

## Winter Irrigation

To date, the San Joaquin Valley has only received 24% of normal (0.85 inches) precipitation since October (see table on page 2). The long-term forecast looks bleak too, with limited precipitation predicted for January, which is typically the wettest month of the season. With limited rainfall expected for the San Joaquin Valley, growers should consider irrigating young vineyards or those planted to sandy soils and/or having a compromised root system.

In past springs, California grape growers observed severe delayed spring growth (DSG), the symptoms of which include irregular and poor bud-break and low shoot vigor. Entire vineyards were affected. Many of the vineyards that displayed erratic growth patterns were Thompson Seedless, but other varieties were also affected. Much of what we know about this phenomenon is from comparing cultural practices (e.g. irrigation), nutrient analysis, and site evaluation (e.g. soils and pests) in areas displaying DSG symptoms with non-symptomatic sites.

### Symptoms

Symptoms of DSG vary in degrees of expression and at times may mimic other biotic (pest or disease) or abiotic (environmental) maladies. It is important to note that some of those maladies may also contribute to DSG depending on severity.

#### In this Issue:

- Winter Irrigation
- San Joaquin Valley Grape Symposium
- Grape Pest Management Publication
- Local Meetings and Events
- University of California Publications

#### Symptoms of Delayed Spring Growth include:

- Poor and uneven bud-break
- Stunted growth
- Smaller flower clusters or complete abortion of clusters
- Failure and ultimately death of individual buds
- Sucker growth at the base or head of the vine

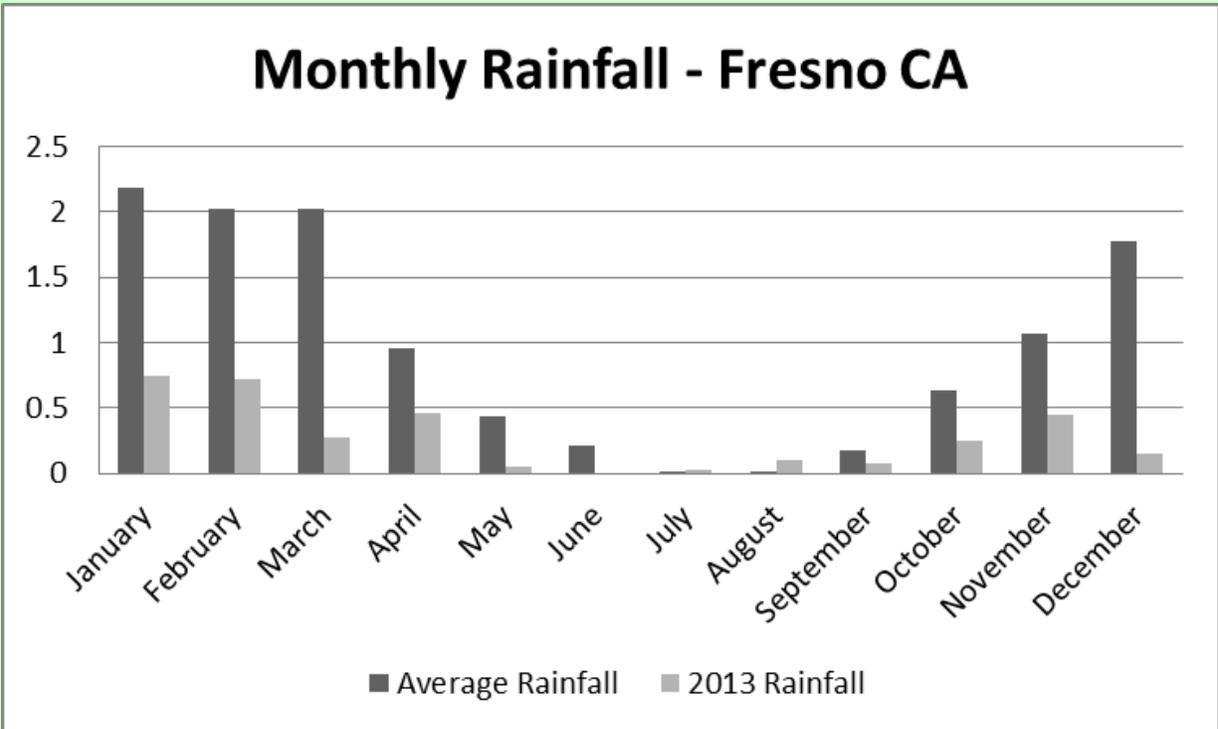
#### Water Stress: A Predisposing Factor of Delayed Spring Growth

Inadequate water after harvest and through the winter is thought to induce DSG. After fruit harvest grapevines continue to assimilate carbohydrates and mineral nutrients which are needed to maintain health during dormancy and new growth the following season.

*Continued on Page 2*

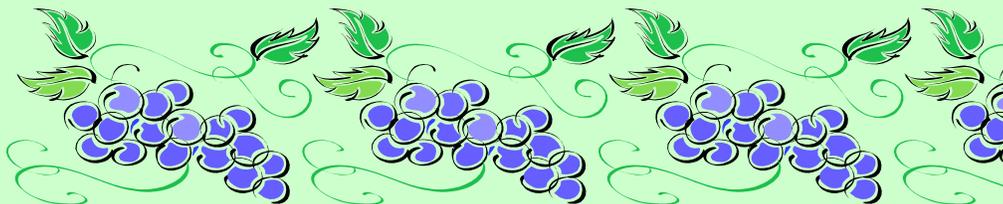
## Winter Irrigation

(Continued from page 1)



Post harvest water stress can hinder those processes. Adequate soil moisture is also needed to rehydrate desiccated vine tissues in late winter, in preparation for bud break.

Normally after harvest a traditional flood-irrigated raisin vineyard has gone two months without water. Wine grape vineyards, depending on variety and harvest date, may also have long periods without being irrigated. Deciding when to irrigate a particular vineyard depends on many factors but soil type and vine vigor/health are probably most important. Sandy soils will be depleted of soil moisture much faster than finer textured soils, and vines may show symptoms of water stress while fruit matures or during the raisin drying process. Vineyards planted to finer textured soils may not show stress and often times do not need to be irrigated until later, when temperatures get cooler (October or November). This will prevent late season growth and encourage cane maturity.



Continued on Page 3

## Winter Irrigation

(Continued from page 2)

### Factors that should be considered when making decisions on late season irrigations:

- Soil type and problems (sandy soils or those with soil pests)
- Trellis type and canopy size
- Rootstock type
- Vineyard age
- Pest pressure
- Time of last irrigation
- Climatic conditions post-harvest
- Climatic conditions during the winter

Poor winter rainfall can enhance DSG, especially when a post-harvest irrigation was not applied. A winter irrigation is strongly suggested when rainfall is less than an inch during the months of November and December. Note that mature vineyards maintained on drip irrigation do not suffer fluctuations between wet and dry and are able to begin storing carbohydrates during harvest, reducing water stress symptom. Young vineyards (1-3 years) should be irrigated when winter rainfall is minimal regardless of soil type.

### Summary

Probably the most important factor in causing DSG is water availability post harvest and during the winter. Without available water during late summer, grapevines are unable to maintain a healthy canopy. This in turn hinders nutrient acquisition and photosynthesis, both needed for producing carbohydrate reserves in permanent wood structures used during dormant respiration and new growth the following season. When deciding on a post harvest irrigation or fertilization, soil type, vine vigor and health, and time of year should be taken into consideration. Assuring that a portion (at least 1/3) of the soil profile is re-wetted by mid December will also help to minimize the effects of cold damage.



## Publications from the University of California

### GRAPE PEST MANAGEMENT—Third Edition

Grape pests and diseases cause significant economic losses to California's wine, raisin and table grape vineyards annually. Grape growers rely on University of California researchers and others for information that allows them to make sound management decisions.

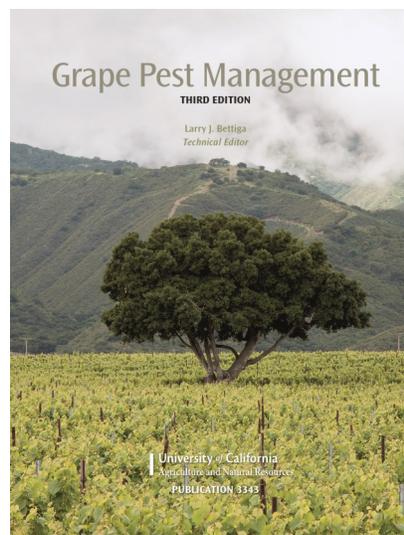
In the much anticipated 3rd edition of Grape Pest Management, more than 70 research scientists, cooperative extension advisors and specialists, growers, and pest control advisers have consolidated the latest scientific studies and research into one handy reference. The result is a comprehensive, easy-to-read pest management tool.

New information includes information on several new invasive species that are now major pests. It also reflects an improved understanding among researchers and growers about the biology of pests. With nine expansive chapters here's more of what you'll find:

- Diagnostic techniques for identifying vineyard problems
- Detailed descriptions of more than a dozen diseases
- Comprehensive, illustrated listings of insect pests
- Regional calendars of events for viticultural management
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- Up-to-date strategies for vegetation management

609 pages

\$100.00 + tax and shipping  
ANR Publication # 3343  
ISBN 978-1-60107-800-1



#### ORDER FORM

Publication	Number	Qty.	Price	Subtotal
Grape Pest Management	3343		\$ 100.00	
Tax = 8.225%				
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## CALENDAR OF EVENTS

### *Local Meetings and Events*

#### ***San Joaquin Valley Grape Symposium***

January 8, 2014  
7:00 a.m. — 12:00p.m.  
C.P.D.E.S. Hall  
172 West Jefferson Avenue  
Easton, CA  
SEE INSERT

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

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

March 8, 2014  
9:00 a.m. — 6:00 p.m.  
1127 North Mondavi  
Robert Mondavi Institute for Wine and Food  
Old Davis Road  
Davis, CA  
Section: 133VIT205

#### ***Current Wine and Winegrape Research***

February 12, 2014  
9:00 a.m.— 6:00 p.m.  
Davis Conference Center, Ballroom A,B, and C  
Old David Rd. Davis, CA  
Section: 133VIT203



## NEW DATE

A new date has been set for the 7th International Table Grape Symposium to be held in Australia.

The Australian organizing committee is planning on holding the meeting **November 11-14, 2014.**

Persons wanting more information regarding the 7th International Table Grape Symposium should contact:

**Jeff Scott, Chair Planning Committee**

Tel. +61 (03) 5021 5718

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Mobile +61 (0)417 122 086

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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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# San Joaquin Valley Grape Symposium

Wednesday January 8, 2014

C.P.D.E.S. Hall

172 W. Jefferson Avenue - Easton, California



- 7:00 am** Registration
- 7:45 am** Morning Welcome
- 8:00 – 8:25 am** **Research Update: Rootstocks for Raisin Production**  
*Sonet VanZyl, California State University, Fresno*
- 8:25 – 8:50 am** **Research Update: Canopy Management in Dry-on-Vine (DOV) Raisin Vineyards**  
*Matthew Fidelibus, UC Davis & UC Kearney Ag Center, Parlier CA*
- 8:50 – 9:30 am** **Dynamics of Nitrogen Reserves in Grapevines and Vineyard Nitrogen and Potassium Requirements**  
*Larry Williams, UC Davis*
- 9:30 - 9:55 am** **Raisin Moth Biology, Damage and Management**  
*Kent Daane, UC Berkeley & UC Kearney Ag Center, Parlier CA*
- 9:55 – 10:15 am** BREAK
- 10:15– 10:45 am** **Research Update: Raisin Grape Breeding Program**  
*Craig Ledbetter, USDA-ARS, Parlier CA*
- 10:45 – 11:15 am** **Economics of Producing Raisins**  
*Annette Levi, California State University, Fresno*
- 11:15–12:00 pm** **Research Update: Grapevine Trunk Diseases and Grower Survey**  
*Kendra Baumgartner*
- 12:00 pm** LUNCH

*Continuing education PCA and CCA hours have been requested.*



Registration Form or Register online with a credit card at <http://ucanr.edu/sjvgrapesymposium>

(\*LATE REGISTRATION at the door — \$20.00)

Company:

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Attendee Names:

Please enclose a check payable to: UC REGENTS

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FEES: Registration and payments must be received by January 3, 2014\*

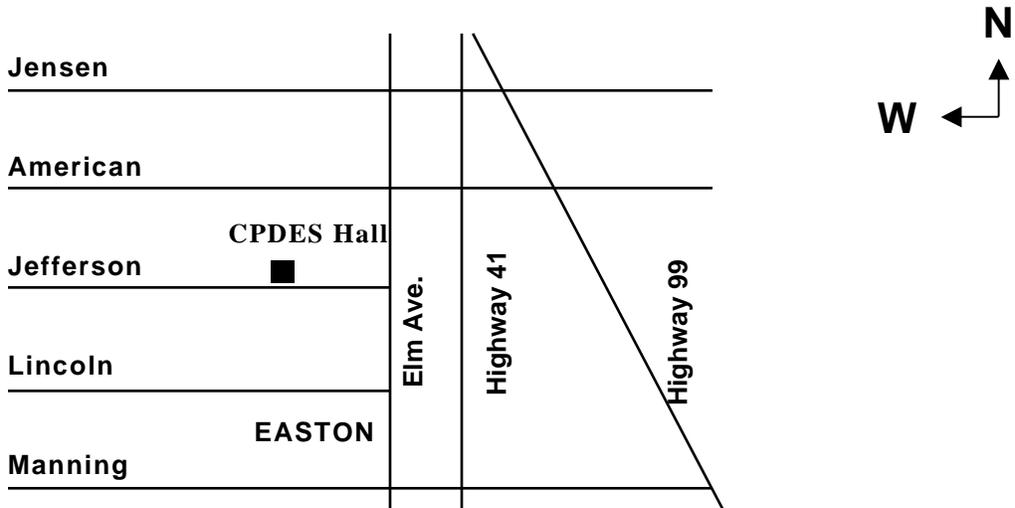
Meeting/Proceedings and Lunch: \_\_\_\_\_ x \$15 each = \$ \_\_\_\_\_

Check Number: \_\_\_\_\_ Amount Enclosed: \$ \_\_\_\_\_

# San Joaquin Valley Grape Symposium Program

Wednesday, January 8, 2014

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. Turn west on Jefferson. C.P.D.E.S. 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. C.P.D.E.S. Hall will be on your right.

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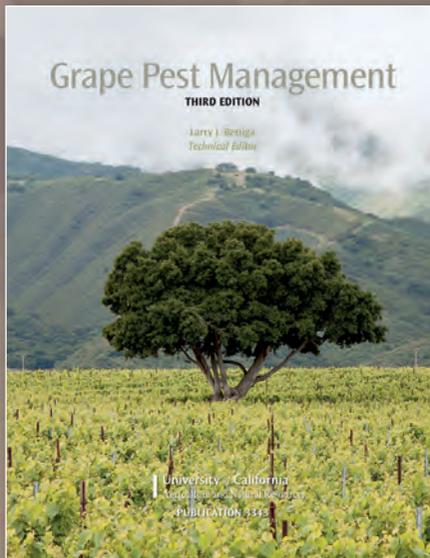
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From the  
University of California

The highly anticipated  
3rd Edition of *Grape Pest  
Management* is now in stock!



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### Pests. Invasives. Vineyard Foes.

We may refer to them differently but the economic impact of pests common to California wine, raisin, and table grape vineyards varies only in scope. In the much-anticipated 3rd Edition of *Grape Pest Management*, more than 70 research scientists, seasoned cooperative extension advisors and specialists, growers, and pest control advisors have consolidated the latest scientific studies and research into one handy reference. The result is a comprehensive, easy-to-read pest management tool that arrives just ahead of the Spring season. What's new? Well, for starters, more pests! The new edition, the first in over a decade, includes several new invasive species that are now major pests. With nine expansive chapters, helpful, colorful photos throughout, here's more of what you'll find:

- Diagnostic techniques for identifying vineyard problems
- Detailed descriptions of more than a dozen diseases, including greatly updated sections on powdery mildew, Pierce's disease and grapevine trunk diseases
- Comprehensive, illustrated listings of insect and mite pests, including the recently emerging glassy-winged sharpshooter and Virginia creeper leaf-hopper
- Regional calendars of events for viticultural management
- Up-to-date strategies for vegetation management

Grape Pest Management, 3rd Edition  
ANR Publication #3343  
ISBN 978-1-60107-800-1  
623 pages • \$100.00

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### The Top 5 Issues in Grape Pest Management Today:

1

Grapevine  
powdery  
mildew



Severe infection showing  
black scarring on the shoots.

2

Mealybugs



Argentine ant tending obscure  
mealybug on a Chardonnay cluster in  
a central coast vineyard.

3

European  
grapevine  
moth



Female European grapevine  
moth (*Lobesia botrana*).

4

Grapevine  
trunk  
diseases



A wedge-shaped canker is the  
typical vascular symptom of  
*Botryosphaeria* canker.

5

Glassy-winged  
sharpshooter



Adult glassy-winged sharpshooter  
(*Homalodisca vitripennis*).

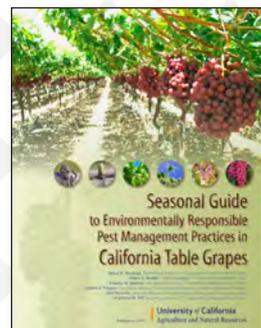
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A Conversation with Larry Bettiga, technical editor of *Grape Pest Management* and a 35-year veteran of grape pest management.

- Q. Can you summarize what's new that readers of earlier editions of *Grape Pest Management* will find in the third edition?
- A. *The new edition includes the results of updated sampling and monitoring techniques, pesticide resistance issues, and management practices. Also, it describes in detail major new grape pests, like the vine mealybug, glassy-winged sharpshooter, Virginia creeper leaf-hopper, light brown apple moth, and European grapevine moth, which are the most common new pests.*
- Q. What has caused the increase of grape pests?
- A. *The global movement of people and products and the potential for the movement of non-native plant and animal species have high-risk consequences. When pest introductions are not detected and contained early, their establishment as pest species becomes more problematic.*
- Q. Can you estimate annual losses related to grape pests in California?
- A. *Although annual losses are difficult to estimate, grape production in California had a farm gate value of \$4.4 billion in 2012. As grape pests affect both the quantity and quality of grapes, our goal is to minimize economic losses through pest management practices. The information in Grape Pest Management can help growers implement best management practices.*

## Save When You Update Your Pest Management Library with These Tools

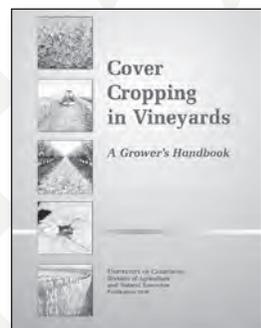
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## About Integrated Pest Management

Integrated Pest Management (IPM) is a combination of methods that work better together than separately and is the most effective, long-term way to manage pests. IPM includes:



- **Biological control**—the use of natural enemies; for example, predators, parasites, pathogens, and competitors
- **Cultural controls**—practices that reduce pest establishment, reproduction, dispersal, and survival, e.g., changing irrigation practices because too much water can increase root disease and weeds
- **Mechanical and physical controls**—controls that kill a pest directly or make the environment unsuitable for it, such as mulches for weed management
- **Chemical control**—the use of pesticides, which in IPM are used only when needed, and in combination with other approaches for more effective, long-term control



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