

your *North Coast* Orchard Notes
University of California Cooperative Extension
883 Lakeport Blvd., Lakeport, CA 95453

JULY 2002

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!! MARK CALENDARS !!

JULY 12 LAKE COUNTY WALNUT SUMMER FIELD DAY
Steve Jones Orchard and Alex Suchan Nursery, Upper Lake
See agenda, page 6

JULY 17 UC NORTH COAST PEAR FIELD DAY (2 sessions)
Yoxagoi Cookson Orchard, Kelseyville
Note revised agenda, page 7

English Session: 8:30 a.m. – 12:00 noon

Spanish Session: 1:00 – 3:00 p.m.

PREPARE FOR WALNUT HUSK FLY (WHF) SEASON

The following are keys to a successful control program:

- 1) **TRAPPING** – Unbaited yellow sticky traps can be purchased locally. They should be “supercharged” with ammonium carbonate (you may buy them pre-charged or do it yourself – contact me for instructions). Place traps as high as possible on the north side of the tree; very shady areas should have an extra trap. Place at least one per five acres (small orchard) or five per 100 acres (large orchard). **CHECK TRAPS AT LEAST EVERY THREE DAYS** to time the first spray accurately. Write down the catch each time. **TRAPS SHOULD BE HUNG BY JULY 15.**

2) TIME TREATMENTS CAREFULLY BASED ON MONITORING

There are three options to choose from; they are presented in descending order of accuracy:

- a. **Monitor for eggs** - As soon as flies are caught, begin to look for eggs. Remove the flies from the trap and place them on a dark-colored surface, which makes it easier to see the white eggs. Using a hand lens, identify the female flies (light-colored first leg segment, pointed abdomen and slightly larger in size) and use a pointed object to press on the abdomen and squeeze out the contents. If eggs are present, they are pearly white and resemble small grains of rice. When eggs are found, there is one week to spray before egg laying occurs. Because walnut husk fly development is not driven by temperature, each orchard must be monitored separately and treatment timing based on the monitoring for that orchard.
 - b. **Monitor for stings** – As soon as flies are being caught, check 10 nuts on the north side of 20 trees, a total of 200 nuts. Females prefer the stem end, but may oviposit (lay eggs) anywhere on the nut. Dark juice flows from the puncture, leaving a tear-drop shaped stain. **WHEN STINGS ARE FOUND, TREAT IMMEDIATELY.**
 - c. **Using traps to time sprays** – This is the easiest, but least reliable method. Once flies are being caught, write down the catch each time traps are checked. When a sharp increase occurs, prepare to spray in 7 to 10 days (use the earlier timing if populations were heavy last year).
- 3) **USE BAIT WITH INSECTICIDE** – Specific label directions should be followed, however, traditionally when using bait, only about 25% of each tree will need to be treated since bait attracts the flies. A low volume wand sprayer should be sufficient. **However**, in cases with a heavy damage history, increase the treated surface area on each tree. Full coverage should be unnecessary if bait is included and timing is good.
- 4) **CONTINUE MONITORING AND PREPARE TO TREAT AGAIN** – Though there is only one generation per season, adults emerge from the soil over an extended period. Currently registered materials will last no more than 10 days; egg development allows another two week delay treating. If flies continue to be caught in traps and eggs are present in trapped females, treat three to four weeks after the first spray. Nuts should be protected until husk split. Growers with previous severe late WHF damage may wish to consider applying the plant growth regulator ethephon (Ethrel®) to hasten maturity and husk split. Contact UCCE or your pest control adviser for details.

A new product was recently registered for use on walnuts in California. The foliar insecticide Success[®], sold by Dow AgroSciences, contains the active ingredient spinosad. This is derived from the fermentation of the soil-borne bacteria *Saccharopolyspora spinosa*. It has been shown to be effective on adult fruit flies even at quite low rates. Label rates are 4 - 10 oz. per acre or 1 - 2.5 oz. per 100 gallons water for dilute full coverage sprays. For local conditions, use pattern will likely be similar to that of the malation and bait combination. Growers should approach initial use cautiously, perhaps on a section of the orchard. It is wise to consult with your pest control adviser before buying and using **any** new material. Use of Success[®] for WHF will be covered at the July 12 field meeting in Upper Lake. U.C. use guidelines will be issued once effective use patterns have been established.

Current UC treatment recommendations:

Pesticide (commercial name)	Amount to Use**		PHI+ (days)
	(conc.)	(dilute)	
BEFORE EGG HATCH			
A. NU-LURE BAIT	1-3 pt.	1 pt.	
COMMENTS: Baited sprays are the preferred treatment and are aimed at killing adults before eggs are laid. Nu-Lure bait attracts flies to spray material and enhances control. If significant egg laying has occurred before treatments, however, adequate control will not be attained.			
...PLUS...			
MALATHION 8EC	1.5-3 pt.	0.4-0.75 pt.	0
COMMENTS: Malathion can increase mite problems			
...OR...			
ESFENVALERATE* (Asana XL)	1 pt.	4 oz.	
...OR...			
CHLORPYRIFOS (Lorsban) 4EC	4 pt.	1 pt.	
** For concentrate application, use the amount given in 80-100 gal water/acre, or lower if the label allows; for dilute application, amount is per 100 gal water to be applied in 300-500 gal water/acre, according to label.			
+ Preharvest interval. Do not apply within this many days of harvest.			
* Permit required from county agricultural commissioner for purchase or use.			

WHF monitoring and control options will be addressed at the July 12 field meeting in Upper Lake. Of course, contact me for assistance with individual situations.

The following useful publications are available from our office:

<i>Calendar of Operations for Backyard Walnut Trees in Lake County</i>	2 pgs.	free
<i>Integrated Pest Management for Walnuts, 2nd ed.</i>		
UCDANR Pub. #3270. rev. 1993. (currently unavailable while under revision)	96 pgs.	\$22.00
<i>UCIPM Pest Management Guidelines: Walnut, July 2000</i>	48 pgs.	\$ 4.80
<i>Walnut Husk Fly</i>		
UCDANR Pest Notes #7430, December 2000	2 pgs.	free
<i>Walnut Production Manual</i>		
UCDANR Pub. #3373, 1998	318 pgs.	\$35.00

Also available is an excellent video with a section on how to monitor trapped female flies for eggs. It is available to purchase **OR LOAN** from our office:

Walnut Husk Fly: Biology, Monitoring and Control Strategies
DANR Video #V96-C, 22 minutes, \$20.00

LEAF ANALYSIS FOR ORCHARD CROPS

July is the optimal time to sample trees for nutritional status. At this time, levels of most nutrients are stable in the leaf tissue. It is also the period for which critical values have been established. These are the levels below or above which deficiency or excess occur. Results should always be used in conjunction with **visual symptoms**. Leaf levels are poorly correlated with iron chlorosis, which is diagnosed by visual symptoms. Key points when taking samples (your commercial lab will also have guidelines):

- ✓ sample typical, fully-expanded, healthy, mature leaves
- ✓ location of leaf is important
 - **apple** – 50 mature leaves from non-fruiting spurs
 - **olive** – 80-100 mature leaves from the middle of non-bearing, current season shoots
 - **pear** – 60-80 mature leaves from non-fruiting spurs
 - **walnut** – 50 mature terminal leaflets about 6' up
- ✓ sample 10-acre blocks or at least different growing conditions, separately (soil type, tree age, rootstocks, etc.)
- ✓ sample problem blocks or areas separately and compare results with “normal” blocks
- ✓ avoid atypical trees – replants, odd varieties, etc.

Collect leaves from each 10-20 acre block, only one leaf per tree randomly distributed. If nutrients (N, K, Zn, Mn, Mg, Ca) have been applied to foliage, the analyses will mask “real” levels. The exception **may** be if heavy rainfall (half-inch or so) washes surface amounts off prior to submission to the lab.

If you would like help sampling, or need more information, give me a call. Here are established July critical levels for BEARING trees:

ELEMENT	<i>Walnut</i>	<i>Pear</i>	<i>Apple</i>	<i>Olive</i>
Nitrogen (N)				
Deficient below	2.1%	2.2%	1.9%	1.4%
Adequate	2.2 - 3.2%	2.3 - 2.8%	2.0 - 2.4%	1.5 – 2.0%
Excess over			2.4%	
Phosphorous (P)				
Adequate	0.1 – 0.3%	0.1 – 0.3%	0.1 – 0.3%	0.1 – 0.3%
Potassium (K)				
Deficient below	0.9%	0.7%	1.0%	0.4%
Adequate over	1.2%	1.0%	1.2%	0.8%
Calcium (Ca)				
Adequate over	1.0%	1.0%	1.0%	1.0%
Magnesium (Mg)				
Adequate over	0.3%	0.25%	0.25%	0.1%
Sodium (Na)				
Excess over	0.1%	0.25%	--	0.2%
Chlorine (Cl)				
Excess over	0.3%	0.3%	0.3%	0.5%
Boron (B)				
Deficient below	20 ppm	15 ppm	20 ppm	18 ppm
Adequate	36- 200 ppm	21 – 70 ppm	25 – 70 ppm	19 – 150 ppm
Excess over	300 ppm	80 ppm	100 ppm	185 ppm
Copper (Cu)				
Adequate over	4 ppm	4 ppm	4 ppm	4 ppm
Manganese (Mn)				
Adequate over	20 ppm	20 ppm	20 ppm	20 ppm
Zinc (Zn)				
Adequate over	18 ppm	18 ppm	18 ppm	unknown

Contact us for Publication #3024 (\$2.50) which lists commercial laboratories that will analyze tissue samples.

Again, REMEMBER, tissue analyses should always be accompanied by carefully observing trees for symptoms of nutrient efficiency or excess. Correction of nutritional problems must be carefully timed for each element. Feel free to contact me for assistance with individual problems or needs.

ARE YOU INTERESTED IN PARTICIPATING IN OAK ROOT FUNGUS RESEARCH?

Pear growers who are interested in participating in on-going field research looking at ways to mitigate oak root fungus (ORF) are invited to participate in current field research. Data from the past several years in Lake County has shown that exposing the crown and upper root systems of infected trees will “dry up” the fungus, turning the mycelial mat into a yellowish chalk. In cases where the tree has yet to become too debilitated, new shoots have grown and trees have actually improved. This was indicated by both better visual ratings and water status using a pressure bomb. This year wider use of the crown/root exposure technique is being initiated using a machine that emits a high volume of air to “blast” soil away from the tree. The exposed area is then allowed to remain indefinitely, although after 2 or 3 years the holes fill with leaves and soil and it may be necessary to re-treat.

Research results thus are in the 1999-2001 California Pear Research Reports; contact me for copies if you need them.

The technique was demonstrated last summer at the pear research field meeting in Ukiah, and will be again at the field day in Kelseyville on July 17 (agenda on page 7). If you have a location with ORF that you are interested in having treated (both treated and untreated trees will be chosen to allow for analysis), contact me soon as we are scheduling treatments around daily rental of a 185 cfm air compressor.

CHANGE IN LAKE COUNTY U.C. COOPERATIVE EXTENSION STATUS

On June 17, the Lake and Mendocino UCCE offices were administratively separated and I assumed the role of Acting County Director (CD) for the Lake County office through September 30, 2003. John Harper, previously Lake/Mendocino CD will remain CD in Mendocino County. We in the Lake County office thank John for his efforts and support these last 4+ years.

Advisor and staff roles will remain the same. Our staff values your support for our programs and will work hard to offer you relevant and innovative programs in the future. We are here to serve the local community; please share your thoughts and suggestions with us.

Rachel Elkins, Acting County Director and Pomology Farm Advisor (also Mendocino; pears only in Sutter and Yuba Counties)

Julie Frazell, 4-H Program Representative

Greg Giusti, Forest and Wildlands Ecology Advisor (also Mendocino, Sonoma and Marin Counties)

John Harper, Livestock and Natural Resources Advisor (also Mendocino County)

Ron Jones, Food Stamp Nutrition Education Program (FSNEP) Program Representative

Glenn McGourty, Viticulture & Plant Science Advisor (also Mendocino County)

LAKE COUNTY WALNUT SUMMER FIELD DAY
Friday, July 12, 2002

Steve Jones' Kusalow Ranch
915 Clover Valley Road, Upper Lake



(Hwy. 20 to Government Street, right on Second Street, left on Clover Valley Road)

Sponsored by:

University of California Cooperative Extension

AGENDA

- 8:30 a.m.** Registration
- 9:00** Welcome and introductions; 2002 season update and using the PestCast weather network
*Rachel Elkins, Pomology Farm Advisor,
UC Cooperative Extension, Lake & Mendocino Counties
Steve Hajik, Agricultural Commissioner, Lake County*
- 9:15** New Chandler planting: orchard establishment and young tree care; are walnuts a viable crop for Lake County?
*Steve Jones, grower, Upper Lake
Alex Suchan and Rafael Valadez, growers, Upper Lake
Rachel Elkins*
- 9:45** LEAVE FOR SUCHAN/VALADEZ RANCH TOUR (carpool)
(10005 Elk Mountain Road; parking will be directed)
refreshments will be served on the Suchan lawn
- 10:00** Walnut husk fly control options
*Bob Van Steenwyk, Extension Entomologist, UC Berkeley
Jill LeVake, Technical Sales Specialist, Dow/AgroSciences*
- 10:30** New walnut varieties
Gale McGranahan, Dept. of Pomology, UC Davis
- 11:00** Progress of Paradox seedlings in nursery
9 year old Chandler "hedgerow"
- 12:00** ADJOURN

UC NORTH COAST PEAR FIELD DAY

Wednesday, July 17, 2002

Yoxagoi Cookson Orchard, 3545 Soda Bay Road, Kelseyville
(enter just east of California Packing Road – signs will be posted)



Sponsored by:

**University of California Cooperative Extension
California Pear Advisory Board
Pear Pest Management Research Fund
Gerber Products, Inc.**

AGENDA

(3 hours continuing education credits applied for)

- 8:30 a.m.** Registration and refreshments
- 9:00** 2002 season update and using the PestCast weather station for irrigation scheduling
Rachel Elkins, Pomology Farm Advisor
UC Cooperative Extension, Lake, Mendocino, Sutter/Yuba Counties
- 9:15** Mating disruption program status and monitoring
Lake and Mendocino Pest Control Advisers
- 9:45** Organic codling moth control using Surround[®], oil, Pyganic[®], and spinosad
Rachel Elkins
- 10:00** BREAK
- 10:15** Boxelder bug and stink bug monitoring and control
Lucia Varela, North Coast Area IPM Advisor, U.C. Cooperative Extension
Rachel Elkins
- 10:45** Variety trial update
Rachel Elkins
- 11:00** Root blasting to mitigate oak root fungus infections
Grower experiences using root blasting
Joe Conant, pear grower, Wheatland
Hal Crain, walnut grower, El Molino
Rachel Elkins
- 12:00** ADJOURN

SPANISH FIELD MEETING

Same location, 1:00 – 3:00 p.m.

Presented by: *Lucia Varela and Rachel Elkins*

Emphasis will be on hands-on training and mating disruption methods

ATTENDEES SHOULD BRING A HAND LENS OR ONE WILL BE PROVIDED

JULY CHECKLIST (contact me for further details)

Apples and Pears

- ✓ Watch pears carefully for any sign of premature ripening about one month prior to harvest. This can be a problem if temperatures one month prior to the beginning of harvest are abnormally cool, i.e. minimums drop below 45°F.
- ✓ If bitter pit has been a problem, apply multiple foliar calcium chloride sprays. Follow product label instructions to avoid fruit injury.
- ✓ Watch for signs of tree dieback and/or collapse as fruit matures. Check for underground problems such as oak root fungus and gophers (rampant these past several years).
- ✓ HAPPY HARVEST! to those beginning in July.

Walnuts

- ✓ Windburn, also known as leaf mesophyll collapse, has been especially severe this year, causing leaves to drop. Hartleys have shown the worst symptoms. This should not affect the crop.
- ✓ OBTAIN AND PLACE WALNUT HUSK FLY TRAPS BY MID-JULY.
- ✓ Continue to encourage one central leader on young trees; pinch back strong competing branches.

All Young Trees

- ✓ Protect from sunburn with white flat latex paint on south and west-facing scaffolds and trunk.
- ✓ CONTROL WEEDS!
- ✓ Keep soil moist but not sopping wet with frequent, light irrigations. You may safely apply 1 oz. of actual N per year of growth with each irrigation.

As of this writing, Lake and Mendocino pears have largely avoided the fire blight conditions that have affected the Upper Sacramento Valley and Southern Oregon. Walnut blight also appears to be non-problematic. Lake and Mendocino fruit and nut crops appear clean and are progressing nicely, though cool spring weather has resulted in about 100 fewer grower degree days (base 40°F) compared to normal. Hopefully July will be warm and dry!

HOPE TO SEE ALL GROWERS AND EMPLOYEES AT THE UPCOMING FIELD DAYS!

Sincerely,

Rachel Elkins
Pomology Farm Advisor