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TREE AND VINE NOTES

UNIVERSITY OF CALIFORNIA

COOPERATIVE EXTENSION MERCED COUNTY

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JANUARY 19, 1999

HENDRICK'S NOTES

WINTER SANITATION IS ESSENTIAL

SANITATION should be your **NUMBER 1** priority in almonds this winter. And convince all of your neighbors to sanitize as well! Make plans to shake and pole trees as needed before bud swell. This year we have extra almonds left in the trees from hull rot, gummy nuts, diseases, late harvest, and just poor removal. Each nut can be a home for a number of NOWs. Even less susceptible varieties like Carmel can provide a food link for NOW.

Good sanitation will starve the *Goniozus* wasps as well, since you eliminate their food supply. *Goniozus* doesn't survive the winter well anyway. If you have an established bio-control program, consider collecting some mummies after shaking and save the nuts as *Goniozus* habitat. Cage these mummies in screened boxes or screen pouches and store them in the barn until spring to protect them from the winter rains. Use metal screen; NOW worms can chew right through plastic! Put them out in the spring so the *Goniozus* can escape through the screen to new sites while the NOWs are left trapped in the cages. Fresh releases of *Goniozus* should be made in spring and summer to coincide with the NOW worm activity.

BENEFICIAL INSECT TRAVELS

There is a good article in the Sept-October 1998 issue of California Agriculture, which documents and measures the movement of beneficial insects from insectary plants to crop plants. Farm Advisor Rachel Long and her co-workers chemically tagged several beneficials and counted the numbers of insects which moved to crops and measured the distances of travel. One subject orchard is in Merced County. This work helps to confirm the value of insectary plants and blooming cover crops in and around orchards.

NORTON'S NOTES

PREDICTING APHID PROBLEMS IN PRUNES

As part of our Environmentally Sound Prune Systems project, Cooperative Extension researchers have developed an experimental sampling program for predicting problems the next spring from aphids. Hopefully this technique will provide information to growers to help determine if their orchard runs a high risk of severe aphid infestation if a preventative (dormant) treatment is not applied. THIS PROTOCOL IS EXPERIMENTAL AND IS BASED ON LIMITED TESTING. I AM INTERESTED IN YOUR EXPRIENCES WITH THIS TECHNIQUE. I have a data sheet you can use in trying this survey.

Fall Monitoring Timing: Monitor in late October or early November preferably when trees begin to defoliate but still have enough leaves to sample 100 leaves per tree. For future reference, identify the trees that are monitored.

Fall Monitoring Method: Examine up to 100 leaves per tree from 20 trees per orchard. Monitor trees that are known aphid hotspots or sections of the orchard which have windbreaks and areas with natural vegetation adjacent. Examine each leaf for the presence of aphids until a prune aphid is found or until 100 leaves per tree have been examined. If possible, distinguish between winged forms of MPA and LCPA. Even if the full 100 leaves have not been examined, if one leaf per tree has any MPA or LCPA present, record the tree as having "Prune Aphids Present" and move on to the next tree.

Spring Monitoring Timing: To continue gathering data to further validate this monitoring technique, examine the same trees the following spring when aphids are generally present, usually in April-May.

Spring Monitoring Method: Monitor the same trees that were examined in the fall, recording the presence or absence of MPA and LCPA for each tree. It is not necessary to look at a specific number of leaves per tree for the spring monitoring. However, each tree should be examined thoroughly. Look for telltale signs of aphid presence then examine branches and leaves more carefully (look for "honey dew" on leaves, severely curled leaves, or the presence of bees or ants).

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NORTON'S NOTES CONTINUED

Treatment Threshold: There is no set treatment threshold. There is a positive correlation, with 80 % reliability, between the percentage of trees with aphids present in the fall and the percentage of trees that have aphids in the spring. For example: If no aphids are found in the fall, there is an 80 % likelihood that no aphids will be present in the spring. Or if 20 % of the trees have aphids in the fall, there is an 80 % likelihood that there will be aphid infestation on approximately 20 % of the trees the following spring etc. This information can help growers decide if their orchard would benefit from a full coverage dormant treatment, a dormant application only to potential hotspots, or if the potential for infestation is not high enough to justify any dormant treatment. If a dormant treatment is not applied, it can also alert the grower to the likelihood of aphids in the spring and the need for springtime aphid monitoring and possible control.

BROWN ROT IN PRUNES

If you had a block that did not get harvested, you should shake off all the crop now. Brown rot fungus overwinters on fruit mummies and will be a big source of inoculum for next year. Fruit should be shaken off before they dry up into mummies.

DORMANT POWDERY MILDEW CONTROL IN GRAPES

Many growers had significant damage from powdery mildew this year. If that was the case in one of your vineyards, you should consider applying a dormant powdery mildew spray. A dilute application of lime-sulfur can be applied after pruning but before bud-break. Apply at a rate of ten gallons of lime-sulfur per acre. To be effective you must soak the cordon, trunk, and preferably any leaf-litter under the vine. Spray nozzles can be arranged to treat only the cordon, trunk and crown area. Air blast sprayers can be used but they would not be very efficient.

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.

Also, California State University of Fresno has developed an irrigation scheduling tutorial that utilizes data from the CA Irrigation Information System. Go to *www.wateright.org* and try it out.

UPCOMING TREE AND VINE EVENTS

MARK YOUR CALENDAR

BI-COUNTY EXTENSION PEACH MEETING

Thursday 17 December 1998 – 8:30 AM to Noon
Stanislaus County Agriculture Center
Travelling north on 99: take Mitchell Road/Ceres exit,
At first signal, turn left and go west on Service Road about 2 miles.
Turn right on Crow's Landing and immediately turn right into the Ag center.
Look for the building with the red silo in front.

Topics
Spray thinning research
Bio-rational practices – using Bt & pheromone disruption
Identification and control of true bug pests
Premature drop problem
Pruning for early production

2 hours continuing education credit applied for.

Almond Research Conference

December 2 and 3, 1998

Modesto - The latest findings on research affecting the almond industry will be presented at the annual Almond Industry Conference on December 2 and 3, 1998, in Modesto at the Doubletree/Modesto Center Plaza.

The conference will follow its traditional two-day format with the first day featuring topics including the globalization of agriculture, production and processing competition, almond nutrition research and the future of farming in the Central Valley. The second day will highlight production research projects funded the Almond Board. A few of the many topics will include Anthracnose, the Chipping and Shredding of Pruning, Genetic Engineering, and Soil Replacement for Methyl Bromide and Pomology Weather Services. For further information contact the Almond Board of California, 1150 9th Street, Suite 1550, Modesto, CA (209) 549-8262 or check the website at www. AlmondsAreIn.com.

1999 Annual Statewide Pistachio Day
Visalia Convention Center
303 E. Acequia, Visalia
January 19, 1999

Co-chairs: Bob Beede and Louise Ferguson

7:30 - 8:15	Registration	
8:15	Welcome: Bob Beede	
	First Session Moderator:	Brent Holtz
8:20	Potassium Nutition of Pistachios	Patrick Brown
8:40	Pistachio Cultivar Improvement	Dan Parfitt
9:00	Oblique Banded Leaf Roller	Walter Bentley
9:30	Events Leading to Shell Split	Vito Polito
9:50	Striped Mealy Bug	Gary Weinberger
10:00	Coffee Break	
	Second Session Moderator:	Craig Kallsen
10:20	Chill Hours on the World Wide Web	Louise Ferguson
10:30	Dormant Oil Effects on Pistachio Tree Performance	Bob Beede
10:50	Rootstock Evaluation on Verticillium Infested Soils	Lynne Epstein
11:10	Hemipteran Pest Involvement in Botryosphaeria	Kent Daane
11:30	Foliar Fungal Diseases of Pistachio	Themis Michailides

Precautions for Using Potassium Chloride for Correction of Potassium Deficiency

By Bill Kruger, UC Cooperative Extension

Prunes, almonds and walnuts often require potassium (K) application for correcting deficiency in Glenn County. Of the three, prunes are the most commonly treated. Soil or foliar application can correct potassium. Soil applications are applied in the fall to allow winter rains to move the K into the rootzone. Either "mass doses" of 1500 to 2000 lbs. of material applied at three to five year intervals or annual "maintenance" rates of 300 to 500 lbs. are used. If correction of a deficiency is expected the year following the treatment, then the higher rates should be used. Two forms of K are commonly applied, potassium sulfate and potassium chloride (KCl). Of the two, KCl is considerably less expensive, about half the cost. However, with KCl if the chloride is not adequately leached from the root zone before growth begins, it can bum the trees.

Following are some precautions to consider if you are using KCl for K deficiency.

1. Do not use KCl on soil with clay pans for high water tables, which will not allow adequate leaching of the Cl from the rootzone. I have observed Cl injury to almonds at the end of irrigation run in a hardpan area where only 500 lbs. per acre had been applied.

2. Be sure that adequate water, either as rainfall or irrigation, follows the application prior to bud break in the spring. In soils with good drainage, 20 inches would be adequate. Potassium chloride injury is always more common following dry winters.

3. Almonds, because they are on peach rootstock, are slightly more susceptible to chloride injury than are prunes on plum rootstock. However, I have seen injury on both.

4. Lower maintenance rates are safer than mass dose rates.

5. If you have applied KCI, you should include a chlorine analysis in your annual leaf analysis to be sure that

CLING PEACH QUALITY AWARDS

Congratulations to Cavaiani Brothers, Grewal Brothers and UC Farms for being the California Canning Peach Association's quality award winners for District nine!

DORMANT SPRAYS FOR DECIDUOUS TREE CROPS

Janet Caprile, UC Cooperative Extension

Dormant sprays are one of the most efficient and economical pest control treatments of the season. You can control a wide variety of pests with minimum of risk to trees, people, and beneficial insects. You have the advantage of a broad range of usable materials and excellent, unobstructed spray coverage. There is usually a conveniently wide window for application (December to prebloom budswell).

Dormant sprays are important in controlling peach twig borer, mites, scale, aphids, many leafrollers, pear psylla and various, other insects. They are essential in controlling peach leaf curl and shothole diseases. Zinc deficiencies can also be corrected with a timely dormant application.

Controlling Insects & Mites: Usually a dormant oil plus an Organophosphate (OP) combination is the most effective control for the insect and mite pests. Diazinon, Lorsban, and Supracide are the most commonly used OP materials. All are similarly effective in achieving 96-97% control. Supracide is effective and often used without oil as it can cause damage to some sensitive crops (like walnuts) when used with oil.

There has been concern over the dormant use of OP insecticides in recent years as they can drift from the target site in our winter fog. *Fortunately, oil can be fairly effective when used alone against most mites, scale and aphids but not against Peach Twig Borer (PTB).* To control PTB without an OP, use two to three BT sprays at bloom. You may still want to apply a dormant oil to guard against mites, scale and aphids.

Controlling Diseases: There are several fungicides that can be used to control *Peach Leaf Curl (needed on all peaches and nectarines and Shothole (needed on apricots, peaches and nectarines)*. Bordeaux and fixed coppers (both organically acceptable) as well as Bravo and Ziram are the most commonly used materials. *An application at leaf fall should control both these diseases.* If disease pressure is high and/or if the winter/spring has been particularly wet, an *additional* application may be necessary *just before budswell for Peach Leaf Curl and during bloom and early leafout for shothole.*

Check the label for compatibility information before you put any fungicide in the tank with your oil or your OP**.** Don't forget to consider the pH and add a buffer if necessary. Bordeaux can raise the pH of the tank mix to 12 and Kocide or other copper hydroxides can raise it to 8. These pH's will *greatly* reduce the effectiveness of all our common OP materials.

Rates: A typical rate for the more common narrow range oils (superior or supreme) is 4-8 gallons/acre. Concentrated or lower volume sprays (1OO GPA or less) have been shown to be just as effective as dilute sprays (400 GPA or more) when applied correctly.

Application: Correct application means that sprays go on in a ground rig traveling no more than 2.0 MPH. If you're not confident that your tractor speedometer is correct, count trees. If you are going 2 MPH, you should cover 176 feet in 1 minute. You can use the chart on the next page to gauge your speed.

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Speed		**Tree Spacing**			
		10’	16’	18’	20’
(MPH)	(Feet/min)	(trees traveled/minute)			
1.00	88	8.8	5.5	4.9	4.4
1.25	110	11.0	6.9	6.1	5.5
1.50	132	13.2	8.3	7.3	6.6
1.75	154	15.4	9.6	8.6	7.7
2.00	176	17.6	11.0	9.8	8.8
2.25	198	19.8	12.3	11.0	9.9
2.50	220	22.0	13.8	12.2	11.0

In large trees, 2/3 of the spray material should come out of the top half of the spray manifold. Don’t forget to check for nozzle wear – wettable powders are harder on the nozzles than other materials. The spray needs time to dry before it rains and, similarly, sprays shouldn’t be applied to wet trees (damp from fog is ok).

Cautions: Walnuts, plums and prunes can be sensitive to oil. The later oils are applied, the less likely damage will occur, so delayed dormant sprays are suggested for these trees. *Delayed dormant sprays are generally more effective against mites, aphids, and leafrollers in all the tree crops.* However, if the winter is very wet, you need to be prepared to get into the orchard as soon as there is a break in the weather if you wait for the delayed dormant period (February to budswell).

Also, keep in mind that any tree can be damaged by oil if it is water stressed. So make sure the soil is moist to 2 ½ to 3 feet and don’t make an application soon after a period of freezing weather or drying winds.

Dormant Spray Alternatives Field Day
December 11, 1998

Sponsored by University of California Cooperative Extension
in conjunction with
Almond Pest Management Alliance

Friday, December 11at Stanislaus County Cooperative Extension
Corner of Service Rd and Crow's Landing.

11:30- Overview of the Almond Pest Management Alliance (PMA) Program:
Chris Heintz, Director of Education and Research, Almond Board of California

12:00 - Lunch (Sponsored by the Almond PMA Project)

Location: Corner of Service and Ustich Roads, 1 mile west of our office. The grower's name is Carl Wagner. Please call Stanislaus Office for directions.

Topics:

- 12:30 to 2:30 Breakout Sessions
  12:30 p.m. Winter Monitoring Guidelines – Walt Bentley, Regional IPM Entomologist

- 1:00 p.m. Dormant Spray Alternatives- An overview
  Discussion of Bt sprays for control of NOW and PTB
  Roger Duncan, Stanislaus County Farm Advisor

- 1:30 p.m. Influence of Dormant Applied Insecticides on in-season Mite Populations

- 2:00 p.m. Trapping for PTB, NOW and San Jose Scale
  Lonnie Hendricks, Merced County Farm Advisor.

If you plan to attend, please fill out the form below and mail it or fax it to:
Roger Duncan, Farm Advisor
UC Cooperative Extension
36800 Cornucopia Way, Suite A
Modesto, CA 95355
Fax: (209) 525-6840

__ Yes, I plan to attend the Dec. 11 Dormant Spray Field Day, which includes free lunch.
Name: _____
Address:_____
City:_____ State:_____ Zip: _____
Phone:_____

Central valleys the amount of side cracking varies more from year to year than it does between orchards. End cracking can be minimized by applying enough irrigation's in May and June to avoid tree moisture stress. However, avoiding such stress may not be possible with flood-irrigated prune orchards on heavy or shallow soils. Some growers try to minimize side cracking by avoiding irrigation's around July 4, the "normal" time side cracking begins. Unfortunately, side cracking does not occur during the same calendar period every year.

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TREE AND VINE NOTES

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