UNIVERSITY of CALIFORNIA
Agriculture & Natural Resources
SAN JOAQUIN COUNTY
FIELD NOTES

A QUARTERLY PUBLICATION OF COOPERATIVE EXTENSION
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Completion of First Delta Responsible Landscape Training

The new Robert J. Cabral Agricultural Center in Stockton, San Joaquin County, hosted the first Delta Responsible Landscape Training in October and November , 2008, for the University of California Cooperative Extension (UCCE) Environmental Horticulture program.

The objective of the training is to inform landscape professionals about how to incorporate environmental conscientiousness into their everyday tasks. It is a three-day course on a range of landscaping topics such as soils, nutrition management, water management, plant selection and installation, waste management, and integrated pest management. This training is taught by UC experts and industry leaders, has a low fee and continuing education hours available for QAL/QAC, and ISA. The trainees take a final exam to validate that they have learned the main concepts of the program. Trainees who have completed the course and passed the exam will comprise a group of certified individuals to be listed on the SJ UCCE Environmental Horticulture webpage at http://groups.ucanr.org/sjeh

This training will repeat February 5, 12, and 19, 2009. Interested parties within the landscape industry can find further information on the webpage as it is announced. You can also contact the San Joaquin County UCCE office by phoning 209-953-6100.

Ashley Basinger, Environmental Horticulture Advisor

These students in the Delta Responsible Landscape Training prepare for one of the "Hands-On" activities.

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Calendar of Events

Southern Sacramento Valley Processing Tomato Production Meeting
Thursday, January 8, 2009
Woodland Community & Senior Center
2001 East Street, Woodland
Info: Gene Miyao (530) 666-8732

61st Annual Conference,
California Weed Science Society
January 12—14, 2009
Doubletree Hotel, Sacramento
Info: http://www.cwss.org/

UC Organic Soil Fertility Management Symposium
Thursday, January 15, 2009 8:30 am to 4:30 pm
Activities & Recreation Center (ARC), La Rue Rd., UC Davis
Info: go to http://vric.ucdavis.edu or (530) 752-1748
Pre-registration advised: $100 fee discounted to $80 through Dec 15

57th Annual Oakdale Livestock Forum
January 20, 2009
Info: Theresa Becchetti (209) 525-6800

California Cherry Research Review
Tuesday, January 27, 2009 8 am to 12 noon
Robert J. Cabral Agricultural Center, Stockton
Info: Joe Grant (209) 953-6115

Water Quality, Range, Pasture, and Livestock Management
Thursday, January 29th, 2009 8:30 am to 1 pm
Robert J. Cabral Agricultural Center, Stockton
Info: see agenda in this newsletter (page 11) or contact Theresa Becchetti (209) 525-6800

Northern San Joaquin Valley Processing Tomato Production meeting
In conjunction with the CA Tomato Growers Association Annual Meeting
Thursday, January 29, 2009 8 am to 11 am
Doubletree Hotel, Modesto
Info: Brenna Aegerter (209) 953-6114

57th Annual Lodi Grape Day
Tuesday, February 3, 2009
Hutchins Street Square, Lodi
Morning session is free, tickets required for lunch (available at door or in advance from the Lodi Chamber of Commerce)
Info: Paul Verdegaal (209) 953-6119

Drip Irrigation of Tomatoes
Tuesday, February 10, 2009
Robert J. Cabral Agricultural Center, Stockton
Info: Details to follow; Brenna Aegerter (209) 953-6114

Tri-county Walnut Institute
Sometime the week of February 8, 2009
Stanislaus County Ag Center, Modesto
Info: Details to follow; Joe Grant (209) 953-6115

San Joaquin, Stanislaus, and Merced Bean Production Meeting
March 2009, Westley, CA exact date TBA
Info: Mick Canevari 209-953-6118

The UC Master Gardener Program is Growing Like a Weed

Now in its second year, our UC Master Gardener (UCMG) Program is getting ready to launch its third volunteer training. This UCMG program is open for enrollment to residents of San Joaquin County. The next training session will begin February 17, 2009; the application deadline is January 16th. The classes will be held on Tuesdays from 8:30 am – 1:00 pm at our Stockton location. The classes will go until June 16, 2009. The fee for the class is $125.00 and includes UC books as well as other Master Gardener materials. Lessons will include an introduction to horticulture; soil; water and fertilizer management; composting; green waste reduction; ornamentals and drought tolerant plants; turf management; landscape trees - planting and maintenance; introduction to insects; integrated pest management; home vegetable gardening; plant disease diagnosis; weed identification and management; home orchards; fruit and nut trees; small fruits and grapevines; identification and control of household pests; understanding

(Continued on page 3)

(UC Master Gardener Program… .continued from page 2)
pesticides; volunteerism; propagating plants; landscape design; diagnosing garden and landscape problems. The classes are taught by UC advisors and professors and are comprised of one 4½ hour class per week, along with quizzes and a final test for certification into the Master Gardener Program. Upon completion of the training, Master Gardeners are required to contribute 50 hours of Community service to San Joaquin County within a year of graduation. The applications are available at the UC Extension Office or online at http://sjmastergardeners.ucdavis.edu

Master Gardeners are available to diagnose plant problems and give horticultural assistance to San Joaquin County residents over the telephone and via office visits, workshops, demonstrations, events, and mass media.

Do you have a gardening question? San Joaquin County residents can benefit from the expertise of the Master Gardener Program at no cost by calling the Master Gardener Hotline at (209) 953-6112. The hotline is available Tuesday through Thursday from 9 am – 12 pm for gardening questions. San Joaquin County residents may also bring their samples into the UC Cooperative Extension Office in Stockton during these hours.

Marcy Hachman, Master Gardener Coordinator

Processing Tomato Variety Evaluation

This year our mid-season maturity variety trial was in the Tracy area. The field was drip-irrigated and was on a Capay clay soil. The trial was transplanted in single rows on 60" beds on May 13th. Due to high winds and heat in the week following transplanting, survival of the transplants was poor. Although the grower was able to fill in the gaps in the field with replacement transplants, we were not able to do the same for our trial area, resulting in a weak stand of plants. For this reason, we did not take yield data for any varieties. However, we were able to take fruit quality samples on September 29th. Results of the PTAB fruit quality analysis are below in Table 1. Varieties with the highest soluble solids were HM 6898 (at 5.2% brix), followed by H 2005, PX 1723, H 8004, and H 9780. Average fruit pH was 4.45; varieties with the lowest pH were HM 6898, H 9780 and AB2. There was very little color variation between varieties.

Variety	% Brix	Color	pH
HM 6898	5.2	23	4.34
H 2005	5.0	23	4.50
PX 1723	4.9	24	4.47
H 8004	4.9	23	4.41
H 9780	4.8	23	4.37
UG 4305	4.6	23	4.51
NDM 5578	4.6	23	4.41
H 2601 (standard)	4.6	23	4.48
SUN 6368	4.5	24	4.43
AB 2 (standard)	4.5	23	4.39
NUN 672	4.3	23	4.48
H 4007	4.2	23	4.55
AB 8058	4.1	23	4.51
MEAN	4.6	22.9	4.45
LSD (P = 0.05)[z]	0.46	-	0.065

[z] Use this LSD value to compare means of any varieties other than UG 4305; means that differ by less than this value are not significantly different. To compare means for UG 4305 to other means use LSD values of 0.5 for % Brix and 0.07 for pH.

Many thanks to our grower cooperator Hal Robertson and to California Tomato Research Institute (CTRI) and the participating seed companies for their financial support.

Later this year, the full UC Statewide Variety Evaluation Report will be available from the UCD Vegetable Research and Information Center. This will have information on how all varieties performed at all eight locations this year. Look for it at the website below after mid-December or I can mail you a copy.

Vegetable Research and Information Center at http://vric.ucdavis.edu/selectnewcrop.tomato.htm

Brenna Aegerter, Farm Advisor
Vegetable Crops

Alfalfa Weed Control and Variety Trial Highlights

Alfalfa weed control options have expanded with the recent registration of two new herbicides. Prowl H_20 ®and Chateau® herbicides became available in 2007 and 2008. Both offer control of important weed problems and have a clean slate from state regulatory and water agencies. I've had the opportunity to research both of these products for years in alfalfa and consider both of them to be good additions to our alfalfa weed control choices.

Pendimethalin (Prowl H_20®) was registered for use in established alfalfa in late 2007 and applied in December/January time frame. With one season's use under our belt, our field observations indicate excellent results. Prowl is a dinitroaniline herbicide related to *trifluralin* (Treflan ®TR 10), a long used standard in alfalfa. They are very effective in controlling summer grasses, many broadleaf weeds (except common groundsel) and dodder when applied before germination. Prowl H_20 is formulated to remain on the soil for several weeks until rain incorporation with little volatility loss; this has been an issue with TR-10 timing of application just prior to a rain. If there are any weeds emerged a post-emergent herbicide must be added with Prowl (i.e. paraquat, Velpar, 2,4-DB, Prism, Post or Raptor/ Pursuit). The rates of Prowl range from 1 to 4 quarts per acre depending on weed type and anticipated weed pressure. I have evaluated rates and timings and found the 2 quart rate of Prowl tank mixed with a burndown herbicide to be a good program for winter weeds and lasting into midsummer for grass control. Using the higher rates will extend weed/grass control into late summer and be more effective if dodder is a problem. Research has shown no crop injury issues with Prowl H_20 on established alfalfa. Prowl is now being reviewed for use between cutting cycles which would be a great benefit for long term summer weed control. Currently, it has a 50 day pre-harvest waiting period which prevents it being used in the summer between cuttings.

Flumioxazin (Chateau®) herbicide is the most recent herbicide registration for use in established alfalfa as of September 2008. It has been tested for several years as a winter pre-emergent herbicide similar to h*exazinone* (Velpar®**)** to control a broad spectrum of weeds. It is one of the only herbicides that will control common groundsel prior to emergence. Like other preemergent herbicides, it is recommended to tank mix Chateau with a burndown herbicide when weeds are already emerged (e.g. paraquat). Chateau will remain stable on the soil surface for several weeks until rainfall incorporation occurs. The labeled rate for alfalfa is 4 ounces per acre which has been effective for most winter weeds and spring germinating grasses. Summer grasses such as yellow foxtail and watergrass are not this chemistry's strength; however, it has shown better grass control than *hexazinone* (Velpar) lasting into the first cutting of alfalfa. Chateau can be tank mixed with other herbicides (e.g. Prowl, Prism, and Poast) for a more effective and longer grass control program. Chateau has a 25 day PHI between cuttings which allows its use between harvests in the summer for special weed problems.

Alfalfa Variety Evaluation Trial

There are numerous varieties from which to choose when planting alfalfa. In addition to considering yield, it is important to take into account the varieties' other characteristics such as their fall dormancy (FD) ratings and insect and disease resistances. In our area, fall dormancies between 3 and 8 can be planted. Varieties categorized as a 3 will slow their growth by September, while those categorized as an 8 will continue growing into November or December depending on temperatures. The dormancy comparisons are reflected in yield differences listed in the variety results in **TABLE 1** (page 5). A November harvest is not desirable in this county with the uncertainty of rain at that time and the low likelihood of having enough hay drying weather. Lower dormancy varieties yield less since they have a shorter growing season but are known generally to be higher in forage quality because of a higher leaf to stem ratio. As a rule of thumb, dormancy ratings between 4 and 7 fit our county harvest window and most alfalfa operations here best. The next decision is to review the varieties' strengths with respect to *Phytophthora* root disease, stem and root knot nematode and aphid resistance. All of these are present in the county and are the primary pest and disease issues I see frequently that are without good solutions for control. More information on yield and variety characteristics can be found on the website http://alfalfa.ucdavis.edu under **Variety Selection** and in the **"Fall Dormancy & Pest Resistance Ratings"** leaflet.

Mick Canevari, Farm Advisor and County Director

TABLE 1. 2006-2008 Yields, UC Davis Alfalfa Cultivar Trial (Trial planted Sept. 28, 2005)

		2006 Yield	2007 Yield	2008 Yield	Average (rank)
	FD	Dry tons/acre			
Released Varieties					
Wildcard	8	12.8 (1)	13.8 (2)	9.0 (6)	11.9 (1)
Magna 788	8	12.2 (11)	14.0 (1)	9.4 (2)	11.8 (2)
WL535HQ	8	11.7 (27)	13.5 (3)	9.4 (1)	11.5 (5)
WL530HQ	8	12.2 (12)	13.1 (10)	8.7 (12)	11.3 (11)
Conquistador	8	12.5 (3)	13.0 (11)	8.4 (25)	11.3 (12)
Yosemite	8	12.2 (10)	13.2 (9)	8.4 (24)	11.3 (14)
Artisian Sunrise	7	12.3 (6)	12.7 (18)	8.6 (18)	11.2 (16)
CUF101	9	11.8 (24)	12.9 (15)	8.6 (16)	11.1 (18)
HybriForce-620	6	12.2 (9)	12.6 (20)	8.4 (23)	11.1 (19)
56S82	6	12.0 (17)	12.5 (22)	8.5 (19)	11.0 (22)
DKA84-10RR	8.4	12.0 (18)	12.7 (17)	8.0 (34)	10.9 (24)
57Q75	7	11.8 (25)	12.4 (23)	8.3 (29)	10.8 (25)
Dura 843	8	11.8 (26)	12.1 (28)	8.3 (28)	10.7 (27)
DKA50-18	5	11.2 (33)	11.6 (36)	8.5 (21)	10.4 (31)
Owyhee	6	11.2 (34)	11.7 (34)	8.3 (26)	10.4 (32)
Mountaineer 2.0	5	11.2 (35)	11.7 (35)	8.3 (31)	10.4 (34)
Sutter	7	11.2 (32)	11.5 (38)	7.6 (40)	10.1 (36)
DKA41-18RR	4.1	10.7 (37)	11.8 (31)	7.9 (35)	10.1 (37)
WL357HQ	5	10.5 (40)	11.5 (39)	7.8 (37)	9.9 (38)
Lahanton	5	10.6 (39)	11.6 (37)	7.5 (43)	9.9 (39)
DKA42-15	4	10.4 (43)	10.9 (40)	7.9 (36)	9.7 (41)
Dura 512	5	10.5 (42)	10.9 (41)	7.4 (44)	9.6 (42)
DKA33-16	3	10.5 (41)	10.7 (43)	7.6 (41)	9.6 (43)
CW95026	5	10.3 (44)	10.5 (44)	7.6 (42)	9.5 (44)
DKA34-17RR	3.4	10.1 (45)	10.4 (45)	7.8 (38)	9.4 (45)

Cancellation of Manex Registration Announced

The Environmental Protection Agency (EPA) has announced it will be cancelling registration of Manex following a decision by United Phosphorous, Inc. to quit Manex production. The California Department of Pesticide Regulation (DPR) has indicated that once the EPA cancels the registration of Manex, the industry will no longer be able to use the product beyond the 2009 season. Manex (*maneb*) may be in short supply as a result of the cancellation process. DPR has indicated that they will also request an additional section 18 for mancozeb, but they do not have control over the EDBC issues at EPA. It may mean a whole new assessment by EPA. This may create problems for the industry in securing Mancozeb Flowable and related products during the 2009 growing season. The California Walnut Commission is working on this issue and keeping handlers informed of the situation. Contact your handler for the latest information.

Joe Grant, Farm Advisor

Causes and Control of Cherry Limb Dieback

Cankers and limb dieback of cherry trees can be caused by bacteria or fungi. In California, the most common bacterial cause is *Pseudomonas syringae*, the causal agent of bacterial canker and blast, which affect all stone fruit crops. Cherries are especially susceptible to bacterial canker; severe losses in recent years in young 'Coral' plantings have demonstrated that this variety is particularly vulnerable. Plant pathologists throughout the world have worked for decades on the biology and control of *P. syringae*. The fact that it is still a major cause of tree death and decline speaks to the complexity of this disease and difficulty of controlling it. In cherries, we are left to rely mainly on three tactics: avoiding planting orchards in areas with 1) warm and wet spring weather (for example, in northern and coastal California) or 2) on soils infested with high populations of ring nematode, and 3) managing orchards in ways that minimize "stress" from improper irrigation, nutrition, salts, and other diseases. These measures are especially important in young orchards. More detailed information on bacterial canker can be found at http://ucipm.ucdavis.edu/PMG/selectnewpest.cherries.html .

There are several groups of pathogenic fungi that cause cankers and limb dieback in cherries. Long a serious problem of older cherry blocks, in recent years we have seen increasing problems in young orchards. Since 2006, a team led by Dr. Doug Gubler of UC Davis has been investigating fungal causes of branch and limb dieback in cherry trees. Their work is beginning to shed new light on fungi that cause dieback and steps growers can take to control them.

For a number of years since it was first identified in a Linden area cherry orchard, we have known that *Eutypa lata*, a major fungal pathogen in grapes, can infect cherry trees, cause cankers, and kill large limbs. Dr. Gubler's group has now conclusively shown that two other fungi – a species of *Phaeoacremonium* and *Calosphaeria pulchella* – are also commonly associated with cherry cankers and may cause limb dieback. Work is underway to better understand when and how these fungi infect cherry trees and how they can be controlled.

While we await the results of these investigations, there is much about these fungi we already know that can be used to manage orchards and minimize risks of infection. These fungi enter into trees mainly through pruning wounds, they release airborne or water-splashed spores mainly during wet or rainy periods, and these spores germinate when they are wetted. The optimal pruning time for disease prevention is therefore during dry weather, spring through early fall.

When a pruning wound is made, natural defense mechanisms are triggered that help protect the wound against subsequent infection. This process takes two or more weeks depending on the severity of the cut and how and when it was made. Larger cuts, "flush" cuts made very close to larger limbs or "stub" cuts which leave a portion of the removed branch on the tree take longer to heal and are susceptible longer to fungal infection than small cuts and those which leave intact the "collar" of tissue where the pruned branch joins the one from which it was removed. Pruning cuts heal much faster during the growing season when trees are active than during the winter. While these disease considerations need to be coupled with horticultural goals in deciding when to prune, a strong case can be made that pruning during the winter is a generally bad idea. Fall pruning done too early can stimulate unwanted re-growth – especially in young orchards - and spring pruning done too late can reduce tree vigor. Pruning time needs to be determined on a case-by-case basis.

Research has shown that treating wounds with fungicides can help prevent infection, but treatments must be applied directly to the wound and very soon after the wound is made to be effective. To my knowledge, however there are no effective fungicides currently registered for this kind of use on cherries in California. Dr. Gubler's group is working to develop a post pruning, tractor applied fungicide program with Dow Agrosciences that could be ready in 2009. Experiments with protectants like paint, wax, and other sealants have generally shown that these treatments provide little or no benefit, especially when compared to pruning at the proper time with good techniques.

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Understanding wound-related disease problems will become increasingly important as we prune heavier and more often to improve fruit size and quality. Dr. Gubler and other cherry researchers will present results of their work at the California Cherry Research Review on January 27 in Stockton. (*see Calendar of Events, page 2*)

Joe Grant, Farm Advisor

CONTACT US!

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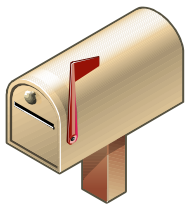

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Dead bud wood and phloem necrosis caused by bacterial canker (blast). Photo by Jack Kelly Clark. UC Statewide IPM Project. Copyright 2000, Regent, University of California

Crop Digest
Grapes and Almonds

Grapes

The 2008 season was the second dry year in a row after two wet years. Again, dry cold winter conditions affected vine development and crop yields. Rainfall total for the year was about 50% of average; the same as last year, but in 2008 the rain stopped after early February and it remained dry. This was the opposite of 2007 when dry conditions dominated until late winter, followed by sufficient rain late winter and early spring. Soil moisture was low as spring unfolded. Weed growth was minimal and all pest pressure was relatively low, whether insect, mite or disease.

Spring frost occurred statewide for the first time since 1972. It appears there were three frost events during the week of April 13. The first two left the heart of the Lodi District untouched, but there were scattered and severe losses in the outer margins of the Lodi AVA. On the third night scattered damage also occurred within a five-mile radius of the central portion of Lodi. Individual growers suffered some severe damage, but as a whole Lodi suffered moderate to light damage compared with many areas of the state. With and without frost damage yields were 15 to 20 % below average and in some varieties such as Merlot and Syrah off by 40 to 50%. Quality was exceptional, but was a minor consolation. After a couple of brief hot spells during the summer, weather was about average. Scattered leafhopper problems did occur late season. The glassy-winged sharpshooter program has kept the area free of that threat, but vine mealy bug continues to spread. Gophers and voles were more of a problem than normal.

Harvest began with an about average start date. The pace began slowly, but ramped up as most all varieties seemed to achieve maturity at once. The light crop helped reduce severe scheduling problems, but did cause some concerns. A slight lull in maturity development in mid-September seemed to slow down most everything still in the field. Chardonnay and Sauvignon Blanc were only slightly below average in yields, where frost wasn't a factor. Most varieties and blocks were slightly below average, except for Merlot, Syrah and white Zinfandel among others. Cabernet Sauvignon was variable with some vineyards off as much as 50%, but most sites were off 10 to 15%. Harvest was finished by the third week of October.

Grape prices did improve by about 15 to 20%, but production costs increased about 30 to 59%. The price range of grapes continues to be large, depending on fruit destination (variety, wine program and winery). The 2008 season was generally better than the last two years, but frost and production costs diminished the good progress. Costs are still well ahead of grower returns on a long term basis; about $405 to $498 per ton for cash costs that don't include cost of overhead and opportunity of investment. The all too familiar challenges remain - regulations, labor availability and more consolidation at the producer, wholesale and retail levels. Growers remain optimistic for 2009 as, at the ball park, there is always next year.

Fall Checklist

-If the soil is dry, a light irrigation to help maintain soil moisture is okay until it rains steadily.
-No nitrogen should be applied now, but potassium now (or early next year) is okay. It won't move like nitrogen. To get full benefit of compost, it needs to be disked in.
-Make a note of any problem weed species that may be increasing.
-Mark any vines with excessive red leaves and/or leaf roll for possible removable.
-Renew your Ag Waiver Discharge membership.
-Update your air pollution mitigation plan if you have 100 acres or more in a single vineyard.
-Also, review your pesticide use reports and get everything up to date
-For vine mealy bug, Lorsban applied post harvest can help keep it checked until the summer control program. Be careful not to apply before a storm, especially near natural drains and waterways.
-Pre-pruning can be done now, but leave at least 12 inches of dormant cane, until *Eutypa* spore load diminishes with some heavy or a few normal rains.
-If you are near or on watershed runoff sites limit herbicide applications so that either a contact material is used to "keep things under control" or use lowest label rate and skip several rows away from immediate runoff areas or slopes. Then reapply remainder of label rate late winter or early spring.

Almonds

The 2008 season was a little more upbeat than for grapes, although there is concern about price weakening. After another very dry and cold winter, there were more calls about tree growth in spite of irrigating "as much or more than usual". It was just too dry to keep up at times this year. Good weather was present for most of the bloom, and Nonpareil seemed to benefit the most. Even though dry again, there seemed to be very good chilling hours accumulated.

The downside was bees were very expensive, but the silver lining (?) was almond prices seemed to be about the same as last year. It looks like prices may hold and just cover increased costs, as market demand stays ahead of another billion-pound crop. Fortunately weather was generally good and so many costs such as bees, fuel, and fungicide use were not devastating. As in all agriculture, air, water and labor regulations continue to add cost pressure. Consolidation of operations at all levels continues. The bloom was moderately paced compared to some years and a little variable in some varieties and sites. The second dry and cold winter didn't help, but yields were still good. The season progressed with a relatively low level of insects and mite problems and a little less incidence of lower limb dieback.

The upside of 2008 has been the continued increase in demand for almonds and more recognition of the potential dietary benefits of almond consumption. Cautious optimism seems justified.

On another note we are starting to implement the Pest Management Alliance II (PMAII) in San Joaquin County. This is a follow-up to the original PMA and will build on developing more information on alternative IPM strategies including reliable but more convenient monitoring, newer materials and timings and getting the information out quickly to more growers. To that end, Daniel Rivers will be housed in our office and working with me on the statewide project in cooperation with the advisors in Madera and Sutter-Yuba counties. Give Dan or me a call if you have questions or want to make sure you are on our mailing list for meetings and the latest information.

Fall Checklist

-If the orchard didn't get a good irrigation after harvest or it has been a while since applied water, a light irrigation just before or after any fall rains may be helpful.
-If water penetration has been a problem, a fall gypsum application or a fall lime application in low pH soils can help winter rains soak in, but spring time is often better with first irrigation.
- No nitrogen should be applied now, but potassium can be applied now or early next year, as it won't move through the soil like nitrogen can.
-Pruning is okay, but not on young trees. In general less pruning is necessary than previously thought to keep production up, especially if the budget is tight. Even skip it for a year.
-Mark trees or limbs which are more easily seen as needing to be removed before next spring.
-Note any problem weed species to make decisions about herbicide or weed control strategies.
-Review your delivery sheets and try to determine exactly what caused the damage (worms versus ants or shrivel or maybe just chipped nuts).
-Renew your Ag Waiver Discharge membership.
-Update your air pollution mitigation plan if you have 100 acres or more in a single vineyard.
-Also, review your pesticide use reports and get everything up to date as there is continued interest in making sure agriculture is held "accountable" for any and all problems real or perceived that could be traced back to orchard sites.
-Think about a dormant spray if it has been more than three to five years and worm or early season mites or possibly scale has become more evident. Although dormant copper sprays have never been proven to prevent blast, there may still be some benefit to suppress an increasing incidence in your orchard. Remember to avoid dormant sprays just before a rain, especially near waterways or natural drains.
-Check orchard or areas where beehives are placed for any suspicious ant mounds that are very big and/or have different looking "red ants". The red imported fire ant is spreading.

Paul S. Verdegaal
Farm Advisor, Almonds & Viticulture

Pasteurized Colostrum and Your Calf Management System

There are few doubts about the value of colostrum, but there are differences in colostrum management that can have a significant impact on the effectiveness of your heifers' first meal. Good colostrum management is vital to raising healthy calves. Over the years, emphasis has properly been placed upon colostrum quality, amount of colostrum fed (based on quality), and time of first colostrum feeding. While colostrum plays an important role in protecting the calf at the start of life, it can also be one of the first introductions of infectious agents into the calf's system. For example, *E. coli*, *Salmonella* spp., and *Mycoplasma* spp. can directly cause diseases in calves such as scours and septicemia. It is also thought that bacteria in colostrum can interfere with the passive transfer of antibodies that calves need to build their own immune systems. Recently discovered cases of tuberculosis in California herds are another good example of why pasteurizing colostrum may be the next logical step in your colostrum regimen.

Early attempts at pasteurizing colostrum led to destruction of IgG (antibodies) and thickened colostrum, causing problems with feeding and the pasteurizing equipment. Problems arise when heating colostrum to temperatures above 60^{o}C, and also when pasteurizing large batches of colostrum, even at acceptable temperature. Large batches increase the time to reach optimal temperature for pasteurization, resulting in thickening and loss of antibodies.

Pasteurizing colostrum at 60^{o}C for 60 minutes minimized the loss of IgG and prevented increased viscosity of colostrum compared with heat-treatment at higher temperatures. A 2007 study compared feeding raw colostrum with heat-treated colostrum. Colostrum from a group of cows was pooled and then divided to be fed to calves either as raw or pasteurized colostrum. Raw colostrum was transferred into sanitized feeding bottles, covered and refrigerated. The colostrum destined for pasteurization was heat-treated at 60^{o}C for 60 minutes using a commercial on-farm batch pasteurizer, and then packaged in the same manner as raw colostrum. Refrigerated colostrum was fed to calves within 36 hours of bottling. Pasteurizing colostrum resulted in lowered bacterial counts, with IgG concentrations similar to that of non-treated raw colostrum. Bacterial counts rose between time of packaging and feeding in both groups, but pasteurized bacterial counts remained significantly lower than non-treated colostrum. Calves fed pasteurized colostrum had greater apparent efficiency of absorption of IgG, and greater serum IgG concentrations at 24 hours when compared with calves fed non-treated colostrum. The efficiency of IgG absorption increases the effectiveness of passive immune transfer, resulting in healthier calves that are better able to respond to environmental stress.

While efficiency of absorption of IgG increased with pasteurization, it is important that quality and quantity of colostrum fed remain consistent with the recommendations of your veterinarian. Pasteurization is not a replacement for other good colostrum handling practices, but may enhance your feeding protocols.

For a list of references, comments or questions, please contact me at (209)525-6800, or jmheguy@ucdavis.edu.

Jennifer Heguy, Dairy Farm Advisor

Photo courtesy of Ed DePeters.

UPCOMING LIVESTOCK MEETINGS

57th Annual Oakdale Livestock Forum

January 20, 2009 in Oakdale!

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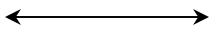

Water Quality, Range, Pasture, and Livestock Management

January 29, 2009

Robert J. Cabral Agricultural Center

2101 E. Earhart Avenue, Stockton, CA 95206

Purpose:

Share recent research results from northern California on:

- Water quality in pasture and rangeland runoff, streams and rivers, and the Sacramento/San Joaquin Delta
- Potential risks that range and pasture management pose to water quality and management options to reduce these risks
- Use of vegetative filter strips and wetlands to clean up range and pasture runoff

Provide practical management options to protect water quality and comply with water quality regulatory programs.

Audience:

Anyone interested in water quality, range and pasture management. This includes livestock/range/pasture managers, agricultural water quality coalitions, agricultural and environmental advocacy organizations, irrigation districts, resource conservation districts, municipal water districts, water quality regulatory agencies, natural resources management and conservation organizations, and environmental consulting firms, among others.

Presenters:

Dr. Rob Atwill, Professor of Environmental Animal Health and Medical Ecology, School of Veterinary Medicine, UC Davis
Dr. Randy Dahlgren, Professor of Biogeochemistry, Department of Land Air and Water Resources, UC Davis
Dr. Toby O'Geen, Soil Resource Specialist, Department of Land Air and Water Resources, UC Davis
Dr. Ken Tate, Rangeland Watershed Specialist, Department of Plant Sciences, UC Davis

8:30 ***Registration, Coffee, Breakfast snacks***

9:00 The water quality concerns associated with livestock, range and irrigated pasture management

10:00 ***Break***

10:10 Livestock, range, and pasture management practices to decrease risks to water quality

11:30 ***Break***

11:40 Use of vegetative filter strips and wetlands to filter pollutants in runoff from rangeland and irrigated pasture

1:00 ***Summary and Lunch***

To Register please send a check for $10 made payable to the UC Regents by **January 14th** to:

Theresa Becchetti
UC Cooperative Extension
3800 Cornucopia Way, Ste A
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For more information please call Theresa at 209-525-6800

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