figure 15

## STEMS

This **pubescence or scurf** on the leaf petiole or stem is common on some palms such as *Brahea armata* (Figure 16, 17) and *Nannorrhops ritchiana* (Figure 18). It may look like scale, mealy bugs or a disease, but it is quite normal on newer leaves. It may fall off with age or stay on and discolor as shown in (Figure 16).



Figure 16



Figure 17



Figure 18

**TRUNK** Sometimes palm trunks will appear to be **bleeding sap**. This may occur when a palm is damaged, as this one was when an identification tag was nailed to the trunk. If the area is not wet and the outer cortex is solid and free of decay, the palm should be fine. Use a screwdriver, or similar device, to gently test the area as shown in *Figure 19*. Be careful not to damage the trunk.



*Figure 19*



*Figure 20*

Some palms are installed with solid, or uniformly colored, trunks (*Figures 20, 21*). These have been stained and will fade with time. Suppliers might make a recommendation to have the trunks re-stained. However, there is no reason to do this, especially in the desert where darker colors add heat to surfaces. Ask suppliers whether or not they stain and ask them not to do so.



*Figure 21*



*Figure 22*

**Loss of the cortex or pseudobark** can be caused by different factors, including cold and age. Once shedding begins, other factors such as water pressure from irrigation sprinklers will cause continued erosion as shown in *Figure 22, 23*.

*Figures 24, 25* show **extreme erosion** that began with freeze damage and continued with high pressure irrigation water striking the trunk. Because palms are overly engineered, they retain their structural integrity, even though their overall health may be impacted due to the loss of the outermost vascular bundles. Do not try to cement or fiberglass over the area. If they are in high traffic areas, remove the trees for safety.



*Figure 23*



*Figure 24*



*Figure 25*



Figure 26

**Splitting of trunks** (Figures 26, 27) in the desert landscape is not unusual. This happens when irrigation water is turned off or not enough water is being applied to meet the needs of the palm and then the palm is over-irrigated, causing the expansion of the trunk. Check the irrigation, add more emitters and water deep. These trunk splits remain for the life of the palm.



Figure 27

**Adventitious roots.** All palm roots are adventitious. This means that palms produce all of their roots from a root initiation zone or area. This zone is at the bottom of the young palm's stem (trunk) and

as the palm grows, the zone expands out and up. This area, as shown in Figures 28, 29, can be several feet above the ground. There are several reasons why palms grow some roots above ground. Adventitious roots may have evolved for purposes of survival. Soil levels may change due to sand accumulation over a period of time or because of organic build up, and then these adventitious roots are no longer arrested, but continue to grow. If the moisture in an area increases from flooding or from being in an area where there is extra moisture, adventitious roots will grow. When conditions become dry, the roots stop growing and are called arrested roots.



Figure 28

Figure 30 shows adventitious roots beginning to grow because of sand build-up. The roots on the *Washingtonia* palms in Figure 31 are growing because they are in a flooded area. The adventitious roots in Figure 32 continue to grow because they are protected by this wall. Figure 33 shows *Trachycarpus* roots that are arrested due to the desert climate they are growing in.



Figure 29



Figure 30



Figure 31



Figure 32



Figure 33



Figure 34



Figure 35

**Splitting bark or cortex near the base of the trunk.** As a palm ages, the area of root initiation moves up the stem. As new roots emerge, the pseudo bark or cortex splits as seen in *Figures 34, 35*. *Figure 36* shows roots that have continued to grow atropically under the boots, or leaf bases, that provided the moisture necessary for survival. This is normal.

### Shedding of leaf bases (boots)

Shedding of boots takes place at different ages in palms, even in the same planting of similar aged palms. This appears to depend on the amount of humidity. *Washingtonia* palms may hold their leaf bases, with or without the leaves attached, for many years. In humid areas like Florida, shedding may take place when a palm is 10 to 15 years old. In the drier climate of the West, they may be even older when this begins. As can be seen in *Figure 37*, this grove of *Washingtonia robusta* palms are not dropping the oldest leaves first, and they are not all dropping at the same height. *Figures 38, 39* show boots dropping at various areas of the trunk with little uniformity. This process is normal and once it begins, the palms become self cleaning. Date palms also shed this way as seen in *Figure 40*. This *Phoenix canariensis* was never pruned into the pineapple ball shape (*Figure 41*).



Figure 36



Figure 37



Figure 38



Figure 39



Figure 40



Figure 41



Figure 42

**Fasciation, or cresting,** is a rare but interesting condition that makes the apical stem flare or spread out like a flattened crest or fan. This may be caused by mutation in the meristematic cells, bacterial or viral infection, mite or insect damage chemical or mechanical damage or boron

deficiency. It can also be inherited or even caused by the environment. It has been documented in more than 100 plants including palms, as shown in Figures 42, 43, 44. Fasciations should not be confused with palms that are either suckering near the top, such as the date palm in Figure 45, or those that have branched because the apical bud



Figure 43

was damaged such as the *Chamaerops humilis* in Figures 46, 47.

The *Phoenix* palm has a *Washingtonia* seedling growing in one of the boots on the trunk Figure 48 and should not be mistaken for suckering. This is more likely to happen in wetter climates or in over-watered yards.



Figure 44



Figure 45



Figure 46



Figure 47



Figure 48

Follow these steps to properly diagnose palm problems.

DETERMINE PALM SPECIES

LOOK AT ALL SYMPTOMS

CHECK THE HISTORY OF THE PALM AND PLANTING SITE

CHECK FERTILIZER AND IRRIGATION SCHEDULES

DO A SOIL AND TISSUE ANALYSIS

CHECK WEATHER HISTORY

(from a presentation By T K Broschat at the Fort Lauderdale Research Center, University of Florida)

#### References

Broschat, T. K., and Elliott, M. L., Normal “Abnormalities” in Palms, Publication #ENH1077, University of Florida IFAS Extension.

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