



Landscape Notes

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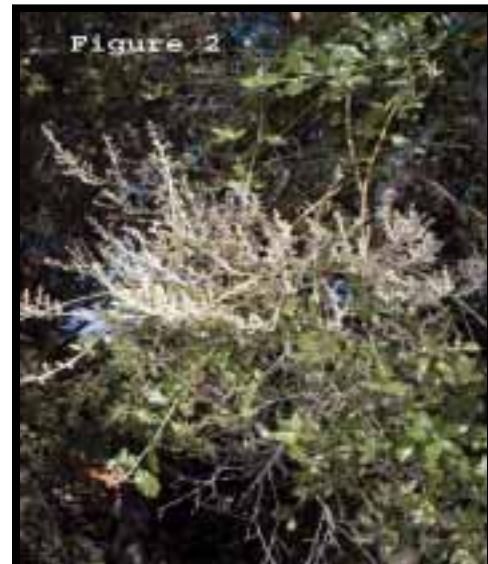
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POWDERY OAK MILDEW – IT'S EVERYWHERE!

Our office has been getting a number of calls regarding the unusual growths seen on coast live oak (*Quercus agrifolia*). The witches broom symptom and the white coloration of the foliage are both symptoms of powder mildew infection (figs. 1, 2). The fungus causing the mildew is *Sphaerotheca lanestrus*. Cool Moist weather conditions this spring were ideal for infection of the expanding buds and emerging shoots. The mildew fungus is quite common on leaves (fig. 3) as a patch or spot and can be found year round on coastal oaks. When buds of coast live oak are infected, the witches broom symptom will be quite common in late spring and early summer.

Control of oak powdery mildew is impossible when the weather conditions favor the disease. In bad years when witches brooms are abundant, we advise tree owners to prune out the brooms. With the onset of warmer dryer days in summer, the disease usually lessens. In some coastal communities where foggy conditions prevail throughout the year, oaks may be defoliated and their vigor greatly reduced. Since powdery mildew fungi are obligate biotrophic fungi (they require a living host), they rarely lead to death of the tree.

Control of Oak powdery mildew is very difficult--it is largely regulated by weather conditions at the time of year when growth on oaks is occurring. Since oaks have a variable growth season, some trees avoid the disease and thus appear resistant. Although it is recommended to avoid excess water and fertilizer that stimulates growth, I don't think that this has much importance as a management tool since the vast majority of oaks are never fertilized and rarely watered in landscapes. We do recommend that witches brooms be cut out to improve the appearance of the tree. In time, warm hot days will resume and the powdery mildew problem will disappear until next year.





Palm Disease Notes—Pink Rot

This newsletter continues our series on landscape palm diseases. Although we do not have funding to produce this newsletter in color we have made these issues available on the web in a color format to better highlight the figures. You can visit the Ventura County Cooperative Extension Web site at: <http://ceventura.ucdavis.edu/>. If you would like to have a color hardcopy they are available upon request 805-645-1458.

In 1923, Biourge named and described the pink rot fungus as a flesh, rose, or salmon-colored fungus which in Belgium had injurious effects on *Areca* palms grown in greenhouses. By 1924, Chevalier reported the same fungus to cause death to *Archontophoenix cunninghamiana*, *Howea forsteriana*, *Washingtonia filifera* and *Washingtonia robusta*. Much of this early history of the disease is summarized by Bliss, 1938. Discussions of the disease lay dormant for many years until Feather and others, 1989, described pink rot as part of a disease complex along with *Fusarium oxysporum* on *Phoenix* palms. There has been little or no work on the disease since Feather et al. published their research.

The pink rot disease of palms is perhaps the most ubiquitous palm disease in the landscape. It is caused by the fungus *Gliocladium vermoeseni*, (*Penicillium vermoeseni*) a member of the fungi imperfecti. The perfect stage of the fungus is not known. The biology of the pink rot fungus is amazing in that it can produce billions of spores while growing on a single plant. Thus its spores are always present where palms are grown so there is no way to avoid it. The fungus is a weak pathogen in that it requires a wound or other plant stress factors that enable it to infect. Pink rot also preys on old specimens that are growing slowly and become susceptible due to reduced growth rates of the main bud. It appears to be associated with palms growing in humid coastal areas. Although it can occur in inland valleys, it is more prevalent along the coast. The host range of the fungus is large, covering several genera and species of palms.



The fungus causes an interesting variety of diseases. On Queen palms (*Syagrus* spp.) it causes a trunk rot (Fig. 4). Sometimes the spores of pink rot can be found under the pseudobark of the palm (Fig. 5). In King Palm (*Archontophoenix cunninghamiana*), spores of the fungus can almost always be found under the clasping leaf bases. When injured (by premature removal of the leaf bases or by pruning wounds) the fungus can cause a trunk rot and death of the tree (Fig 6).



Figure 6

Pink rot can be controlled preventatively by avoiding wounds that allow entry of the fungus. It also helps to avoid planting susceptible species (such as *Washingtonia filifera*) along the coast. For old or valuable specimens, fungicides can be applied to prevent pink rot infections. Thiophanate-methyl is often used for this purpose. Since T-methyl is weakly systemic, some applicators believe it to be helpful therapy on already infected plants. There has been little or no research on the effects of newer fungicides on pink rot control.

(See references on pg. 4)

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References

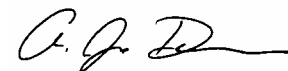
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