

**TREE AND VINE NOTES****MAY 2005****RED IMPORTED FIRE ANT STILL IN MADERA COUNTY**

By Brent Holtz, Ph.D., UCCE Madera County

Red Imported Fire Ant (RIFA) was found in 2000 on 742 acres of agricultural land that encompassed seven properties in Madera County. The California Department of Food and Agriculture initiated ant bait treatment program on these properties aimed at eradicating RIFA. In 2004, 395 acres remained under treatment. In the last five years over 50,000 acres of almonds have been surveyed in Madera County, increasing the treatment area to about 1,300 acres. The CDFA, in conjunction with the Madera County Agricultural Commissioner, is in process of developing a multi-year action plan to eradicate the infestation.

RIFA was probably introduced into Madera County on infested beehives arriving from the southeastern United States used for pollination. The red imported fire ant (RIFA) is unique among exotic pests since it may impact so many facets of the state's population and economy. RIFA poses a threat to agriculture, to urban and suburban lifestyles, and too many California ecosystems. RIFA is a pest because of its sting to humans, its direct damage to crops and livestock, its interference with electrical and irrigation equipment, and its ability to displace native species of ants.

Red imported fire ants have been found to actually plug up irrigation systems when they need to find water in times of drought. They also have been known to chew through irrigation lines to reach water. RIFA is also attracted to electrical fields around bare wire; once they contact the wire they are killed, but not before setting off an alarm pheromone that attracts others which can cause them to mass on the wire and ultimately cause the equipment to short out.

RIFA can also inflict damage to ground nesting birds and mammals. Immobilized animals such as penned livestock or young newborns and hatchlings are at greatest risk since RIFA are attracted to their mucus membranes causing blindness and potential suffocation. Animals which have learned to avoid RIFA may become malnourished or dehydrated when the ants have infested their food or water.

The red imported fire ants arrival in the US occurred around 1940, probably on infested soil used as ballast on ships coming from South America. It is native to lowland areas of Argentina and Brazil. From its introduction point in Alabama it has spread outward at rates of over 100 miles per year. Its current geographic distribution includes the entire south from Florida to California and as far north as Virginia, Tennessee, and Oklahoma.

The life cycle of a fire ant colony begins with a newly-mated queen searching for a suitable next site in soil. During this search the queen is vulnerable to predators such as their mortal enemies, the Argentine ant. The Argentine ant and the red imported fire ant, both exotic pest ants from South America, are mortal enemies and fight to death on contact. If the queen is lucky, she survives and finds a suitable next site where she snaps off her wings, burrows in the ground and seals herself off from the outside to lay her first batch of eggs.

**NEW WINEGRAPE COST STUDY IS AVAILABLE**

A New UC Cooperative Extension study examines winegrape establishment and production cost in the San Joaquin Valley. The cost of study focuses on spur pruned cultivars like French Colombard, Rubired and Ruby Cabernet that are suitable for production in the San Joaquin Valley. The study is intended as a

guideline to help identify establishment costs, make production decisions, determine potential returns, prepare budgets and evaluate production loans. The study is available free online at <http://costsstudies.ucdavis.edu>, or may be obtained for a small charge at your local UCCE office.

### **VARIETY DISPLAYS AND STONEFRUIT RESEARCH SEMINARS**

Friday 3 June                      Friday 1 July                      Friday 12 August  
8:00am – 9:00am new varieties displayed by breeders, nurseries and USDA  
9:00am – 10:00am research updates

UC Kearney Agricultural Center, 9240 Riverbend Ave.  
Parlier – South of Fresno on 99, take the Manning exit and go east through Parlier. The KAC will be on your right before you get to Reedley.

More information: Brent Holt 559/675-7879 X 209

### **LIGHT CROP = LESS FERTILIZATION**

By Roger Duncan, UC Cooperative Extension

Old leaves, blossoms and pruned limbs (in orchards where the brush is shredded) stay in the orchard and their nutrient components are recycled into the soil. Therefore, the largest loss of nutrients from an orchard by far is in the harvested crop. This means the demand for nitrogen and potassium fertilizer in mature orchards is largely driven by crop load. For fruit trees, where crop load is thinned to a fairly consistent level each year, fertilizer requirements do not fluctuate much from year to year. For almonds, where crop loads can fluctuate greatly from year to year, fertilizer requirements can vary considerably.

The old rule of thumb for nitrogen fertilization is about 1 pound of N for every 10 pounds of almonds that will be harvested. Therefore, if a grower estimates that an orchard has a 2000 pound crop, he or she might apply about 200 pounds of N per acre, in order to replenish what the crop will use that year. In a year with a light crop, trees will use far less nutrients and growers should reduce their fertilization rates accordingly. Applying 300 pounds of nitrogen to a 2000 pound crop will not turn into a 3000 pound crop, nor will it mean that next year's crop will be 3000 pounds.

Be sure to take leaf samples in late June or July to monitor your nutrient levels. Leaf nitrogen should be between 2.2 – 2.5%. Higher than necessary nitrogen levels, will result in excessive growth, higher pruning costs, premature shade-out of lower wood, and increased brown rot and hull rot. If nitrogen is applied at a rate higher than a tree can take it up, it will leach through the soil profile and contaminate the ground water. Not only is that a waste of money, it is irresponsible.

Calculating nitrogen and potassium needs has become a little more sophisticated in the past few years. If you want to calculate exactly how much nitrogen and potassium fertilizer to apply in each orchard, you can use UC Davis Specialist Dr. Patrick Brown's simple internet calculator. Go to <http://fruitsandnuts.usdavis.edu>, click on the Fruits & Nuts button, and then choose Almonds. You can then scroll down under "Production Management" to "Nitrogen Fertilization Recommendation Model for Almond". Note that growers using drip or micro sprinklers can reduce their fertilizer use substantially because of increased application efficiency.

### **STANISLAUS UCCE PEST TELEPHONE HOTLINE**

Flight activity and optimal treatment timing for oriental fruit moth, peach twig borer, codling moth, & omnivorous leaf roller is available on our prerecorded Tree & Vine IPM Telephone Hotline. Information can be accessed 24 hours a day at 209/525-6841. Information is based on insect traps monitored by UC Farm Advisors in local orchards. The tape will be updated every Tuesday afternoon. The tape is intended as a guide only and growers should monitor their own traps because biofixes, trap catches and damage history vary among orchards.

### **SIERRA FOOTHILL ORGANIC FRUIT AND NUT CROPS VARIETY DEMONSTRATION**

Saturday, May 21                      10:00 – 11:30 am  
UC Sierra Foothill Rand Extension Center, 8279 Scott Forbes Road, Browns Valley

From Marysville take Highway 20 east (about 14 miles) towards Grass Valley, turn north on Peoria Road and follow the signs (5 miles).

Topics: you will see a mix of different fruit and nut varieties that were planted in 1992 or more recently at this low elevation foothill site (about 600 ft.) to determine what crops and varieties perform best under foothill conditions. The trees have also been grown organically since 2001. We will discuss organic pest, weed and nutrient management practices and IPM practices in general. You will also hear about the future plans. There will be time to walk around and examine the plantings.

Speakers: Janine Hasey, UC Farm Advisor in Sutter and Yuba Counties, Dustin Favell from the research and extension center, and John Tecklin and Leonard Chapman from Mountain Bounty in Nevada City. Please call the Sutter/Yuba UCCE at 530/822-7515 or the research and extension center at 530/639-8800 if special accommodations are needed.

### **CODLING MOTH I APPLES AND WALNUTS**

By Bill Coates, UC Cooperative Extension, San Benito County

Codling moth (CM) larvae are the most significant causes of internal “worm” damage to walnuts, apples and pears. Most insect control programs are based upon control of this pest before all others. Currently, the biofix for most Central Coast locations is March 31. The biofix is the first day when both significant CM catches occur in pheromone traps and the sunset temperature exceeds 62 F. It is safest to establish your own biofix especially if you are warmer or cooler than the location where we measure temperatures from automated stations or if you have an especially high or low population of CM.

For apples, conventional spray materials are applied at 250 degree-days (DD). Some apple growers have been having significant damage from CM despite following a spray program. You may be relying on insecticides to last longer than is warranted or have the development of insecticide resistance. You must have insecticide residue present whenever eggs are hatching. This means spraying every three weeks (or at least two sprays per 1A, 1B and 2<sup>nd</sup> flight) for many growers. Some alternatives are to combine pheromone mating disruption (Md0 with a spray program or switch to different pesticide chemistry. Some alternatives to the commonly used pyrethroids are a high rate of Imidan (acidify water below 6.0 pH) or possibly an insecticide combined with an insect growth regulator (IGR) such as Intrepid or other reduced risk insecticide such as Assail or Success. For options, check our IPM web site. For organic growers, MD remains the mainstay for CM control. MD dispensers should have been placed on or before March 31. Where MD is inadequate or for small acreages where mating MD does not work well, you might consider Entrust or Entrust plus oil. Do not apply oil with or near a sulfur spray.

For walnuts, conventional spray materials (i.e. Lorsban, Imidan) are applied at 300 DD for the 1A flight or at ½ inch nut diameter (for ‘Payne’ or ‘Serr’), whichever comes later. Be sure to acidify the spray water below pH 6.0 for Imidan. Other materials such as IGR’s must be applied earlier or in combination with traditional insecticides. For organic orchards, use pheromone mating disruption (MD) or Entrust + oil. MD works best in orchards greater than five acres. The 1A flight results in infested nuts that fall off the tree in June or July. Late blooming varieties such as ‘Chandler’ and ‘Hartley’ are rarely infested by 1A larvae. The 1B flight (late May – June) and the 2<sup>nd</sup> flight (July) can result in damaged nuts that may be present at harvest. Evaluate your need to spray any particular flight based upon nut damage at harvest last year and your pheromone trap catches this year. Bait sprays for walnut husk fly do not control CM and full-coverage sprays for CM do not control walnut husk fly adequately – consider these two separate pests with different control measures for the best results.

The following are predicted spray dates for several Central Coast locations for the first (1A) CM spray for apples (250DD) and walnuts (300 DD). Actual spray dates may vary due to local conditions. For further information on CM control, go to the UC IPM web site at [www.impm.ucdavis.edu](http://www.impm.ucdavis.edu)

<u>Area</u>	<u>250 DD</u>	<u>300DD</u>
Hollister	May 3	May 8
San Juan Bautista	May 5	May 10
Ausaymas	April 28	May 3
Morgan Hill	May 1	May 5
Watsonville	May 4	May 10
Santa Cruz	May 5	May 12
Pajaro	May 8	May 14
King City	May 1	May 6

#### **PEACH TWIG BORER (APRICOTS)**

By Bill Coates, UC Cooperative Extension, San Benito County

Peach twig borers are the larvae found in ripening apricot fruit feeding at the stem end or down to the pit. They are brown with lighter bands. They also bore down shoot tips causing them to wilt. The biofix for peach twig borer is used to predict spray dates. The suggested spray timing occurs between 400 and 500 degree-days. Our computer model currently predicts the following spray dates for peach twig borer.

400 DD 500 DD

Hollister May 22 & 31

Ausaymas/North County May 19 & 28

Morgan Hill May 17 & 24

