

Cooperative Extension

University of California



Landscape No

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Ventura Community College Horticulture/Agriculture Classes for the Fall Semester Classes start in August!!!!

As many of you may know, Don Rodrigues, long time professor at Ventura Community College has announced and formalized his retirement. Don retired as of June this year. Don has taught at VCC for over 36 years. He has been a real leader Ventura County's horticultural industries for many years. Although he is now retired, he still teaches at the college part time and wants the program to continue. There is a great staff of part time instructors and a substantial program that greatly benefits the agricultural and horticultural communities. Right now with budget cuts looming, the College is in a "use it or lose it" mode, so sign up for a class—you will benefit yourself as well as the college program. Don't forget that classes start early (August 18). However, there is still time to register. Many of these courses are offered at night and on weekends.

The following courses are offered at VCC this fall:

AG V03	Plant Biology
AG V22	Insects and Diseases of Plants
HORT V32	Irrigation System Design
HORT V33	Landscape Planning and Design
HORT V40	Nursery and Greenhouse Management
HORT V42A	Landscape Plant ID and Uses I
HORT V45	Arboriculture
HORT V47-48	Beginning and Intermediate Floral Design

The Ventura Community College catalogue which contains registration information is available on-line at <http://www.venturacollege.edu/>.

Palm Disease Notes **Diamond Scale**

Host Range and Occurrence

Diamond scale is a disease caused in *Washingtonia filifera* by *Sphaerodothis neowashingtoniae* Shear. The disease is only reported in California and is especially problematic near the coast or in valleys with

coastal influence. In a recent field study of amendments for palm planting, I observed that *Washingtonia* palms growing in Long Beach were much more susceptible to *Sphaeodothis* than those planted in Irvine CA. Although we see the disease in Riverside, it is much less common on young trees. I have examined native palms in California desert oases (Borrego Springs and Twenty Nine Palms) and found no evidence of the disease. However, the pathogen should occur in the native range of *W. filifera* as it is its only host. As *Washingtonias* have been used to a greater degree in landscapes the occurrence of hybrids (*W. filifera* X *W. robusta*) are in greater abundance. These hybrids are somewhat susceptible to the disease, so that it is not uncommon to find occasional fruiting bodies on a palm that resembles a *W. robusta*. *Washingtonia robusta* that have not hybridized with *W. filifera* are completely resistant to diamond scale, while the native *W. filifera* are susceptible. There is some problem here for landscapers who wish to ensure the purity of their palms and plant resistant specimens. We have found that nurseries are not producing pure stock. Many of the palms sold today as *W. robusta* have some *W. filifera* in them. Because these palms are wind pollinated and both species are common to Southern California, the purity of seed sources is suspect. The only way to obtain genetically pure *W. robusta* plants may be to collect seeds from their native range in Mexico.

Symptoms signs and progression of the disease

The disease is called diamond scale because of the diamond shaped ascothecia or ascus bearing structures that form on the leaves of affected palms. Contrary to common belief, this is not a “scale” insect, but the fruiting body of the ascomycete fungus mentioned above. The diamond shaped structures hold the sexual spores of the fungus. The asexual stage of the fungus (anamorph) has not been identified. Since not all the spore stages of the fungus are known, an accurate life history of the organism is impossible to discern. There are many gaps in the knowledge of this fungus and its associated disease in *Washingtonia*. We **do not** know the native range of its occurrence, its time of year for infection, the life span of the spores, optimal temperature ranges for the fungus or all of the events that lead up to a successful penetration and infection of new hosts. What little is known has been from casual observation of the pathogen and its associated disease.

The earliest symptom after infection is a water soaked lesion on the frond of an infected plant (figure 1). A hard black stroma begins to form soon after this—the beginning of the fruiting body (figure 2). The stroma enlarges and continues to gain size over a period of weeks to months (figure 3). As the stroma gains size, the leaf tissues around it begin to yellow and if on the midrib of the frond, elongate forming long yellow streaks. Yellowing symptoms around nearby infections tend to coalesce. By the time all of this is noticeable, the leaves are usually mature and in a relatively horizontal or downward pointing position on the palm. Newly emerged leaves are seemingly unaffected. New leaves probably do not stay in their upright position long enough for the disease to develop on them. By the time the fronds are downward pointing along the trunk they have yellowed or turned completely brown (figure 4). Palms unaffected by the disease appear to have about two times as many green leaves as extensively infected palms.

The reduction of leaf area and the slowed growth associated with diamond scale is debilitating and leads to reduced vigor of *Washingtonia filifera*. While it is not believed that diamond scale kills *Washingtonia*, it certainly predisposes these palms to attack from the pink rot fungus (see previous issue of Landscape Notes) that can cause its death. The palms shown in figure 4. are in decline from diamond scale and the palm on the far right is being killed from pink rot.

Control of the disease

Here again we have a vacuum of knowledge. While thiophanate-meythl (Clearys 3336) has been used against diamond scale, we have no hard data on its efficacy, timing of application or re-treatment interval. The same holds for copper based fungicides. Fungicide efficacy trials on this pathogen are badly needed. Although pruning would eliminate some inoculum, it is not known if pruning away old

fronds is helpful in controlling the disease because we do not know how long the spores live in old leaves. The best control of diamond scale is to avoid planting palms with *W. filifera* genetics in coastal landscapes. If you should happen to inherit some *W. filifera* with the disease, it will always be there for you. I know of no cases where it has been eradicated from living palms.



Figure 1. Early infection

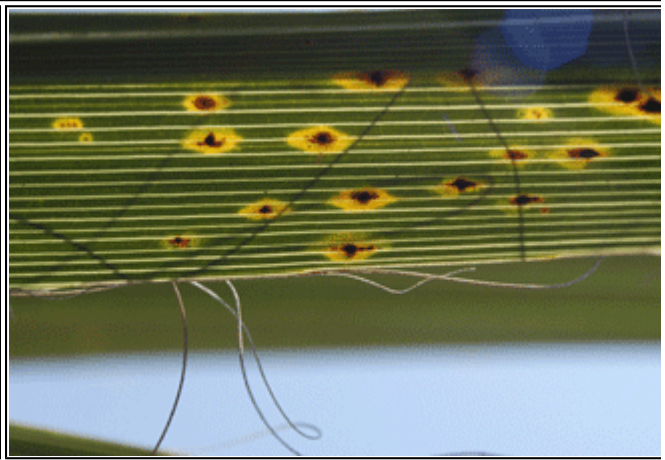


Figure 2. Ascostroma forming



Figure 3. Mature ascostroma on rhacis



Figure 4. Frond death from diamond scale and stunting/death from pink rot