



Cooperative Extension ~ University of California
Sutter/Yuba Counties

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ORCHARD NOTES

FEBRUARY 2006 ISSUE

SUTTER/YUBA/COLUSA WALNUT DAY

WEDNESDAY, FEBRUARY 22, 2006

1:00 TO 4:30 P.M.

VETERANS MEMORIAL HALL, 1425 CIRCLE DRIVE, YUBA CITY, CA

12:30 p.m. Registration

PROGRAM

WELCOME & MODERATOR: JANINE HASEY

MARKETING UPDATE

1:00 p.m. WALNUT INDUSTRY RESPONDS TO CHANGE, *Dennis Balint, CEO, California Walnut Commission & Walnut Marketing Board*

CULTURAL/ PEST MANAGEMENT ISSUES

1:10 p.m. OILLESS NUTS: IS THERE ANYTHING A GROWER CAN DO? *Janine Hasey, UC Farm Advisor, Sutter & Yuba Counties*

1:30 p.m. WALNUT BLIGHT UPDATE: APPLICATION TIMING & NEW TREATMENTS *Jim Adaskaveg, Plant Pathologist, UC Riverside*

2:00 p.m. SUSTAINABLE PEST MANAGEMENT & NATURAL RESOURCES CONSERVATION SERVICE, *Allison Bettencourt, Soil Conservationist, NRCS*

REGULATORY UPDATE ON SUSTAINABLE PEST MANAGEMENT, *Jan Kendel, Sutter County Agriculture Department*

PLANTING SYSTEMS/VARIETIES

2:15 p.m. WALNUT HEDGEROW SYSTEMS *John Edstrom, UC Farm Advisor, Colusa County*

2:45 p.m. **BREAK – COURTESY OF DUPONT CROP PROTECTION**

MODERATOR: JOHN EDSTROM

3:00 p.m. NEW WALNUT VARIETIES: HOW DO I DECIDE IF THEY ARE FOR ME? *Gale McGranahan, Walnut Improvement Program Director, UC Davis*

INTERNATIONAL

3:30 p.m. THE WALNUT INDUSTRY IN CHILE *Wilbur Reil, UC Farm Advisor Emeritus, Yolo & Solano Counties*

REGISTRATION UPDATE

4:00 p.m. RETAIN: HOW TO USE IT FOR PISTILLATE FLOWER ABSCISSION, *Tom DeWitt, Technical Specialist, Field Market Development, Valent USA Corporation*

4:30 p.m. ADJOURN

SPONSORED BY

University of California Cooperative Extension, Sutter/Yuba/Colusa Counties
Co-Sponsor - Sutter County Agriculture Department
Meeting Room Expenses - Courtesy of Valent USA Corporation

PCA and Private Applicator Credit – 2.0 hours approved; includes .5 hour laws

CHILLING HOURS UPDATE

February 2, 2006	554	2005-06	?
February 1, 2005	910	2004-05	994
February 2, 2004	713	2003-04	886
January 31, 2003	569	2002-03	779

Chilling hours recorded at our office in Yuba City on Garden Highway. For hours below 45° F model. The chilling units for the same model on 2/1/06 at the Nicolaus Cimis station were 614.

SCALE CONTROL IN KIWIFRUIT – MATERIAL UPDATE

The three armored scales that attack the bark, leaves, and fruit on kiwifruit are greedy scale (*Hemiberlesia rapax*), oleander scale (*Aspidiotus nerii*) and latania scale (*Hemiberlesia lataniae*). Most kiwifruit growers apply annual dormant sprays to avoid fruit infestation. Very recently, there have been changes to the spray materials available to growers. It is somewhat confusing because conventional growers do not have access to one of the spray oils that organic growers do. Here is a summary of changes:

- Volck Supreme Spray oil that has been a great scale control material in conventional vineyards with low to moderate populations since the late 1980's, is no longer available as of the end of 2005. It was also allowed in organic vineyards up until the 2004 season. The loss of Volck Supreme Spray oil is at least in part due to the high world wide price for oil.
- For **organic growers**, an emergency 24(c) for the organically acceptable Omni Supreme Spray oil for scale control in kiwifruit was approved on February 11, 2004 and was just extended at the end of January 2006 for one to two more years.
- In the meantime, the organically acceptable oil PureSpray GREEN, a product of Canada, is registered for scale control on kiwifruit in California. Its registration was based on accepting public literature for its efficacy and phytotoxicity.
- Since there is no efficacy or phytotoxicity data for PureSpray GREEN under California conditions, I will be testing it and Omni Supreme Spray oil this season.
- In summary, **conventional growers** have the organophosphate Supracide or the oil PureSpray GREEN available for scale control in 2006. **Organic growers** can use either Omni Supreme Spray oil or PureSpray GREEN.
- Another material that controls scale is the reduced-risk insect growth regulator Pyriproxyfen (Seize 35 W). I tested this product and oils in 2004. Presently, the company (Valent) is conducting further testing to establish tolerances so this material may be available in the future for conventional growers.
- The scale spray should be applied before budbreak.
- On our website, <http://cesutter.ucdavis.edu>, under 2005 February "Orchard Notes", is a summary of my 2004 scale control research.

PEACH REPORTS AVAILABLE

Last season Kitren Glozer from the Department of Plant Sciences at UC Davis and I conducted labor saving research on mechanical and chemical thinning of cling peaches. The reports of those trials are available at our office.

NRCS WORKSHOP

Natural Resources Conservation Service (NRCS) is holding a Workshop for the Conservation Security Program (CSP) on Thursday, February 9, 2006 at 9:00 a.m. at the UC Cooperative Extension meeting room at 142 Garden Highway, Yuba City. The meeting will provide growers an overview of the CSP funded by the 2002 Farm Bill with time to fill out the necessary paperwork. The sign up period is from February 13th to March 31st 2006. Call 530 674-1461 ext. 3 for reservations.

RETAIn[®] FOR SERR PFA: THE FINAL ANSWER?

The following article was written by Bob Beede, UC Farm Advisor Kings and Tulare Counties, who has done extensive research on Retain since 2003

The University of California Pomology Department faculty, Cooperative Extension farm advisors, and the Walnut Board have collectively sought a practical solution to pistillate flower abortion (PFA) in walnut for over thirty years. Recent UC field studies with the new Valent BioSciences plant growth regulator, ReTain[®], suggest it may be the “silver bullet” for this complex and economically damaging cultural problem that primarily affects the Serr variety, but is also found to a lesser degree in other major walnut varieties.

PFA is the loss of nut-producing pistillate flowers 2 to 3 weeks after bloom. It was first noted in the Serr cultivar soon after the earliest plantings came into production in the 1970's. Originally referred to as Serr drop, flower loss due to this phenomena sometimes exceeded 90 percent in certain orchards and years. Determining the cause of the disorder proved extremely difficult. By the late 1980's UC research lead by Drs. Peter Catlin (Emeritus), Gayle McGranahan, and Vito Polito had eliminated mites, walnut blight, numerous nutritional deficiencies (including nitrogen, calcium, and boron), tree age, shading, pruning practices, water stress, tree competition, incompatible pollen and lack of pollination. Cherry Leafroll virus, the cause of Blackline, was also studied and eliminated. At one point, frustrated growers believed that nitrogen application up to 400 pounds per acre was the solution. The severity of PFA in northern California Serr orchards forced many growers to either remove them in their prime or suffer costly and complicated scaffold grafting to another variety.

In the 1990's, researchers in Hungary and California tested the possibility that excessive

pollen might be the cause. UC Davis Pomology faculty and farm advisors confirmed this from detailed tagging of flowers and collection of yields from individual trees varying in distance from a pollen source. Reduction of the pollen load in test orchards by catkin removal also decreased PFA and increased yield. Tests on cultivars other than Serr (Chandler, Vina and Chico) showed the presence of PFA but not at levels which typically resulted in economic loss.

Additional research by Dr. Polito showed that the excessive pollen tubes (produced by germinating pollen grains and they carry the sperm to the egg contained in the ovule at the base of the female flower) growing down the style of the female walnut flower produce excessive amounts of ethylene, a natural plant hormone associated with organ senescence. Elevated ethylene is therefore the most likely cause of walnut flower abortion.

Preliminary field studies in 2003 by UCCE Farm Advisor, Bob Beede, with ReTain[®], a new, commercially available ethylene inhibitor developed by Valent BioSciences, supported Dr. Polito's hypothesis by increasing fruit set in a Serr orchard from 21% to 89%. Continued field studies in 2004 and 2005 by Beede and Joseph Grant, UCCE Farm Advisor, San Joaquin County, have focused on assessment of yield improvement and development of time and rate of application recommendations under commercial speed sprayer conditions. Doctoral candidate Holly Johnson, in cooperation with Dr. Polito and Joe Grant, has also studied any negative effects from repeated ReTain[®] application.

Results from these intensive projects conducted with local walnut growers (Barton Ranches, Blain Farms, Hester Orchards, Doug Verboon, and Corny Warmerdam) suggest, “All systems go”!
Applications performed at 125 ppm (one soluble

bag/ 100 gpa) at about 30% bloom have consistently provided dramatic reductions in PFA and corresponding increases in yield. Table 1 provides a brief summary of the 2005 results obtained in Kings, Tulare, and San Joaquin Counties.

TABLE 1. EFFECT OF ReTAIN[®] PLANT GROWTH REGULATOR APPLIED AT 125 PPM IN 100 GPA ON PERCENT DROP AND YIELD PER TREE OF SERR WALNUTS GROWN IN KINGS, TULARE AND SAN JOAQUIN COUNTIES. 2005.

County	Percentage Drop		Yield Per Tree (lbs)	
	Untreated	ReTain	Untreated	ReTain
Kings	40.6	14.0	108	152
Tulare	69.2	16.2	76	163
San Joaquin	73.3	36.3	72	105

Growers and consultants wishing more information are strongly encouraged to attend their local walnut meeting. Your local Valent representative is also trained to assist you.

early bloom. We have received good results at about 30% bloom. Do not apply in combination with copper. The addition of an adjuvant is not necessary. Aerial applications have not yet been tested, hence they are not recommended at this time. Aerial treatment in 2006 is at your own risk!

ReTain[®] should have cleared the US EPA office and be registered for walnuts by the time you read this. Be sure to confirm this with your crop consultant prior to use! The recommended application rate is one soluble bag of ReTain[®] per acre in 100 to 200 gallons of water. Coverage is critical! Speed sprayers MUST not travel in excess of 2 mph! Time of application should be during

This exciting discovery represents the culmination of decades of difficult field and laboratory research by UC personnel in concert with growers and the Walnut Marketing Board. Let’s hope it truly is “the final answer”!

JANINE HASEY
UC FARM ADVISOR

PEACH PEST MANAGEMENT

During my recent Cling Peach Day meeting, we discussed how to access website information to implement integrated pest management (IPM) and more sustainable practices in peach orchards. Specifically, we demonstrated how to use the updated 2006 Peach Pest Management Guidelines and the new Peach Year-Round IPM Program Annual Checklist for pest monitoring and management throughout the seasons. This information will be available around mid-February on the web at <http://ipm.ucdavis.edu>. We will also have hard copies of the Year-Round Checklist at our office after that date. I've included the updated 2006 Fungicide Efficacy and Treatment Timing Tables for Peach and Nectarine that are from that website. They will help answer your questions as to how effective a particular fungicide is for a disease and when to apply it. There is also a table on fungicide properties on this website to help you plan your fungicide program to manage resistance. As you apply your disease sprays, remember to rotate between fungicide spray classes to minimize the risk of resistance developing to any one class of fungicides.

ORIENTAL FRUIT MOTH: February is the time to prepare for the first flight of oriental fruit moth (OFM). OFM traps should be hung by February 20th to detect the first moth. The biofix (first moth) for Sutter County was March 7th in 2005, February 29th in 2004, March 5th in 2003, and February 22nd in 2002. Consider using pheromone mating disruption this season to manage insecticide resistance, reduce insecticide sprays and runoff problems, and encourage long-term population reduction.

PEACH AND NECTARINE—TREATMENT TIMING

Note: Not all indicated timings may be necessary for disease control.

Disease	Dormant	Bloom		3-6 weeks postbloom	Preharvest ^a	
		20-40%	80-100%		3 weeks	1 week
Brown rot	----	++	+++	+	++	+++
Powdery mildew	---/ND	++	+++	+++ ^e	----	----
Leaf curl ^b	+++	+	----	----	----	----
Rust	+ ^c	----	----	+++	++	----
Scab	----	+	++	+++	----	----
Shot hole ^d	+++	+	+	++	----	----

Rating: +++ = most effective, ++ = moderately effective, + = least effective, ---- = ineffective, and ND = no data but needs to be evaluated.

- a. Timing not exact; weather conditions determine need for treatment.
- b. Treatment should be made before bud break and preferably before bud swell.
- c. Dormant treatment with liquid lime sulfur.
- d. Fall application before winter rains begin is the most important; additional spring sprays are seldom required but may be needed to protect the fruit if heavy persistent spring rains occur.
- e. Apply until pit hardening.

PEACH AND NECTARINE—FUNGICIDE EFFICACY

Fungicide	Resistance risk ¹	Brown rot ¹		Powdery mildew ¹	Scab	Rust	Leaf curl	Shot hole
		Blossom	Fruit					
Benlate ²	high	++++	++++	+++	+++	+	----	----
Elite	high	++++	++++	+++	++	+++	----	+/-
Indar	high	++++	++++	+++	+++	ND	----	+/-
Orbit (Bumper)	high	++++	++++	+++	----	+++	----	+/-
Pristine	medium	++++	++++	+++	+++	ND	ND	++++
Rovral ³ + oil ⁴	low	++++	++++	+	+	++	----	++
Scala ⁷	high	++++	+++ ⁷	ND	ND	ND	----	+
Topsin-M ²	high	++++	++++	+++	+++	+	----	----
Vanguard	high	++++	+++ ⁷	ND	ND	ND	----	+
Elevate	high	+++	+++	ND	ND	ND	ND	ND
Rally	high	+++	+++	++++	----	----	----	----
Rovral ³	low	+++	+++	----	----	----	----	----
Abound	high	++	+	++	++++	+++	----	++
Botran	high	++	+	ND	ND	ND	ND	ND
Bravo/Echo ^{5,6}	low	++	----	----	+++	+	+++	+++
Captan ⁶	low	++	++	----	+++	----	----	+++ ⁸
Copper	low	+/-	----	----	----	----	+++	+++
Sulfur ⁶	low	+/-	+/-	+++	+++	+++	----	----
Ziram	low	+/-	----	----	+++	----	++++	+++

Rating:++++ = excellent and consistent, +++ = good and reliable, ++ = moderate and variable, + = limited and/or erratic, +/- = minimal and often ineffective, ---- = ineffective, and ND = no data.

1. Do not use the same fungicide or fungicides with similar chemistry and high resistance risk more than twice in one year.
2. Benlate label withdrawn. Strains of *Monilinia fructicola* resistant to Benlate and Topsin are present in some peach and nectarine orchards.
3. Blossom blight only; not registered for use after petal fall.
4. Oil is a "light" summer oil, 1-2% volume/volume.
5. Do not use after jacket (shuck) split.
6. Do not use in combination with or shortly before or after oil treatment.
7. High summer temperatures and relative humidity reduce efficacy.
8. Not effective if used as a dormant treatment.

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Statewide IPM Program, Agriculture and Natural Resources, University of California
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[Administration](#)

For noncommercial purposes only, any Web site may link directly to this page. FOR ALL OTHER USES or more information, read [Legal Notices](#). Unfortunately, we cannot provide individual solutions to specific pest problems. See [How to manage pests](#), or in the U.S., contact your [local Cooperative Extension office](#) for assistance. / revised: January 12, 2006 . [Contact webmaster](#).
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