

TREE AND VINE NOTES

OCTOBER 1999

UPCOMING EVENTS

The Biology & Technology of Tree Fruit
Production
UC Davis November 1-5, 1999

Nut Grower Trade Show
Turlock Fairgrounds
November 3, 1999

Workshop: Planning for Establishment of
New Orchards & Vineyards in Vernal Pool
Grassland November 4, 1999
4th Annual San Joaquin Valley Chip-Off
November 5, 1999

Pacific Nut Producer, California Nut Expo,
Merced Fairgrounds
November 10, 1999

Almond Research Conference, Modesto
December 8-9, 1999

**See inside newsletter, page 6 for other
important meeting dates**

ANT CONTROL IN ALMONDS (HENDRICKS)

Walt Bentley from Kearney Ag Center and I had a big test plot again this year to test ant control in almonds. Lorsban and Clinch (avermectin) are registered for ant control in almonds. The other treatments are experimental, and are being compared to our standard Lorsban treatments and to an untreated check.

Treatments were made on July 6, July 20, and August 3, with timing depending upon the material. Avermectin is a biological insecticide that is also sold as Agri-Mek miticide. We evaluated early, mid and late treatments separately. No plots received double treatments.

For the early evaluations from pre-treatment to harvest we used hot dogs as bait in plastic vials to trap ants for a one-hour timed period. The California fire ant and pavement ant are attracted to fats and protein, and they love hot dogs. The vials are capped after one hour and ants are counted back at our lab. For the harvest evaluation we placed 10 Nonpareil almonds in 5 screened PVC tubes in each plot at harvest (August 30-September 2) and evaluated ant damage after the nuts are on the ground for 3 days. These results of ant damage to nuts in the field are shown on the next page:

(Continued on page 2)

<u>TREATMENT</u> <u>KERNELS</u>	<u>DATE</u>	<u>RATE ACTIVE</u> <u>PER ACRE</u>	<u>ANT DAMAGED</u> <u>PER 10 KERNELS</u>
LORSBAN 4E	8/3	2 LB (4 PT)	0.4
LORSBAN 75w	8/3	1.1 LB	0.5
LORSBAN 75w	7/20	2 LB	2.4
IMIDAN 70 WP	7/20	4 LB	2.9
UNTREATED	--	--	6.4
CLINCH	7/6	0.0001 LB (1 LB)	2.5
CLINCH	7/20	0.0001 LB (1 LB)	3.2
CLINCH	8/3	0.0001 LB (1 LB)	4.7
UNTREATED	--	--	6.4
DISTANCE	7/6	0.01 LB (2 LB)	1.8
DISTANCE	7/20	0.01 LB (2 LB)	5.3
DISTANCE	8/3	0.01 LB (2 LB)	5.6
BRIGADE	8/3	0.1 LB (1 LB)	4.6
UNTREATED	--	--	6.4

The standard **Lorsban** 4E as well as the new 75W formulation looked very good, especially at the four weeks before harvest date of treatment. It has good knockdown and lasts as well. Lorsban is still the one to beat. **Imidan** looked surprisingly good. In numbers of nuts damaged it looked nearly as good as Lorsban 75W at the same treatment date. In our hotdog evaluations Imidan seemed to respond slower than Lorsban and began to lose control sooner, but we need to look at this again with more treatment dates for evaluation.

Clinch looked good at the early application date, but weaker at the later dates. Clinch needs time to work and must be applied early. Our hotdog numbers were getting better as time went along, and were still getting better when we stopped checking after harvest. **Distance** likewise needs time and was comparable to Clinch when applied early. **Brigade** was weak in the nut damage evaluation and didn't show much reduction of ants or longevity in the hotdog counts either.

I want to thank Stan Morimoto, Chris Masuda and Danny Wade at Morimoto Farms for their great cooperation and lots of help with these applications. This was another **BIG** experiment that covers about 25 acres!

ENVIRONMENTALLY SOUND PRUNE PROJECT (Norton)

This year was most interesting with respect to our project to develop a transitional program to convert to a “soft” program in prunes that does not rely on organophosphate dormant sprays. Last year, we worked with one orchard and the section we did not dormant spray ended up with a severe infestation of mealy plum aphid. We tried to control them with M-Pede or Sun Oil but we were too late and the population was too high. We ended up treating with diazinon. This year, in that same orchard, the section that was not dormant sprayed did not have a problem with aphid. We found colonies scattered through the entire orchard but they never reached treatable levels.

We added a second orchard to the program this year in the same part of the county. Sure enough, we had to spray out the mealy plum aphid where we did not dormant spray. What will happen next year? I am

In the first orchard we were surprised by the build up of a significant population of oblique-banded leaf roller. This worm pest feeds on leaves and fruit and is first noticed by its behavior of fastening leaves to fruit and to each other. The grower had to spray the leaf rollers in both sections of the orchard whether dormant sprayed or not.

In both prune orchards we observed two-spot mites all spring and early summer spread throughout the block. They never reached treatable levels because of the presence of predaceous mites, and thrips, which were actively feeding on the mite eggs and adults. I presume the thrips were western flower thrips but I am not sure. I know they were not six-spot thrips – the type we generally consider to be a major predator in SJV orchards. We also observed European red mites in the spring. A low population of red mites can be beneficial because they can provide a food source for beneficial insects and mites. In any case, it always pays to survey for beneficial insects prior to making any decision about spraying mites.

COOL WEATHER AND MITES (Norton)

I was recently asked about what to expect when you have a population of Pacific mites developing late in the summer along with predaceous mites, but the weather is predicted to stay cool as it did this year. After talking to three entomologists, I recommend that you wait and watch because the cool weather tends to favor the predators. The pest mites have a slightly higher temperature threshold and their eggs will take longer to hatch but the predators will continue developing at a fast rate. Cool weather may favor the return of thrips to feed on mite eggs.

MAXWELL’S WEB SITES TO CHECK OUT

Cooperative Extension has a very good newsletter on landscape horticulture available <http://commserv.ucdavis.edu/cesanjoaquin/news.htm>

Another good source of information on ornamental trees is <http://www.cnr.berkeley.edu/ucce50/6perry/6-hindex.htm>

Another fun website is the Junk Science Home Page www.junkscience.org

Workshops for Trainers of Pesticide Handlers and Agricultural Fieldworkers

The University of California's Pesticide Education Program is planning more train-the-trainer workshops for people who are responsible for training pesticide handlers or agricultural fieldworkers. This UC program helps trainers understand the Worker Protection Standard and California training requirements and provides useful information on how to conduct training programs. People attending one of these workshops receive certificates that they can use to obtain the blue "EPA Training Verification" cards from the Department of Pesticide Regulation.

People training pesticide handlers and/or fieldworkers who work in production agriculture or commercial greenhouses and nurseries must be qualified trainers. To be qualified as a trainer, you can be a licensed pest control adviser, a certified private or commercial pesticide applicator, or have attended an approved train-the-trainer program. University of California farm advisors and biologists working in agricultural commissioners' offices are also qualified trainers.

Patrick O'Connor-Marer, Coordinator of the UC IPM Pesticide Education Program, says that plans are under way to hold workshops in several parts of the state later this year.

Trainers of Pesticide Handlers and Agricultural Fieldworkers

Chico November 9, 1999 Spanish session
Chico November 10, 1999 English session
San Diego November 16, 1999 Spanish session
San Diego November 17, 1999 English session
Modesto December 14, 1999 Spanish session
Modesto December 15, 1999 English session
San Luis Obispo January 11, 2000 Spanish session
San Luis Obispo January 12, 2000 English session
Indio February 8, 2000 Spanish session
Indio February 9, 2000 English session
Salinas March 14, 2000 Spanish session
Salinas March 15, 2000 English session
Parlier March 21, 2000 Spanish session
Parlier March 22, 2000 English session

Trainers of Agricultural Fieldworkers only

Chico November 11, 1999 English and Spanish sessions
San Diego November 18, 1999 English and Spanish sessions
Indio February 10, 2000 English and Spanish sessions
Salinas March 16, 2000 English and Spanish sessions
Parlier March 23, 2000 English and Spanish sessions

The latest information regarding these workshops will also be posted on the UC IPM web site (<http://www.ipm.ucdavis.edu/IPMPROJECT/workshops.html>). Or, you may call (530)752-5273 for more information and to request registration materials.

**PRECAUTIONS FOR USING POSTASSIUM CHLORIDE FOR CORRECTION
OF POTASSIUM DEFICIENCY**

Bill Kreuger, Farm Advisor, Butte County 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. Potassium can be corrected by soil or foliar application. Soil applications are applied in the fall to allow winter rains to move the K into root zone. 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 surface applied in a band or shank in at the drip line of the tree. 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, KCl, if the chloride is not adequately leached from the root zone before growth begins, can burn 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 an 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 KCl, you should include a chlorine analysis in your annual leaf analysis to be sure that chloride levels are not getting too high.

Fall soil preparation for planting trees – CAUTION! (Hendricks)

Land Leveling – Not much land leveling is done before planting orchards these days, since micro-sprinklers and drip irrigation make leveling unnecessary. But in some irrigation districts it still makes good economic sense to level and flood irrigate. A word of caution in land leveling:

DO NOT BURY ANY ORGANIC MATTER IN FILLS!!!

Every few years I come across a situation where old stubble, alfalfa roots and stems, sweet potato trash, or even burn pile residue has been buried in a fill then trees planted over it. Organic matter residues buried more than 6"-12" deep will not decompose properly. The anaerobic condition will promote the formation of methane (sewer gas) and the old organic matter will stain the soil blue. Break open clumps of this blue soil and you will smell the sewer gas, just like when you dig up a leach line! This gas kills the roots. Sometimes trees will grow fairly normally for a year or two when the major roots are still in the surface soil. As the roots penetrate deeper the gas begins killing roots and the trees stall out. All organic matter must be completely decomposed before making fills. This goes for back hoeing too. Don't bury weeds and residues in backhoe sites either, or you will create the same anaerobic conditions and sewer gas will kill the trees.

Cost of Production Studies, Online:

We often get requests for cost of production studies for various crops. We have copies of these studies at our office for a \$1 printing fee, but now you can download many of these publications from the internet. Go to <http://www.agecon.ucdavis.edu/outreach/crop/cost.htm> The publications highlighted in blue are available for download, and the ag economists are working toward someday having all of the studies online.

EPA STANDARDS

EPA's Worker Protection Standards require pesticide warning signs in English and Spanish. For those who have a need for signs in Cambodian, Chinese, Haitian Creole, Ilocano, Korean, Laotian, Tagalog, Thai, or Vietnamese languages, downloadable images are available at

http://www.epa.gov/oppfod01/work_saf/cwpb.htm

Weeklong Workshop on Art and Science of Multiple Tree Crop Production

Get an advanced update on current research and practices involving tree fruit production at this five day, intensive course sponsored by UC Davis and UC Cooperative Extension's Fruit and Nut Crop Information Center. Intended for orchardists, crop care advisors and pest control advisors working with multiple tree crops, The Biology and Technology of Tree Fruit Production, takes place November 1-5 in Davis.

The program begins with an advanced review of the current understanding of plant growth, then focuses on Prunus species (peach, plum, prune, apricot, cherry) as well as pears and apples. The format includes three and one-half days of lectures; a half-day field study designed to demonstrate pruning, tree training, water relations and orchard floor management; and one full day of concurrent sessions, each focusing on a specific fruit variety. Specific program topics include tree and fruit growth and development, cultural practices, pest and disease management, postharvest handling and preharvest factors effecting postharvest quality.

The \$600 fee includes course materials, field trip transportation and a box lunch on November 2 (field trip day). Housing costs and other meals are not included in the fee.

To request more information or to enroll, call toll free (800) 752-0881.

ORCHARD NOTES

Kevin R. Day, Tree Fruit Farm Advisor, Tulare County

This past season has been one of the worst years for phytophthora root and crown rot that I have experienced. I have observed the problem on fruit trees of all ages and species, and in all types of soil.

Symptoms of the disease include leaf yellowing, overall weakening of scaffolds, and shoots, small fruit, and eventual tree death. Diagnose the disease by cutting into the tree trunk just below the soil line. If the disease is present, the rootstock will be brown and decayed, and sometimes slippery. Unlike bacterial canker, there usually is no smell associated with the disease.

The common culprit in all instances of phytophthora infection is water. The phytophthora fungus is a water loving pest that lives in and is spread by water. Because of this it is important to ensure that orchards are not over-irrigated, especially in the spring and fall when soil temperatures are cool and most favorable to the development of the fungus.

To help prevent this disease do not over-irrigate or saturate soils this time of year. Try to make sure that water never stands for more than 24 hours after an irrigation, and make sure that water never stands around the trunk of the tree. A good rule of thumb is to irrigate after mid-September only if necessary.

Average tree water use in October and later is negligible. Of the 35 to 40 inches of water required by the average orchard in our area, only about 1.5 to 2 inches are used after the first of October. And only about 3.5 inches of water are used in September. Compare this to the period of peak water demand—July—when about 8 inches are used. Consequently, tree irrigation needs this time of year can generally be met with just very small amounts of water. This reduction can play an important role in limiting phytophthora infection.

MARK YOUR CALENDAR!

The 4th San Joaquin Valley Chip-Off (Hendricks)

The Almond Pruning Chip-Off is coming to **CSU Fresno on Thursday, November 4th** at Bullard and Chestnut in Fresno, and to **D&S Farms on Hull Ave between Atwater-Jordan and Sunset in Atwater on Friday, November 5th**. Check-in at 8:30, program starts at 9:00 a.m.

Featuring:

- Equipment demonstrations ~ See the latest equipment
- Growers and hullers share their knowledge
- Report on brush shredding and chipping trials ~ Report by Lonnie Hendricks
- Brush burning regulations update ~ Jose Martinez from the SJV Air Pollution Control District
- Cost-Sharing ~ local NRCS office will help you save money

The Chip-Off is jointly sponsored by CAFF and the EMRCD. For more information contact Gwen Huff at 209-521-4455.

PLANNING FOR ESTABLISHMENT OF NEW ORCHARDS AND VINEYARDS IN VERNAL POOLS GRASSLANDS: HOW TO PLANT FOR A MIXED PROJECT

DATE: THURSDAY, NOVEMBER 4, 1999
TIME: 10:00 AM TO 12:00
LOCATION: NATURAL RESOURCES CONSERVATION FIELD OFFICE, MERCED
PURPOSE: DEMONSTRATE HOW TO PLAN FOR A MIXED DEVELOPMENT (ORCHARD/
VINEYARD, WATERFOWL HABITAT, AND VERNAL POOL EASEMENT AREA)
WITHIN A 640-ACRE VERNAL POOL GRASSLAND PARCEL

FOR MORE INFORMATION CALL: 723-3714

COMING EVENTS

27 Oct	American Vineyard Magazine Grape & Raisin Expo in Caruthers
28 Oct	MID Vision 2000 Symposium addressing the future of water and electric issues in Merced County. Call 722-5761 for information.
9 Nov.	CA Canning Peach Assoc. District meeting; 9:30 JACL Hall in Cortez
10 Nov	Grape Grower Magazine Farm Show North in Lodi
16 Nov	Citrus freeze damage prevention field day; UC Lindcove Research & Extension Center East of Visalia; Call 559/592-2408 for more information.
25-27 Jan	Unified Wine & Grape Symposium, Sacramento

October 1999 Integrated Apple Production

*A practical workshop for growers and PCA's
on "reduced risk" pest management practices*

**Monday, November 15
1:30-4:30**

**Delta Community Services Center
730 Third Street
Brentwood in Contra Costa County**

Codling Moth Management:

- Mating disruption update: theory, practice, products, monitoring supplemental sprays.
- Reduced risk approaches for other pests:
What do we do about mites, aphid, scale, leafhopper, leaf miner?
- Integrated Apple Production (IAP) Program and first year results.
Funded by DPR to assist with the transition to a reduced risk pest management program in apples program overview, pest damage, costs, pesticide use.
- Panel Discussion: Grower & PCA participants in the IAP program
- Reduced Risk Pest Management Products "Trade Show"

**There is no charge but reservations are required by calling
Contra Costa Cooperative Extension at 925/646-6540**