University of California Cooperative Extension Fresno County

Vine Lines

Stephen J. Vasquez, Viticulture Farm Advisor

October/November 2009 Issue

New Invasive Vineyard Pest Found in California

Stephen Vasquez, Walt Bentley, and Lucia Varela

European grapevine moth (aka European grape berry moth; (*Lobesia botrana*) was recently found in Napa County, a first known find for California. The insect has the potential to cause great economic harm to California's diverse grape industries. The moth was trapped in Napa County's, famous Oakville grape growing region known for high valued wines. Common to Europe and the Mediterranean, European grapevine moth has been intercepted from across the US where international travelers, cargo or mail disembark from planes originating from overseas. Currently, the Napa County Agriculture Commissioner is working with the CDFA and USDA to survey the area where the moth was first located in an attempt to detect additional European grapevine moths.

European grapevine moth identification

European grapevine moth can be confused with American grape berry moth (*Endopiza viteana*) native to the eastern United States or European grape berry moth (*Eupoecilia ambiguella*). Wings of the invasive European grapevine moth, *L. botrana*, have a mosaic shaped pattern with black-brown, cream, and gray-blue ornamentation (Fig. 1.). Larvae tend to develop a purple cast after feeding and will often be found inside the berry. Samples should be taken to a trained university or state entomologist for proper identification and documentation. It is important to note that samples should be enclosed in a sealed container, jar, or vial if found prior to moving the insect (all stages) from an infestations site.

(Continued on page 2)

Keeping Herbicide Sprays on Target to Reduce Potential Spray Drift Injury

Kurt Hembree and Stephen Vasquez

Herbicides play a vital role in weed management efforts in California. For herbicides to work effectively, they need to be selected based on targeted weed control, spray equipment must be functioning properly, appropriate nozzles need to be used, and the application technique must be done in a manner that protects desired vegetation. When herbicides are not properly applied, weed control will be reduced and desirable plants can be injured.

Plants are particularly sensitive to postemergent herbicide injury from off-target movement (spray drift), so application technique is one area you don't want to skimp on. Postemergent herbicides commonly associated with spray drift injury include the *plant growth regulators* (2,4-D, dicamba, etc.), *amino acid inhibitors* (glyphosate, imazamox, etc.), and *cell membrane disruptors* (paraquat, carfentrazone, etc.). Since potential exposure of desired vegetation to herbicide spray drift is high, it's important to keep sprays on-target, when treating weeds. The degree of herbicide-related injury varies, depending on

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New Pest Found

(Continued from page 1)

Damage

Damage can be seen to both grape flowers and developing fruit. Larvae feed on flowers prior to bloom and continue through bloom. As bloom peaks, larvae protect themselves by producing webbing around the damaged flowers and feeding on neighboring flowers and parts. Second and third generation larvae feed on berries hollowing and contaminating them with excrements (Fig. 2.). Cultivars that naturally have tight clusters—like Chardonnay, Pinot noir and Zinfandel—will suffer the most damage. Much like infestations from other worm pests, feeding damage will lead to infections by bunch rot fungi. Raisin and table grape cultivars will also experience damage, especially when bloom is prolonged due to weather, making flowers less responsive to applications of gibberellic acid used for bloom thinning. Table grape cultivars with tight clusters have the least tolerance for the moth due to fruit feeding damage and contamination with webbing, excrements and rot. All life stages can be found in vineyards infested with European grapevine moth but larvae from the second and third generations have been found to be the most damaging when fruit is maturing.

Figure 2. *L botrana* feeding on berries.
Photo credit: M. Cooper

Host range

The host range for European grapevine moth is diverse. In addition to *Vitis vinifera* (cultivated grape), they also feed on other important agricultural crops like apple, cherry, nectarine, persimmon, plum, pomegranate and olive. It has been documented that privet and some grape cultivars are preferred for oviposition. Plants should be inspected for eggs, larvae and pupae. Larvae can be found in flower or fruit clusters along with webbing and in berries or other fruits. Pupae are frequently found inside a silken cocoon in rolled leaves, inside clusters, and under the bark of any of the previously mentioned host. At this time there are no regulations in place regarding the movement of fruit or other plant material from Napa County but growers and industry representatives should be vigilant. Trapping beginning at budbreak, using a tested pheromone is the best approach to monitoring vineyards for activity. Pheromones attract males to traps and allow estimating a population of European grapevine moth. With cooler fall temperatures, adult moths will be absent and only the diapausing pupul stage inside a silken cocoon can be found protected by grapevine bark. Growers should consult with their County Agriculture Commissioner or University of California personnel to determine the best approach to monitoring and properly identifying European grapevine moth.

Figure 1. Adult European grapevine moth displaying mosaic.
Photo credit: Chilean Wine Corporation A.G.

Stephen Vasquez the UC Cooperative Extension viticulture farm advisor in Fresno County. Walt Bentley and Lucia Varela are UC IPM advisors in Fresno and Sonoma Counties, respectively.

San Joaquin Valley Grape Symposium

January 6, 2010

C.P.D.E.S. Hall
Easton, California

Sponsored by the University of California Cooperative Extension and the California Raisin Marketing Board

Drift Injury

on herbicide type and dose, plant species and age, and other factors. Symptoms from herbicide drift vary from mild yellowing of the foliage to plant death.

Spray drift damage occurs mainly when spray droplets are carried from the application site downwind and deposited on sensitive plant surfaces, like buds, leaves, and fruit. Spray drift can also occur from vapor drift (evaporation of herbicide from a plant surface) and particle drift (spray carrier droplets evaporate, leaving concentrated herbicide droplets). Spray drift is influenced mainly by droplet size. Spray droplets with a mean diameter of <200 microns are the most susceptible to drift. Since small droplets are lighter and remain airborne longer than larger ones, they travel greater distances from the treatment site. A high spray height or wide nozzle tip angle will also increase drift distance. Several environmental and spray conditions affecting spray drift potential are shown in table 1.

To maximize weed control and reduce the likelihood of spray drift injury of desired vegetation, consider the following application factors before spraying:

1. *Label instructions* – Read and follow all label directions carefully before spraying.
2. *Environmental conditions* – Spray when winds are <7 mph. Don't spray on foggy days or when the air is still, because fine droplets can remain airborne a long time. Spray when the temperature is <80 °F, because some products are volatile at higher temperatures. Consider spraying towards the end of day when it begins to cool. Use "amine" formulations of 2,4-D, sine "ester" formulations are more volatile under warm conditions.
3. *Buffer zones* – Leave an appropriate buffer zone to protect sensitive plants near the treated site and don't spray if the wind is blowing towards a nearby sensitive crop, garden, waterway, or other sensitive area.
4. *The sprayer* – Use spray shields where possible, because they help reduce spray drift by 35-75%. When using, low-volume (<5 gpa) sprayers, treat small weeds so the equipment can be lowered as much as possible. Likewise, boom or boom-less sprayers should also be set as low as possible to reduce drift. Practice good sprayer maintenance and calibration for efficient use of herbicides, time, and labor.
5. *Application timing* – Apply postemergent herbicides when weeds that are <4" so the boom can be lowered. Raising spray booms or angle spray nozzles upright to compensate for large weeds, risk of spray drift is increased.
6. *Nozzle selection, spray pressure, and volume* – Use spray nozzles with an orifice size of >02 for larger droplets less prone to drift.

Table 1. Important conditions that influence spray drift

Factor	More Drift	Less Drift
Nozzle type	Fine droplets	Coarse droplets
Nozzle orifice size	Smaller	Larger
Nozzle height	Higher	Lower
Spray pressure	Higher	Lower
Wind speed	Higher	Lower
Air temperature	Higher	Lower
Relative humidity	Lower	Higher
Air stability	Vertically stable	Vertical movement
Herbicide volatility	Volatile	Non-volatile

(Continued on page 4)

Drift Injury

(Continued from page 3)

Use "Drift Guard", "Air Induction", "AirMix", "TurboDrop", or other nozzles designed to reduce drift. They work well with most pre- and systemic postemergent products. Keep the spray pressure as low as possible according to manufacturer recommendations. Don't crank up the spray pressure for a larger volume of water (potentially more drift), rather select a larger nozzle size or a drift-preventing nozzle. "Extended Range (XR)" type nozzles produce larger droplets under a low (15 psi) operating pressure and fine-sized droplets at high spray pressures. Refer to table 2 for various spray nozzle types and manufacturer's recommended uses. Nozzle tip wear must be frequently checked to insure each nozzle is putting out the appropriate flow rate. Change nozzles when the flow rate differs by 10% from that of new nozzles. Tip wear depends primarily on the material used in the manufacturing of the spray tip: brass (wears quickly) > stainless steel > polyacetyl > hardened stainless steel > ceramic > carbide (little to no wear). Dry herbicides wear tips faster than liquid materials.

7. *Boom and nozzle height* – Operate nozzles at their lowest recommended height. For 80° tips, this is 18", and for 110° tips, this is 12". Orient nozzles forward to allow for further height reductions.
8. *Travel speed* – Use a travel speed of 3-5 mph, since speeds above 6 mph can create a wind-sheer effect on spray droplets, increasing drift.
9. *Spray additives* – Spray drift retardants can reduce drift up to 95%. Spray additives, like ammonium sulfate, can improve efficacy of postemergent materials, but may alter spray viscosity and flow rate. Check the flow rate and droplet pattern on water sensitive paper before adding herbicides to see if droplet size is adequate.

Table 2. Spray nozzle description, operating pressure, droplet size, drift, and general herbicide use patterns

Spray Nozzle Description	PSI Range	Droplet size*	Drift Mgt.	Preemergents	Systemics	Contacts
Extended Range (XR) Flat Fan	15-60	F-C (15 psi) VF-M (50 psi)	Good (15-20 psi)	Good	Very Good (15-30 psi)	Good (>40 psi)
Turbo TeeJet Flat Fan	15-90	M-XC	Very good (<30 psi)	Good	Excellent (<30 psi)	Good
Drift Guard Flat Fan	30-60	F-C	Good	Good	Good	---
Air Induction Flat Fan	30-100	C-XC	Excellent	Very good	Excellent	Good
Air Induction XR Flat Fan	15-90	M-XC	Excellent	Very good	Excellent	Good
Turbo TeeJet Induction Flat FAn	15-100	XC	Excellent	Excellent	Excellent	---
TwinJet Dual Fat Fans	30-60	F-M	---	---	Good	Excellent
Drift Guard TwinJet Dual Flat Fans	30-60	F-C	Very good	---	Excellent	Very good
Turbo TwinJet Dual Flat Fans	20-90	M-XC	Excellent (<30 psi)	---	Excellent (<30 psi)	Excellent (>30 psi)
ConeJet (hollow cone)	40-125	VF	---	---	---	Excellent

*VF (very fine), F (fine), M (medium), C (Coarse), XC (extra coarse)

--- = not generally recommended or no information available

Information presented here was obtained from Spraying Systems Co. TeeJet® catalog No. 50 and through field trials and observations. For additional information regarding spray nozzle selection and use, refer to the TeeJet® website (www.teejet.com), Greemleaf® website (www. Turbodrop.com), or other places where spray nozzles are purchased.

New Grape Variety Is Disease Resistant and Good to Eat, IFAS Researcher Says

Gainesville, Florida (August 24, 2009)--Southern Jewel, the latest grape variety issued by the University of Florida's Institute of Food and Agricultural Sciences, is high-yielding, disease resistant and produces fruit in big bunches.

IFAS developmental biology professor Dennis Gray, who led the team that created the new muscadine variety, says the new grape has been in the works since 1994.

It is Gray's second grape cultivar release. The first was "Delicious," also issued this year. Southern Jewel is the 19th grape cultivar created by UF researchers.

In this month's issue of the journal HortScience, Gray describes Southern Jewel as having "an excellent taste and a crunchy texture with a palatable skin, making it well-suited for fresh fruit consumption."

Southern Jewel, created with traditional plant-breeding techniques, was grown and compared with other muscadine varieties at the Mid-Florida Research and Education Center in Apopka, starting in 2002.

Its ability to produce fruit in bunches made it stand out, Gray said.

"Muscadines typically make very small clusters, maybe just four or five berries," he said. "This one can make more than 12, sometimes 16 berries on a cluster."

That allows growers to harvest the grapes by cutting the stem of the cluster rather than picking individual berries, he said. Researchers don't yet know how much of an advantage that might be, he added.

Southern Jewel is an open release by UF, which means any grower should eventually be able to grow the plant once nursery owners have enough established plants to sell.

A few plants may already be available through some nurseries, he said. Interested growers should check the Florida Grape Growers Association Web site at www.fgga.org for information or check with larger nurseries for more information.

During the trials, Gray said researchers used minimal disease control treatments — just one spray per year with copper sulfate — to determine their disease resistance.

Muscadines are typically resistant to Pierce's disease, which plagues many grape varieties grown in Florida, but they can be susceptible to bitter rot or ripe rot, which cause the berries to decompose. Southern Jewel was resistant to all three diseases.

"You can have the most beautiful plant in the world, but if it won't survive outside, it's worthless," he said.

Jacob Paulk, who owns Paulk Vineyards in South Georgia and has been growing grapes since the 1970s when he planted the crop to replace tobacco, said the prospect of clusters that can be cut at the stem is an intriguing one.

Most of his muscadines now must be hand harvested, put onto a conveyor belt and sent into a packing shed, where workers grade and sort them by hand before packing them in small containers. Eliminating that step could mean less expensive grapes for consumers, he said.

A variety that could go from the stem to stores "would be a novel thing for us," he said.

Spotted Wing Drosophila — A New Potential Pest for Grapes?

Larry Bettiga

Spotted wing drosophila, *Drosophila suzukii*, officially identified as a pest on the cherries earlier this year. It has caused significant damage in Santa Clara County as well as several other cherry producing areas. In addition to cherries, the spotted wing drosophila has been found infesting the fruit of raspberry, blackberry, blueberry, and strawberry plantings on the central coast. Although it has not been reported on grapes in the field, in the lab it has been shown to feed on grapes and tomatoes. There have been reports of spotted wing drosophila feeding on grapes in Asia, which is where the fly originated. Currently, spotted wing drosophila has been found in 21 California counties, as well as locations in Washington and Oregon.

Description of the Pest

Adults and maggots closely resemble the vinegar or pomace fly, Drosophila *melanongaster,* which are attracted to damaged and bunch rot infested clusters in the vineyards or fermenting grapes and pomace at the winery. Adult spotted wing drosophilae are two to three millimeters long with pale brown bodies and black horizontal stripes on the abdomen. The adult male has a black spot on the end of the wings.

Potential Damage

Unlike the vinegar fly, the spotted wing drosophila has the ability to penetrate the skin of healthy undamaged soft fruits and lay eggs inside. The female has a serrated ovipositor that gives it the ability to pierce the skin of fruits. Once the eggs hatch the developing maggots turn the flesh of fruits brown and soft; they can cause fluid leakage to the berry surface. Feeding damage also provides an entry wound for the secondary fungal and bacteria pathogens to infect produce fruit rot.

Preferred Climates

Spotted wing drosophila prefers high humidity and moderate temperatures, conditions that are common to the Central Coast. The adults are most active at 68ºF; activity is reduced at temperature above 86ºF.

Lifespan

Similar to other fruit flies, the spotted wing drosophila has a short life cycle that can be one to two weeks, depending on temperatures during the fruit ripening period. At optimum temperatures, these insects are able to quickly develop large populations and cause significant fruit damages. The insect may have as many as ten generations per year under California conditions. Winter cold does not appear to limit the flies' survival in China and northern Japan where spotted wing drosophilae are well established.

Monitoring

Spotted wing drosophilae can be monitored with a number of traps. Liquid traps, such as the Rescue Fly Trap, can be filled with about one inch of apple cider vinegar to monitor for this pest. Yeast and/or banana slices may also be added to the liquid. These traps may capture other species of Drosophila; check the trap captures to confirm the presence of male flies by identifying the spotted wings. Researchers are currently evaluating monitor and control methods for spotted wing drosophila. If the fly is found in the traps then the fruit should be monitored carefully for egg-laying punctures and larval damage to the fruit. Experience with our fruits suggests that females do not lay eggs until the fruit is nearly ripe.

Time will tell if spotted wing drosophila will become a pest of the grape industry in California. Due to this insect's preference for cooler conditions the risk may be higher in coastal productions areas. Spotted wind drosophilae have been found in traps on the edge of a Central Coast vineyard adjacent to a cherry orchard, but currently they have not been observed on grape berries. Vineyards adjacent to areas where susceptible soft fruits are grown (cherry, strawberry, cane berries) may be at greater risk of having spotted wing drosophila populations.

To find out more…

More information on spotted wing drosophila can be found online at: http://www.ipm.ucdavis.edu/EXOTIC/drosophila.html

Larry Bettiga is a Viticulture Advisor at the University of California Cooperative Extension in Monterey, San Benito, and Santa Cruz Counties.

Calendar of Events

Local Meetings and Events

Gopher Biology and Trapping Demonstration
December 10, 2009
UC Kearney Research and Extension Center
Parlier, CA
9:30 a.m - 12:00 p.m.
Contact: Stephen Vasquez (559) 456-7285

San Joaquin Valley Grape Symposium
January 6, 2010
C.P.D.E.S Hall
172 Jefferson St.
Easton, CA
Contact: Stephen Vasquez (559) 456-7285
Register on-line at:
http://ucanr.org/2010_grape_symposium

6th International Table Grape Symposium
June 24-26, 2010 — Symposium
June 28-30, 2010 — Technical Tour

Contact: Stephen Vasquez or Jennifer Hashim-Buckey at 6thinttablegrapesymposium@gmail.com.

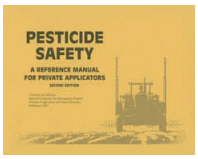
U.C. Davis University Extension Meetings

(800) 752-0881

Current Issues in Vineyard Health
November 19, 2009
Da Vinci Building, 1632 Da Vinci Ct.
Davis, CA
Instructor: Deborah Golino
Section: 092VIT202

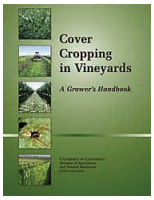
Current Wine and Winegrape Research
February 18, 2010
UC Davis: Freeborn Hall, North Quad
Davis, CA
Instructor: Deborah Golino
Section: 093VIT203

Publications from the University of California



Pesticide Safety: A Reference Manual for Private Applicators
ANR Publication 3383
Price - $7.00 + tax and shipping

Updated in 2006, this manual covers information essential for anyone using pesticides on California farms, including growers, managers and employees. The manual covers pesticide labels, worker safety (handlers and fieldworkers), how to mix and apply pesticides, calibration, the hazards of pesticide use including heat related illness, and pesticide emergencies.



Cover Cropping In Vineyards
ANR Publication 3338
Price - $20.00 + tax and shipping

This guide features cutting-edge methods for using cover crops to enhance vineyard performance. Based on extensive research, this guide details technical and theoretical information on how cover crops affect vineyards and promote ecological stability.

Order Form

Publication	Qty.	Price	Subtotal
Pesticide Safety		$ 7.00	
Cover Cropping in Vineyards		$ 20.00	

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$40—49.99	$9
$50—79.99	$10
$80—99.99	$12
$100+	$15

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Vine Lines

Produced by U. C. Cooperative Extension Farm Advisor Stephen J. Vasquez. Contact me for further article information, or to be added to the mailing list.

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In This Issue:

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Key Code
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Varietal Winegrape Production

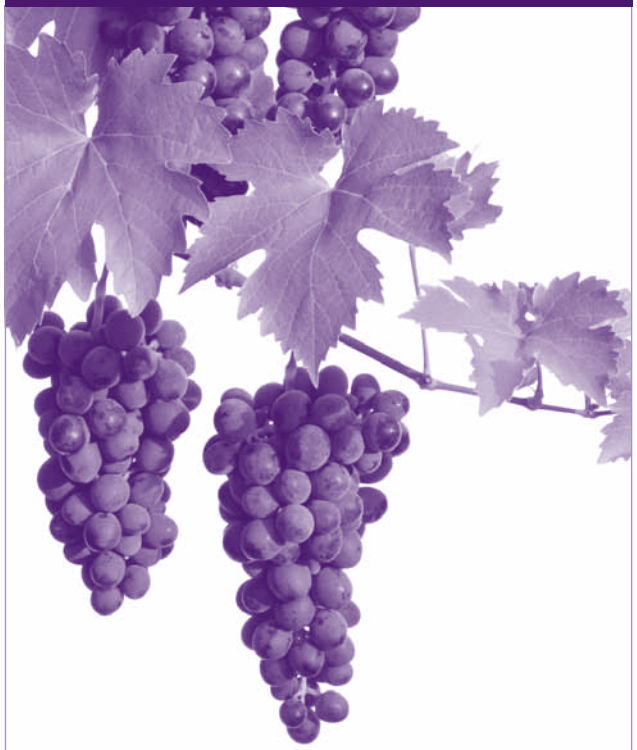
A three-day viticulture short course

February 23-25, 2010

University of California, Davis

A three-day viticulture short course

Varietal Winegrape Production



February 23-25, 2010

University of California, Davis

UCDAVIS EXTENSION
WINEMAKING

CONTINUING AND PROFESSIONAL EDUCATION

Varietal Winegrape Production

A three-day viticulture short course

February 23-25, 2010
University of California, Davis

This intensive three-day course is designed as an in-depth and comprehensive study of all aspects of varietal winegrape production. Lectures are given by viticulture farm advisors and specialists with Cooperative Extension and by faculty members of the Department of Viticulture and Enology, University of California, Davis. The course is similar in format to past short courses, but has been revised to focus on current issues relating to varietal winegrape production. Topics include:

Physiology review

- The cycle of vine growth
- Environmental grapevine physiology

Vineyard establishment

- Site evaluation and preparation
- Issues in vineyard resource conservation
- Rootstock and cultivar selection
- Selection and handling of planting stock
- Vine training
- Spacing and trellising considerations

continued...

Vineyard management

- Crop load assessment and management
- Pruning
- Irrigation systems and scheduling
- Monitoring vine nutrition
- Diagnosis and correction of nutritional problems
- Vine grafting and budding
- Mechanization in the vineyard
- Vineyard floor management options
- Frost protection considerations

Pest management

- Grape viruses and viral associated problems
- Powdery mildew and bunchrot diseases
- Canker and root diseases
- Nematodes
- Insect pests

PCA and CCA credit pending.

Date, Times and Location

Tuesday-Thursday, February 23-25, 2010; Tuesday: registration begins at 8 a.m., course meets 8:30 a.m.-5 p.m., social 5-6 p.m.; Wednesday, 8:30 a.m.-5 p.m.; and Thursday, 8:30 a.m.-4 p.m. This course takes place at Freeborn Hall, UC Davis.

Enrollment Information

The course fee of $675 includes course materials, three lunches and social on Tuesday evening. Accommodations are *not* included in the course fee. Early enrollment is suggested. **Enroll in section 093VIT200.**

For more information

Questions regarding the short course content should be addressed to your local viticulture farm advisor.

Questions regarding registration details should be directed to UC Davis Extension at (530) 757-8899 or email aginfo@unexmail.ucdavis.edu.

If your plans change

Refunds, less a $30 processing fee, will be granted if requested at least one week before the course begins. At that time, you can also discuss transferring your enrollment to another program or sending a substitute.

Tax deductibility of education expenses

Expenses of education — including registration fees, travel, meals and lodging — may be deductible if they maintain or improve professional skills or meet the express requirement of an individual's employer.

Course cancellations and changes

UC Davis Extension reserves the right to cancel or reschedule courses and to change instructors. If a course is canceled or rescheduled, you may request an official transfer to another course or a refund. Every reasonable effort will be made to notify enrollees of changes or cancellations.

ENROLL
www.extension.ucdavis.edu/wine
ONLINE

Not printed at state expense. UC Davis Extension is a self-supporting, nonprofit organization, funded by course fees, grants and contracts.

ENROLLING IS EASY!

MAIL Complete this form and send it to the Registration Office, UC Davis Extension, University of California, 1333 Research Park Drive, Davis, CA 95618-4852.

PHONE Call toll free (800) 752-0881. From Davis or Woodland, call 757-8777. Please have your Visa, MasterCard, Discover or American Express account number handy.

FAX to (530) 757-8558. If you are enrolling with a company purchase order, please fax a completed enrollment form along with a copy of the purchase order. For security purposes we can no longer accept credit card payments via fax.

ONLINE at www.extension.ucdavis.edu/wine

HERE IS YOUR FOUR-STEP ENROLLMENT FORM.

1. ❑ **YES!** Please enroll me in **Varietal Winegrape Production Short Course** / February 23-25, 2010 / $675 / section 093VIT200.
❑ No, I can't enroll at this time but please add my name to the mailing list for future information about wine courses.

2. CUSTOMER INFORMATION:

Name

Social Security number*

❑ Grower ❑ Other Acreage of grapes

Job title Organization

Address ❑ home ❑ work

City State Zip

Daytime telephone Evening telephone

Email If you do not wish to receive periodic email about UC Davis Extension courses and programs in your area of interest, please check this box ❑.

Please add **info@ucde.ucdavis.edu** to your address book or safe list to ensure that our email messages are delivered properly.

*UC Davis Extension is required by federal law to report your Social Security Number (SSN) and other pertinent information to the Internal Revenue Service pursuant to the reporting requirements imposed by the Taxpayer Relief Act of 1997. UC Davis Extension also will use the SSN you provide to verify your identity. SSN disclosure is mandatory. This notification is provided to you as required by the Federal Privacy Act of 1974.

3. PAYMENT INFORMATION:

❑ Enclosed is a check payable to the UC Regents.

❑ Enclosed is a company purchase order (a complete enrollment form must accompany your purchase order)

Please charge Visa/MasterCard/Discover:

Account number Expires

Name of cardholder 093120

4. IMPORTANT!

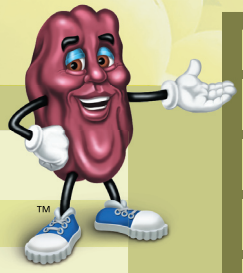
Key code: ___ ___ ___ ___ ___ ___ ___ ___

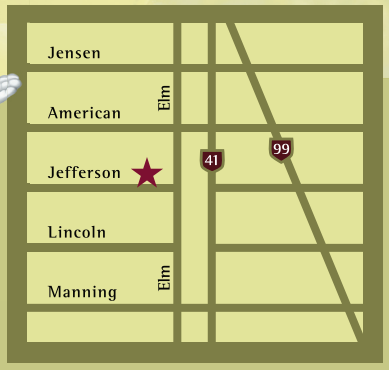
For efficient processing of your enrollment, please fill in this code as it appears on your mailing label, whether or not it is addressed to you. If you enroll by phone, please be prepared to provide this code to your customer service representative.

UC University of California Cooperative Extension
Fresno County

San Joaquin Valley Grape Symposium

WEDNESDAY, JANUARY 6, 2010





Meeting Agenda

7:00am	Registration and Refreshments
7:45	Morning Welcome
8:00	Presentation: Stephen Vasquez 2009 Powdery Mildew Challenges
8:30	Presentation: Kurt Hembree Spray Tips for Aiding Herbicide Performance
9:00	Presentation: David Ramming The USDA/ARS Raisin Grape Breeding Program
9:30	Break and Refreshments
10:00	Presentation: Health and Nutrition Research Update
10:30	Presentation: Marketing Activities Update
11:00	Presentation: Matthew Fidelibus Update on Grape Abscission Agent Research
11:30	Presentation: Mike McKenry Performance of Movento as a Nematicide
12:00pm	Lunch with Guest Speaker Paul Loeffler, KMJ Sports Announcer and Historian
1:30	Prize Drawing (Must be present to win)

Location: C.P.D.E.S. Hall
172 W. Jefferson Avenue
Easton, California

From North of Fresno:
Take Highway 99 South to Highway 41 south. Take Highway 41 south to American Avenue. Turn west on American Avenue towards Elm Avenue. Turn south on Elm Avenue towards Jefferson Avenue. CPDES Hall will be on your right.

From South of Fresno:
Take Highway 99 south to Manning Avenue. Turn west on Manning Avenue to Elm Avenue. Turn north on Elm Avenue towards Jefferson Avenue. Turn west on Jefferson Avenue. CPDES Hall will be on your right.

Continuing education PCA and CCA hours have been requested.

Registration Form San Joaquin Valley Grape Symposium

Pre-register online at http://ucanr.org/2010_grape_symposium to be entered in the Prize drawing.

Company: _____

Phone: _____

Address: _____

City: _____ Zip: _____

Attendee Names:

_____

_____

_____

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559-456-7285

Make Checks Payable to: UC Regents
Late registration for, day of meeting:
$15 per person at the door.

Fees:

Registration and Payment Must be Received by December 31, 2009

Meeting/Proceedings and Lunch: _____ x $10 each = $_____

Check Number _____ Amount Enclosed $_____