



TREE AND VINE NOTES



JANUARY 2003

U.C. Cooperative Extension Almond Day for the North San Joaquin Valley January 29, 2003

Stanislaus County Agricultural Center
Service and Crows Landing Roads, Modesto

2 hours of Continuing Education Credits Pending

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| 8:00 | Registration, coffee, etc. |
| 8:30 –12:00 | Program |
| 8:30 | Review Of Four-Year Study Comparing Dormant Sprays And “Softer” Programs
In Almond Insect Management.
Roger Duncan, UCCE, Stanislaus County |
| 9:00 | Identification and Control of Ants in Almond Orchard Systems.
Benny Fouche, UCCE, San Joaquin County |
| 9:30 | Salinity Management In Almond Orchards
Blaine Hansen, Irrigation and Drainage Specialist. UC Davis |
| 10:00 | Break |
| 10:20 | The Ten-Lined June Beetle, An Emerging Pest In The San Joaquin Valley
Marshall Johnson, entomologist, UC Kearney Ag Center |
| 10:50 | The Roles Of Potassium & Nitrogen In Almond Production
Steven Weinbaum, Dept. of Pomology, UC Davis |
| 11:20 | San Jose Scale Biology & Control
Kent Daane, Entomologist, UC Berkeley |

There is no fee or pre-registration required for this meeting.
This is a handicapped accessible site.

WINEGRAPE SHORT COURSE

Intensive short course on all aspects of winegrape production.

4-6 February at UC Davis

To have a complete program sent to you call 800/452-0881

NORTH SAN JOAQUIN VALLEY GRAPE SEMINAR

Thursday 13 February 2003
Turlock Irrigation District Auditorium, 333 East Canal Drive , Turlock
8:00 Registration and Coffee Program 8:30 to Noon

Mechanical Pruning – Maxwell Norton 8:30

Controlled Deficit Irrigation – Terry Pritchard 9:00

Vine Mealy Bug – Kent Daane 9:30

Break 10:00

Diseases Caused by Xylella – Tom Watson 10:30

Chemigation - Larry Schwankle 11:00

Delayed Spring Growth Syndrome – Steve Vasquez 11:30

No attendance fee or pre-registration is required. This site is handicapped accessible.
Two hours of continuing education credit approved.

From the south take the Golden State Blvd exit north all the way through the downtown area. Turn right and proceed east on Canal Drive several blocks and turn left on Denair Ave.
The Turlock Irrigation District building is on the north-west corner.

From the north take the Fulkerth Exit and go east into town. Cross Golden State; Fulkerth turns into Hawkeye. Cross Geer road and turn right and go south on Denair. The parking lot is on your right just before you get to Canal.

SJV DRIED PLUM DAY

Wednesday 19 February

Tulare County Cooperative Extension Office
4437 South Laspina Street, Tulare **Telephone (559) 685-3303**

Take the Paige Ave. exit, on the east side of the freeway turn right and go south about 1 mile on Laspina (office is across the street from the International Ag Expo Center)

8:00 Coffee & Registration

8:30 to Noon Program:

Industry and trade update

Update on the tree pull program

International prune conference



salia

Update on Integrated Prune Farming Program
Irrigation scheduling to reduce water and energy costs
How to prevent salinity problems from developing in orchards

SALT PROBLEMS IN ORCHARDS – A DISCUSSION

Thursday 30 January

Merced Cooperative Extension Classroom

A discussion featuring Dr. Blaine Hansen, Extension Specialist at UC Davis to discuss the increase in salinity problems in area orchards and what we can do to reduce them. This will be an informal meeting to answer questions and review options.

Reserve a spot by calling 385-7403

CHERRY SHORT COURSE

Intensive short on all aspects of cherry production in the SJV.

25-27 March in Stockton

To have a complete program sent to you call 800/452-0881

Spring Control of Almond Diseases

By Brent A. Holtz, PhD, UC Cooperative Extension Madera County

Almond trees are susceptible to bloom and foliar diseases when it rains at bloom, and the decision of when to spray and what fungicides to use can be quite difficult. In the San Joaquin Valley we are usually in a low precipitation region and we cannot predict when and how much it is going to rain. We often receive rain during bloom which can result in favorable conditions for several plant pathogenic fungi to cause spring time diseases of almonds. The main diseases in almonds are Brown Rot Blossom Blight, Green Fruit Rot or Jacket Rot, and Shothole. Other less familiar diseases include Scab, Rust, Leaf Blight and Anthracnose. The fungi that cause these diseases are usually always present in almond orchards, sometimes in higher or lower amounts depending on the previous years disease levels and current environmental conditions.

Brown Rot and Shot Hole

Most orchards are treated at least once during bloom for brown rot. The brown rot fungus (*Monilinia laxa*) attacks the tree by invading the anthers and pistils of the flower when it is open. From there the fungus can move into and kill the spur or shoot.

Young fruit are also susceptible in early spring and infection of fruit may extend to and kill spurs and shoots. Although all cultivars of almond are susceptible to brown rot, they vary in their degree of susceptibility; Butte is the most susceptible variety followed by Carmel. Ne Plus Ultra and Mission are only moderately susceptible, while Nonpareil and Peerless are the least susceptible to brown rot. Varieties that are susceptible to Green Rot or Jacket Rot (caused by *Monilina laxa*, *Botrytis cinerea*, *Sclerotinia sclerotiorum*) are Butte, Ne Plus Ultra, Merced, Carmel, Price or any variety with tight clusters. Nonpareil can be affected by this disease if the right environmental conditions occur. The time of infection for Green Fruit Rot or Jacket Rot is

from flower opening to petal fall. Brown Rot Blossom blight is usually controlled by a treatment at pink bud which is sufficient in most years, but a second application at full bloom or early petal fall may be necessary in years favorable to disease (rain). If bloom is strung out and the weather is wet and rainy, no more than ten days should elapse between treatments.

Shot Hole

The Shot Hole fungus (*Wilsonomyces carpophilus*) is notoriously more prevalent in wet years. This fungus requires water for all its activities, so periods of extended rainfall create a situation that favors Shot Hole disease epidemics. The fungus can cause lesions on leaves and fruit, but most of the time it infects the leaves as they emerge from the leaf bud. Leaf infections lead to defoliation, which usually occurs in early spring. Shot hole infection of young fruit, shortly after they emerge from the jacket, can cause the fruit to drop. As fruits enlarge, shot hole infection results in a lesion but the fruit no longer fall. About the first of May, when the embryo of the nut begins to grow, the hull becomes resistant to infection and no further lesions develop. Shot Hole is usually controlled by fungicide applications after bloom.

Scab

Until recently, scab (*Cladosporium carpophilum*) was considered more of a curiosity rather than a crop threatening disease. This has changed! In the last several years more and more orchards have developed scab problems and the disease is often serious. The fungus causes greasy black spots on fruit, leaves, and green shoots. The shoot lesions are the overwintering sites for the fungus and the source of new spores in the spring. No apparent damage is done to the fruit, but the leaves fall. Scab can completely defoliate a tree in a short time. Severe defoliation in early summer was even observed in several orchards in Madera County last year. All cultivars appear susceptible, but Carmel seems especially vulnerable. Scab is controlled by fungicide applications from 2 to 5 weeks after bloom. Earlier treatments are not effective alone, but increase the protection provided by the later treatment. Applications later than 5 weeks after bloom are less effective, especially in the southern part of the San Joaquin Valley. Not all fungicides are effective against scab, thus it is important to include scab-active materials in an overall treatment program.

Rust

Rust (*Tranzschelia discolor f. sp. dulcis*) can also cause defoliation. Both rust and scab are favored by high humidity and usually are worse in years when late spring rains occur. Orchard culture that produces humid conditions for long periods is ideal for both diseases. Like scab, rust usually appears in late spring or early summer. The fungus attacks leaves but not fruit. On leaves, it produces small, bright yellow dots on the upper leaf surface, and reddish orange pustules on the lower leaf surface. The only material registered that has any efficacy is sulfur. One or two applications of sulfur in late spring can usually control rust.

Leaf Spot

Still another defoliating disease, Alternaria leaf spot, is also new to the San Joaquin Valley. Nothing is known about the disease except that it appears in early summer, causes large lesions on leaves, and can cause defoliation. Carmel, Nonpareil, Butte, Price, Sonora, Mission, and Peerless are affected. Sonora is somewhat more susceptible than the others. Leaf Spot has been around for several years, and only at a few locations has it caused enough damage to be of concern. But be on the alert! Rovral applied at 5 weeks after petal fall has some efficacy against Alternaria leaf spot, but does not prevent serious defoliation. The limitation of treatment no later than five weeks after petal fall may be partly responsible for the poor control. Ziram and Maneb show slight activity.

Leaf Blight

The leaf blight fungus attacks the base of the leaf petiole and the bud that sits between the leaf and shoot. The leaf dies, turns a light tan color, and remains stuck to the tree. Later these leaves are then covered with the black growth of secondary fungi decomposing the infected leaves. Leaf death is of less importance, however, than the bud death that accompanies it. Leaf blight is more common in Northern California and fortunately we see it seldom here in Madera County. Generally, scab and shot hole programs control leaf blight.

Anthracnose

An extremely damaging fungal disease, Anthracnose (*Colletotrichum gloeosporioides*) was severe in some orchards in Northern California last year. Anthracnose has been in California for many years, but has become more severe recently, attacking leaves and fruit. Leaf lesions have a bleached appearance and can cause the leaves to drop, though defoliation is not usually very pronounced. On fruit, anthracnose causes deep crater-like lesions; the affected area turns a rusty reddish brown, and older fruit often gum profusely. Inside, the nut meat is destroyed. The fungus is reported to invade the wood, and the branches upon which infected fruit reside weaken and die. Thus, in addition to destroying the crop, long term damage and weakening of the tree may occur. Varietal differences in susceptibility are not clear. It appears that good scab control programs appear to provide some control against this disease. Orchards which have a history of anthracnose should be treated during bloom, preferably at pink bud, to help reduce inoculum build-up as much as to protect blossoms. Trees should be protected before every rain, thus repeated applications may be necessary through spring.

Fungicide Control Programs

Generally, a good disease control program is based upon a wise choice of fungicides and good timing and coverage. Growers should assess the diseases present in their orchards and select materials carefully. Not all fungicides are equally effective on all diseases (fig. 1). It is a good idea to use more than one kind of fungicide for a broader spectrum of activity.

Usually two sprays are made for brown rot control. The first is usually done at 5-20 % bloom using a systemic fungicide such. Some of these fungicides may require a contact fungicide to reduce resistance. Resistance to these fungicides can develop over time and repeated use, thus try to rotate the fungicides you use. The second spray should be done at about 80% to full bloom or two weeks after the first spray. This is the most effective brown rot spray. Depending on the weather, a third spray may be necessary if rains persist and two weeks of protection have gone by. Since we cannot predict the weather at bloom time, we must at least take some initial action to protect our crop. Application techniques are also important. Usually ground application is better than air; but care must be taken that both are applied correctly. In general, use properly calibrated and directed nozzles and maintain a slow speed.

For the 2003 tables showing fungicides registered and their relative efficacy for tree crop diseases go to <http://www.uckac.edu/plantpath> and click on the fungicide and efficacy timing tables. You can print them out for free. This table can also be purchased at the Cooperative Extension office for three bucks (cash only please).

Chill Hours

It looks like we will have sufficient chill hours for almonds but we don't know yet for peaches. The current cold, foggy weather is ideal for tree crops as the morning fog keeps the temperatures low enough to accumulate additional hours below 45F. As of Jan 15 we had accumulated 631 hours near Livingston compared to a 10 year average for that date of 781. As of 15 Jan we had 608 east of Merced and 574 near Los Banos. To look at chill hour accumulations at stations around the state go to <http://fruitsandnuts.ucdavis.edu/> and select weather services.

FIG INDUSTRY IN MERCED COUNTY

A look at the recently published annual report by the CA Fig Advisory Board shows that Merced County is the number two county for figs in America with 3,456 of the state's 14,730 acres. Only 1% of Fresno County and 5% of Madera's acres are non-bearing. Merced County has 9% of its acres non-bearing. The cultivars grown in Merced County from most to least are Calimyrna, Kadota, Mission, Canadria, Adam, Tena and Adriatic. For lots of info about figs: californiafigs.com

Just Published

Refrigerated Trailer Transport of Perishable Products

The second in a series of publications on proper transportation of perishables, this is an indispensable guide for shippers, transport company personnel, inspectors, surveyors, insurers and receiving company employees. Inside you'll find comprehensive information on how to select the proper boxes for shipment, how to plan a load, product temperature at loading, carrying temperatures, product compatibility, trailer operating condition, loading, and how to monitor and record temperature during transit.

Also included is an appendix that discusses heat transfer in trucks and tables that address the long-term storage of perishable products. Includes two 22" x 34" color posters, one in English and one in Spanish, that summarize the major steps for successful loading.

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