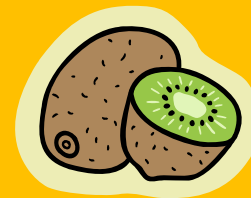




UNIVERSITY OF CALIFORNIA ≈ COOPERATIVE EXTENSION
SUTTER/YUBA COUNTIES
142A GARDEN HIGHWAY, YUBA CITY CA 95991
TEL: (530) 822-7515 ≈ FAX: (530) 673-5368
<http://cesutter.ucdavis.edu>



ORCHARD NOTES

September 2008

COVER CROP SEEDING
DEMONSTRATION
TUESDAY, SEPTEMBER 16, 2008
10:00A.M. - 11:30A.M.

EQUIPMENT DEMONSTRATIONS WILL INCLUDE
NO-TILL DRILLS AND BROADCAST SPREADERS.

LOCATION:

BAINS RANCH
HIGHWAY 70, ¼ MILE NORTH OF WOODRUFF LANE
EAST SIDE OF DIRT ROAD, MARYSVILLE, CA
(LOOK FOR YELLOW UCCE SIGNS)

PRESENTATIONS

- Performance of annual reseeded cover crop mixes in local trials
Janine Hasey, UCCE Farm Advisor Sutter/Yuba Counties
- Helpful hints for establishing cover crops
Fred Thomas, Cerus Consulting
- Cover crop seeding equipment and methods
Mark Cady, Community Alliance with Family Farmers

SPONSORED BY:

University of California Cooperative Extension, Sutter/Yuba Counties
Community Alliance with Family Farmers

For more information: Janine Hasey (530) 822-7515
Mark Cady (530) 756-8518 ext. 20.

*This event is made possible by funding provided by the
California State Water Resources Control Board*

If special accommodations are required please contact the
Sutter/Yuba UCCE at (530) 822-7515 one week in advance of the meeting.

SUBMITTED BY

*JANINE HASEY
U.C. FARM ADVISOR
SUTTER/YUBA COUNTIES*

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ORCHARD FLOOR MANAGEMENT

HERBICIDE CHARTS

The 2008 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 only changes from the previous year include the addition of rimsulfuron (Matrix) and a footnote on pendimethalin having a supplemental label on two crops which expires at the end of the year. The Susceptibility of Weeds to Herbicide 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.

PLANTING A SUCCESSFUL ANNUAL RESEEDING COVER CROP

Janine Hasey, UC Farm Advisor, Sutter and Yuba Counties
Mark Cady, Community Alliance with Family Farmers

Three cover crop systems used in walnut orchards are winter green manure crops that are mowed or cultivated in spring, annual reseeding legumes or grasses, or perennial sods. This article focuses on annual reseeding cover crops although the planting guidelines are similar for successfully establishing any seeded cover crop.

Annual reseeding cover crops are planted initially in the fall and managed during the spring and early summer to allow plants to naturally reseed. They can only be maintained in non-cultivated orchards. Once seed has fully matured in early to mid-June, the annual reseeding cover crop is mowed. If managed properly, the cover crop will reseed annually and reestablish the following fall and winter so costs incurred will be initial seed and planting costs only.

Why are annual reseeding cover crops so well suited to orchards in our area? A primary advantage to an annual reseeding 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. 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. Planting a cover crop can improve soil quality by adding organic matter and for legumes, also nitrogen. Allowing resident vegetation to grow during the winter with mowing in the spring and summer has many of these same advantages but may have less biomass than a seeded cover crop.

For any fall-seeded cover crop, the best results will be achieved with the earliest possible planting date. Any time in October to early November is suitable for planting a cover crop in the Sacramento Valley. By December, soil temperatures are too low to provide quick and consistent germination while competition from resident vegetation becomes more of a problem. A cover crop can be planted in fruit crops and young non-producing walnuts in October. In producing walnut orchards, plan to seed just after harvest but before significant leaf fall for best stand establishment. Make sure the seed and equipment are lined up before walnut harvest begins.

Cover crops can be seeded with various planting equipment including a no-till drill, a standard grain drill or a broadcast seeder. No-till drills can be rented from seed suppliers or Resource Conservation Districts (the Colusa RCD has one). Grain drills are standard equipment for most field crop growers. Broadcast seeders are less available, though a fertilizer spreader can be used with some difficulty. In a pinch or on very small acreage, a worker with a large belly grinder on the tailgate of a pickup truck will suffice. Small seeded legume mixes are typically seeded at a rate of 25 to 30 lbs per *planted* acre.

The kind of ground preparation required depends on the seeding equipment. Whatever the method, you will want to have a flat, level surface that is ready for harvest without any further ground work. A no-till drill requires little or no ground preparation and will plant directly into most surfaces. A contact herbicide treatment (*not* a pre-emergent) applied at or before seeding will prevent weed competition.

Both grain drill and broadcast seeders require a soft surface into which small cover crop seed can be placed. Work up the top two inches of soil with a harrow or disk until the surface condition is fairly fine. Plant the seed right away. Seed should be buried in just the top quarter- to half-inch of soil. A no-till or a standard grain drill can place seed fairly precisely. If you broadcast the seed onto soft ground, a single pass with a ring roller should move seed and soil around enough to cover the seed. Normal fall and winter rainfall will be sufficient for germination and winter growth. A light irrigation may be needed by late November if there hasn't been sufficient rainfall for seed germination.

Common problems with cover crop seeding often involve poor timing. Early rain can stop you at any step of the seeding process. If rain falls after ground preparation but before seeding, weed seeds get a head start on the cover crop and the ground can seal up making it impossible to bury the seed with a roller or a standard grain drill. This is a good reason to have your seed and equipment lined up before walnut harvest is over.

This past year, we had several annual reseeding cover crop demonstration sites in tree crops. A subterranean clover mix with varying maturity times was preferred by most of the grower cooperators because it grew lower to the ground and didn't interfere with other cultural practices, it could be mowed more often if needed without decreasing seed production, and it fixed some atmospheric nitrogen. Another cover crop mix that performed well but grew much taller was a nitrogen fixing legume mix with several clovers including Persian clover. These lower growing legume mixes were preferred to those that included the grass soft chess (Blando brome) mainly due to the taller grass but also due to potential benefit of nitrogen fixation. Supplemental nitrogen is needed in mature walnut orchards and should be applied as a broad band in the tree row rather than broadcast or clover seed production will decrease over time. The range of above-ground biomass accumulated ranged from just over 2,000 lbs/acre to well over 8,000 lbs/acre. The sites where the cover crop established well contained the higher amounts of biomass.

For more information, ANR Publication 21627, "Cover Crops for Walnut Orchards" is available at our office.



EVALUATING KIWIFRUIT DRY WEIGHT (DW) AS AN ALTERNATIVE MATURITY INDEX TO SOLUBLE SOLID CONCENTRATION (SSC).

Because of the current kiwifruit market situation, there may be an economic advantage to our growers harvesting and marketing high consumer acceptance kiwifruit. It has been proposed that kiwifruit dry weight could be used as a maturity index. One advantage is that dry weight values should not change dramatically during cold storage, making it more reliable than the soluble solids concentration currently in use. Research was conducted during the 2006 and 2007 harvest season by Dr. Carlos H. Crisosto, Extension Specialist and Pomologist at UC Davis located at the Kearney Ag Center, evaluating dry weight as a method of measuring kiwifruit quality. The goal is to develop a better tool or maturity index to predict final consumer quality.

Fruit was sampled from vineyards in both the Sacramento Valley and San Joaquin Valley over several weeks. Various studies examined dry weight (DW) accumulation, dry weight at commercial harvest, and dry weight distribution in the vineyard, within the vine and within the fruit. Quality attributes measured at harvest included soluble solids concentration (HSSC), firmness, titratable acidity (HTA) and dry weight. Dry weight was calculated as a percentage of the initial fresh weight of the sample.

In our preliminary work, we found that ripe kiwifruit with a dry weight $\geq 17\%$ had the highest consumer acceptance (87%). Comparing dry weight to HSSC, dry weight detected the final consumer acceptable quality earlier than using HSSC.

The objectives of our proposal for this final year are to:

- Study the relationship between DW and consumer acceptance
- Survey California and foreign kiwifruit nondestructive DW year-round.
- Evaluate kiwifruit DW variability within the vine and vineyard.
- Select and evaluate the best nondestructive DW sensor according to the current available information.

For dry weight sampling protocol developed by Dr. Crisosto's group or the research report, visit our website at <http://cesutter.ucdavis.edu> and <http://postharvest.ucdavis.edu>.

PEST CHECKLIST

Walnuts – Continue to monitor for **walnut husk fly** until hull split and treat up to three weeks before harvest if needed. At harvest, identify the larva of any worm damaged nuts to distinguish between **codling moth** and **navel orangeworm** infestation. Knowing which insect is causing the problem is necessary to monitor for and achieve good insect control during 2009.

Peaches – As in the previous year, some growers reported **peach twig borer** (PTB) problems in their fruit especially on earlier varieties. Other growers had some problems with **oriental fruit moth**. For those using mating disruption, the pheromone was likely affected by all the wind during the spring and early summer decreasing its efficacy. It is important to monitor degree days for both insects since spray timing does not always coincide. If you are using multiple pyrethroid sprays during the season and dormant period, consider applying a material with a different mode of action this dormant season for PTB control. There are several effective materials and some are almost as inexpensive as the pyrethroids. Alternating spray materials with different chemistries during the season will also help to manage insect resistance and keep the pyrethroids as viable insecticides.

ANNOUNCEMENTS

FUNDING AVAILABLE FOR ILLEGAL DUMPING ON SUTTER COUNTY FARMS

The Sutter County Resource Conservation District (SCRCD) is seeking funding from the California Integrated Waste Management Board (CIWMB) to remove refuse dumped illegally on private property in Yuba and Sutter Counties. Through the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program, CIWMB will provide up to 100 percent funding for the cleanup of illegal disposal sites on farm and ranch properties, as well as funds to construct security gates and fences to prevent recurrence of illegal dumping. If you have refuse that was illegally dumped on your property and are interested in this program, please call Larry Lloyd, SCRCD Programs Manager, at (530) 674-1461 X 134 to schedule an interview and site visit.

DISASTER ASSISTANCE ELIGIBILITY DEADLINES APPROACHING

Crop insurance or NAP coverage is required for Disaster Assistance eligibility.

- Buy-in deadline for 2008 Disaster Programs is September 16, 2008. Growers must submit a “buy-in” fee to assure disaster program eligibility for 2008 crops.
- Fruit and Nut Crops NAP 2009 application closing date is December 15, 2008. Young orchards not yet reaching crop insurance minimum age must have NAP coverage.

Contact the Sutter/Yuba/Nevada Farm Service Agency (FSA) County office at (530) 671-0850 ext.2 for more information.

USDA NATURAL RESOURCES CONSERVATION SERVICE (NRCS) EQUIP PROGRAM SIGN-UP PERIOD

Conservation cost-share applications for the popular Environmental Quality Incentives Program (EQIP) in Yuba and Sutter Counties are being accepted for funding consideration in fiscal year 2009 from now through October 31, 2008, in the NRCS office, 1511-B Butte House Road in Yuba City. EQIP is a voluntary program for farmers who wish to address natural resource concerns.

Growers should call (530) 674-1461, ext. 3, well before October 31 to provide appropriate documentation of agricultural production, land ownership or control, and project location before the application deadline.

Herbicide Registration on Horticultural Tree and Vine Crops--2008

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	R	R	N	R	N	N	N	
diuron (<i>Karmex, Diurex</i>)	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	R
Flumioxazin (<i>Chateau</i>)	R	R	R	R	R	N	R	NB	R	R	NB	R	NB	N	R	N
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	R	R	R	R	R	R	R	R	R	R	R	R	R	R	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	NB	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	R	R	R	N	N	R
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 sour only	R	N	R	R	R	R	R	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	R	R	R	R	NB	R	NB	R	NB	R	R	R	NB	NB	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>Prism</i>)	NB	NB	NB	NB	NB	N	NB	NB	NB	NB	NB	NB	NB	N	NB	R
2,4-D (<i>Clean-crop, Orchard Master</i>)	R	R	R	R	R	N	R	N	R	R	R	R	R	N	R	N
fluazifop-p-butyl (<i>FusiladeDX</i>)	NB	NB	R	R	NB	N	R	NB	R	NB	R	R	NB	NB	NB	N
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	N	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	NB	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.

* Supplemental label expires Dec. 31, 2008

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

2008 Susceptibility of Weeds to Herbicides

Preemergence

Postemergence

	Carson	Karmex	Devrinol	Solicam	Surflan	Goal	Simazine	Treflan	Prowl	Kerb	Gallery
Annual Broadleaves											
Cheeseweed (Malva)	C	P	P	P	P	C	P	N	N	P	C
Chickweed	C	C	C	P	C	N	C	C	C	C	C
Clover	P	P	P	N	N	P	C	N	N	N	P
Fiddleneck	C	C	C	P	C	C	C	C	C	N	C
Filaree	P	C	C	P	N	C	P	N	N	N	C
Flax-leaved Fleabane	C	N	N	N	N	N	C	N	N	N	
Goosefoot	C	C	C	C	C	C	C	C	C	C	P
Grousel	C	N	P	P	N	C	C	N	N	N	C
Henbit	C	C	N	P	C	C	C	C	C	C	C
Horseweed (Mare's tail)	P	N	N	N	N	N	C	N	N	N	P
Knotweed	C	C	C	P	C	P	C	C	C	C	P
Lambsquarter	C	C	C	P	C	C	C	C	C	C	C
Mustard	C	C	P	P	N	C	C	N	N	C	C
Nightshade	C	C	N	C	P	C	C	N	P	C	C
Pigweed	P	C	P	P	C	C	C	C	C	N	C
Prickly Lettuce	C	C	C	C	N	C	C	N	N	N	C
Puncturevine	C	P	N	C	C	C	P	P	P	N	
Purslane	C	C	C	C	C	C	C	C	C	C	C
Shepherdspurse	C	C	N	P	N	C	C	N	N	C	C
Sowthistle	C	C	C	C	N	C	C	N	N	P	C
Spurge	C	P	N	C	C	C	P	C	C	N	P
Wild Radish	C	C	N	N	N	C	P	N	N	C	C

	Roundup	MSMA	Gramoxone	2,4-D	Poast	Fusilade	Prism
	P	N	P	P	N	N	N
	C	C	C	P	N	N	N
	P	N	P	P	N	N	N
	C	N	P	P	N	N	N
	P	N	P	P	N	N	N
	C	N	P	C	N	N	N
	N	N	P	C	N	N	N
	C	N	C	C	N	N	N
	C	C	C	P	N	N	N
	C	N	P	C	N	N	N
	C	N	P	P	N	N	N
	N	N	N	C	N	N	N
	P	N	C	C	N	N	N
	C	P	C	C	N	N	N
	C	N	C	C	N	N	N
	C	N	P	C	N	N	N
	C	N	C	C	N	N	N
	C	N	C	C	N	N	N
	C	N	P	P	N	N	N
	C	N	C	C	N	N	N

Annual Grasses

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

	C	N	P	N	N	N	C
	C	P	C	N	C	C	C
	C	C	C	N	C	C	C
	C	N	P	N	C	C	C
	C	N	P	N	C	C	C
	C	N	P	N	C	C	C
	P	N	C	N	N	N	N

Perennials

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

	P	N	N	P	N	N	N
	C	N	N	N	P	P	P
	C	C	N	N	C	C	C
	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.ucdavis.edu>