



## Cooperative Extension ~ University of California Sutter/Yuba Counties

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# Orchard Notes



February 2003

### CHILLING HOURS UPDATE

We have accumulated 569 chilling hours as of January 31, 2003 at my office in Yuba City. Compared to last year's very low chilling hours, on January 28, 2002, we had 509 chilling hours, so we're not much ahead of last year. Chilling at the Nicolaus Cimis station (which tends to be cooler) as of January 30, 2003 was 675 hours compared to 579 in 2003. You can access chilling hours for any Cimis station through Pomology weather services at <http://fruitsandnuts.ucdavis.edu>.

### FUNGICIDE EFFICACY & TREATMENT TIMING TABLE

Fungicide efficacy and treatment timing tables for Peach and Nectarine are attached for your reference. They will help answer your questions as to how effective a particular fungicide is for a disease and when to apply it. There are also guidelines for other crops and a table on fungicide properties available from our office that provides information that should be helpful in planning your fungicide program to manage resistance. The report produced by U.C. Plant Pathologists, Beth Teviotdale, Jim Adaskaveg, Themis Michailides and Doug Gubler, can be accessed at the following websites: UC Kearney Agricultural Center: <http://www.uckac.edu/plantpath/> UC Davis, Dept of

Plant Pathology:

<http://www.plpnem.ucdavis.edu/PLP/Index.htm>.

### FEBRUARY REMINDERS – PEACHES

#### *Oriental Fruit Moth:*

Oriental Fruit Moth (OFM) populations appear to be increasing in our area. Even some extra early varieties suffered severe OFM worm damage last season. For controlling OFM, the materials available are limited to pyrethroids, pheromone mating disruption (MD) and Carbaryl. To reduce the number of in-season pyrethroid sprays, manage insecticide resistance and make MD more economical, integrate MD with your spray program. Consider applying OFM mating disruption at biofix this year. Many pheromone dispensers last for 90 days often eliminating the need for the late May or early June spray.

If using mating disruption apply OFM pheromone dispensers or sprayable pheromone at first moth or by March 1. Sprays can then be used during the summer as needed. There are several potential combinations of pheromone products and sprays. Please call or consult with your PCA for more information. Hang Oriental Fruit Moth (OFM)

pheromone traps by the third week of February to detect the first moth. The biofix was February 22 in

2002 and February 26 in 2001 in Yuba City. Sometimes it occurs in early March in our area.

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*Peach Twig Borer:*

Where no dormant insecticide was used, *Bacillus thuringiensis* (Bt) should be applied with bloom time fungicide sprays to control overwintered PTB. The first Bt spray is applied when 20-40% of the overwintering PTB larvae have emerged from the hibernacula. The second application is made at 80-100% emergence. These two Bt sprays have provided effective control for overwintered PTB in cling peaches locally as an alternative to a dormant insecticide application. Success (spinosad) is another material for PTB control that helps preserve beneficial insects and can be applied as a bloom spray at 30-70% hibernacula emergence.

**PESTICIDE RESISTANCE MANAGEMENT STRATEGIES.**

*At my recent Sacramento Valley Peach Day meeting, UC Riverside Plant Pathologist Jim Adaskaveg and Frank Zalom, Extension Entomology Specialist from UC Davis, discussed fungicide and insecticide resistance management strategies respectively. Below are highlights from their presentations.*

**FUNGICIDE RESISTANCE IN FUNGI**

- A genetically inherited character that allows a fungus to withstand a chemical that previously inhibited its growth.

**Why Do We Need Resistance Management?**

- Many new fungicides are single-site mode of action fungicides, thus a single genetic change can result in dramatic shifts in population structure.
- Many host-pathogen systems (e.g., brown rot) have historically developed resistance to single- and multiple-site mode of action fungicides.
- Historically there have been only a few fungicides registered for individual crops.
- Registrations for fungicides are increasingly difficult to obtain. Thus, their efficacy needs to be maintained.

**Alternate-Row Spray**

- The critical component is to maintain

fungicide residue in the orchard

- Need to return to unsprayed row within a few days to maintain fungicide residue
- Developing fungicide resistance is favored if the unsprayed row is not sprayed within a few days, (i.e., if you wait one week or longer)

**Strategies to Prevent or Delay the Development of Fungicide Resistance**

*-Follow the **RULES** of Fungicide Stewardship-*

- **R**otate between different classes of fungicides or use mixtures prior to the development of resistance.
- **U**se labeled rates and use only when needed.
- **L**imit total number of fungicide applications of any one class to less than 4 per season.
- **E**ducate yourself about fungicide activity, mode of action, and class.
- **S**tart a fungicide management program with the most effective or a multi-site mode of action fungicide.

**Fungicide Stewardship.....**

- “Unlike any time in the history of modern agriculture, we now have the opportunity to learn from our experiences and to apply our knowledge to a new era of preharvest management of fungal diseases of agricultural crops..... What choices will we make as an industry working together?”

**INSECTICIDE RESISTANCE MANAGEMENT STRATEGIES**

- Change frequency of application, use only when necessary based on monitoring and economic thresholds.
- Use local rather than areawide treatments
- Take into consideration life stages of a pest, treat the more susceptible stage
- Maintain untreated refuges (where insect population escapes insecticide exposure)

- Use less persistent pesticides
- Use rotations of insecticides with different modes of action
- Use recommended high rates at first

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The goal of resistance management is to conserve genetic susceptibility of an insect population.

#### Cause of Concern?

- Resistance shows up much more quickly for each new class of pesticides.
- The number of species resistance to organochlorines (e.g. DDT and methoxychlor) doubled every 6.3 years.
- Doubling time for pyrethroids is only two years.
- Multiple resistance (two or more resistance mechanisms in the same insect) is increasing.

**Pesticide Resistance Is Not The Only Factor Influencing Efficiency**  
*(It may not even be the most important factor)*

- Inadequate coverage
- Incorrect pesticide rate or calibration
- Improper treatment timing
- Incompatibility with other pesticides or adjuvants
- PH
- Temperature
- Insect immigration after treatment applied

- Use selective pesticides
- Use pesticide mixtures in suitable areas
- Promote use of natural enemies with pesticide tolerance

### PRUNING QUESTIONS

Walnut growers with new or young plantings who have pruning questions please call me at (530) 822-7515 or e-mail me at: [jkhasey@ucdavis.edu](mailto:jkhasey@ucdavis.edu).

### ADVANCES IN CODLING MOTH MANAGEMENT March 6, 2003

Walnut, Apple and Pear growers should have received a registration brochure. These are available at the office or can be downloaded from our website.

**DON'T FORGET TO VISIT OUR WEBSITE**

AT <http://cesutter.ucdavis.edu/>

**FOR MEETING AND INFORMATION**

**UPDATES.**

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JANINE HASEY  
 U.C. FARM ADVISOR



**SUTTER/YUBA/COLUSA WALNUT DAY**  
**TUESDAY, FEBRUARY 18, 2003**  
**1:00 TO 4:00 P.M.**  
**VETERANS MEMORIAL BUILDING, 1425 CIRCLE DRIVE**  
**YUBA CITY, CA**

Sponsored by the University of California  
Cooperative Extension  
**SUTTER/YUBA AND COLUSA COUNTIES**

12:30 p.m. Registration

**PROGRAM**

Moderator: Janine Hasey

- 1:00 p.m. Long-Term Performance of Own-Rooted Chandler Compared to Chandler on Paradox Rooted Trees,  
*Janine Hasey, UC Farm Advisor, Sutter/Yuba Counties*
- 1:30 p.m. Update on Biology and Management of Nematodes on Walnuts  
*Becky Westerdahl, Extension Nematologist, UC Davis*
- 2:00 p.m. "Walnut Irrigation- Is More Always Better?"  
*Bruce Lampinen, Extension Pomologist, UC Davis*
- 2:35 p.m. Break *Refreshments Courtesy of John Taylor Fertilizer*
- 3:00 p.m. Update on Walnut Scale  
*Tom DeWitt, Valent USA Corporation*
- 3:15 p.m. New Reduced Risk Technologies for Control of Walnut Huskfly  
*Barat Bisabri, Technical Service & Development, Dow AgroSciences*
- 3:45 p.m. Agricultural Used Oil and Oil Filter Recycling Programs  
*Yuba-Sutter Disposal, Inc. Representative*
- 4:00 p.m. Adjourn

PCA & PRIVATE APPLICATOR CREDIT - 1.25 HOURS - CCA CREDIT - 2.25 HOURS

Location of meeting is wheelchair accessible. Persons with special needs wishing to attend a program should contact the cooperative extension office in advance, Tel (530) 822-7515 and efforts will be made to accommodate your specific need.

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