Sacramento Valley Walnut News

Issue 37 Fall, 2019

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In This Issue

Submitted by:

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Emeritus
Sutter, Yuba and Colusa Counties

2019 IPM Breakfast Meeting

Join Area IPM and Farm Advisors to discuss current pest management and production issues. We will largely focus on orchard crops (but everything is on the table for discussion!). These meetings are open to all interested growers, consultants, PCAs, CCAs, and related industry.

Meetings will be held the **second** Friday of each month (8:00-9:30am ***note new start time***) from March through October and will cover a wide range of timely pest and orchard management topics. Meeting locations will be rotated throughout the Sacramento Valley each month. Please contact Emily Symmes to request topics or bring your questions to the meeting!

Remaining 2019 meeting date:

September 13th, 8:00-9:30am: Dancing Tomato Caffé, Yuba City

Additional details will be posted on the events page at sacvalleyorchards.com
RSVPs required at (530) 538-7201 or ejsymmes@ucanr.edu
DPR and CCA Continuing Education hours requested

Industry Partners: Sponsorships for venue and refreshment costs are welcome and appreciated. If you would like to sponsor one or more of these meetings, please contact Emily Symmes to inquire.

Post-Harvest Almond and Walnut IPM Workshop

Join a panel of your Sacramento Valley Area IPM and Farm Advisors to hear about the latest research updates, 2019 field observations, and discuss key production and pest management issues in almonds and walnuts as we wrap up the season and look toward 2020!

To request specific topics or for more information, please contact UC IPM Advisor Emily Symmes at (530) 538-7201 or ejsymmes@ucanr.edu

Friday, November 22nd, 2019, 8:00am – 11:00am

Chico Veteran's Memorial Hall, 554 Rio Lindo Avenue, Chico, CA 95926

Complete agenda and additional details will be available on the events page at sacvalleyorchards.com

DPR and CCA Continuing Education hours requested

Coffee and refreshments provided by the Support Group of Butte County UCCE

Fall and Winter Walnut Management Considerations

Drew Alonso Wolter, UCCE Junior Specialist Horticulture Intern, UC Davis Graduate Student
Katherine Jarvis-Shean, UCCE Orchard Advisor, Sacramento, Solano and Yolo Counties
Emily J. Symmes, UCCE Area IPM Advisor, Sacramento Valley

Pre-Harvest

- **Proper water management is key for kernel quality.** Cutting it short on water during hull split can lead to stuck hulls and darkened kernels. Profit margins are likely to be tight this year, so don't sacrifice nut quality and value.
- **Should you use ethephon?** Using ethephon can advance harvest. Ethephon applications can lead to an earlier harvest which helps maintain kernel color and reduce navel orangeworm or mold damage. Sample frequently for 100% packing tissue brown (PTB) to time the ethephon application properly. For more info visit: sacvalleyorchards.com/walnuts/horticulture-walnuts/ethephon-for-earlier-harvest/
- **Avoiding freeze damage in non-bearing trees.** Water management is perhaps the most critical step. To encourage terminal bud set, avoid irrigating in September until growth at the tips of the branches has stopped. Hold off on water until you stop seeing new growth and red leaves but not so long that you get yellowing leaves and defoliation. See the article in this newsletter on preparing for extreme weather events. To learn more visit: sacvalleyorchards.com/walnuts/horticulture-walnuts/avoiding-freeze-damage/
- **Evaluate navel orangeworm (NOW) damage risk**. Healthy, intact walnuts are most susceptible to NOW damage once husks begin to split. The third NOW flight in the Sacramento Valley came on strong in almonds in the first half of August (just as Nonpareil harvests were beginning). We also observed an uptick in our walnut traps during this time. Continue to monitor for NOW in walnuts, using pheromone or female traps, as well as visual observations of infestation and egg-laying activity on codling moth- or sunburn-damaged nuts and early splits. Watch for fourth flight activity in later harvesting varieties. Consult with your PCA or crop consultant to determine if treatment is needed and economical, bearing in mind pre-harvest intervals, duration of residual activity, and impacts of materials to your overall IPM program.
- **End nitrogen applications.** Finish nitrogen (N) applications by the end of August. It is critical to avoid stimulating new growth that is susceptible to freeze injury, and along with withholding water, is necessary for hardening off young trees. There is not much N uptake during the fall and adding it late in the season also risks contaminating the groundwater supply with nitrates.

Harvest

- **Harvest Timing:** Harvesting as early as possible can help reduce quality losses due to navel orangeworm, mold development, and darkening kernel color. At harvest, the objective is to shake what you can pick up that same day. Walnut quality declines most rapidly during the first 9 hours after shaking.
- **Collect harvest samples**. Collecting ground samples at harvest will allow you to distinguish sources of damage in greater detail than is provided on grade sheets. A sampling protocol and damage identification guide is available at: sacvalleyorchards.com/walnuts/insects-mites-walnuts/harvest-damage-evaluation-for-walnuts/.

Post-Harvest

- **Clean operation:** Once harvest is complete, ensure that hullers, dryers, and areas surrounding orchards are cleared of nuts that may be harboring moth larvae. Sanitize orchards as part of your NOW management program by shaking/hand poling, blowing berms, and then flail mowing mummies prior to next season. Remember that walnut mummies on the orchard floor (middles and tree rows) provide overwintering

survival sites for NOW, so even if you have few mummies remaining in the trees, blowing and destroying mummies on the ground helps reduce carry-over NOW populations.

- **Planting a cover crop:** Annual cover crops are planted in the fall. Target the narrow window after harvesting late varieties and before leaf fall to seed the cover crop. If you'd like to find more info on cover crops visit: sacvalleyorchards.com/blog/walnuts-blog/time-to-think-about-cover-crops-in-walnuts/
- ***Botryosphaeria* or *Phomopsis*:** Pruning with BOT infection in mind: If pruning or hedging is planned this year, aim for as early in fall as you can and when weather is forecast to be dry to avoid infection.
- **Scouting for weeds.** Walking the orchard in the fall provides the ability to evaluate the current year's weed control program. By scouting the orchard for areas where weed species may have escaped control, you can adjust your management practices to control these weeds in the following year. See the article on post-harvest weed scouting in this issue for more information.
- **Site Preparation for Walnut Replanting.** If you are tearing out an existing orchard and planning to replant into walnuts, post-harvest and in October is the time to cut trees and paint stumps with Garlon to kill tree roots. Paint within five minutes of cutting the stump and leave the painted stump for at least 60 days. See more at sacvalleyorchards.com/walnuts/diseases/considerations-for-replanting-walnut-orchards/.

Preparing for extreme events: Freeze and Fire

Luke Milliron, UCCE Orchards Advisor, Butte, Tehama & Glenn Counties
Janine Hasey, UCCE Orchards Advisor Emeritus, Sutter-Yuba & Colusa Counties

The sudden November 2018 freeze event that caused extensive damage in many walnut orchards is a stark reminder that we must do our best to prepare against extreme events. In addition to early freezes, fires and floods are extremes we will consider possible preparations against. Preparing for floods will appear in the winter issue of this newsletter.

Freeze. How can damage be prevented or reduced?

- Withdraw irrigation in September until a terminal bud (photo 1) is set on the trunk of young trees to harden the trees. After the terminal bud has set you can resume irrigation to avoid tree stress and defoliation, without the fear of pushing new growth.
- If there has not been adequate rainfall by the end of October, irrigate young and mature orchards so the soil is moist going into November. Rainfall adequacy can be determined by comparing rainfall totals with ET, and monitoring soil moisture levels by hand or with sensors. Trees with adequate soil moisture are better able to withstand low temperatures without damage than trees that are dry. Water conducts and stores more heat than air spaces.
- Continue to actively monitor soil moisture and freeze predictions in November. If a freeze is predicted and the soil is dry, it should be wetted 3 to 5 days prior to a freeze event to fill the air spaces so the soil will store more heat. The top foot is the most important and should be at field capacity (not too wet). Avoid water on the soil surface before a freeze since it will make the soil surface colder because of evaporative cooling.
- If freeze damage is suspected in the fall or winter, check the tissue for drying or browning (photos 2 & 3). Subsequent sunburn can further damage tissue on the southwest side of the tree. Paint the southwest side of damaged trees with 50% diluted (1:1 water to paint) white interior latex paint. Painting up to a week after the freeze event can decrease damage by half or more.

Photo 1. Withhold irrigation until a terminal vegetative bud sets on trunk (photo: Janine Hasey).

Photos 2 & 3. This characteristic distinct margin of dead and living tissue is typically seen in young orchard blocks. Shown both before (left) and after cutting (right; photos: Luke Milliron).

Mitigating Fire Risks.

Fires are an extreme event that are front of mind for Californians. Walnut orchards could be in the path of the next fire.

- Orchards have acted as a green wall, helping to halt the spread of fire in 2015 with the Okanogan Complex Fire in Washington state, the Thomas Fire in Southern California in 2017, and the Mendocino Complex Fire in 2018. During the Camp Fire last year, orchardists were asked to turn on their sprinklers when the fire was threatening to jump Highway 99. Irrigation and lush vegetation help make orchards a good fire block.
- A key management strategy is controlling weeds to avoid the buildup of dry biomass that serves as a potential fuel source and can act as a ladder for the fire to move from the orchard floor to the trees. Tilling a fire break along weedy orchard borders can help to stop the fire's spread.

- Finally, if there is a sprinkler irrigation system in place, pre-irrigating the orchard floor before a fire and continuing to wet the orchard during a fire can help to protect the orchard. Ideally, source the electricity for irrigation during a fire from a backup generator that is protected from fire. However, if you rely on a public water supply, irrigating may limit fire fighters' capacity to fight the fire!

If you do sustain tree damage due to freeze or fire, don't rush to prune back or remove trees. Follow the advice mentioned above for freeze damaged trees, helping protect against sunburn damage by painting the southwest side of damaged trunks. Carefully manage irrigation and fertilization of damaged trees the following season. Following autumn or winter damage, be patient and wait for latent buds to push and show the true potential for tree recovery the following summer.

Increase Your Return on Investment with Post-Harvest Weed Scouting

Drew Alonso Wolter, UCCE Junior Specialist Horticulture Intern, UC Davis Graduate Student

Why scout for weeds?

While weeds are present in every orchard, there is variation in the species composition and the density of each population, from orchard to orchard. Scouting for weeds is the basis for a good Integrated Weed Management (IWM) plan. Information gathered from weed scouting allows growers to:

- Evaluate the current year's weed control program
- Discover weed stands before they spread throughout the orchard
- Adjust control practices for the following year
- Select the best control option for species of concern, such as:
    - Choosing appropriate herbicide for species
        - Identifying areas for possible spot treatments
    - Selecting best cultivation method for weed stage
    - Where to alter cultural practices to target weed life cycles

Post-harvest scouting offers an opportunity to evaluate the current year's orchard floor management plan, allowing you to see what weed species have escaped that year's management plan, where they are, and how severe the infestation may be. These are all valuable pieces of information, which help design a management program that can meet the specific needs of the orchard from year to year.

Keys to Scouting

Most weed species are much more challenging to manage as they mature. Because of this, post-harvest scouting should start early and be repeated a couple of times throughout winter, in order to catch weeds when they are young. Herbicide applications targeting mature weeds are often minimally effective, resulting in a less successful program and increased management costs. Three keys for successful scouting:

1. Record weed infestations and use a map/GPS to show areas of escaped weeds. For more info visit: ipm.ucanr.edu/PMG/C881/walnut-winterweeds.pdf
2. Accurately identifying weed species is crucial for effective management because herbicide recommendations, mechanical, and cultural control strategies vary depending on the species. While some species can look similar, they may have drastically different management requirements.

3. Look out for different weeds in different management zones. A good place to start is by checking in the tree rows to evaluate the effectiveness of any previous herbicide applications. Check the ground cover in the row middles for any perennial seedlings. Check orchard borders and at the ends of rows where new species may be introduced.

Herbicide resistance

With the growing number of herbicide resistant weeds in California orchards, control of escaped weeds can considerably reduce the cost of an annual orchard floor management program. For example, spot treating two acres of glyphosate resistant palmer amaranth with a tank mix of Glufosinate and Gramoxone is much more affordable than trying to control it over the entire 50-acre block. There are currently thirty confirmed herbicide resistant species in California. Below are pictures of some of the more common resistant weeds in orchard cropping systems. Scout now so you can spot treat, rather than having an orchard full of Roundup resistant weeds in the future.

Figure 1. Young Palmer Amaranth

Figure 2. Russian Thistle seedling

Figure 3. Hairy Fleabane

Figure 4. Annual Bluegrass

For more information on herbicide resistant weeds, species identification and control options please visit the UC Davis Weed Research and Information Center wric.ucdavis.edu OR ipm.ucanr.edu/agriculture/walnut/Integrated-Weed-Management/

Wishing a Fond Farewell

Dani Lightle, UCCE Orchards Advisor, Glenn, Butte & Tehama Counties

How lucky I am to have something that makes saying goodbye so hard!
(A.A. Milne, Winnie-the-Pooh)

My last day with UC Cooperative Extension will be September 18. I am returning to my pest management roots and beginning a new adventure serving as Director of the IR-4 Project for western Oregon. In my new role, I will be representing the pest management needs and priorities for Oregon specialty crops (ranging from hops to cranberries to clover seed) and conducting research required for new pesticide registrations.

When I arrived in California in February, 2014, I was an outsider to California agriculture. During my first week on the job as an Orchards Advisor, I quickly learned how to tell the difference between almond, prune and walnut trees (and managed to get stung by a honey bee in the process). Since then, I've been privileged to work alongside northern Sacramento Valley growers and PCAs to troubleshoot irrigation problems, manage diseases, and research topics ranging from cover crops to insect and disease control. Even better, I've been able to take my experiences and share them with all of you through talks, articles, and our website, SacValleyOrchards.com.

I am truly honored to have been involved with the local tree crop industries. Thank you to all the PCAs and growers who have graciously shared their knowledge and my research cooperators who have dedicated their time and resources. I wish you all the very best in the growing seasons ahead.