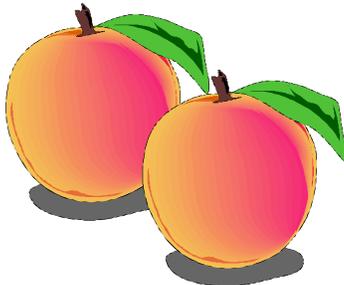




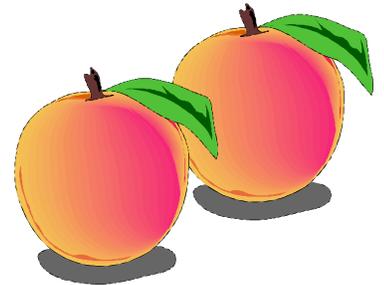
UNIVERSITY OF CALIFORNIA ~SUTTER/YUBA COUNTIES
 COOPERATIVE EXTENSION
 142A GARDEN HIGHWAY, YUBA CITY, CALIFORNIA 95991
 (530) 822-7515 ~ FAX (530) 673-5367



ORCHARD NOTES



PEST MANAGEMENT FIELD MEETING



APRIL 20, 2000
9:30 A.M. - 11:30 A.M.
QUINCO RANCH, 1563 SIMPSON LANE, MARYSVILLE
(MAP ON OTHER SIDE)

Reduced risk approaches to peach pest management and monitoring techniques will be covered in this hands-on field meeting. Alternatives to conventional pest treatments may be a necessity as key production tools are regulated out of use. Come and learn how to integrate reduced risk pest management techniques in your orchard.

Introduction: Janine Hasey, UC Farm Advisor, Sutter and Yuba Counties

What is the Peach Pest Management Alliance (PMA) - Concept and Objectives? - *Heidi Sanders, Research Coordinator, Canning Peach Association*

Mating Disruption for Oriental fruit moth & peach twig borer (PTB); Alternative controls for PTB - *Janine Hasey, Farm Advisor*

San Jose Scale, Mite, Thrips and oblique banded leaf roller management; the Role of Biological Control - *Walt Bentley, Regional IPM Advisor, Kearney Agricultural Center, Parlier*

Hands-on Displays - *Kim Hicks, Field Assistant*

SPONSORS

UC COOPERATIVE EXTENSION, SUTTER AND YUBA COUNTIES
 UC STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM
 DEPARTMENT OF PESTICIDE REGULATION
 CALIFORNIA CLING PEACH GROWERS ADVISORY BOARD
 CALIFORNIA TREE FRUIT AGREEMENT

Earn 2 hours of PCA or Private Applicators Credit

In the event of rain or the need for special accommodations, please call our office, 822-7515.

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PEST TRACKER

The pest tracker is posted in the entry area of our office as in the past. If you would like to receive the updates via e-mail, send your address to jkhasey@ucdavis.edu. Degree-days and other forecasts will be updated weekly on Wednesdays. Oriental fruit moth, peach twig borer, codling moth, San Jose scale, and navel orangeworm will be tracked from the beginning of the flight in Yuba City and in District 10 and the Simpson Lane area in Yuba County. Oblique Banded Leafroller and Cling Peach Rust updates will also be included. Peach rust forecasts will be updated on Mondays through spring. The rust forecasts are based on the presence of inoculum and rain to predict whether a spray is needed (see rust article).

FINAL CHILL HOURS

The chill hours accumulated at or below 45 degrees from November 1st to March 1st at my office in Yuba City were 804. The previous season they were 1221 for the same time period. To browse chilling data from the automated CIMIS station in Nicolaus go to <http://fruitsandnuts.ucdavis.edu> and click on pomology weather services.

CLING PEACH RUST

Rust was not a problem in 1999. There were low inoculum levels last year and if our spring is dry, it probably won't be a problem this year. However, rust is a disease that needs to be watched since it can become a real problem under the right conditions. Ideal temperatures for rust are between 60 -70 F; below 55 F and over 90 F it is inhibited. The rust fungus overwinters in perennial twig cankers that allow it to survive. From early April to early May, these cankers produce urediniospores that start the disease cycle. Applying a preventative fungicide spray when spores are found in these cankers is very important to controlling this disease. From our past research, we are able to forecast if rust will be a problem and predict when to spray. If there are twig cankers (inoculum source) and rain, then preventative sprays are needed. If there is no inoculum and no rain, there is no need to spray. Likewise, if there is rain but no inoculum or inoculum but no rain, then sprays are not needed. We will be monitoring highly susceptible orchards this spring for twig cankers. Every Monday through spring, we will post our findings on the pest tracker and whether a spray is recommended.

GLASSY-WINGED SHARPSHOOTER

The glassy-winged sharpshooter (GWSS) is a potentially damaging pest to almonds, grapes and a wide range of ornamental and wild plants. It transmits the bacterial diseases almond leaf scorch to almonds and Pierce's disease to grapes. GWSS has been found in southern California and the south end of the San Joaquin Valley. Everyone needs to be aware of this pest since it is important to delay its establishment in our area. To help prevent introduction the Agricultural Commissioners in Sutter and Yuba Counties will be inspecting all nursery shipments coming into the counties. They also both have proposals to do mass trapping in prunes, peaches and the urban areas. If you have any questions or do not want a trap in your orchard, please contact your Agricultural Commissioner. We have color brochures in our office and the following web sites have information on GWSS and Pierce's Disease:

<http://fruitsandnuts.ucdavis.edu/crops.html#tools>

www.CNR.Berkeley.edu/xylella/

<http://ucceventura.xlrn.ucsb.edu/IPM/>

<http://danrcs.ucdavis.edu/Special/gwss/default.shtml>

If you find anything you think might be GWSS, please contact your Agricultural Commissioner's office or Cooperative Extension immediately.

WALNUT BLIGHT

Blight bacteria survive the winter primarily in dormant buds. Bacteria is spread to unprotected tissue by rain, heavy dew or irrigation. To control blight, apply sprays to the bloom, nutlets and foliage **before** it rains to prevent the bacterium from being spread by moisture.

This year, Manex® again received a Section 18 as a tank mix with fixed copper for blight control. Adding Manex® to every copper spray will reduce blight infection. The Section 18 will expire on June 15, 2000.

The main points to keep in mind with your blight control program are:

- Start your spray program just before the first female flower appears and be prepared to apply sprays through May.
- All new plant tissue must be sprayed **before** it rains. Plan to treat weekly, but watch the weather forecasts. Spray at least every seven days during wet weather and every ten days during drier weather.
- Full coverage is needed for the most effective blight control.

For blight control there is ongoing research testing efficiency of zinc with lime and various new compounds and using penetrating materials with copper and Manex® at terminal budbreak. There are no other registered materials for walnut blight. In research trials, copper plus Manex® consistently give the most effective control.

CODLING MOTH

We set a biofix for codling moth in walnuts on March 22nd in a high population orchard in District 10 and on April 2nd in Yuba City. When setting the biofix for codling moth, a sustained moth catch is needed and sunset temperatures of 62 degrees for codling moth to mate successfully. We had sunset temperatures over 62 degrees between March 20th and April 3rd with the exception of March 27th.

APPLYING THE FIRST FLIGHT SPRAY

Moth emergence to beginning of egg hatch takes about 200 degree days. Apply organophosphate or pyrethroid sprays when most of the larvae have hatched. This corresponds to a spray timing of 300 DD from biofix or at d -½ inch nut size, whichever is later, on early leafing varieties like Ashley and Serr. The insect growth regulators (IGRs) Confirm or Dimilin have different spray timings than conventional pesticides. Confirm is sprayed around 200 DD which is the beginning of egg hatch. Coverage is essential for IGRs

to be effective.

In some years there is a second peak of the first flight. We call this second peak 1B and the first peak 1A. Codling moth damaged nuts from the 1A flight will drop to the ground but infested nuts from the 1B flight will not all drop but will be blown at harvest. These damaged nuts can make a good home for navel orangeworm to build up in over the season. If a 1B peak is seen, then plan to spray again especially if a short residual material was used for the 1A peak. The spray timing for this second peak often occurs around 600-700 DD. With varieties like Chandler or Hartley, this 1B peak is also of concern. Here, if there is enough foliage expansion, you may want to consider an IGR like Confirm if the codling moth population is low and the trees are smaller (below 30').

It is very important that best management practices be used when applying all insecticides and irrigation water is managed to avoid runoff.

NITROGEN MANAGEMENT

Developing a sound nitrogen program involves several steps. First, make an estimate of the orchard's nitrogen removal rate and nitrogen needs. Then estimate nitrogen supplied by other sources such as irrigation water, cover crops and soil organic material. From this, an approximate fertilization rate is developed. Then fine-tune the rates annually using leaf tissue analysis (July), yield records and general vigor of the trees. The efficiency of nitrogen applications is influenced by fertilizer materials, timing and placement, irrigation application efficiency and FERTIGATION TECHNIQUES. Nitrogen assessment, increasing use efficiency, choosing fertilizer materials and determining specific nitrogen fertilizer rates are clearly explained in the video/handbook on nitrogen management in stone fruit available from our office.

NITROGEN APPLICATION TIMING:

WALNUTS

For greater efficiency, split nitrogen (N) fertilizer

applications between the spring and the end of summer or early September while the roots are still active. The springtime N application will be used by the tree during the growing season, and the N applied late summer goes into storage and is used during the following bloom. On sandy soils, consider splitting nitrogen into three or more applications.

PEACHES

During the spring growth flush period, usually early April, apply between 30-70% of the total annual amount of nitrogen depending on the variety. Apply higher rates to late-season varieties. Apply the second application in late summer, usually August to September. Early season varieties should have higher rates at this timing. Evaluate tree vigor during the growing season by looking at the upper shoot growth, three feet is usually sufficient. The common 5-7 feet of shoot growth is excessive and causes hangers to dieback from shading.

APPLES

Split nitrogen applications between spring and postharvest. Nitrogen levels should be low but not deficient as harvest nears to improve fruit quality and color (red varieties).

KIWIFRUIT

Each mature vine needs about one pound of actual nitrogen annually. Apply about two-thirds of the N fertilizer in March at budbreak as a broadcast application. This gets the vine growing vigorously and provides the N needed for fruit set. Apply the remaining one-third of N needed in May for vine maintenance. If using fertigation, apply N April through July.

ORIENTAL FRUIT MOTH AND PEACH TWIG BORER

The first oriental fruit moths (OFM) were caught at our Yuba City peach orchard and in District 10 on February 23, which we set as the biofix. These are the orchards that we calculate degree-days from for reporting on the pest tracker. Generally no insecticide is applied to the first generation because of

erratic emergence and egg-laying caused by

variable weather. Several growers are using mating disruption this season. With the loss of PennCap-M®, pyrethroids are the main spray tool left for OFM control. By integrating mating disruption for early season control with a summer spray, there is less chance for resistance developing from multiple pyrethroid sprays and the costs of using mating disruption become more economical.

If planning to control OFM with sprays, monitor shoot strikes during the first flight to decide if a spray will be needed during the second flight to reduce OFM population levels. When about 920-1010 degree-days (DD) have accumulated, the second flight should begin. Once started (in May), begin accumulating DD from zero and apply spray treatments 500-600 DD from the beginning of the second flight for the best control.

If using mating disruption to control peach twig borer (PTB), pheromone dispensers should be placed in orchards when the first moth is caught which could be late April or even in May. (See table of historical biofix). If planning to spray, it should be applied between 400 DD to 500 DD after biofix.

OBLIQUE BANDED LEAFROLLER

Traps should be hung the end of April to detect the beginning of the flight which is usually early May.

NEW VIDEO AND PUBLICATION

CROWN GALL OF TREE CROPS: BIOLOGY AND CONTROL Crown gall can cause serious losses to deciduous fruit and nut crops in California. Its treatment is a costly and labor-intensive activity. This videotape shows disease symptoms, discusses the cause and how it is transmitted. It is directed to growers to minimize infection and spread in their orchards. By watching this tape, you'll learn prevention techniques and eradication methods from trees already infected with galls. There is an English and a Spanish version available on a two day checkout from our office. They also both can be purchased from our ANR publications catalogue for \$35.00 each.

SCHEDULING IRRIGATIONS: WHEN AND HOW MUCH provides up-to-date information on irrigation scheduling - when to irrigate and how much water to apply. This was the guide book we used at our recent Irrigation Workshop in March. It gives step-by-step procedures for developing irrigation scheduling for different irrigation methods. \$25.00 from our office or through the ANR publications catalogue.

JANINE HASEY
UC FARM ADVISOR

HISTORICAL BIOFIX AND RUST DATA

YEAR	OFM	PTB	CM	RUST
2000	2/23 (S) 2/23 (Y)		4/02 (S) 3/22 (Y)	
1999	2/24 (S) 2/24 (Y)	5/03 (S) 5/17 (Y)	4/15 (S) 4/12 (Y)	4/21 spores found (twig cankers)
1998	3/09 (S)	4/27 (S)	4/19 (S) 4/18 (Y)	4/6 spores found (twig cankers) 5/4 spores on leaves
1997	3/07 (S)	4/14 (S)	3/21 (S) 3/19 (Y)	
1996	3/07 (S)	4/25 (S) 4/25 (Y)	3/18 (S) 3/16 (Y)	4/11 spores found (twig cankers) 5/9 spores on leaves
1995	3/02 (S) 3/04 (Y)	5/02 (S) 5/05 (Y)	4/01 (S) 4/01 (Y)	
1994	2/28 (S)	4/11 (S)	4/04 (S) 3/26 (Y)	

(S) =Sutter
(Y) =Yuba

**COOPERATIVE EXTENSION
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OAKLAND CALIFORNIA 94612-3560**

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