

**TREE AND VINE NOTES**  
**UNIVERSITY OF CALIFORNIA**  
**COOPERATIVE EXTENSION MERCED COUNTY**

HAPPY NEW YEAR TO ALL OF YOU AND YOUR FAMILIES

MAY THE NEW YEAR BE  
PROSPEROUS FOR EVERYONE

FROM THE STAFF AT  
UC COOPERATIVE EXTENSION MERCED COUNTY

***UPCOMING EVENTS***

TRI COUNTY APPLE MEETING  
JANUARY 15, 1999  
MERCED CO AG CENTER

1999 ANNUAL STATEWIDE PISTACHIO DAY  
VISALIA CONVENTION CENTER  
JANUARY 19, 1999

CALIFORNIA CHERRY RESEARCH REVIEW  
JANUARY 19, 1999  
STOCKTON

NORTH SAN JOAQUIN VALLEY GRAPE SEMINAR  
JANUARY 27, 1999  
STANISLAUS CO AG CENTER

STONE FRUIT POSTHARVEST DECAY CONTROL WORKSHOP  
FEBRUARY 2, 1999  
KEARNEY AG CENTER

TRI-COUNTY ALMOND GROWERS MEETING  
FEBRUARY 4, 1999  
STANISLAUS COUNTY COOPERATIVE EXTENSION

## NORTON'S NOTES

“Properly dispose of rinse water and excess chemicals”

Here are some common sense practices that you can use to help save money and protect water quality:

- Measure and mix ag chemicals precisely so that you avoid the problem of leftover chemicals.
- After emptying containers, pour rinse water into the spray tank during the mixing/loading process.
- Excess mixed chemicals left in the spray tank or equipment rinse water should be disposed of by spraying on one of your fields, following label directions. Never drain leftover chemicals or rinse water from equipment on the ground or into ditches, streams, ponds, lakes or other water sources.

### Effect of Water Quality on Herbicide Performance

by Larry Mitich

Minerals, clay, and organic matter occurring in water used for applying herbicides (spray carrier water) can reduce their effectiveness. For example, clay inactivates Gramoxone Extra and Roundup, while organic matter inactivates many herbicides, and minerals of various types inactivate 2,4-D amine, MCPA amine, Poast, Roundup, and Banvel.

In some parts of California, water is high in sodium bicarbonate, which reduces the effectiveness of 2,4-D, and MCPA amines (not esters), Poast, Roundup and Banvel. Antagonism of the herbicides mentioned above is related to the salt concentration. At low salt levels, loss in weed control may not be noticeable under normal environmental conditions. However, the antagonism from low salt levels will cause inadequate control when weed control is marginal because of drought or for marginally tolerant weeds.

In nearly all situations, high salt levels diminishes weed control. Calcium and, to a lesser degree, magnesium are antagonistic to 2,4-D and MCPA amines, Banvel, and Roundup; indeed, calcium antagonism may become noticeable at 150 ppm. Sulfate ions in the solution will reduce calcium and magnesium antagonism, but to overcome antagonism, the sulfate concentration must be three times the calcium concentration. So, for practical purposes, naturally occurring sulfate in water is of little consequence.

An analysis of water used for spraying provides a guide for determining possible effects on herbicide efficacy. Water with more than 150 ppm calcium or 300 ppm sodium or magnesium may inhibit herbicide phytotoxicity. Iron also is antagonistic to many herbicides, but usually it is not abundant in California water.

Often water contains a combination of sodium, calcium, and magnesium and these cations generally are additive in the antagonism of herbicides. Many adjuvants are marketed to modify the pH of spray water, but low pH does not appear essential to the action of most herbicides. Adding granular or liquid ammonium sulfate or 28% liquid nitrogen fertilizer to the spray solution helps overcome antagonistic salts.

### COLD WEATHER (Norton & Hendricks)

The cold weather we have had the last two weeks had many wondering about its effect on our tree and vine crops.

Most of our tree and vine crops are temperate zone plants and they generally benefit from the type of weather we have had for a variety of reasons. The main benefit is the chill hours below 45°F that most stone fruit need to be fruitful (see following article). The other benefit, (this is not scientifically proven) is that the survival rate of some insect pests is reduced and first generation pressure may be lowered.

We anticipate no adverse effects at all on almonds, apricots, peaches, prunes or other Prunus species. Apples and pears should be unaffected as well. Vigorous shoots on young walnuts could possibly be frozen back, but a late December freeze is less likely to cause problems than is a November freeze.

If canes on grapes are not fully mature or if they grew vigorously into the fall, they may not be hardened off and can die back. After the freeze of 1990, many Thompson vineyards that were weak, had a poor selection of canes at pruning time. This is another reason to delay pruning grapes as late as possible. The quality of canes and spurs is often not evident in December or even early January.

Subtropical plants such as citrus are less tolerant and can sustain damage to both fruit and foliage. Oranges and lemons are most sensitive with mandarins and kumquats being the most hardy.

#### **CHILL HOURS (Norton & Hendricks)**

We are accumulating chill hours at a brisk pace this winter and that is good. Hopefully we will avoid bud drop and other problems attributed to low-chill conditions. Temperate zone plants require a number of hours at or below 45°F. We count hours from November 1 to February 15. Below are the approximate hours needed by each crop. These numbers vary depending upon the source used.

Almonds:	200-500
Apples:	1000-1100
Apricots:	700-1000
Pistachio:	600-800
Cling peaches:	600-900
Shipping peaches:	650-850
French prune:	850-1000
Walnuts	700(Payne), 1500(Franquette)

Here is what we have accumulated thus far:

<u>Location</u>	<u>Date</u>	<u>Hours</u>	<u>Source</u>
Livingston	04 Jan	716	Stan Fidel
Kesterson	04 Jan	789	Website
Los Banos	04 Jan	723	Website

#### **WEBSITE INFORMATION:**

You are able to access the newsletter on line at:

<http://fruitsandnuts.ucdavis.edu>. This website also offers other information such as; new research, crop information, weather and what's new in the the Department of Pomology at Davis. Also you will be able to get winter chilling hours from the Kesterson and Los Banos weather sites.

#### **OFM TRAPS (Norton)**

Early February is the time to put out the first oriental fruit moth (OFM) traps in peaches. These early traps should be placed in any known hot spots or blocks with historically high numbers. The rest of the traps should be up by March 1<sup>st</sup>. Mating disruption dispensers for OFM should be placed in the orchard at the beginning of the first flight. Do not wait until later.

#### **APHIDS IN PRUNES (Norton)**

Many growers had to treat aphids last spring or summer. Most of what I saw were the mealy plum aphid. A delayed-dormant dormant spray of and oil plus an organo-phosphate will almost always provide good control. If oil alone is used, you need to wait until the mealy plum aphid begin to hatch which is approximately at bud swell through 5% bloom.

Dormant sprays that contain both oil and an organo-phosphate can often be applied to every other row and still enjoy good control. With oil alone, I would have to be convince that I was getting excellent coverage with the whole tree getting soaked before I experimented with every other row applications.

If you would like more information about aphids in prunes, call me and I can send you some. We will be intensively monitoring two prune blocks in east Merced County this year as part of our statewide Environmentally Sound Prune Systems project. I will be giving frequent updates at our IPM breakfasts beginning in March.

## IPM UPDATE BREAKFASTS

As a reminder, the IPM Update breakfast meetings will begin the first week of March and run through

July. Keep watching the newsletter for exact dates.

### CHECK IT OUT! (Hendricks)

The new article titled “**Native gray ant has beneficial role in peach orchards**”, by Kent Daane and Jeff Dlott has just been published in California Agriculture, Nov-Dec 1998. This article describes the native gray ant (also known as gray field ant or crazy ant) and defines its benefits as a predator of peach twig borer in orchards. We have known for some time that the native gray ant is a predator of PTB, and this research report quantifies its performance in peach orchards. Let us know if you need a copy of this article.

### **A Comparison of Dormant Sprays in Almonds-Hendricks**

Dormant sprays of oil plus insecticide have long been a standard annual application to almonds for control of peach twig borer (PTB), San Jose scale (SJS) and eggs of European red mite and brown almond mite. Organophosphate insecticides (OP) such as diazinon, Supracide®, and Lorsban® are being found in local rivers, and regulatory agencies are concerned about our dormant sprays. I have conducted several test plots in the past few years to evaluate alternatives to the OP insecticides. This experiment was conducted to test the control of PTB and SJS with several dormant sprays and to monitor the response of the scale parasitoid, *Encarsia perniciosi*.

The following applications were made to mature almonds in late January 1998 with an air-carrier sprayer at 100 gpa. No other insecticides EXCEPT Omite® were applied during 1998.

- 1) diazinon 4EC @ 2 qt/ac + supreme oil @ 5 gpa + 8 # Kocide 101
- 2) Success®\* 2SC @ 6 oz/ac + supreme oil @ 5 gpa + 8 # Kocide 101
- 3) Asana® XL @ 10 oz/ac + supreme oil @ 5 gpa + 8 # Kocide 101

4) Untreated check

\* Success® is spinosad derived from the bacterium *Saccharopolyspora spinosa*

All treatments reduced PTB catches in pheromone traps by nearly 2/3 in the first flight, but did not affect the second flight catches. PTB damage in the harvest samples from windrowed nuts was 0.9% in the untreated check, 0.6% for diazinon, 0.5% for Success®, and 0.3% for Asana®. See the chart entitled “PTB-DAMAGED NUTS AT HARVEST”. PTB damage in the harvest samples was reduced significantly by Success® and Asana®. Diazinon was not statistically better than check.

All insecticide treatments reduced SJS male counts in pheromone traps by 80% or more in the 1<sup>st</sup> flight in late March, and had no apparent effect on the very small August flight. However, San Jose scale is not a problem in this orchard even in the unsprayed check because *Encarsia* seems to be controlling the San Jose scale in the unsprayed Check.

Trap counts of the SJS parasitoid *Encarsia perniciosi* were very sharply reduced by the Asana® spray throughout the trapping period from March to September. This indicates a possible problem with disruption of biological control of SJS in an orchard in which SJS has become a major pest. Success® and diazinon showed moderate reductions of *Encarsia perniciosi* as compared to the catches in the unsprayed check. Growers and PCAs should carefully consider this possible problem when choosing a pesticide for dormant application. Success® and diazinon showed almost identical, moderate reductions of *Encarsia perniciosi* as compared to the catches in the unsprayed Check. Navel orangeworm is only a minor pest in this orchard at this time and harvest samples showed no significant differences between treatments. Dormant sprays did not seem to be a factor with the web spinning mite populations in 1998. Two-spotted mite populations became high in all treatments including the unsprayed check and required treatment.

Special thanks to David Arakelian for allowing us to use his orchard for the test plot and to Dow AgroSciences and the Almond Board of California for their support.

## **MARK YOUR CALENDARS**

### **TRI-COUNTY APPLE MEETING**

**Friday, 15 January 1998**

Merced County Agricultural Center

8:30 Registration and Coffee

9:00 PROGRAM

Growth regulator research – Kathy Kelley and Maxwell Norton

Predicting the occurrence of fire blight – Brent Holtz

Highlights of the 8th international conference on fire blight – Brent Holtz

Codling moth research update - Walt Bentley

### **NORTH SAN JOAQUIN VALLEY GRAPE SEMINAR**

**Wednesday, 27 January 1999**

Stanislaus County Agriculture Center, Corner of Service and Crows Landing Roads, Modesto (going north on 99, take Mitchell Road exit, turn left and go west on Service Road. The Ag center is on the north-east corner)

8:15 Registration and coffee

8:30 PROGRAM

Vineyard cover crops – Mike Costello

Training winegrapes – Paul Verdegaal

Trellising winegrapes – Pete Christensen

Update on measles and young vine decline – Doug Gubler

Pruning phomopsis & eutypa infected vines - Maxwell Norton

### **SAN JOAQUIN VALLEY VITICULTURE TECHNICAL GROUP**

**Wednesday, January 13, 1999 at 10:00 am**

**DiCicco's Restaurant, Madera**

Topic: "Mechanized Production Systems for  
Winegrapes in the SJV"

Dr. Keith Striegler (main speaker)

Panel Discussion

Keith Striegler

Gary Wilson - custom harvester perspective

Phil Scott - innovations in equipment

Blake Cuadros – a winery perspective

Ron Metzler - a grower perspective

**For reservations call: Rob Roy, Fresno 559-442-4912 or 800/242-4494**

**TRI-COUNTY ALMOND GROWERS MEETING  
THURSDAY, FEBRUARY 4, 1999  
HARVEST HALL AT STANISLAUS UCCE OFFICE  
CORNER OF CROWS LANDING AND SERVICE ROAD**

8:00 am COFFEE and REGISTRATION

8:30 REPORT OF LOCAL RESEARCH - 1998  
Roger Duncan, Farm Advisor, Stanislaus County

9:00 DELTA COLLEGE VARIETY TRIAL REVIEW  
Paul Verdegaaal Farm Advisor, San Joaquin County

9:30 ANT CONTROL IN ALMONDS  
Walt Bentley, Area Entomologist, Kearney Ag Center

10:00-10:20 BREAK

10:20 REPORT OF LOCAL RESEARCH - 1998  
Lonnie Hendricks, Farm Advisor, Merced County

10:50 WATER STRESS VS HULL ROT AND NUT REMOVAL  
Wilbur Reil, Farm Advisor, Yolo County

12:20 ANTHRACNOSE - IDENTIFICATION AND CONTROL FOR 1999  
Jim Adaskaveg, Plant Pathologist, UC Riverside

**Continuing Education Credit pending.**

**California Cherry Research Review  
Tuesday, January 19, 1999  
Stockton Inn, Highway 99 at Waterloo Road  
8:00 to 12:00**

**Sponsored by University of California and California Cherry Advisory Board**

**TOPICS**

Sweet cherry research in the Pacific Northwest  
Control of dormancy and bud break in sweet cherry  
Evaluation of mahaleb rootstock clones  
Evaluation of chemicals for reducing cherry cracking  
Sweet cherry nutrition survey and effects on fruit quality  
Improved mahaleb seedling rootstocks  
Cherry stem pitting: Soil-baiting and transmission experiments  
Update on the cherry buckskin epidemic in El Dorado County  
Changes in Bing cherry firmness after harvest  
Effect of orchard treatments and harvest maturity on quality of Bing cherries  
Managing pre- and post-harvest decay of sweet cherries  
Mechanism(s) of pitting and bruising damage in cherries

**1999 Annual Statewide Pistachio Day  
Visalia Convention Center  
303 E. Acequia, Visalia  
January 19, 1999  
8:00 am to 3:00 pm**

**Please contact California Pistachio Commission  
Telephone: 559/221-8294**

**REGISTRATION MUST BE RECEIVED BY  
FRIDAY, JANUARY 8, 1999**

**WE HAVE REGISTRATION FORMS IN OUR OFFICE**

**STONE FRUIT POSTHARVEST DECAY CONTROL WORKSHOP  
Tuesday, February 2, 1999 (Groundhog Day)  
Kearney Ag Center  
9240 S. Riverbend Avenue, Parlier, CA  
7:45 am to 4:00 pm**

This program will cover useful information to reduce arrival condition problems for stone fruit and cherry packers and shippers. Cold storage owners; sales people; packingline; hydrocooler, cold storage, truck, and container loading supervisors and operators are encouraged to attend. Demonstrations on packingline wax application; packingline bruising reduction; truck and marine container loading; chlorine, oxygen reduction potential (ORP), and temperature measurements will be done. A detailed decay identification laboratory will be conducted.

**Lunch is provided by CTFA. Reservations are required!! Please call: 559-646-6500  
Registrations must be received no later than January 26, 1999  
Walk-ins will not get lunch!!**

**Continuing Education Credit pending.**

Cooperative Extension  
U.S. Dept. of Agriculture  
University of California  
Oakland, CA 94512-3560  
Official Business

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**Merced County Cooperative Extension**  
**2145 Wardrobe Avenue**  
**Merced, CA 95340**  
**209-385-7403**  
**Fax: 209-722-8856**  
**e-mail: cemerced@ucdavis.edu**

**Lonnie Hendricks**  
**Farm Advisor**  
**e-mail address:**  
**lchendricks@ucdavis.edu**

**Maxwell Norton**  
**Farm Advisor**  
**e-mail address:**  
**mnorton@ucdavis.edu**

#### **TREE AND VINE NOTES**

For special assistance regarding our programs, please contact our office 72 hours prior of request.

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