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Orchard Notes

June/July 2005 Issue

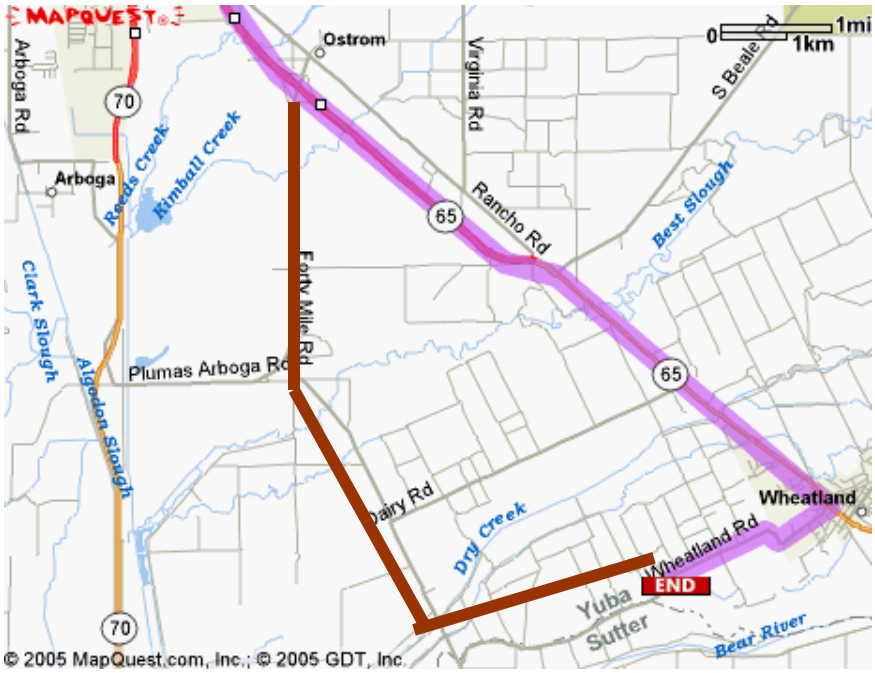
FIELD MEETING
WALNUT HUSK FLY BIOLOGY AND NEWER CONTROL METHODS
WEDNESDAY, JUNE 22, 2005, 9:00 A.M. – 10:30 A.M.
WHITNEY WARREN RANCH, WHEATLAND/ RIO OSO ROAD, (SEE MAP BELOW)

This meeting will include a discussion on walnut husk fly biology, traps, and control methods emphasizing the alternative materials GF-120, Success and Entrust. We will demonstrate GF-120 application using an ATV sprayer. The speakers include UC Entomology Extension Specialist Bob Van Steenwyk and UC Farm Advisor Janine Hasey. Following the husk fly discussion, Sutter County Agricultural Biologist Jan Kendel will give a Pesticide Regulatory Update.

1.5 hours of PCA and private applicator's credit is pending

Map to Whitney Warren Ranch House, 3890 Wheatland Road

From Marysville take Hwy 65, turn on the Forty Mile Road exit, and go past the amphitheater staying on Forty Mile Road. Go left on Wheatland/Rio Oso Road (before Bear River)



We will meet on the paved road to the ranch house. You may park on the ranch house road or on Wheatland Road next to the pears near the road's entrance. **Look for UC meeting signs.**

GILLI MEALYBUG

The Gilli mealybug (formerly referred to as Striped) is a new B-rated pest of deciduous trees and shrubs. It has been found in about 2,000 acres of pistachios in at least five counties (including Colusa), almonds, and a vineyard in El Dorado County. This pest has been shown to do well on potted stone fruit trees and is also reported on ornamentals. Included in this newsletter is a color insert you can keep with you by UC Farm Advisor David Haviland, Kern County, who is researching this pest. If you find mealybugs in any fruit or nut orchard, please contact your local farm advisor immediately.

WALNUT TASKS/OBSERVATIONS

• There are many new walnut plantings especially where peaches or prunes once stood. That means there are many farmers new to growing walnuts in our area. I have observed several new walnut orchards where it appears trees were planted more like a stonefruit than a walnut. Although some of the following recommendations may be too late for these plantings, growers training new orchards or planning future walnut orchards please take note.

▪ *Use 10 foot stakes with two feet in the ground.* We train walnut trees as a modified central leader. The first season, one vigorous shoot is tied up the stake to become the trunk and competing branches are pruned back. For conventional trees, our goal is 10 feet or more of growth by fall, a little less for hedgerow trees. Because of north-south winds in our area, place stakes about 10 inches to the west of the tree in the hole at planting. This way the stake will not wound the tree with later placement. The west direction allows the tree to blow to the north or south without rubbing on the stake. Often growers use 8 foot stakes with 6 feet above ground. This does not give enough height to train conventional trees without risking wind breakage. I've even seen walnuts this year with stakes only 4 feet above the ground.

▪ *At planting cut off trees at 3-5 buds above the graft union (regardless of diameter).* With walnuts, to force a good, strong shoot for the trunk, you must cut back this far and throw most of the tree away. The biggest mistake I see is growers leaving their newly planted walnut trees too high so there are many buds that break but none dominate to train as the trunk.

▪ *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 but don't let them slow the growth of your trunk.

▪ *Check soil moisture frequently with a soil tube or auger.* Walnut trees do not like to be stressed for water and will stop growing if they are. The key to great growth is frequent and light irrigations. Avoid saturated soil and do not irrigate over 18 hours per set time to avoid crown and root rot diseases.

• Off-Type Chandlers – These are trees that drop their nuts in certain years. Around mid-May, several growers observed that off-type trees had dropped their nuts, so 2005 is an off-type year. Although we don't know why these trees do this, I have observed over the years that it often happens when springs are cooler and wetter than usual.

• Walnut Husk Fly – In the past, we have recommend hanging husk fly traps by July 1. Instead, consider hanging traps in early to mid-June because of observing earlier and earlier flights in several local orchards. To properly control this pest, it is very important to know when the initial flies are present, especially if using some of the newer materials such as GF-120 for control. Please see announcement for our June 22 husk fly meeting and demonstration. We also have a video in our office available on a 2 day checkout.

• Walnut Aphids - Early in the season, populations of over 15 aphids per leaflet reduce nut yield and quality and cause an increase in nuts with perforated shells. Walnut aphid is often controlled biologically by the parasitic wasp, *Trioxys pallidus*, unless disrupted by chemical spraying. Consider treatments for walnut aphid if the average number of non-parasitized healthy aphids found on the underside of subterminal leaflets of early varieties is over 15 per leaflet. Please notify me of any orchards with particularly heavy infestations.

• Dusky-veined Aphid – These started appearing in some orchards in May. Treatments should be considered for this aphid whenever an average of 10 percent of the subterminal leaflets have colonies of six or more feeding on their upper surface along the midvein.

PLANT BASED IRRIGATION

What is plant based monitoring? The sum of four environmental influences determine plant water stress: soil moisture, wind, humidity, and direct sunlight. A plant based monitoring system allows you to measure what the plant is experiencing not just one of the environmental stresses. The pressure chamber is a plant based monitoring device for measuring the degree of water stress within the plant. Water is under tension within the plant and as water evaporates from the leaves, replacement water must be pulled in from the soil. It becomes harder for the plant to extract water from the soil as it dries increasing the tension within the plant. The pressure chamber allows us to measure how much tension the leaf is experiencing and the degree of water stress.

Through research, we have developed stem water potential values for walnuts and peaches that indicate when the tree is stressed and needs irrigating. I have used the pump-up pressure chamber for irrigation research and also found it an invaluable tool for helping diagnose and correct water stress or over irrigation problems in some local orchards. Many of you have seen this device at some of my meetings. Give me a call in July if you would like more information on this irrigation monitoring tool.

LEAF SAMPLING IN JULY

Before you start putting on all kinds of nutrients (both soil and foliar) on your trees, take some time in July to assess the nutrient status of all your orchard blocks. You really can save money by assessing the nutrient status of your trees to help you determine the nutrients and amounts that are excessive, adequate or deficient. When sampling an orchard, keep in mind that trees with root problems may exhibit certain nutrient deficiencies because the tree is unable to extract some nutrients due to a limited root system. It is important to

sample properly so the values you obtain can be compared to critical nutrient levels. Below are points to consider when sampling:

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
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. We have a list of laboratories that do plant, soil and water testing in our office.

CRITICAL NUTRIENT LEVELS

Based on July leaf samples

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

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 2.8-3.0%
(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

Fruit and nut growers encouraged to report mealybug infestations

David Haviland- UCCE Kern Co.

Gilli mealybug is a new pest of deciduous trees in California. It is primarily a pest of pistachios, but has also been found in almonds and grapes. It is important to quickly identify and treat new infestations of this pest in an effort to minimize its spread.

Gilli mealybug can reach ½ cm in length and has a pink body covered in white filamentous waxy excretions. When looking from the top, they appear to have two pink stripes running down the length of their bodies and two white tails.

Gilli mealybug feed by sucking plant juices and produce large amounts of a sticky liquid called honeydew. This liquid supports the growth of sooty mold which can turn bark, leaves, and nuts completely black.

During he fall, Gilli mealybug aggregate on the trunk and main scaffolds and produce offspring that overwinter in cracks of the bark. This is an easy time of year to find the mealybugs due to the furry appearance given to the bark.

During the spring, Gilli mealybug feed on the stems, leaves and then fruit. In pistachios they prefer to feed within the cluster just prior to harvest when they can reduce nut quality and possibly yields.

Growers of any nut, stone or pome fruit who find mealybugs are encourage to report them to their local UCCE Office.

A PDF of this flyer is available on the web at cekern.ucdavis.edu/Gilli

PEST UPDATES ONLINE

You can obtain weekly updates for oriental fruit moth and peach twig borer on peaches and codling moth on walnuts through the Pest Tracker at our website, http://cesutter.ucdavis.edu and current and past "Orchard Notes" newsletters. The Pest Tracker is also posted in our office weekly.

DIAMOND WALNUT GROWERS

We will have an information sheet in our office provided by the UC Davis Department of Agricultural and Resource Economics on potential impacts of proposed conversion of Diamond Walnut Growers on its members once the SEC information has been finalized. We will post on our website, http://cesutter.ucdavis.edu, once the sheet is available for pick-up from our office.

JANINE HASEY
U.C. FARM ADVISOR