



UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
SUTTER/YUBA COUNTIES
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ORCHARD NOTES

November/December 2009

UPCOMING MEETINGS

- | | |
|---|--|
| December 1 & 10 | Sutter County Fall Grower Meeting
Sutter County Ag Building
Contact: 530-822-7503 |
| January 27, 2010
(Morning) | Sacramento Valley Cling Peach Day
Sutter County Ag Building
Contact: 530-822-7515
(Program in Jan. issue of Orchard Notes) |
| February 25, 2010
(Afternoon) | Sutter/Yuba/Colusa Walnut Day
Veterans Memorial Hall, Yuba City
Contact: 530-822-7515
530-458-0570
(Program in Feb. issue of Orchard Notes) |
| March 2, 2010 | Pruning Young Walnut Trees;
Howard Pruning Plot
Nickels Soil Laboratory, Arbuckle
Contact: 530-822-7515
530-458-0570 |

Submitted by:

Janine Hasey
U.C. Farm Advisor
Sutter/Yuba Counties

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ORCHARD FLOOR MANAGEMENT

Herbicide Charts

The 2009 registration status of Herbicides in Trees and Vines was recently updated by Extension Weed Specialist, Tom Lanini, from UC Davis. It is included for your reference along with Susceptibility of Weeds to Herbicides in the back of the newsletter. The "Susceptibility of Weeds to Herbicides" chart can also be accessed through the Pest Management guidelines at the UCIPM website at <http://ucipm.ucdavis.edu>. Go to the weed section under each individual crop.

Non-Cultivation and Cover Crops

The October 13th storm that dropped around 2 inches of rain in our area made a mess in many walnut orchards and delayed harvest. If you still disk your orchard, then you probably had an even harder time harvesting than those growers who have non-tilled orchard floors and manage either resident vegetation or a reseeding annual or perennial cover crop by mowing. A primary advantage to a reseeding annual cover crop in high rainfall areas such as the Sacramento Valley is better fall and winter orchard access due to firmer ground. Early fall rains can make it very difficult to harvest in walnut orchards cultivated for weed control or incorporation of a winter green manure cover crop. Planting a cover crop can improve soil quality by adding organic matter and for legumes, also nitrogen. Other advantages may include weed suppression, less runoff compared to bare soil, and reduced labor and diesel costs since the seeded cover crop is usually mowed only a couple of times in the spring and early summer. Allowing resident vegetation to grow during the winter with mowing in the spring and summer has many of these same advantages but may produce less biomass than a seeded cover crop.

We had several local cover crop demonstration trials in walnuts and peaches seeded in 2007 or 2008. Results showed the various nitrogen fixing clover mixes sampled in May 2009 ranged from 31 lbs to 250 lbs of nitrogen per acre averaging 92 lbs per acre. All of this nitrogen will not necessarily be available to the tree; however, some plots did not need any additional nitrogen applications this year and had leaf values with adequate nitrogen based on July leaf samples.

For any fall-seeded cover crop, the best results will be achieved with the earliest possible planting date. However, there is still a window of opportunity to plant a cover crop this fall. In producing walnut orchards, plan to seed just after harvest but before significant leaf fall for best stand establishment. By December, soil temperatures are too low to provide quick and consistent germination while competition from resident vegetation becomes more of a problem although we had successful plots that were seeded in early December 2008.

For instructions on seeding a cover crop, go to http://cesutter.ucdavis.edu/Orchard_Crops/Cover_Crops.htm. We have a new fact sheet for growing cover crops locally based on our demonstration research the last two years. It is available online at http://www.caff.org/CovercropFactsheet2_web.pdf or as a brochure from our office.

Pruning Walnuts

What is the best time to prune or train your walnut trees? Well, that depends on the age or condition of the orchard, and your objectives. The timing below pertains to both standard-spaced orchards and walnut hedgerows.

For 1-3 year old walnut orchards, it is best to wait as late in the season as possible, preferably late February or March, after the threat of autumn frosts and winter freezes that can kill wood has passed.

For mature orchards with deadwood or dead branches from branch wilt or other diseases this past summer, you'll want to prune as soon as harvest is over when there are still leaves on the tree. This way you can distinguish where the dead limbs are and easily remove them. With branch wilt, make sure to remove all infected discolored wood and burn pruned limbs to avoid spreading the fungal spores.

For healthy young or mature orchards, your timing will depend on your objective. If you want to prune to manipulate light penetration on the orchard floor, prune after harvest while leaves are still on the tree. If you are still training the scaffold branches or just need to do some thinning cuts or plan to hedge prune, it's easier to wait until after leaf fall when you can clearly see the tree's framework. Keep in mind when training walnut trees that the objective is to maximize leaf exposure to sunlight while maintaining sunlight exposure to different leaves on the same tree. The principal sites of nut production are well-exposed sunlit spurs. Areas of the tree canopy that are heavily shaded will be less productive and also lead to quality problems we are finding, than sunlight exposed portions of the same canopy.

The following are generalized guidelines only for pruning walnut trees that are two years and older. Typically on our lateral bearing varieties like Chandler and Howard trained in the modified central leader system, the limbs that will form the main scaffolding of the tree are selected and then headed back about $\frac{1}{4}$ to $\frac{1}{2}$ of last years growth depending on the vigor until the trees reach the desired size. During the first few years of training, the leader should be left the longest. Keep in mind when you're training Howard trees that the wood is very brittle and limbs break easily in heavy crop years like 2009 or in wind storms. Only keep limbs with strong branch angles. The Tulare variety is quite vigorous and usually needs little pruning (heading cuts) after the initial training. Once trees reach the desired size, typically pruning is infrequent and confined to thinning cuts unless the tree needs invigorating; if hedged, a common practice is to hedge every third or fourth middle each year on a rotational basis.

In a study comparing pruned and unpruned (after age two) young Howard trees at Nickels Soil Laboratory, after five years, the trees in both systems were performing similarly in tree size, yield and midday canopy light interception. The unpruned trees tended to have a more open canopy structure while the pruned trees have had more shading related lower canopy dieback. You will have the opportunity to see this plot during our March walnut pruning meeting.

Peach Shot Hole Disease Control

The disease shot hole, caused by the fungus *Wilsonomyces carpophilus*, can take a toll on peach twigs and buds during high rainfall winters. Symptoms first appear on twigs as small, purplish black spots that turn brown as they enlarge, eventually producing spores. Buds affected by shot hole turn dark brown or black and are usually covered with a shiny layer of exuded gum.

We've been somewhat complacent the last few years about protecting against this disease because of our drought situation. We're in an El Nino now and in the past that has meant higher rainfall. To be on the safe side, this would not be a year to skip this spray.

Spray at leaf fall in late November or early December before winter rains to protect against twig infections. The fungicides Pristine, Ziram, and copper are effective in disease prevention. Visit <http://ipm.ucdavis.edu/PDF/PMG/fungicideefficacytiming.pdf> for more information on control. This spray is applied before the dormant oil that is typically applied in January or early February to control scale and mite eggs and combined with copper for peach leaf curl control.

Managing Gray Mold in Kiwifruit

Gray mold caused by *Botrytis cinerea* often infects at the wound where the stem is snapped off during kiwifruit harvest resulting in decayed fruit during cold storage. For the conventional grower, there are two postharvest fungicides available, Scholar and Judge. These products are currently registered in California and when applied postharvest, have been proven to be the most effective for controlling gray mold. If fruit will be stored for a long period and surface growth of *Cladosporium* spp. is a concern, then Scholar should be used. Unfortunately, Vanguard for pre-harvest gray mold treatment did not get registered for the 2009 season. Once it is registered, it would be part of an integrated approach to this disease. Most gray mold infections are not causing crop loss in the field that result in fruit rots on the vine; Rather, with wet weather during harvest, gray mold populations may be high which can lead to fruit contamination and subsequent fruit infections during storage.

For organic kiwifruit growers, there are no effective organically acceptable materials at this time for gray mold control. Organic growers may want to try "curing" fruit, which is letting the stem end dry out before packing and putting in cold storage. This has been shown to help reduce gray mold in storage in New Zealand and to a limited extent in California.

New Publications!

"Fruit and Nut Varieties for Low-Elevation Sierra Foothills", Publication 8396, is available at <http://anrcatalog.ucdavis.edu/Items/8396.aspx>. This summarizes 14 years of data from my tree crops demonstration plot at the University of California Sierra Foothill Research and Extension Center in Brown's Valley. It is intended primarily for foothill residents with backyard orchards or small commercial operations.

"Orchard Cover Crops". This guide outlines the steps for planting and maintaining a successful reseeding annual cover crop in no-till orchards in Sutter and Yuba county orchards. Available online at http://www.caff.org/CovercropFactsheet2_web.pdf or as hardcopy from our office.

Regulatory Reminder

Dormant spray regulations go into effect when the rainy season begins. Call in a notice of intent (NOI) to the Agricultural Commissioner's office at 530-822-7503 (Sutter County) or 530-749-5400 (Yuba County) if you're making an organophosphate or pyrethroid insecticide application 48 hours before a rain event.



Confronting Difficult Situations: Farm Foremen Training
(Spanish)

When: Wednesday, December 2, 2009 (9:30 AM to 4 PM, please arrive by 9:15 AM)

Where: Agricultural Center, Harvest Hall, Stanislaus Building, Rooms H & I, Modesto (corner of Crowslanding Road and Service Road). Map and driving instructions: <http://www.cnr.berkeley.edu/ucce50/ag-labor/7map.htm>

Content: Farm foremen will learn how to confront difficult disciplinary and conflict situations that require effective listening and interpersonal negotiation skills. This training will be very much of a hands-on seminar. Topics will include effective listening skills, interpersonal negotiation skills in dealing with conflict and disciplinary situations. Giving of positive feedback. Limited space.

Instructors: Gregorio Billikopf and Ryan Boothe.

Who should attend? **Spanish-speaking** farm foremen, herd managers, crew leaders and front line supervisors.

Cost = \$36 per person includes *lunch and materials* (\$28 per person **if postmarked on or before November 23, 2009**). Send check made out to **UC Regents**:

University of California
c/o G. Billikopf
3800 Cornucopia Way #A, Modesto CA 95358
Contact: (209) 525-6800

Thank you all for your support of our programs this past year. A special thank you to cooperators on research projects and educational programs - I very much appreciated your efforts and contributions. May 2010 be a prosperous year for you.



Respectfully,
Janine Hasey



Herbicide Registration on Horticultural Tree and Vine Crops—Sept. 2009

Herbicide-Common Name (trade name)	Almond	Apple	Apricot	Cherry	Grape	Kiwi	Nectarine	Olive	Peach	Pear	Pecan	Prune	Walnut	Pomegranate	Pistachio	Citrus
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Preemergence

dichlobenil (<i>Casoron</i>)	N	R	N	R	R	N	N	N	N	R	N	N	N	N	N	N
diuron (<i>Karmex, Direx</i>) ¹	N	R	N	N	R	N	N	R	R	R	R	N	R	N	N	R
EPTC (<i>Eptam</i>)	R	N	N	N	N	N	N	N	N	N	N	N	R	N	N	NB
Flumioxazin (<i>Chateau</i>)	R	R	R	R	R	N	R	NB	R	R	R	R	R	NB	R	NB
isoxaben (<i>Gallery</i>)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
napropamide (<i>Devrinol</i>)	R	N	N	N	R	R	N	N	N	N	R	N	N	N	N	R
norflurazon (<i>Solicam</i>)	R	R	R	R	R	N	R	N	R	R	R	R	R	N	N	R
oryzalin (<i>Surflan, Farm Saver</i>)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
oxyfluorfen (<i>Goal</i>)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	NB
pendimethalin (<i>Prowl H₂O</i>)	R	R	R	R	R	N	R	N	R	R	R	R	R	R	R	R
pronamide (<i>Kerb</i>)	N	R	R	R	R	N	R	N	R	R	N	R	N	N	N	N
rimsulfuron (<i>Matrix FNV</i>)	R	R	R	R	R	N	R	N	R	R	R	R	R	N	R	R
simazine (<i>Princep, Caliber 90</i>)	R	R	N	R	R	N	R	R	N	R	N	N	R	N	N	R
thiazopyr (<i>Visor</i>)	NB	N	NB	NB	NB	N	NB	N	NB	N	N	NB	NB	N	NB	R in Orange & Grapefruit
Trifluralin (<i>Treflan</i>)	R	N	R	N	R	N	R	N	R	N	R	R	R	N	N	R

Post emergence

Carfentrazone (<i>Shark</i>)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Clethodim (<i>Select</i>)	NB	NB	NB	NB	NB	N	NB	NB	NB	NB	NB	NB	NB	N	NB	NB
2,4-D (<i>Dri-clean, Clean-crop, Orchard Master</i>)	R	R	R	R	R	N	R	N	R	R	R	R	R	N	R	N
fluzifop-p-butyl (<i>FusiladeDX</i>)	NB	NB	R	R	NB	N	R	NB	R	NB	R	R	NB	NB	NB	NB
glyphosate (<i>Roundup, Touchdown</i>)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
glufosinate (<i>Rely</i>)	R	R	N	N	R	N	N	N	N	N	R	N	R	N	R	N
halosulfuron (<i>Sandea</i>)	N	N	N	N	N	N	N	N	N	N	R	N	R	N	R	N
MSMA	NB	NB	NB	NB	N	N	N	N	NB	NB	N	NB	NB	N	N	R
Paraquat (<i>Gramoxone Inteon</i>)	R	R	R	R	R	R	R	R	R	R	R	R	R	N	R	R
sethoxydim (<i>Poast</i>)	R	R	R	R	R	N	R	NB	R	R	R	NB	R	NB	R	R

Note: This is intended as a general guide only. Before use of any herbicide, consult the label.

Labels change frequently and often contain special restrictions regarding specific use of a company's product.

¹ Use only under well established trees and vines

N = Not registered, NB = nonbearing, R = Registered

2009 Susceptibility of Weeds to Herbicides

Preemergence

Postemergence

Annual Broadleaves	Preemergence											Postemergence						
	Carson	Karmex	Devrinol	Solicam	Surflan	Goal	Simazine	Treflan	Prowl	Kerb	Gallery	Roundup	MSMA	Gramoxone	2,4-D	Poast	Fusilade	Prism
Cheeseweed (Malva)	C	P	P	P	P	C	P	N	N	P	C	P	N	P	N	N	N	
Chickweed	C	C	C	P	C	N	C	C	C	C	C	C	C	P	N	N	N	
Clover	P	P	P	N	N	P	C	N	N	N	P	P	N	P	N	N	N	
Fiddleneck	C	C	C	P	C	C	C	C	C	N	C	C	N	P	N	N	N	
Filaree	P	C	C	P	N	C	P	N	N	N	C	P	N	P	N	N	N	
Flax-leaved Fleabane	C	N	N	N	N	N	C	N	N	N	C	N	P	C	N	N	N	
Goosefoot	C	C	C	C	C	C	C	C	C	C	P	N	N	P	C	N	N	
Grounzel	C	N	P	P	N	C	C	N	N	N	C	C	N	C	N	N	N	
Henbit	C	C	N	P	C	C	C	C	C	C	C	C	C	P	N	N	N	
Horseweed (Mare's tail)	P	N	N	N	N	N	C	N	N	N	P	C	N	P	C	N	N	
Knotweed	C	C	C	P	C	P	C	C	C	C	P	C	N	P	P	N	N	
Lambsquarter	C	C	C	P	C	C	C	C	C	C	C	N	N	N	C	N	N	
Mustard	C	C	P	P	N	C	C	N	N	C	C	P	N	C	C	N	N	
Nightshade	C	C	N	C	P	C	C	N	P	C	C	C	P	C	C	N	N	
Pigweed	P	C	P	P	C	C	C	C	C	N	C	C	N	C	C	N	N	
Prickly Lettuce	C	C	C	C	N	C	C	N	N	N	C	C	N	P	C	N	N	
Puncturevine	C	P	N	C	C	C	P	P	P	N	C	C	N	C	C	N	N	
Purslane	C	C	C	C	C	C	C	C	C	C	C	C	N	C	C	N	N	
Shepherdspurse	C	C	N	P	N	C	C	N	N	C	C	C	N	C	C	N	N	
Sowthistle	C	C	C	C	N	C	C	N	N	P	C	C	N	P	C	N	N	
Spurge	C	P	N	C	C	C	P	C	C	N	P	C	P	P	P	N	N	
Wild Radish	C	C	N	N	N	C	P	N	N	C	C	C	N	C	C	N	N	

Annual Grasses

Annual Bluegrass	C	C	C	C	C	P	C	C	C	C	P	C	N	P	N	N	N	C
Barnyardgrass	P	C	C	C	C	P	C	C	C	C	P	C	P	C	N	C	C	C
Crabgrass	P	C	C	C	C	N	P	C	C	C	P	C	C	C	C	N	C	C
Ryegrass	N	C	C	C	C	N	N	C	C	C	P	C	N	P	N	C	C	C
Wild Barley	C	C	C	C	C	P	C	C	C	C	N	C	N	P	N	C	C	C
Wild Oats	P	P	C	C	P	P	C	P	C	P	N	C	N	P	N	C	C	C
Fescues	P	C	C	C	C	C	C	C	C	C	N	C	N	C	N	N	N	N

Perennials

Field Bindweed	P	N	N	N	P	N	N	P	P	N	N	P	N	N	P	N	N	N
Burmudagrass	P	N	N	P	N	N	N	P	P	N	N	C	N	N	N	P	P	P
Dallasgrass	N	N	N	N	N	N	N	N	N	N	N	C	C	N	N	C	C	C
Johnsongrass	N	N	N	P	N	N	N	P	P	N	N	C	C	N	N	C	C	C

C = Controlled

P = Partial Control

N = Not Controlled

Weed Susceptibility lists are available on the UCIPM website <http://ipm.udcavis.edu>