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Submitted by:

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Walnut Husk Fly Field Meeting Monitoring, New Control Methods, Impact on Quality

Wednesday, June 9th, 2010
Time: 9:30am -11:00am
22122 Karnak Road, Knights Landing (see map)

Agenda

Introduction and Regulatory Update

Janine Hasey, UC Farm Advisor

Jan Kendel, Ag Biologist, Sutter County Agricultural Dept

Biology of Walnut Husk Fly

Carolyn DeBuse, UC Farm Advisor, Yolo/Solano Counties

Trapping/ Monitoring/ Decision Making

Janine Hasey, UC Farm Advisor, Sutter/Yuba Counties

New Chemical and Baiting Control Methods

Bill Coates, UC Farm Advisor, San Benito County

Impact and Damage

Bill Coates, UC Farm Advisor, San Benito County

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Sutter/Yuba and Yolo/Solano Counties

Co-Sponsored by: Sutter County Agricultural Department

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Cool Spring in 2010 Will Lead to Long Growing Season & Large Fruit

The article below by Roger Duncan, UC Farm Advisor, Stanislaus County, is from his newsletter "The Scoop on Fruits and Nuts in Stanislaus County", May 2010, Vol. 15.2. Please see the article that follows this one for Sutter and Yuba Counties GDH and 2010 harvest prediction.

The rate of cell division and respiration within a developing fruit is driven largely by temperature. The warmer it is during Phase 1 of fruit development, the faster the fruit develop and the larger the demand for carbohydrates. Recent studies at UC Davis have shown that the demand for carbohydrates can be 5 to 10 times higher during a warmer spring than during a cooler spring. Any limitation to carbohydrate accumulation by the fruit can ultimately lead to smaller fruit. During cool springs like 2010, fruit takes much longer to develop and there is more time to accumulate necessary carbohydrates for fruit development and to obtain larger size.

Temperatures during the first 30 days of fruit development have the greatest effect on harvest date and fruit size. A model has been developed at UC Davis that calculates heat units, called growing degree hours (GDH). The lower the GDH, the longer the growing season and the larger the fruit potential. By tracking the accumulated GDH during the first 30 days after bloom and comparing the bloom date and GDH to previous years, growers can predict the approximate harvest date of his/her orchard and estimate fruit size potential.

In an "average" spring, we accumulate about 6000 growing degree hours during the first 30 days after bloom. This spring we accumulated only 4800 GDH. This is very low and is similar to 2006 (a year with very big fruit). This means we will have a relatively long growing season; maybe a week longer than 2009. (Actual harvest dates in 2010 may be about the same as 2009 because bloom was nine days earlier this year). When you combine a long growing season with the slightly lighter fruit set we had in many orchards, this year fruit size should be very large in 2010.

Canning Peach growers get the maximum yield potential from their orchards when they thin trees just enough to have fruit slightly large enough to make number 1 size at harvest. If you have really large fruit at harvest and almost no number 2 fruit, you thinned too heavily and have lowered your yield. In my opinion, growers should leave at least 10% more fruit on their trees this year than 2009 in order to obtain maximum yields.

In summary:

- Cool temperatures during the first 30 days after bloom = slow fruit development
- Slow fruit development = delayed reference date and delayed harvest
- Delayed harvest = large fruit potential
- Large fruit potential = leave more fruit on the tree to obtain maximum yield

Thin lightly in 2010 for maximum production.

Predicting Local Cling Peach Harvest Timing

Peach harvest timing can be predicted based on the heat units accumulated driven by temperature the first 30 days after bloom. Temperatures those first 30 days are critical and what happens after that has a much smaller effect on harvest date. Weather near harvest coupled with soil, tree nutrition, water status, etc. can also have some effect on harvest date. As mentioned in the previous article, peach harvest data indicate that sizing fruit is more difficult when growing degree hours (GDH) 30 days after bloom are above 6,000 whereas it is generally a better fruit sizing year when springtime temperatures are cooler and GDH₃₀ is below 6,000.

The table below lists full bloom dates, growing degree hours (GDH) 30 days after bloom using the Nicolaus CIMIS weather station, and the general harvest timing from 2003-2009. Also included is the prediction for 2010.

Year	2010	2009	2008	2007	2006	2005	2004	2003
Full Bloom	Mar 12	Mar 16	Mar 10	Mar 9	Mar 14	Mar 3	Mar 9	Mar 9
GDH₃₀	5,060	6,117	5,548	7,420	4,375	6,153	7,788	5,953
Harvest Timing	Predict later than normal	Slightly later than normal	Normal	Early	Very late	Normal	Very early	Normal



Insect Activity

Codling moth, oriental fruit moth, and peach twig borer have had late biofixes and very sporadic flights this spring due to cool temperatures. Oriental fruit moth biofixed in some peach orchards around March 10. Peach twig borer is now being trapped in some peach orchards although a May biofix for this pest is not unusual in our area. For codling moth in walnuts, some orchards biofixed around April 18 or 19 in our area which is on the late side but a biofix date we have experienced before in 2006 and 1998, both cool, wet springs. What is unusual is the orchard where I have a codling moth study didn't biofix until May. Because of the wide variation throughout our counties, I have decided not to send out my weekly Pest Tracker this season. If there is some insect or disease issue I want to alert you to however, I'll send it out at that time. Look for more information on managing codling moth in the summer issue of the Sacramento Valley Walnut Newsletter.

Training Walnut Trees

Newly planted walnut orchards need constant vigilance once they start growing to properly train the trunk - the objective during the first summer. The goal is to attain over ten feet of trunk growth in a standard spaced orchard and about seven to eight feet of growth in a hedgerow orchard. Check trees frequently during the summer and tie trunk to stake as needed. Keep competing shoots pruned back. They add carbohydrate for increasing caliper growth and sunburn protection but don't let them compete with the trunk and slow its growth. Check soil moisture frequently with a soil tube or auger and stem water potential with a pressure chamber if you have one. Avoid stressing walnut trees for water or they stop growing and it can take a few weeks for them to resume growth. Typically, the key to great growth is frequent and light irrigations. Avoid saturating the soil to prevent crown and root rot diseases. Monitor carefully all summer and into early fall.

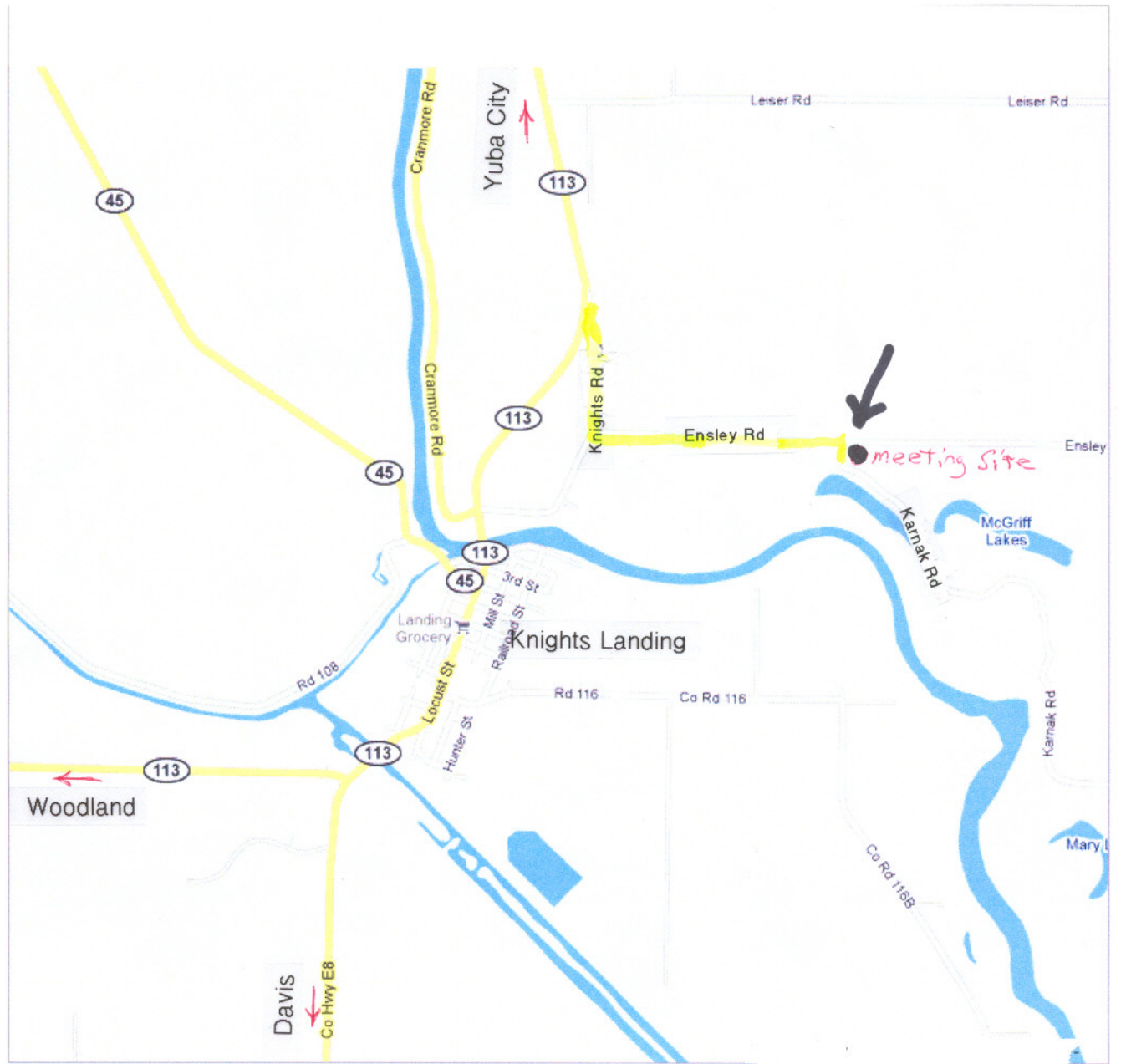


Walnut Husk Fly Field Meeting Map

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Drive until you see the yellow and blue UCCE meeting signs. Park along the side of the road.