UNIVERSITY OF CALIFORNIA ~ SUTTER/YUBA COUNTIES
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ORCHARD NOTES

JUNE/JULY 1999

UPCOMING EVENTS

Microsprinkler Irrigation Tour for Tree Crops
July 13, 1999

Topics include system design, installation, efficiency, water requirements, converting mature flood irrigated orchards to microsprinklers, and costs.

Look for a separate announcement and registration form soon.

RED IMPORTED FIRE ANT

Article written by Mark Quisenberry, Sutter County Agricultural Commissioner.

Red Imported Fire Ant (RIFA), a native of South America, was accidentally introduced into the Southern States in the early 1900's. This pest has caused severe economic impacts for growers in those states, and has the potential to cause billions of dollars of loss to the California agricultural industry. RIFA can obliterate IPM programs, their nests can damage farm machinery, they destroy fruit and girdle trees, the ants prevent hand-harvest, and their mere presence places severe restrictions on the marketability of a grower's crop (quarantine).

Red Imported Fire Ants have been artificially spread by hitchhiking on beehives. If you have ever used honeybees for pollination purposes from out-of-state, your orchards may be at a greater risk of having an infestation. As outlined in the enclosed brochure, if you have ever seen suspicious ants in or around your orchard, please contact your Agricultural Commissioner immediately. In Sutter County call (530) 822-7500. In Yuba County call (530) 741-6484.

CHEMICAL THINNING - PEACH

Many growers saw the effects of applying the bloom time chemical thinning surfactant called Entry (was Armothin) at my May field meeting. We also discussed using the plant growth regulator Ralex for chemical thinning. Instead of bloom time application, Ralex is applied when next years flower buds are initiating, which is usually around the late June/early July period. In research trials started last year on Loadel, Ross and Andross, we made applications either on July 15 or July 30, 1998 because of the late year. Although the 1999 data is being analyzed now, we have preliminary data on thinning time and fruit size where Ralex was used. Thinning time was cut in half compared to the unsprayed controls and fruit size was increased at reference date by 2 mm. This means that trees have the potential to be cropped more heavily than where hand thinning only is used. Trees that had been treated with Ralex the previous year also appeared to be less stressed than untreated trees because of less crop.

We will have a full report on the 1999 data for both Entry and Ralex next winter. Given high costs of labor and the favorable data we do have, these materials merit your consideration. The usual recommendation is to try new materials on a limited basis to get some experience. The timing for Ralex this year will probably be the mid to late July period like last year since we are again late in 1999. Please give me a call if you are considering using Ralex and would like more information.

TREE NUTRITION

Leaf analysis is very helpful in assessing tree nutrition and providing information to guide your fertilizer program. There are still many growers who do not use this relatively inexpensive tool for determining nutrient deficiencies, toxicities, or excesses. An example of where leaf analysis would be beneficial is in excessively vigorous peach orchards. In our area, many growers put too much nitrogen on peaches, a tree crop that has a lot of vigor. This leads to excessive shoot growth which often results in shading of hangers and loss of lower fruitwood. The percent nitrogen levels considered adequate range from 2.6 - 3.5 but we have found that levels over 3.0 are excessive. In a local Dr. Davis orchard with excessive vigor, even after two years with no nitrogen fertilization, the nitrogen averaged 3.5 percent from several samples. From other research we know it can sometimes take several years before trees become deficient after nitrogen is withdrawn. In addition to leaf analysis to fine-tune your nitrogen fertilizer program, we have a work sheet to help estimate nitrogen fertilizer needs for mature peach trees in our office. We also have a video and manual on nitrogen management that can be checked out of our office.

Points to remember when sampling:

- Sample in July (August for pistachio) when nutrient levels in leaves are relatively stable
- Test annually for nitrogen, potassium and zinc
- Check for any other suspected deficiencies or toxicities
- Each sample should be of the same variety, age, rootstock and soil
- Take comparison samples between poor vs. good trees
- **Peach** -select 60-80 mid-shoot leaves from moderately vigorous fruiting shoots.
- **Walnut**-select 25-30 terminal leaflets from spurs or from the middle of moderately growing shoots.
- **Apples**-select 60-80 fully expanded, mature leaves from non-fruiting spurs.
- **Kiwifruit**-select 25-30 mature leaves, just past the fruit on the shoot.
- Put leaves in paper bags and keep them cool until they are delivered to the lab.

CRITICAL NUTRIENT LEVELS

	Cling Peach	Apple	Walnut	Kiwifruit
% Nitrogen (N) Deficient below Adequate	 2.4 2.6-3.5 (1)	 1.9 2.0-2.4	 2.3 2.4-3.2	 1.6 2.2-2.8 (2)
% Potassium (K) (3) Deficient below Adequate over	 1.0 1.2	 1.0 1.2	 0.9 1.2	 1.0 1.5
% Magnesium (Mg) Adequate over	 0.25	 0.25	 0.3	 0.3
% Calcium (Ca) Adequate over	 1.0	 1.0	 1.0	 2.0
% PPM zinc (Zn) Adequate over	 20	 18	 18	 15
% Chloride (Cl) (4) Excess over	 0.3	 0.3	 0.3	 1.1
% Sodium (Na) (4) Excess over	 0.2	 --	 0.1	 (?)

Based on July leaf samples except pistachio (August samples). Adequate levels for all orchard crops: Phosphorus (P) 0.1- 0.3%; Copper (Cu), over 4 ppm; Magnesium (Mn), over 20 ppm.
(1) Best to keep around 3.0%
(2) 2.5% or lower is recommended to maximize storage potential
(3) K levels between deficient and adequate are considered 'low' and may cause reduced fruit sizes in some years.
(4) Excess Na or Cl cause reduced growth at the levels shown, leaf burn may or may not occur when levels are higher. Confirm salinity problem with soil or root samples.

PEST UPDATES

Check the pest tracker in our office for the latest update on insect activity or get on the e-mail pest tracker.

Walnuts

Codling Moth - Change pheromone traps and watch for the beginning of the second flight to occur in late June. Time sprays for 250 degree days (DD) from the beginning of the second flight (200 DD for Confirm). Several orchards had high trap catches during the first flight. Table 1 from the UCIPM Walnut Pest management Guidelines is a quick reference to help you time Codling Moth sprays. The guidelines are available from our office or the internet at www.ipm.ucdavis.edu.

Walnut Husk Fly - Hang husk fly traps supercharged with ammonium carbonate by July 1. Last year husk fly came late and with a vengeance. The box below shows the dates eggs were found in female husk flies and spray timing in a 1998 research plot. Three sprays were needed last year to control it. Because of variability, every orchard needs to be monitored carefully for husk fly. We also found that where populations are high, full coverage pesticide may give better control than partial sprays of insecticide and bait. The insecticides we recommend are Malathion, Lorsban or Asana. Check out the husk fly video from our office for monitoring and spray timing guidelines.

FIRST EGG TO SPRAY INTERVALS

FIRST EGG 8/10	FIRST SPRAY-8/14, 8/15
SECOND EGG 8/31	SECOND SPRAY-9/4, 9/5
THIRD EGG 9/14	THIRD SPRAY-9/18, 9/19

Peaches

Continue to monitor for Oriental Fruit Moth (OFM) and Peach Twig Borer (PTB) with pheromone traps until harvest.

OFM - Look for the 3rd flight to start in late June. Once moths are caught, reset the biofix and spray at 500-600 degree-days (DD) or 400-500 DD if fruit are ripening. Because of a cool spring, OFM populations may have been building like last year. With the peaches being late again like 1998, monitor OFM carefully during the 3rd and 4th flight.

PTB - Look for the 2nd biofix to occur in early July. Spray at 400-500 DD from the biofix or at 300 DD when fruit is ripening.

Leafroller - Last year there was leafroller damage on fruit in several peach orchards like 1997. We've been monitoring for leafroller worms all spring in peaches. In 1998, most of the worms we found were oblique banded leafroller (OBLR). We have already found second generation OBLR larvae in a prune orchard. When we start finding leafroller in peaches it will be posted on the pest tracker in our office. It is time for you to check your own orchard for leafroller and be prepared to spray if worms are found.

TRAINING NEWLY PLANTED WALNUT TREES

For walnuts, it is critical to spend time the first season properly developing the tree trunk. Throughout the summer, encourage all growth into one main shoot that will form the trunk of the tree. Tie it loosely to the stake as it grows. Pinch or prune back the growing tips of competing shoots. Young trees do best with frequent, lighter irrigations ensuring adequate but not excessive moisture.

NEW PUBLICATION

The new IPM for Stonefruits Manual is about to be released. It covers pest problems on peaches, prunes, plums, nectarines, cherries and apricots. This will be an invaluable resource for anyone who works in these crops. We are preordering copies which should be available in our office by late July or early August. Cost will be $35.00.

UC PUBLICATION WEBSITES

UC Catalog of Publications, Videos and Slide Sets Available Online

Practical, research-based publications from University of California advisors, specialists, and faculty provide valuable information for growers, ranchers, landscapers, educators, homeowners, and individuals interested in agriculture and natural resources.
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