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Orchard Notes

April 2004



PLANT OR PULL? ORCHARD ECONOMIC OUTLOOK MEETING IN YUBA CITY

UC Cooperative Extension and UC Davis Ag Issues Center will be sponsoring a day-long program on the economic outlook for orchard crops in the south Sacramento Valley. The meeting will be held in Yuba City on May 6 at the Veteran's Building on Veteran's Memorial Circle. University and industry speakers will present information on key issues affecting profitable production of walnuts, prunes, cling peaches, and almonds including biological "choke points" (i.e. soil type, frost, disease, etc.), production costs, trends in tree crop production in China, as well as the international marketing outlook for those crops. THIS MEETING IS A "MUST" FOR ANYONE INTERESTED IN THE FUTURE OF TREE CROP PRODUCTION IN THE REGION.

The meeting cost is \$15 per person and will include lunch with vegetarian options. Pre-registration is required. Registration will be accepted by fax, phone, e-mail to pabagley@ucdavis.edu, and by credit card. You should have received a program agenda and registration form by now. Contact our office if you did not receive one. The program is also on our website at <http://cesutter.ucdavis.edu>.

PEST TRACKER

The pest tracker is up and running as of March 29, 2004 and will continue through the summer with weekly updates. Oriental fruit moth, peach twig borer, codling moth, San Jose scale, and obliquebanded leafroller will be tracked from the beginning of the flight in Yuba City and/or in District 10. Cling peach rust updates will also be included. The rust forecasts are based on the presence of inoculum and rain to predict whether a spray is needed. This year I am using CIMIS weather stations in Nicolaus and Durham to calculate degree-days (DD) for codling moth and a biophenometer in a Yuba City orchard on George Washington Blvd to calculate DD for the other pests. We will also be tracking both male and female codling moth DD using both pheromone lures (catch males in traps) and DA lures (catch

both). The pest tracker is intended as a guide only. Each grower should have traps in their orchards and consider past history, trap catches, and pest control advisor input when determining treatments. For walnut blight, see the article on the Xanthocast Model.

The pest tracker can be accessed or subscribed to online as can this newsletter at our website <http://cesutter.ucdavis.edu>. Click on "Pomology", and then click on "Pest Tracker". You may also receive it directly from my email as an Excel attachment. Just send your email address and request to jkhasey@ucdavis.edu. For those who do not have access to the Internet, the pest tracker print-out will be posted every Wednesday on neon yellow paper on the bulletin board in the office lobby.

FINAL CHILLING HOURS

Year	Oct 31-Mar 1 *(Yuba City) FINAL	Nov 1-Mar 1 (Nicolaus CIMIS) FINAL	Oct.31-Jan 3 *(Yuba City)	Oct.31-Jan 3 (Nicolaus CIMIS)
2003-2004	886	869	436	424
2002-2003	779	930	388	471
2001-2002	761	829	227	238

*Chilling hours recorded at our office in Yuba City on Garden Highway. Chilling hours below 45° F model. Included is a comparison of final chilling units to those accumulated in November and December, often considered as critical months for chilling.

The 2001-02 season was a very low chill year. We also saw low chill effects of straggled bloom on walnuts and peaches last year as in 2001-02. This year, the bloom was more uniform in peaches and appears to be that way in walnuts also. Because of the unusually warm March weather, the walnuts leafed out and are blooming much earlier than normal. It is very likely that walnut harvest will also be earlier this year.

For peaches, predicted harvest date is determined by the weather during the first 40 days after bloom according to the Peach Crop Yield and Tree Growth Simulation Model developed at UC Davis. Last year we had many cool days in that time period and harvest was delayed. We would expect harvest to be earlier this year because of our warm March following bloom.

HISTORICAL AND CURRENT BIOFIX AND PEACH RUST DATA

YEAR	OFM	PTB	CM	PEACH RUST
2004	2/29 (S)	4/12 (S)	3/20 (Y-M) 4/6 (Y-F)	?
2003	3/5 (S)	5/10 (S)	3/30 (Y)	5/6 Twig Canker
2002	2/22 (S) 2/26 (Y)	5/7 (S)	3/27 (Y)	5/3 - Twig Canker
2001	2/26 (S) 2/28 (Y)	4/24 (S)	3/19 (S) 3/21 (Y)	5/4 - Twig Canker
2000	2/23 (S) 2/23 (Y)	5/3 (S) 4/24 (Y)	4/2 (S) 3/22 (Y)	None
1999	2/24 (S) 2/24 (Y)	5/3 (S) 5/17 (Y)	4/15 (S) 4/12 (Y)	4/21 - spores found (Twig Cankers)
1998	3/9 (S)	4/27 (S)	4/19 (S) 4/18 (Y)	4/6 - spores found (Twig Cankers)
1997	3/7 (S)	4/14 (S)	3/21 (S) 3/19 (Y)	
1996	3/7 (S)	4/25 (S) 4/25 (Y)	3/18 (S) 3/16 (Y)	4/11 - spores found 5/9 spores on leaves
1995	3/2 (S) 3/4 (Y)	5/2 (S) 5/5 (Y)	4/1 (S) 4/1 (Y)	
1994	2/28 (S)	4/11 (S)	4/4 (S) 3/26 (Y)	

S = Sutter County, Y=Yuba County
M = male moth, F = female moth

WALNUT BLIGHT

At Sutter/Yuba/Colusa Walnut Day held last February, we had Bill Olson, Butte County Farm Advisor, present many years of his walnut blight research before his recent retirement earlier this month. Below, I have summarized the highlights of his presentation:

- All varieties are susceptible to blight. As the season progresses, the susceptibility of the nut to infection decreases. Susceptible tissue must be protected **BEFORE** it rains.
- Copper + Manex is the material of choice. We have found no superior copper product.
- The “old rule” rate recommendation was 8 lbs of metallic copper. That was before the new formulations, many which use less metallic copper. Follow the label rate for the material you use. The new copper formulations give equivalent control to the 8 lb metallic copper rate.
- **Effective copper products** tested from 1990-2003: Champion, Champ Flowable, Nordox, CT-N, Kocide DF, Kocide 101, Blue Shield, Zinc Bordeaux, NuCop, Nordox 75 WG, Kocide 2000 6 lbs., Champ Dry Prill 5.6 lbs.
- Non-Effective products included Iron Chloride/Iron Oxide, Iron additions did not improve control, Terramycin, Streptomycin, NFA, NuFilm P, NuFilm 17 and CS-7, DTEA, Ziram, Actigard, B694, DBNPA, PHMB, Zeritol, and surfactants increase phytotoxicity and not disease control.
- Recommended first treatment timing is one week after terminal bud break when significant leaf tissue is present. This usually coincides with the very first pistillate (female) bloom. Recent research showed that the first few sprays provided most of the blight control even with several rain events. This first spray gave 60 percent control, the second 35 percent control and the third and fourth sprays 5 percent control. The additional fifth, sixth and seventh sprays gave no additional control.
- The Xanthocast Model may help you be more consistent in your approach to mitigating walnut blight risk.
- Current recommendation summary:
 - ~ Avoid irrigation during blight season, through May if possible.
 - ~ Use material and rate proven effective
 - ~ Generally treat every seven days and use good sense when stretching treatment interval. The model will help you do this.
 - ~ Be certain of good spray coverage
 - ~ Add Manex to copper

MORE ON XANTHOCAST MODEL

Interested in saving 1 to 1.5 blight sprays? That is the spray savings when the Xanthocast walnut blight forecasting model was used in a very conducive year for disease. Developed by Plant Pathologist Jim Adaskaveg and other UC researchers, the model is based on walnut phenology (leafing and flowering), temperature, and leaf wetness. The most conducive environments for disease during early fruit development are wetness events (rainfall and dew) between 54 and 65°F. Walnut blight can be forecasted based on a risk assessment of favorable wetness and temperature conditions. Currently, the model is available for

free at the Ag-Vise website (<http://www.ag-vise.com>). The model works by establishing index points for favorable conditions and decreases with non-favorable conditions. If the closest weather station to a specific orchard forecasts a disease event by reaching a critical value, then a copper-Manex spray is recommended. The crop is protected for 7 to 10 days. The index is then recalculated for that orchard after this period until the selected critical value (usually 6 to 7) is reached again. Another spray is applied and the process is repeated. Additionally, Fox Weather provides a 5-day forecast at the website that takes the guess-work out of predicting future conducive weather events for disease development allowing time to spray. The Xantho-Calculator, a new web feature, allows you to track indices, bloom and spray dates of individual orchards for the entire season. Try it out on one of your blocks this year and get some experience with it.

NEW SIZE CONTROLLING PEACH ROOTSTOCKS

Two new peach-plum hybrid rootstock selections – P30-135 and K146-43 will be available from nurseries that have a license agreement to propagate and sell nursery stock. These new selections were developed jointly by breeders in the UC Davis Pomology department and at USDA. Their goal is to breed a series of size controlling peach rootstocks in California to reduce the cost of labor. Below is a description of the rootstock selections.

P30-135

The P30-135 rootstock is an interspecific hybrid rootstock developed for use as a commercial clonal rootstock under peach and nectarine cultivars. It imparts vigor control to the scion cultivar that has been propagated on top of it, allowing for the reduction of the height of orchard trees without compromising the quality of the fruit. P30-135 eventually produces a tree that is about 90% the size of a tree growing on Nemaguard rootstock (depending on pruning practices) and trees on P30-135 require less severe pruning and have more open canopies than trees on standard rootstocks. This allows a grower to reduce tree size by pruning without as much re-growth as one gets with Nemaguard. Size reduction of commercial orchard trees increases the efficiency of various cultural operations such as pruning, thinning and harvesting by reducing the need for workers in the field to carry and climb tall ladders. In some soils trees on this rootstock have also been demonstrated to have higher leaf and fruit calcium concentrations than trees on Nemaguard. This stock has been successfully propagated clonally by hardwood cuttings.

K146-43

The K146-43 rootstock is an interspecific hybrid rootstock, useful primarily as a commercial understock for peach and nectarine cultivars. It imparts a substantial degree of vigor control to the scion cultivar that has been propagated on top of it, reducing the height of the individual orchard tree without compromising the quality of the fruit. K146-43 produces an orchard tree that is about 50-60% of the size of trees growing on Nemaguard rootstock, depending on pruning practices. This increases the efficiency of various cultural operations such as pruning, thinning and harvesting by reducing the need for field workers to use tall ladders. This stock has been successfully propagated clonally by hardwood cuttings.

Note: Both of these rootstocks are moderately rootknot nematode susceptible and are probably not inherently resistant to numerous soil pathogens.

WATER AND IRRIGATION ISSUES

“GROUNDWATER LEVEL MONITORING: WHAT IS IT? HOW IS IT DONE? WHY DO IT?” AND “WATER WELL DESIGN, CONSTRUCTION, AND DEVELOPMENT: IMPORTANT CONSIDERATIONS BEFORE MAKING THE INVESTMENT” are the fourth and fifth in a series of six newsletters related to groundwater, water wells and pumping plants. Written by

UC Irrigation and Water Resources Advisor Allan Fulton, these can be accessed through our website at <http://cesutter.ucdavis.edu>. To access go to our website, then go to “links”, scroll down to Cooperative Extension Offices and select “Tehama County”, press go, then select “publications”, then “newsletters”. You can also obtain a hard copy from our office.

IRRIGATION SCHEDULING – You can get step-by-step procedures for developing irrigation schedules for different irrigation methods by using the publication Scheduling Irrigations: When and How Much Water to Apply. Order forms are available from our office as well as the local crop coefficients for our main tree crops grown with and without a cover crop that is needed to develop a schedule. Please call if you would like assistance in developing a schedule for your orchard. Look for more details on an irrigation scheduling meeting I’m holding in June in my next “Orchard Notes”.

WALNUT RESEARCH REPORTS

Annually, the Walnut Marketing Board publishes a limited number of the Walnut Research Reports in a spiral bound book. The numbers are limited to keep costs contained. The Board was able to put the 2003 Walnut Research Reports on a CD, which is very inexpensive and easy to manage. These will be available for free from our office. Just drop by and pick one up.

UPCOMING FIELD MEETINGS

Details will be in May “Orchard Notes”

FASTER SHOOT STRIKE AND MITE MONITORING METHODS IN PEACHES
MAY 25, 2004 IN THE MORNING.

IRRIGATION SCHEDULING IN WALNUTS
MEETING TBA IN EARLY JUNE.

RECENT RETIREMENTS

Three special people from the University of California who made great contributions to the walnut industry and other commodities have recently retired. They are Farm Advisors Bill Olson (Butte County), Wilbur Reil (Yolo/Solano Counties) and Plant Pathology Specialist Beth Teviotdale (Kearney Ag Center). You have heard them speak at meetings over the years and many plant samples were sent to Beth for disease diagnosis. I wish them the best in their retirement but we will miss them.

JANINE HASEY, UC FARM ADVISOR