



Agriculture and Natural Resources  
Cooperative Extension

# SONOMA COUNTY VITICULTURE NEWSLETTER December 2009



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## Sonoma County Viticulture Newsletter is going online-only

To reduce printing and postage costs, future issues of this newsletter will only be published online. To receive email notification of future issues, please subscribe at [http://cesonoma.ucdavis.edu/news\\_372/Sonoma\\_County\\_Viticulture/](http://cesonoma.ucdavis.edu/news_372/Sonoma_County_Viticulture/)

When a newsletter is produced, subscribers will receive an email with a link to the UCCE Sonoma County web page that contains Newsletters. There is nothing to download; all information may be read online. Selected past issues are also online.

Increasingly over the last few years, I have sent meeting announcements by email and not by the US Postal Service. By subscribing to the newsletter, you will be able to receive those announcements as well. You will not be receiving frequent emails from this office aside from an annual Grape Day announcement and other UCCE *meetings* addressing general viticulture or IPM topics once or twice a year. In addition, you will always be able to “unsubscribe” when ever you receive meeting announcements.

**This newsletter is being sent electronically as well as by US Postal Service. Regardless of how you receive it, please subscribe (or re-subscribe) to the Sonoma County Viticulture Newsletter by following this link:**

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## Exotic Pest Discovered in Napa

The European Grapevine Moth (EGVM), *Lobesia botrana*, was discovered near Oakville in October 2009. It is the first time this insect has been reported in the United States. It is native to Southern Italy and is considered a major pest on grapes in Europe. EVGM larvae feed on flower clusters, and subsequently berries, causing Botrytis bunch rot.

A recently published fact sheet for EVGM can be found at:

<http://www.ipm.ucdavis.edu/EXOTIC/eurograpevinemoth.html>

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## Meeting Announcements

### SONOMA COUNTY GRAPE DAY

**DATE:** Tuesday, February 9, 2010

**TIME:** 9 AM to 1 PM

**LOCATION:** Wells Fargo Center for the Arts, Santa Rosa.

Presentations include vertebrate pest management, identifying and monitoring for worm pests, factors affecting flower cluster initiation, bloom and fruit set.

Registration materials will be sent in January.

### CURRENT WINE AND WINEGRAPE RESEARCH

**DATE:** Thursday, February 18, 2010

**TIME:** 9 AM to 4 PM

**LOCATION:** Freeborn Hall, UC Davis

Researchers who successfully competed for grants to conduct projects in winegrapes and enology will make 15 minute presentations on their projects. Funding for projects was provided by the American Vineyard Foundation, <http://www.avf.org/> a non-profit organization supported by contributions; and federal and/or state funding through the Viticulture Consortium West and the California Competitive Grants Program for Research in Viticulture and Enology respectively.

Pre-registration is required.

**CONTACT:** University Extension, 1-800-752-0881 or go online

<http://extension.ucdavis.edu/>

### VARIETAL WINEGRAPE PRODUCTION

**DATES:** February 23-25, 2010

**TIME:** 8:30 AM to 5 PM

**LOCATION:** Freeborn Hall, UC Davis

<https://ucanr.org/sitebuilder/filegroups/calendar10-Dec-08-1909/17731.pdf>

Pre-registration is required.

**CONTACT:** University Extension, 1-800-752-0881

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## Water Rights in the Russian River Watershed

Two public workshops have been held this year in Sacramento by the State Water Resources Control Board (SWRCB) to address the use of water for frost protection in the Russian River watershed. **Currently, the SWRCB is considering adopting regulations regarding frost protection in 2010 in the watershed encompassing Sonoma and Mendocino Counties.**

Prior to the Russian River Frost Protection Workshop in April, the National Marine Fisheries Service (NMFS) requested the SWRCB take immediate regulatory action and address their concern that water diversions for frost protection will likely cause losses of Coho salmon, Chinook salmon and steelhead smolt due to reduced stream flows in tributaries. All three salmonids are protected by the Federal Endangered Species Act.

NMFS reported two such losses (“takes”) in 2008, one each in Sonoma and Mendocino County due to frost protection.

On April 7, the State Water Resources Control Board (SWRCB) received information from stakeholders and agencies regarding the need for frost protection and the effects of water diversion for this use on salmonids in Sonoma and Mendocino Counties. Presentations were made and comments submitted by regulatory and resource agencies, growers and local organizations. This included descriptions of best management practices to protect the watershed from the impacts of land use and involvement of organizations in both counties to develop ongoing voluntary actions by growers to prevent future impacts to fish.

A follow-up workshop was held on November 18 to get updates on the same topics. At this meeting, a coalition of growers, the Mendocino and Sonoma County Farm Bureaus, the Russian River Flood Control and Water Conservation Improvement District and the California Land Stewardship Institute presented the **Russian River Frost Program**. This program encompasses a series of self-imposed measures to avert future fish kills and accompanying regulation.

In January, the staff of the SWRCB will make a recommendation to the board regarding the ability of the Russian River Frost Program to prevent fish strandings in 2010. **Success of the program depends on participation by the maximum number of growers.**

The Russian River Frost Program requires information from growers who farm in the watershed. At this time, five meetings are scheduled in the first two weeks in January for growers to learn the details of the program and provide basic information about their water use for frost. Crop insurance information will also be presented. Meeting dates and times are posted on the Sonoma County Winegrape Commission calendar.

<http://www.sonomawinegrape.org/event>

Information on Russian River watershed frost protection is posted on the web site of California EPA, Division of Water Rights

[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/hearings/russian\\_river\\_frost](http://www.waterboards.ca.gov/waterrights/water_issues/programs/hearings/russian_river_frost)

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## **Grapevine Leafroll Disease Is Worth Avoiding**

The number of vines with leafroll symptoms appears to have significantly increased in some coastal winegrape vineyards - especially in the past 10 years. The disease significantly delays fruit maturity<sup>(1)</sup>. More growers are discovering that aggressively thinning fruit on symptomatic vines does not increase soluble solids to the same level as vines without symptoms.

This article addresses the importance of planting only certified vines to establish new or replanted vineyards. Using certified stock is the best method to prevent the incidence of

leafroll disease (and other grapevine virus-borne diseases) in a new vineyard. Certified stock is not “virus free” but it is the product of a process that increases the likelihood that virus disease problems are far less likely to occur as compared to using non-certified vines. Starting out “clean” takes on new importance given that specific types of leafroll virus are vectored (moved) by insects and grapevine leafroll disease spread between adjacent blocks has been documented<sup>(2,3)</sup>.

Movement of the virus by mealybugs and scale insects is not new. What is new and unexplained is the increase of obvious symptoms in some coastal vineyards. Reasons for this may include the use of new, less virus-tolerant rootstocks (as compared to AXR#1), increasing mechanization (that promotes the spread of vectors) and the importation of grape cuttings infected with different strains of leafroll virus.

At this time, mealybugs are considered to be the major vector of leafroll virus in California, and attention is focused on the native *grape mealybug* (*Pseudococcus maritimus*) which can be found in most vineyards, *obscure mealybug* (*P. viburni*) which is in fewer grape regions in the state as well as the *vine mealybug* (*Planococcus ficus*), an introduced pest. Both obscure and vine mealybug are present in Napa and Sonoma counties.

### **Research is underway to better understand the role of mealybugs in disease spread**

A multi-disciplinary, multi-state research effort was funded this year to address relationships between leafroll virus and its mealybug vectors. The research team is headed by Kent Daane, Extension Specialist and co-project director Rodrigo Almeida, Entomologist as the key researchers from UC Berkeley. Other team members include researchers from UC Davis, UC Cooperative Extension, Oregon State University and Washington State University.

The research is primarily funded by the USDA Specialty Crops Research Initiative and the American Vineyard Foundation, and the project includes the following objectives:

- (a) Document the distribution of different grapevine leafroll associated viruses and their genetic variants within the Western Region to determine if the observed increase in incidence and damage is due to the introduction of invasive vector species.
- (b) Determine seasonal changes in the occurrence of both virus and vector in order to obtain a better understanding of grapevine leafroll disease at the regional level.
- (c) Investigate the impact of conventional and sustainable mealybug controls on disease incidence.
- (d) Develop an extension and outreach program focusing on grapevine leafroll disease and mealybugs.

### **Differences in severity of leafroll disease**

The severity of leafroll disease symptom expression is affected by several things including the **types** of leafroll virus and other viruses present in the vine and the **strains** within those types. There are several grapevine leafroll associated viruses (GLRaV's), often referred to as “types” that cause disease. Leafroll virus types are named GLRaV1 to GLRaV10, specifying the 10 types identified. Each type is a different species.

Recently virologists have decided to restructure the species definition for grapevine leafroll viruses. As a result, several species will be combined; however GLRaV2 and 3, two types most familiar to grape growers, will remain as distinct species. GLRaV3 is very common and is vectored by mealybugs and scale. Vectors for GLRaV2 have not been identified, and field spread has not been reported although theoretically it may be vectored by aphids.

Molecular variants often referred to as “strains” exist within leafroll types and can affect disease expression depending on the rootstock or the presence of other viruses in the vine. An example is the “Red Globe strain” of GLRaV2 (GLRaV2-RG) which is lethal to vines grafted on 5BB, 5C, 3309C and 1103P rootstock<sup>(4)</sup> (Figure 1). There is a diagnostic test specific for GLRaV2-RG.

A molecular diagnostic test available for many grape viruses includes PCR (polymerase chain reaction). The PCR primer used to detect a specific type of leafroll virus may or may not be designed to detect all known strains of that leafroll type. PCR tests can be highly specific or inclusive for a targeted virus or group of viruses respectively. Strains of one type of virus are usually only slightly different from another thus a commonly used PCR primer may detect newly reported strains.

In the case of GLRaV3, currently there are 4 known strains. Rodrigo Almeida’s lab at UC Berkeley is conducting research to determine which strain(s) of this virus predominate in north coast vineyards. Different strains of GLRaV3 may affect severity of disease symptoms as well as mealybug transmission efficiency.

Testing several vines within a bud source vineyard to determine what viruses are present often provides inadequate information to determine the “safety” of that wood source. Very little is known about how likely combinations of leafroll type, strain, rootstock, and other factors are to cause severe disease. Complicating things even more is the presence of viruses other than leafroll. Sourcing bud wood from established vineyards is inherently risky.

### **Plant certified stock**

There is no cure for leafroll disease in a vineyard. Farming practices, including fertilizers and soil amendments do not reduce the effects of disease on fruit maturity. The best strategy for control of leafroll is to purchase certified vines which have gone through the California Grapevine Registration and Certification Program (R&C Program). The R&C Program is designed to produce plants that are not infected with many of the currently detectable viruses and is administered by the California Department of Food and Agriculture (CDFA).

The source of vines for commercial nurseries’ “mother blocks” is Foundation Plant Service (FPS) at UC Davis which maintains and regularly tests vines in its foundation blocks utilizing diagnostics that far exceed the standards addressed by R&C Program

guidelines. The R&C Program is considered by many to be the best of its type in the nation – with room for improvement.

Improvements and modifications in the grapevine certification program by nurseries and CDFA has been ongoing<sup>(5)</sup>. Progress continues at FPS in the development of diagnostic tests, disease detection and elimination and in the establishment of a new foundation vineyard that will meet future standards of the National Clean Plant Network (6). Now and in the future, purchasing certified vines is the best option to avoid planting vines infected with grapevine leafroll virus. When contemplating planting uncertified vines, hoping to avoid unintended consequences is not a strategy.

**References and links:**

- (1) A. C. Goheen. 1988. Leafroll. Page 52 in: Compendium of Grape Diseases. R. C. Pearson and A. C. Goheen, eds. American Phytopathological Society, St. Paul, MN.
  - (2) Golino, D.A., Sim, S., Gill, R., and Rowhani, A. 2002. Grapevine leafroll disease can be spread by California mealybugs (PDF). California Agriculture 56: 196-201.
  - (3) Golino, D.A., Weber, E., Sim, S., and Rowhani, A. 2008. Leafroll disease is spreading rapidly in a Napa Valley vineyard. California Agriculture 62:4 156-160.
  - (4) Uyemoto, J.K., Rowhani, A., Luvisi, D., Krag, C.R. 2001. New Closterovirus in 'Redglobe' grape causes decline of grafted plants (PDF). California Agriculture 55: 28-31.
  - (5) The California Grapevine Registration and Certification Program is voluntary. Current regulations were enacted in 1984 and significant modifications have been proposed. One of the most important is the creation of two levels of increase blocks – “primary” and “secondary.” Persons interested in making statements or arguments relevant to the proposals, may do so prior to January 11, 2010.  
[http://www.cdfa.ca.gov/phpps/regs\\_grapevines.html](http://www.cdfa.ca.gov/phpps/regs_grapevines.html)
  - (6) The National Clean Plant Network - <http://ucanr.org/sites/natcpn/>  
Established by the 2008 Farm Bill, this directs the United States Department of Agriculture to work with universities and industry to develop a network of programs in specific states to develop and maintain clean plants.
- Virus Diseases section of the UC Integrated Viticulture Online web page - [http://iv.ucdavis.edu/Viticultural\\_Information/?uid=121&ds=351](http://iv.ucdavis.edu/Viticultural_Information/?uid=121&ds=351)

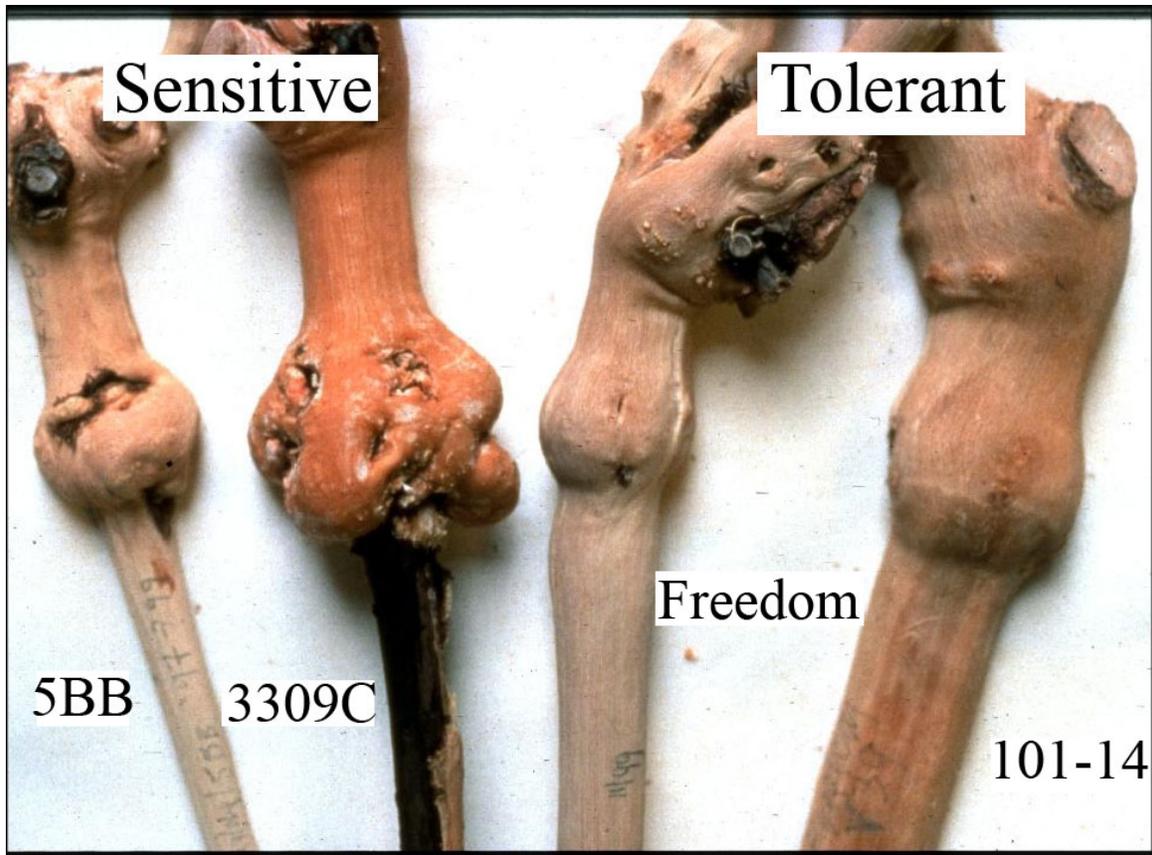


Figure 1: Examples of sensitive and tolerant rootstocks to the “Red Globe strain” of GLRaV2 (leafroll type 2). Photo: Jerry Uyemoto, USDA-ARS.



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**Exotic Pest Discovered in Napa**

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