

your *North Coast* Orchard Notes

**University of California Cooperative Extension
883 Lakeport Blvd., Lakeport, CA 95453**

JULY 2000

!! MARK YOUR CALENDARS !!

- | | |
|----------------|--|
| July 11 | WALNUT SUMMER FIELD DAY
8:30 a.m. – 12:00 noon
see agenda on page 7 |
| July 13 | LAKE COUNTY PEAR FIELD DAY
Spanish Session 12:30 – 3:00 p.m.
English Session 3:30 – 6:00 p.m.
see agenda on page 8 |
| July 14 | MENDOCINO COUNTY PEAR FIELD DAY
English Session 8:30 – 11:30 a.m.
Spanish Session 12:30 – 3:00 p.m.
see agenda on page 9 |

UPDATE ON LOCAL PESTCAST WEATHER NETWORK

Growers should now be familiar with the Lake County Pear and Grape PestCast Network. Several important changes have recently been made to improve usefulness to users:

Update on the Lake County Weather Page (www.wxnet.com/lakeco)

The web site will again be continued through the summer. The cost for this is \$135.00 per month, which is currently being borne by the Lake County Fruit Frost Trust Fund and the UCCE Pomology Program. There are now ten Campbell Scientific stations included on the Lake County Weather Page. The Lake County PestCast stations are Cow Mountain, Kelseyville, Middletown, Red Hills, Scotts Valley, and Upper Lake. There are also two non-PestCast stations on Guenoc Ranch, Butts Canyon Road (headquarters) and Napa, and one each in Pope and Napa Valleys.

Weather Page menu changes

The final fruit frost forecast and hourly observations were published May 31; special forecasts were issued June 6-9 in conjunction with the .3 - .4 inches of rain that fell June 7-8. Data is summarized daily, weekly, and monthly (actual offering varies with each time interval).

Monthly data summary selections include:

Meteorological – minimum and maximum temperature, relative humidity, wind direction/speed, degree-hours over 65°F (for fireblight) and precipitation. Eto since April 29 is also given for the Kelseyville station, thanks to the solar radiation sensor contributed by Lake County Title Co.

Biometerological – grape powdery mildew model (points/pressure statement/index), degree hours > 65°F (for fireblight), chilling hours < 45°F, hours ≤ 32°F/70-85°F/> 90°F and leaf wetness hours (for pear scab and/or grape powdery mildew models).

Growing degree-days (40°F and 50°F thresholds) since April 1 - this section can be modified depending on user or research interest.

***Winds for the Web* and data file downloading**

Users may download individual station data in three and ten day intervals directly from the website. Data is formatted primarily for the WeatherNews WINDS software, which may be obtained directly from WeatherNews. Examples of WINDS software output (graphics, tabular, etc.) may be viewed on the WeatherNews home page. It is also available to view at the UCCE office. Data files may also be downloaded to a spreadsheet.

Winds for the Web was added to the menu in late May. This allows interactive use of certain WINDS features. Reports for many pest degree-day models and the UC Davis grape powdery mildew model may now be generated directly on line. This makes it unnecessary to download data into the software. Other features of WINDS will be added to the interactive online site as programming is completed.

Additional website features

In addition to previous day, seven-day, and monthly observations, there are satellite and radar imagery, 24/48/72 hour weather charts, El Niño/La Niña statements, Lakeport sunrise/sunset times and links to the UC Statewide IPM Project and WeatherNews home pages. Users may also e-mail WeatherNews from the web site with suggestions, comments or questions.

Data from the PestCast stations are also downloaded each night to the UCIPM PestCast database, www.ipm.ucdavis.edu. There users may view data, calculate degree-days, run pest models and utilize many other features.

Growers and others requiring up-to-date weather data are highly encouraged to utilize the two websites frequently. Please contact us for the latest revision of the *Lake County Pear and Grape PestCast Network* (this description can also be read and downloaded from the website). Those wishing a demonstration of either the Lake County Weather Page or the UCIPM PestCast Database are welcome to contact our office. If enough interest is shown, small group classes can be set up at the office.

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 PGR Ethephon (Ethrel®) to hasten maturity and husk split. Contact UCCE or your PCA for details.

Current UC treatment recommendations:

Pesticide (commercial name)	Amount to Use** (conc.) (dilute)		PHI+ (days)
<i>BEFORE EGG HATCH</i>			
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 will be addressed at the July 11 field meeting in Kelseyville. 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.	96 pgs.	\$22.00
<i>UCIPM Pest Management Guidelines: Walnut, May 1999</i>	48 pgs.	\$ 4.80
<i>Walnut Husk Fly</i>		
UCDANR Pest Notes #31, February 1996	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	Walnut	Pear	Apple	Olive
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 deficiency 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.

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 late July and early August temperatures 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).

Walnuts

- ✓ OBTAIN AND PLACE WALNUT HUSK FLY TRAPS BY MID-JULY (pages 3-4).
- ✓ 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 (June 8), Lake and Mendocino pears have largely avoided the severe fire blight episodes that have affected the Upper Sacramento Valley and Delta districts. Walnut blight also appears to be non-problematic. We will know in a week or so whether the .3 - .4 or so inches of rain on June 7-8 exacerbated any diseases. Despite several late rains, the Lake and Mendocino fruit and nut crops, though light, appear clean and are progressing nicely.

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

Sincerely,

Rachel Elkins
Pomology Farm Advisor

LAKE COUNTY WALNUT SUMMER FIELD MEETING

WHEN: Tuesday, July 11, 2000
8:30 to 11:30 a.m.

WHERE: Lauenroth Plunkett Lane Orchard, Kelseyville
Hwy. 29 to Renfro, then turn right on Bell Hill to Plunkett Lane
1st walnut orchard on the west side of Plunkett Lane
SIGNS WILL BE POSTED FROM HWY. 29

SPONSOR: University of California Cooperative Extension

PROGRAM

(2 hours of PCA Continuing Education Credit requested)

- 8:30 A.M.** **Registration, coffee, and pastries**
- 9:00** **Welcome and introductions**
Rachel Elkins, Pomology Farm Advisor, UCCE
- 9:05** **Walnut burl theft update**
Lake County Sheriff Department representative
- 9:30** **Transitioning to organic walnut production**
- **Registration/certification**
Chuck Morse, Lake County Dept. of Agriculture
 - **Providing nutrients**
Stu Pettygrove, Extension Soils Specialist, UC Davis
 - **Organic weed and vertebrate management options**
Rachel Elkins
Paul Lauenroth and other participating growers
 - **Cover crop establishment and management**
Alex Suchan, Upper Lake grower/nurseryman
- 10:45** **Walnut husk fly monitoring and control**
Sue Opp, Dept. of Biological Sciences, CSU Hayward
- 11:15** **Frosted scale monitoring and control**
Rachel Elkins
- 11:30** **ADJOURN**

BRING HAND LENSES
(a limited number will be available to borrow)

2000 UC LAKE COUNTY PEAR FIELD DAY
Thursday, July 13, 2000

SPONSORS:

U.C. Cooperative Extension
California Department of Pesticide Regulation
California Pear Advisory Board (CPAB)
Pear Pest Management Research Fund

3 units PCA Continuing Education Credit applied for

For both sessions, meet at Quercus Ranch, 4150 Soda Bay Road, Kelseyville. Follow parking signs to labor camp. The meeting will then progress to local orchards on Soda Bay Road.

SPANISH SESSION: 12:30 - 3:00 p.m. (Registration at 12:30 p.m., program begins at 1:00)

Translation by Lucia Varela (*Please encourage employees to attend at least one of the Spanish sessions in Lake or Mendocino County – for your benefit as well as theirs!!*) **A HAND LENS WILL BE GIVEN TO EACH ATTENDEE.**

ENGLISH SESSION: 3:30 – 6:00 p.m. (Registration at 3:30, program begins at 4:00)

PROGRAM

(same for English and Spanish sessions)

- **Registration, refreshments, welcome**
Rachel Elkins, U.C. Cooperative Extension, Lake and Mendocino Counties
- **Oak root fungus management and using the pressure bomb to measure tree stress**
HANDS-ON PRACTICE USING THE NOW-COMMERCIAL “SHACKEL” PRESSURE BOMB MADE BY PMS INSTRUMENTS
Rachel Elkins and field staff
Dave Rizzo, Dept. of Plant Pathology, UC Davis
Ken Shackel, Dept. of Pomology, UC Davis
Jeff Hamel, PMS Instrument Co., Corvallis, OR
- **Pear Pest Management Alliance late-season pheromone hanging (final update)**
Rachel Elkins
Participating growers and PCA's
- **CalDPR/PMA areawide codling moth “puffer” project**
DISCUSSION AND HANDS-ON PRACTICE WITH DISPENSERS AND PROGRAMMER
Rachel Elkins and field staff, UCCE
Bob Elliott, CalDPR Project Manager
Roland Gerber, Paramount Farming Co., Bakersfield
Bob McClain, CPAB
Participating Growers and PCA's
- **European pear variety trial – 2000 observations and fruit viewing**
Rachel Elkins
- **ADJOURN**

Those who wish to view and discuss the 8th leaf Golden Russet Bosc training and rootstock trial in Finley are welcome to join us after the English meeting ends at 6:00. Training systems are central leader, 3-leader, ‘parallel hedgerow’, perpendicular fan and Tatura trellis. Rootstocks are OHxF 40, 69, 87, 97, 217, 333, and 513, Quince BA29C and *P. betulaefolia*.

2000 UC MENDOCINO COUNTY PEAR FIELD DAY

Friday, July 14, 2000

SPONSORS:

U.C. Cooperative Extension
California Department of Pesticide Regulation
California Pear Advisory Board (CPAB)
Pear Pest Management Research Fund
Ukiah Valley IPM Pear Growers, Inc.

3 units PCA Continuing Education Credit applied for

The English and Spanish sessions will both meet at Oswald Ranch, 3400 Ruddick-Cunningham Road, off Talmage Exit, Hwy. 101. Follow signs from Talmage/Ruddick-Cunningham junction.

ENGLISH SESSION: 8:30 – 11:30 a.m. (Registration at 8:30, program begins at 9:00)

PROGRAM

- 8:30 Registration, refreshments, welcome**
Rachel Elkins, UCCE Pomology Farm Advisor, Lake and Mendocino Counties
- 9:00 Pest Management Alliance/Ukiah IPM Growers areawide codling moth mating disruption project**
Pete Chevalier, President, Ukiah IPM Growers, Inc.
Erin Ruddick, Secretary, Ukiah IPM Growers, Inc.
Participating Growers and PCA's
Bob McClain, CPAB
- 9:20 Control of OBLR and true bugs in mating disruption programs**
Bob Van Steenwyk, Extension Entomologist, UC Berkeley
Lucia Varela, UCCE North Coast IPM Advisor
- Comparison of Concep and Isomate pheromone dispensers**
Lucia Varela
- 9:45 Surround® kaolinic clay to enhance red pear color (data from 1999 trial)**
Rachel Elkins
- 10:00 Mixed codling moth/OBLR "puffer" trial**
Rachel Elkins
Roland Gerber, Paramount Farming Co.
- 10:15 Root related problems along the Russian River**
Dave Rizzo, Dept. of Plant Pathology, UC Davis
Rachel Elkins
- 10:45 Pressure bomb and neutron probe to schedule irrigations and measure tree stress**
Ken Shackel, Dept. of Pomology, UC Davis
Jeff Hamel, PMS Instrument Co., Corvallis, OR
Larry Schwankl, Extension Irrigation Specialist, UC Davis
Steve Southwick, Extension Pomologist, UC Davis
Rachel Elkins
- 11:15 Management of rat-tail blooms in a fire blight program**
Steve Southwick

SPANISH SESSION: 12:30 – 3:00 p.m. (Registration at 12:30, program begins at 1:00).

Translation by Lucia Varela

TOPICS: mating disruption (Isomate, Concep, puffers), pear pest and beneficial insect identification, OBLR, root-related problems (oak root fungus, "wet feet", Phytophthora). A HAND LENS WILL BE GIVEN TO EACH ATTENDEE.

(Please encourage employees to attend at least one of the Spanish sessions in Lake or Mendocino County—for your benefit as well as theirs!!)