

## Spider Mites: Identification, Damage and Management

### Pest Description

The Pacific spider mite (*Tetranychus pacificus*) is the primary pest mite species in the San Joaquin Valley on grapes. Adult Pacific spider mite females (Fig.1) vary from slightly amber to greenish in color. Later in the season as they go into diapause or under high population densities adult females can turn orange to reddish. Upon emergence adult Pacific spider mites are almost void of food spots. As feeding begins usually two large diffuse spots appear at the front and two smaller spots appear on the rear portion of the abdomen. Pacific spider mite prefers the warmer upper canopy of the vine. Although it can cause damage early in the season, Pacific spider mite generally prefers the hotter, dryer part of the season. Because they are so similar in appearance, it is difficult to discern between the Pacific and Willamette spider mites unless they are side-by-side. The Pacific mite is larger in size than the Willamette mite (*Eotetranychus willamettei*). Pacific spider mite forelegs are reddish in color and those of Willamette (Fig. 2.) spider mite are translucent to pale yellow.

The Willamette spider mite is pale yellow. It is often considered an early-season mite. It prefers the cooler parts of the plant and is found mostly in the shady parts of the vine. In certain areas (e.g., North Coast) and during certain years, populations can persist throughout the growing season. Willamette spider mite is primarily a problem in the Salinas Valley and Sierra foothill production areas where it can cause economic damage to varieties such as Zinfandel. In the North Coast it can cause damage in early spring when shoot growth is delayed or later in the season in vines with small canopies. Willamette spider mite is seldom a pest in the San Joaquin Valley, especially on Thompson Seedless.

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### Crop Damage

Damage caused by each species can help in identifying each spider mite. Pacific spider mite damage begins as yellow spots (Fig. 3.). As damage progresses, dead (necrotic) areas appear on the leaves. High populations can render the

## Notice of Release of Table Grape C51-63

Excerpted from the signed notice by the USDA, Agricultural Research Service, issued July 5, 2012

The United States Department of Agriculture, Agricultural Research Service, announces the release for propagation of the new red seedless *Vitis vinifera* L. table grape cultivar C51-63. This red seedless grape (Fig. 1) ripens in the late season and has medium-large, sweet, firm berries with a neutral flavor. C51-63 resulted from the cross C66-144 X Crimson Seedless made in 1988. C66-144 and Crimson Seedless are complex hybrids whose parents include Blackrose, Cardinal, Divizich Early, Maraville, Muscat of Alexandria, Sultanina, and Tafafihi Ahmur. The original vine was planted in 1989 in cooperation with California State University, Fresno, and selected in 1991 by David W. Ramming and Ronald Tarailo. C51-63 has been tested in the San Joaquin Valley of California.

C51-63 ripens with Crimson Seedless and is harvested the last week of October to the first week of November. The fruit averages 20 to 21 percent soluble solids and 5.9 to 7.7 g acid per liter juice at maturity. Red skin color development is enhanced by pulling leaves and the application of Ethrel. The clusters are large in size (1.5 to 2.0 pounds) and length. They are conical and uniform in shape with average berry set.

The natural berry is oval to elliptical in shape and averages 1.8 cm diameter, 2.5 cm long and weighs 4.7 to 5.3 grams. Berries from girdled vines averaged 1.95 cm diameter, 2.6 to 2.8 cm long, and weigh 5.7 to 6.6 grams. The flavor is sweet and neutral but becomes astringent when fully ripe. Girdling appears to increase astringency and heat damage. The skin of C51-63 is thick and adheres to the flesh. Flesh texture is firm and meaty. Berries contain very small aborted seeds which are not noticeable when eaten. Fruit retains its firmness during cold storage. Berry attachment to the pedicel is very good and very little postharvest shatter occurs. The rachis has average thickness.

C51-63 is medium to high vigor. Production is very good and averaged over 60 pounds per vine on fourth leaf vines. C51-63 was indexed by Foundation Plant Services, University of California, Davis, CA 95616 and found to qualify for the California Registration and Certification Program for grapevines.

Genetic material of this release will be deposited in the National Plant Germplasm System, where it will be available for research purposes including development and commercialization of new cultivars. It is requested that appropriate recognition be made if this germplasm contributes to the development of a new breeding line or cultivar. The Agricultural Research Service has no plants of C51-63 available for distribution. Inquiries regarding availability of C51-63 should be addressed to USDA Agricultural Research Service, 9611 South Riverbend Avenue, Parlier, CA 93648.

C51-63 is currently being grown as Vintage Red, Sundale Red, Castlerock Red, Jasmine Red, and Early Crimson as well as other names throughout the world.



Figure 1 C51-63 grown in the SJV.

*Originally published in the Foundation Plants Services October 2012 newsletter.*

## 7th International Table Grape Symposium

In June 2010, UC Cooperative Extension hosted the 6<sup>th</sup> International Table Grape Symposium; showcasing California's advanced production systems. Approximately 300 participants—including growers, industry representatives and researcher from around the world convened to discuss all aspects of table grape production. In 2013, the 7<sup>th</sup> International Table Grape Symposium will be held in Australia and will include vineyard tours preceding the symposium. This will be a great opportunity to see Australia's unique subtropical growing environments and production systems.

### **SYMPOSIUM**

When: November 24-26, 2013

Where: Mildura, Victoria, Australia

### **PRE-SYMPOSIUM TOURS**

Tour 1. When: November 16-20, 2013

Where: Stanthorpe, Queensland, Australia (subtropical)

Tour 2. When: November 23, 2013

Where: Mildura, Victoria, Australia

Persons interested in presenting a paper at the 7th International Table Grape Symposium should contact:

David Oag

Telephone +61 7 4681 6147

Mobile +61 (0)427 427 517

[david.oag@daff.qld.gov.au](mailto:david.oag@daff.qld.gov.au)

More information can be found here:

<http://www.australiangrapes.com.au/news-and-events/events/7th-international-table-grape-symposium-2013>

More information on Mildura, Australia can be found here:

<http://www.visitmildura.com.au/>

To learn more about Australian viticulture, read this review titled "Grape Production in Australia", by David Oag: <http://www.fao.org/docrep/003/x6897e/x6897e04.htm>

## Wood-Canker Disease Survey

We are writing to ask for your participation in a survey of PCAs, consultants, and other agricultural advisors investigating wood-canker disease management in grape, pistachio, and almond. We hope to learn about the practices that agricultural advisors recommend for preventing and managing wood-canker diseases. This survey is part of a broader research project, funded by the USDA, and involving USDA researchers, UCCE farm advisors, and faculty researchers from UC and other institutions.

Your participation in this survey is extremely important to obtaining representative responses from all types of agricultural advisors and regions of California. Your responses will help researchers and extension agents more effectively target future research, education, and extension efforts. You may also find this survey interesting and useful in thinking about your own disease-management decisions.

We greatly appreciate your time in answering this survey. As a small token of appreciation, if you complete the survey, you will be entered in a drawing for one of 10 \$100 Amazon gift certificates.

You may have previously received a similar announcement for this survey from UC Davis, CAPCA or another of your contacts. If you have already completed the survey, thank you very much for your participation and please disregard this announcement.

Please participate in the survey by clicking on the following link: UC Davis PCA Wood-Canker Disease Management Survey [https://ucdavispolysci.qualtrics.com/SE/?SID=SV\\_0eu1tMplqPx0YRv](https://ucdavispolysci.qualtrics.com/SE/?SID=SV_0eu1tMplqPx0YRv)

You can also participate by copying and pasting this URL into your web browser: [https://ucdavispolysci.qualtrics.com/SE/?SID=SV\\_0eu1tMplqPx0YRv](https://ucdavispolysci.qualtrics.com/SE/?SID=SV_0eu1tMplqPx0YRv)

If you have any questions or concerns, please do not hesitate to contact our research team.

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## Spider Mites *(Continued from page 1)*

leaves unfunctional with leaf burning and bronzing and copious amounts of webbing (Fig. 4.). Damage is worse along the shoulder and tops of the vine canopies (Fig. 5). Willamette spider mite feeding in mid- or late season causes foliage to turn yellowish bronze, but usually no burn occurs unless vines are weak. In red varieties, infested leaves may turn reddish.

### Management

Web-spinning spider mites should be managed in the vineyard by using an integrated pest management approach that includes biological, cultural and chemical controls.

Biological Control: Many natural enemies help to control pest mite populations. The western predatory mite, *Galendromus occidentalis*, is commonly present in vineyards and can be quite effective in reducing all stages of spider mite populations. This mite is translucent to light amber, pear shaped, and quite active. The effectiveness of this predator depends upon its ability to increase its population size as the season progresses. Disruptive sprays applied early will reduce the survival of this beneficial mite. Naturally occurring predator mites will survive sulfur sprays and dusts, but insectary reared and released ones may not survive dusting sulfur unless they have sulfur resistance. Predator mites, including insecticide-resistant ones, are available commercially to augment populations in the field. Other predators, including sixspotted thrips (*Scolothrips sexmaculatus*), can also be important. To preserve these natural enemies, avoid using disruptive materials like carbaryl.

Cultural Control: Apply water or other materials formulated to reduce dust on roads in or near the vineyard. If possible, maintain resident vege-



**Figure 1. Adult female Pacific spider mites.**



**Figure 2. Adult female Willamette spider mite.**



**Figure 3. Pacific spider mite early season damage.**

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## Spider Mites

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tation or other cover in the vineyard middles to further reduce dust. Irrigate in a manner that will avoid stressing vines.

**Organically Acceptable Methods:** Organically acceptable methods include biological and cultural control methods as well as oil or soap sprays.

**Monitoring and Treatment Decisions:** Monitor for webspinning spider mites as part of dormant and budbreak spur monitoring as described in the [Year-round Grape IPM Programs](#) and record observations on a [monitoring form](#). During rapid shoot growth, look for spider mites and predatory mites weekly on the first emerging leaves. When monitoring for mites, note the presence of mite predators. When mite populations increase rapidly, growers should consider chemical treatment to reduce damage. Visit the UC Pest Management Guidelines for current, registered products for spider mite management.

### **Additional information**

UC Pest Management Guidelines: Spider Mites—  
<http://ucipm.ucdavis.edu/PMG/r302400111.html>



**Figure 4. Pacific spider mite webbing and leaf damage.**



**Figure 5. Severe Pacific spider mite damage.**

## UC Grape Day

August 13, 2013  
8:00 a.m. - 12:00 p.m.  
Kearney Agricultural Center  
Parlier, CA  
559-646-6500



## SoilWeb Reveals What's Hidden Underneath the Ground's Surface

*Jeannette E. Warnert*

Beneath your vineyard there is a complex blend of minerals and organic matter that varies widely in texture, color and structure. Producing a quality crop depends on this little understood, but critical outermost layer of the Earth's crust—the soil.

Anyone can learn about the United States' diversity of soils using [SoilWeb](#), a nationwide database of soil variability first developed in 2004. SoilWeb reached a new milestone this year when it was integrated with Google Maps and designed to scale across any Web-enabled device – desktop computer, tablet or smart phone.

SoilWeb has dozens of uses. The information can inform insurers about flooding frequency and builders about locations suitable for roads, basements or septic tanks. The agricultural real estate industry, farmland owners and farmers interested in renting or purchasing land commonly need information about soil productivity and land capability.

"SoilWeb's a great way to understand the landscape you live in," said [Anthony O'Geen](#), [UC Cooperative Extension specialist in the Department of Land, Air and Water Resources](#) at UC Davis. O'Geen developed SoilWeb with Dylan Beaudette, now a Natural Resources Conservation Service soil scientist, when Beaudette was a Ph.D. student at Davis.

The SoilWeb allows users to find information about the soil at a location by standing at the site with a GPS-enabled smart phone or tablet or by entering an address, landmark or latitude and longitude coordinates for anywhere in the United States. The location's satellite image opens overlaid with yellow polygons marking soil-type boundaries. For each of the polygons SoilWeb provides information about soil profiles, soil taxonomy, land classification, hydraulic and erosion ratings and soil suitability ratings.

All the soil information in SoilWeb was collected from the National Cooperative Soil Survey, organized by the Natural Resources Conservation Service. NRCS began collecting the information in the 1930s.

"The surveyors create a conceptual model of the distribution of soils and soil properties by digging holes, conducting field tests and characterizing representative soils in the laboratory," O'Geen said. "Not all soil survey areas are the same. Areas such as agricultural regions have more detailed information compared to cities. Because they started so early, they never dreamt of the intended uses of the land and demands required of soil surveys. Today, our methods of collecting data have become much more rigorous and new surveys of urban landscapes are much improved."

The soil survey reaches about five feet below the surface or to bedrock, O'Geen said. One shortcoming of the database is in some urban areas the soil is classified simply as "urban land." Where the California State Capitol is situated in Sacramento, for example, the locale is considered 100 percent urban land. No other information is given.

"That's unfortunate," O'Geen said. "They are changing that. Surveyors are remapping critical areas, but it's tough. You can't dig holes easily in cities."

In addition, on some rugged terrain in the West, surveys haven't yet been completed, including parts of the Mojave Desert, Calaveras and Tuolumne counties.

"Soil survey is one of the most detailed and expansive spatial data sets in the world," he said. "It's a tremendous resource that has helped our nation conserve and carefully manage soil and water resources."

Find SoilWeb at <http://ucanr.edu/SoilWeb>

## Publications from the University of California

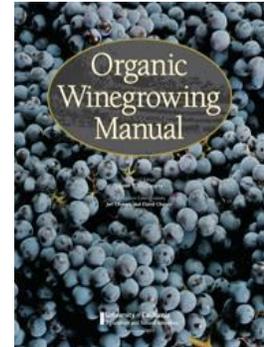
### VINEYARD PEST IDENTIFICATION CARDS

Keep your vineyard healthy by staying on top of pest activity with this pack of 50 sturdy, pocket-size laminated cards. This is the perfect quick reference to identifying and monitoring vineyard diseases and pests. Twenty-seven common insects and mites, 8 diseases, 6 beneficial insects, and a variety of other disorders, weeds, and invertebrate pests are covered in 244 photos. These 50 information-rich cards will help growers, and vineyard managers identify and manage most common problems. **See page 5 for special pricing.**



### ORGANIC WINEGROWING MANUAL

Interest in California organic wine grape production inspired this publication that provides a full-color guide with information on soil management, including soil considerations when selecting a vineyard site, developing organic soil and fertility programs and selecting cover crops. An extensive section covering weed, disease, insect, mite, and vertebrate pest management options for organic grape production is covered. The chapter on organic certification contains an overview of considerations for evaluating and selecting a certifier.



#### ORDER FORM

Publication	Number	Qty.	Price	Subtotal
Vineyard Pest Identification	3532		\$ 25.00	
Organic Winegrowing Manual	3511		\$ 35.00	

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## CALENDAR OF EVENTS

### *Local Meetings and Events*

#### ***UC Grape Day***

August 13, 2013

8:00 a.m. - 12:00 p.m.

Kearney Agricultural Center

Parlier, CA

559-646-6500

#### ***U.C. Davis University Extension Meetings (800) 752-0881***

#### ***Rootstock Workshop: Identification and Use***

August 12m 9:00 a.m.— 2:30 p.m.

Plum, DANR Building

1 Hopkins Road, Davis, CA

Section: 131VIT218

#### ***Winegrapes: Identification and Use***

August 20-21, 2013

9:00 a.m.— 2:30 p.m.

Plum, DANR Building

1 Hopkins Road, Davis, CA

Section: 131VIT219

#### ***Introduction to Wine Analysis***

September 7, 2013

9:00 a.m.— 6:00 p.m.

1127 North Robert Mondavi Institute for Wine and Food

Old David Rd. Davis, CA

Section: 131VIT221



### **7th International Table Grape Symposium**

Attention table grape growers and attendees of the 6th International Table Grape Symposium,

I am pleased to announce the

#### **7th International Table Grape Symposium**

will be held in Australia in early  
November 2013.

Persons interested in presenting a paper at the  
7th International

Table Grape Symposium should

contact: David Oag

+61 427427517

david.oag@deedi.qld.gov.au

If you are interested in receiving more information as it becomes available please email me at: [sjvasquez@ucanr.edu](mailto:sjvasquez@ucanr.edu)

### **Additional Web News**

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# *Vine Lines*

## *San Joaquin Valley Viticulture Issues*

Vine Lines is produced by UC Cooperative Extension. Contact the office to be added to the e-mail list.

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*Our programs are open to all potential participants. Please contact the Fresno County UCCE office, (two weeks prior to the “scheduled” activity), at 559-600-7285, if you have any barriers to participation requiring any special accommodations.*

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