COOPERATIVE EXTENSION | UNIVERSITY OF CALIFORNIA

TREE AND VINE NOTES

January 2007

2007 North San Joaquin Winegrape Seminar

Friday, 9 February 2007
8:30am – Noon

Turlock Irrigation District Auditorium
333 East Canal Drive, Turlock
Located on the corner of Denair and Canal

Sponsored by UC Cooperative Extension

8am – 8:30am **Registration, Coffee, and Donuts**

8:30am **Program Begins**

- **Improving Worker Productivity**
  Gregory Billikopf, Area Farm Advisor, Stanislaus County

- **Delayed Harvest – Science and Experience**
  Paul Verdegaal, Farm Advisor, San Joaquin County

- **Canker Disease**
  George Leavitt, Farm Advisor, Madera County

- **Effects of Irrigation and Canopy Management on Merlot Productivity and Quality**
  Larry Williams, Professor Plant Physiologist-AES, UC KAC

- **Selecting Clones to Improve Yield and Quality**
  Matthew Fidelibus, CE Viticulture Specialist, UC KAC

Noon **Adjourn**

North San Joaquin Valley Almond Day

Thursday, January 25, 2007
8:30am – Noon

Stanislaus County Agricultural Center
Corner of Service and Crows Landing Roads, Modesto

Sponsored by UC Cooperative Extension

8am – 8:30am **Registration**

8:30am **Program Begins**

- **Update on Lower Limb Dieback Disease.**
  Roger Duncan, Farm Advisor, Stanislaus County

- **The Impact of High Density Planting and Minimal Pruning on Almond Production.**
  Roger Duncan, Farm Advisor, Stanislaus County

- **Almond Canopy Management to Maximize Production**
  Dr. Bruce Lampinen, Pomology Extension Specialist, UC Davis

- **Recent Strides in Understanding the Replant Problem**
  Dr. Greg Browne, USDA Plant Pathologist

- **Techniques to Improve Water Penetration In Your Orchard**
  Terry Prichard, Water & Irrigation Mgt Specialist, San Joaquin County UCCE

- **Micronutrient Fertility in Almond**
  Dr. Patrick Brown, Professor of Pomology Nutrition, UC Davis

- **Are Blue Orchard Bees a Viable Alternative for Almond Pollination?**
  Carolyn Pickel, UC IPM Advisor, Sacramento Valley

1.5 hours of continuing education credits pending

References on Frost Protection and Meteorology

Dr. Rick Snyder, Cooperative Extension Bio-meteorologist has posted an extensive collection of publication on frost protection, when to turn sprinklers on etc at **biomet.ucdavis.edu.** I encourage you to browse through the site and print out the papers that may be of use to you. The frost protection links are about 2/3 of the way down the page.

Peach Leaf Curl

By Roger Duncan, UC Cooperative Extension, Stanislaus County

Peach leaf curl was a problem in many local peach and nectarine orchards in 2006. This was due to the unusually high amount of rainfall we experienced last spring. In most years, this disease is easily controlled in our area with one dormant copper & oil spray. However, in years with a high amount of rainfall, two sprays are sometimes necessary to get satisfactory control. This is especially true in highly susceptible fresh market varieties. The first spray is traditionally applied around Thanksgiving. The second application is applied in late January or early February. If only one spray is applied, it must be applied before flower buds begin to show any color in the spring. UC Plant Pathologist Jim Adaskaveg has shown that a dormant Ziram application reduces peach leaf curl as well or better than copper. If leaf curl symptoms are noticed soon after trees leaf out in the spring, Ziram or chlorothalonil (Bravo / Echo) can be applied to stop further spread of the disease.

Efficacy of fungicide treatments applied during dormancy against peach leaf curl of Fay Elberta peaches at UC Davis. Jim Adaskaveg. 2005/06.

Treatment1	Date of Application		% Incidence2
	12/19/05	1/24/06	
Untreated	--	--	100 a
Kocide 2000 @ 8 lbs	X		77 b
Kocide 2000 @ 8 lbs	X	X	48 bc
Nordox 75 WG @ 3 lb	X	X	62 b
Ziram 76 DF @ 8 lbs	X		26 c
Ziram 76 DF @ 8 lbs	X	X	4 d
Ziram (6 lb) + Cuprofix (4 lb) tankmixed	X	X	4 d
Cuprofix (6 lb) on 12-19 + Ziram (8 lbs) on 1-24	X	X	5 d

1Materials were applied without oil. Oil (at least 2 gallons per 100 gallons of water) should be included in a copper application to substantially improve control.
2Incidence is the average percentage of 100 shoots with leaf curl when evaluated in April 2006.

Chilling Hours

The number of chilling hours near Livingston at/or below 45ºF as of Monday, January 15, 2007 is 828.

According the UC Pomology web site the number of hours east of Merced is 763, near Kesterson is 786 and near Los Banos is 791.

Phytophthora and Phosphonates

by Joe Grant, UC Cooperative Extension San Joaquin County

Many orchards, especially walnuts and cherries, can have heavy tree losses last year from Phytophthora-root and crown rot.

The “first fronts” of combating soil saturation and infection by Phytophthora have long been and still remain 1) use of Paradox hybrid rootstock, more resistant to Phytophthora than black or English walnut, 2) proper pre-planting site preparation (deep ripping, slip plowing, or backhoeing; grading and leveling of the site; and planting trees on raised berms), and 3) good irrigation system design, construction and operation. Tactics (2) and (3) are both aimed at avoiding prolonged periods of soil saturated conditions which kill roots directly and favor spread and infection by Phytophthora.

Phosphonates are a recent addition to the arsenal in the battle against Phytophthora. Phosphate fertilizers, which have been available for many years, are derived from phosphoric acid (H_3PO_4) and have no fungicidal activity. In contrast, phosphonates are derived from phosphorous acid (H_3PO_3) and were first found to have disease control properties in the mid – 1980s. When sprayed on foliage, injected into the water-conductive xylem tissue, or taken up by roots after chemigation through drip or microsprinkler systems, phosphonates move systemically through treated trees and their root systems.

The mechanism by which phosphonates suppress diseases caused by Phytophthora is poorly understood; there is evidence that phosphonates operate by directly suppressing the pathogen as well as by intensifying plant defense responses against the pathogen. Many phosphonate-based products are currently available but only a few companies have undertaken the time and expense to register these products as fungicides with US EPA and California Department of Pesticide Regulation. When choosing a product remember that, to be recommended and used legally, a product applied for the purpose of controlling pests (including diseases) must be registered as a pesticide with USEPA and CDPR.

Research with phosphonates in walnuts and other tree crops is still in the early stages, but there is mounting evidence that phosphonate applications help reduce Phytophthora losses in tree crops. Experimental methods used to apply phosphonates have included pressurized trunk injection, application through drip or other localized irrigation systems, and foliar sprays. The results of these tests to date suggest:

- ? An effectively delivered phosphonate application can provide suppression for disease caused by Phytophthora for up to 3 to 5 months after application.
- ? Foliar phosphonate sprays have been effective in late spring, summer, and early fall, when leaves are in good condition and are actively exporting products of photosynthesis to the tree.
- ? Effective uptake of phosphonates applied through microsprinkler and drip irrigation systems appears to be limited to periods in summer when trees are using water rapidly.
- ? Foliar spraying probably is the most effective way to apply phosphonates in orchards, especially for single applications.

We will need more testing and commercial orchard experience with phosphonates to improve our understanding of the effectiveness, limitations and best uses of these materials. In any case, coupled with use of resistant rootstocks and good soil/water management aimed at avoiding saturated conditions that favor Phytophthora, phosphonates look to be an effective tool to help reduce Phytophthora losses and increase orchard life and profitability.

January 2007 Task List for Pistachios

by Bob Beede, UC Cooperative Extension Kings County

The subject for this month is pruning: The goal is to manage the tree canopy over the life of the orchard to achieve the maximum possible yield of clean open split-nuts from an efficient harvest. In our quest for this goal, we must couple our knowledge of how pistachios grow and fruit with the research data developed over the years. One thing to remember about pruning is that we must think in terms of TWO years, rather than just NEXT year if we want to better manage alternate bearing. Pruning harder prior to an on-year improves the yield during an off-year, in my opinion. My hypothesis is that reducing crop load in the on-year decreases the loss of cytokinins from the floral buds during kernel filling, and thus improves flower bud retention for the upcoming off-year.

The pistachio tree is very apical dominant, meaning that is does not branch readily and grows mostly from the terminal bud and one or two lateral buds behind it. Therefore, branching must be forced by removing the end portion of a limb, known as a heading cut. Heading cuts are performed regularly during the training years to develop the desired branching. Because pistachios are apically dominant, they do not develop girth (enlargement of trunk and limb diameter) rapidly. Consequently, main structural limbs have to be headed shorter than other nut trees in order to maintain upright growth.

The fruiting characteristics of pistachio also greatly influence how we prune the tree. Flower buds are born on one-year-old wood, typically towards the base of medium to long shoots and adjacent to the terminal vegetative bud on short shoots (spurs). The lack of lateral branching causes the fruit-bearing wood to become increasingly distant from the central axis of the tree. Failure to contain the tree canopy to a diameter of about 17 feet results in crop “not caught” at harvest due to limited equipment size.

The main structural limbs bend downward during the on-bearing seasons from the weight of the clusters. Without corrective pruning, the pistachio tree canopy takes on an umbrella appearance. This combination of less upright fruiting limbs and their greater distance from the tree’s center creates major problems for effective harvest. The high energy imparted by the shaker can no longer be sufficiently transmitted to the fruiting zone for its removal. Some growers attempt to solve this by simply shaking the tree harder. The result is more frequent equipment breakage, removal of next year’s fruiting wood and possible greater tree stress from disruption of roots at the tree’s crown. Harder shaking also flings the crop past the catch frame of the harvester.

The solution: prune the pistachio with the objective of “pushing back” the canopy perimeter (reduce its diameter) and directing growth upward. This is accomplished principally by “thinning cuts”, the complete removal of a limb at its point of origin. These cuts are made to flat limbs around the outside of the tree and within the canopy where excessive fruitwood exits. Take care not to perform too many cuts in any given zone of the canopy unless the fruitwood is unusually abundant. Also, avoid removing all of the lateral limbs on a single structural branch in order to make room for adjacent branches. Rather than creating “snakes”, it is better to leave the best structural branch minimally pruned and remove the competing branch. Also avoid opening the center of the tree excessively. We do not want peach trees! Pistachios will naturally open up and allow sufficient light into the canopy center for fruitwood production. Loss of fruitwood in the middle of the tree over time is, in my opinion, more a function of apical dominance than insufficient light penetration. So, remember, prune to keep the pistachio canopy compact and upright for productivity and harvestability.

2007 Regional Almond Meeting
Tuesday, January 23, 2007
Madera County Conference Center, 700 E. Yosemite Ave, Madera
8:00 AM-12:30 PM

8:00 a.m. **PCA and continuing education credits sign-up**

8:30 a.m. **Mite management in the southern San Joaquin Valley**
David Haviland, University of CA Farm Advisor, Kern County

9:00 a.m. **Leaffooted plant bug biology and management**
Dr. Kent Daane, University of CA Entomology Specialist, UC Berkeley

9:30 a.m. **Navel Orangeworm management strategies, pest, present, and future**
Walter Otus Bentley, Regional IPM Advisor, Kearney Ag. Center

10:00 a.m. **Weed control in almond orchards**
Kurt Hembree, University of CA Farm Advisor, Fresno County

10:30 a.m. **Break**

11:00 a.m. **Pre-plant fumigation for nematode control**
Dr. Mike McKenry, University of CA Farm Advisor, Kern County

11:30 a.m. **Crown gall disease and almond rootstock selection**
Mario Viveros, University of CA Farm Advisor, Kern County

12:00 p.m. **Bloom disease control and resistance management in almond orchards**
Dr. Brent Holtz, University of CA Farm Advisor, Madera County

12:30 p.m. **Adjourn**

3.5 hours of PCA, CCA and Private Applicators Credit have been requested
A **free lunch** will be served by the Madera County 4-H
Sponsored by the University of California, BASF, Bayer CropScience, Dow Agro Sciences, Syngenta, Valent,
Please RSVP at 559-675-7879 ext 201

Directions:
From the north take 4th street exit, go south on I Street, and east on Yosemite, 145 East
From the south, take Gateway exit, go north until Yosemite 145, then go east.

Just Published

We have two new almond cost studies available via free download from **coststudies.ucdavis.edu** or for a nominal cost from your local Cooperative Extension office. One is for the San Joaquin Valley and one is for the Sacramento Valley.