



# your Lake County HORTICULTURAL NOTES

NOVEMBER 1993

## !! MARK YOUR CALENDARS !!

NOVEMBER 17 & 24

ASCS Ag Conservation Program  
Ag Center, Lakeport  
9:00 a.m. to 12:00 noon

NOVEMBER 25

**HAPPY THANKSGIVING!**

DECEMBER 9

WATER USE MONITORING WORKSHOP  
**EVERYONE COME!** (complimentary  
breakfast)  
Clear Lake Grange #680, Finley  
(agenda and registration form -  
back page)

JANUARY 24-26, 1994

Wine Grape Production Short Course  
UC Davis (page 5)

### PLAN NOW TO PREVENT BUNCH ROT IN 1994

The late season brought both good and poor fortune to the Lake County winegrape crop. Late bloom enabled it to survive early-season rains relatively unscathed compared to other North Coast districts. Indeed, excellent bloom conditions fostered a very large crop. However, season-long cool weather and several weeks of intermittent rain and clouds the first two weeks of October brought on the undesirable combination of late maturity and rot in white varieties. Ironically, both conditions were exacerbated by the large crop!

As of mid-October, there was a substantial amount of Chardonnay and Sauvignon blanc still on the vine. In many cases, sugars were marginal while rot developed. Some growers and wineries, given the choice of suboptimal sugar or threat of rot, chose the former and beat the worst rains. Others waited, with no guarantee sugars would climb appreciably at such a late date.



Predictably, rot problems were most evident on the heavy soils of Big Valley but also in vigorous Upper Lake vineyards. Hillside and bench vineyards on the red soils, as well as in the Middletown area, matured earlier and generally looked fine. Also, red varieties were minimally affected by rot.

As stated above, crop load played a significant role this year. The severe potassium deficiency symptoms in some vineyards attest to this (article page 3). In terms of rot, BIG CROP + LATE SEASON = LATE MATURITY & EXPOSURE TO INCLEMENT FALL WEATHER. It is difficult to say whether early-season conditions played a major role. There were some preclose rachis infections this year, mainly in white varieties. These may have heightened late season infection severity.

Of course, most growers realize that it is too late to control Botrytis in 1993. But, it is not too early to begin thinking about 1994. Here is how you can help minimize problems next year:

- 1) REMOVE AND DESTROY INFECTED CLUSTERS to eliminate overwintering sclerotia, which produce next season's spores.
- 2) UTILIZE APPROPRIATE CANOPY MANAGEMENT PRACTICES to expose bunches to light and air so that after a rain they will dry out quickly. Perhaps the most effective (though still remedial) cultural practice is the removal of 4-5 basal leaves around each bunch at set (not too late or sunburn may occur). Other practices include shoot thinning and proper fertilizer/water management to prevent excessive vegetative vigor and tight bunches. Cluster thinning may also be warranted in heavy cropping years, especially to hasten maturity and thus beat the rains.
- 3) PERHAPS A NEW TRELLIS TYPE IS IN ORDER to promote an open, airy canopy. Good sun exposure will likely improve maturity and quality as well as reduce disease severity, without sacrificing yield. Trellis changeover will likely occur as Lake County switches varieties and rootstocks.
- 4) IF AVAILABLE, CHOOSE A LOOSER CLUSTER CLONE especially for such varieties as Chardonnay. Talk with your winery about acceptable possibilities.
- 5) BE PREPARED TO USE A JUDICIOUS FUNGICIDE PROGRAM but remember, chemical control is a poor substitute for proper canopy and fruit management. Contact us for the latest UC bunch rot recommendations.

Botrytis (and other types of) bunch rot is to be expected in an area beset by late spring and early fall rains. Growers should be aware of, and practice, the most effective proven means of preventing and reducing infection.

## TRAINING AND PRUNING APPLE AND PEAR TREES

This is the title of a recent book published by the American Society of Horticultural Science (ASHS). It was written by three internationally recognized experts on pome fruits, including retired Oregon State University Extension Specialist Robert Stebbins (remember him from the 1990 Pear Short Course?).

The book is 170 pages long and covers eight main topics: vegetative-fruiting relationships, light management, physiological effects of pruning, types of pruning cuts, pruning to promote desired growth and crop, summer pruning, training young trees, training and pruning different in management systems (central leader, multiple leader, etc.) and renovating neglected trees.

There are many photos, excellent drawings and lots of charts. Each chapter ends with references for further study. Best of all, it is written for growers and people who prune - very practical, direct and unintimidating.

In addition to a copy for yourself, this book would make an excellent holiday gift for your pruning foreman! Contact me if you would like to order. If there is enough interest, I will place a group order with ASHS at the \$27.00 rate. This is a great basic reference.

## POTASSIUM DEFICIENCY IN WINEGRAPES

Several Big Valley Chardonnay and, to a lesser extent, Cabernet Sauvignon vineyards exhibited unusually severe potassium (K) deficiency symptoms this season. Affected vineyards were mainly, though not exclusively, south of Hwy. 29. The problem was noticeable in July and worsened considerably by harvest (late October). Delayed maturity due to the heavy crop and cool weather probably exacerbated the situation by increasing late season vine stress.

A diagnostic tour of Big Valley vineyards revealed no comparable problems in other varieties. A tentative conclusion is that Chardonnay appears to be particularly sensitive to K, an observation confirmed by other North Coast farm advisors. The problem in affected Cabernet vineyards seems more due to heavy crop load and long season than to variety.

For those unfamiliar, symptoms include faded to necrotic leaf margins, spreading inward into interveinal tissue, and finally complete necrosis (tissue death). "Black" or "chocolate" leaf is also associated with K deficient and stressed vines, especially red varieties. Clusters are small, unevenly colored and partially raisined. Both clusters and leaves are small and vine growth and yield are depressed.

Affected Lake County vines were mainly:

- on heavy, "cracking" clay soils
- fairly young
- VERY HEAVILY CROPPED relative to vine size and vigor

Given what is known about K nutrition, it is unsurprising that young, heavily cropped, stressed vines on heavy clay soils showed symptoms. K demand by grapes is high, increasing dramatically between veraison and harvest. In an experiment at UC Davis' Oakville Field Station, Dr. Larry Williams of the Dept. of Viticulture and Enology found that the per vine K level of Cabernet Sauvignon clusters increased 6.9 grams each from August 1 to veraison. Based on 8' x 12' spacing, this equals 12 lbs. K per acre removed by the crop. 75% of this amount was redirected from leaves, stems and canes. Depending on variety and planting density, K removal from soil may be one-third or more higher.

Heavy K demand by fruit is confounded by poor K availability in clay soils. K ions are closely held on clay particles in high cation exchange capacity soils. This is compounded by high levels of magnesium (Mg) which is known to be antagonistic to K uptake (though why is unclear). Also, clay soils are poorly aerated, causing poor root growth and hence more apt to stress vines, which in turn impedes K uptake.

Due to the above factors, K nutrition management is multifold:

- 1) UC research has shown that deficiency must be corrected by applying large amounts of high K fertilizer to overcome soil "tie up". For severe symptoms in North Coast vineyards, as much as 5 lbs. per vine of potassium sulfate ( $K_2SO_4$ ) may be needed to see response in 1 or 2 years. This should be applied in a concentrated area beneath each vine in the fall in order to be carried in by winter rains. Sonoma County Farm Advisor Rhonda Smith has seen good results with drip irrigation. In this case, 3 lbs. per vine applied in the fall is thought to be adequate if followed by at least 3 in-season fertigations of a high content soluble K such as 0-0-30  $KCO_3$  (not KCl).
- 2) In the longer term, it may be desirable to improve available K uptake, aeration and rooting conditions. Although there is little experimental data in North Coast vineyards, this is often done by applying heavy quantities of gypsum (calcium sulfate) to substitute calcium (Ca) for Mg ions on exchange sites. The theory is that since Ca and K have a favorable exchange relationship, unlike Mg and K, more K will be present in the soil solution and hence available for uptake. Also, Ca is utilized to improve soil structure and permeability. Unlike lime, gypsum will not increase soil pH and will actually contribute acidifying sulfur. To offset

the Mg in our soils, a gypsum program will probably require heavy amounts over multiple years to achieve the desired results. TO SEE TIMELY K DEFICIENCY CORRECTION IN SEVERELY AFFECTED VINEYARDS, IT IS RECOMMENDED THAT K FERTILIZER BE APPLIED. K fertilization will more likely remedy a deficiency without gypsum than gypsum will without applied K. Growers may want to consider mixing gypsum with K fertilizer to maximize the effect of both in a localized area of the root zone.

- 3) Water management must be optimal in heavy clay soils. Too dry or too wet soil will hinder feeder root growth, cause vine stress and upset K balance.
- 4) Finally, and very importantly, CROP LOAD must be balanced with vine vigor, age and inherent site conditions. For those with Chardonnay, this seems especially critical.

Contact me for more detailed information on K correction materials and application protocols.

**WINE GRAPE PRODUCTION SHORT COURSE**

January 24-26, 1994      UC Davis      \$375.00  
includes course materials, one dinner and all lunches

This intensive three-day short course is designed as an in-depth and comprehensive study of all phases of wine grape 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. Lectures include aspects of vine physiology, vineyard establishment, vineyard management and pest management.

Early enrollment is suggested because the short course is limited to 180 participants on a first-come, first-enrolled basis. Programs and pertinent information will be sent prior to the first class meeting.

Contact us for a registration form or with questions regarding the short course content. Or contact Jim Lapsley, University of California, Davis, (916) 752-4077 or (916) 757-8899. Questions regarding registration details should be directed to Sharon Munowitch, University Extension, University of California, Davis, CA 95616-8727. Phone: (916) 757-8899.

### **UPCOMING UNIVERSITY EXTENSION (UNEX) CLASSES**

contact 1-800-752-0881 or our office for details

Pesticide Regulations and Safety

Friday, December 3 UC Davis \$155.00

Future of Pesticides Regulatory and Risk Issues

Tuesday, December 7 UC Davis \$75.00

1st Annual UC Davis Pest Management Conference

Thursday-Friday, December 16-17 UC Davis \$95.00

### **MORE CONFERENCES** (contact us)

Financing Agriculture in California's New Risk Environment

Wednesday, December 1 Holiday Inn, Sacramento

sponsored by UC Ag Issues Center and Giannini Fdn. of  
Agricultural Economics

\$95.00 by November 22, \$120.00 after November 22

Call 1-916-752-2320

Community Supported Agriculture Conference

Monday, December 6 UC Davis

sponsored by UC Small Farm Center, UC Sustainable Ag

Research and Education Program and several private groups

\$35.00 in advance or \$45.00 at the door

call 1-916-756-8518

### **AUDIO-VISUAL AIDS FOR YOUR SAFETY TRAINING PROGRAM**

Contact us for a list of VHS videos that can be borrowed from the Farm Safety program of the Dept. of Biological and Agricultural Engineering at UC Davis. Topics include (\* indicates Spanish translation):

- \* ag tractor and machinery safety
- \* hazard communications (right-to-know)
- \* pesticide safety training
- \* power and hand tool safety
- \* back safety
- precautions for operating vehicles on country roads
- farm safety for kids
- chain saw safety
- \* oxyacetylene and arc-welding safety
- the John Deere Safety series (various topics)
- \* vineyard safety series (various topics)
- \* electrical safety
- \* orchard air-blast sprayers
- \* orchard tripod ladder safety

## SOIL MOISTURE MONITORING WORKSHOP

**WHEN:** Thursday, December 9, 1992  
8:00 - 12:00 A.M.  
1:30 - 3:00 P.M. (field demonstration)

**WHERE:** Clear Lake Grange  
1510 Big Valley Road, Finley (wheelchair accessible)

**SPONSORS:** UC Cooperative Extension  
USDA Agricultural Stabilization and Conservation  
Service (ASCS), Lake County Committee  
USDA Soil Conservation Service  
Clear Lake Basin Resource Management Committee -  
Land and Water Resource Subcommittee

### **AGENDA**

8:00 Registration and coffee

8:30 **BREAKFAST** - sponsored by Growers Exchange of  
Geyserville and Rainbow Ag Services of Ukiah and  
Lakeport

9:15 Introduction and Purpose of Workshop  
Rachel Elkins, UCCE Lake County  
Katherine Delbar, ASCS, Ukiah

9:30 Status of Lake County Water Supply  
Tom Smythe, Lake County Flood Control District

9:45 Irrigating Lake County Orchards and Vineyards -  
How are we doing?  
Rachel Elkins

10:00 ASCS Ag Conservation Practice WC-4: Irrigation Water  
Conservation - What, Why and How  
Katherine Delbar and Lake County ASCS Committee

10:30 Comparison of Soil Moisture Monitoring Methods  
Dr. Larry Schwankl, Extension Irrigation  
Specialist, UC Davis

11:30 1994 ACP Program Plans - an open forum  
ASCS, UCCE, SCS

12:00 LUNCH (on your own)

1:30 FIELD DEMONSTRATION/DISCUSSION OF VARIOUS MONITORING METHODS  
(wheelchair accessible)

3:00 ADJOURN

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**REGISTRATION - Please call one of these people by December 3:**

Rachel Elkins, UCCE, Lakeport	263-2281
Katie Delbar, ASCS, Ukiah	468-9225

Tell us how many people will be eating breakfast

**NEWSLETTERS GALORE!**

Desktop publishing has enabled many organizations to keep a target audience apprised of activities and news. Two of potential interest to Lake County agriculture are (contact me for a sample copy):

**CDFA Agricultural Update**

Contact: CDFA  
Editor, Agricultural Update  
1220 N Street, Suite 100  
Sacramento, CA 95814  
(916) 654-0466  
bi-monthly, free

**The Wine Press**

Contact: Wine Library Associates of Sonoma County  
Post Office Box 15225  
Santa Rosa, CA 95402  
free to members (\$15.00 to join the group)

HAPPY THANKSGIVING!!



Rachel Elkins  
Farm Advisor