

## Dry Bean/Blackeye Field Day

**Wednesday, August 10, 2011**

**7:30 a.m. – 12:00 p.m.**

Kearney Research & Extension Center  
9240 S. Riverbend Ave., Parlier, CA  
(directions on page 2)

7:30 a.m.     **Registration**

8:00           **Field Tour Departs**

Root Knot Nematode Screening for Beans – *Jeff Ehlers, UC Riverside*

What's Looking Good? Blackeye Variety Development (yield, quality, and resistance to aphids & lygus bugs) - *Jeff Ehlers, UC Riverside*

Hope for Problem Weeds? Post-emergence Herbicide Trial in Blackeye with Directed Spray Applications – *Kurt Hembree, UCCE Fresno County*

Insecticide Evaluation for Lygus Bug Management - Potential Materials for Blackeye Registration – *Carol Frate, UCCE Tulare County*

10:30          **Conference Room Presentations**

What do you want to know and how do you want to know it? – *Shannon Mueller, UCCE Fresno County*

Pigeon Peas – a niche crop for bean growers? - *Jeff Ehlers, UC Riverside*

Updates from University, Industry & Marketing

*Paul Gepts, UC Davis*

*Nathan Sano, Manager, California Dry Bean Advisory Board*

*Gary Luckett, Manager, Cal-Bean & Grain Warehouse, Pixley*

12:00          **Adjourn**

**PCA Hours – 2 hrs (other)**

**CCA Hours: 4 hrs (2.5 for pest management; 1.5 professional development)**

*Refreshments courtesy of Cal-Bean & Grain Warehouse, Pixley*

# Alfalfa Field Day

**Thursday, September 8, 2011**

**7:30 a.m. – 12:00 p.m.**

Kearney Research & Extension Center  
9240 S. Riverbend Ave., Parlier, CA  
(directions below)

## *Tentative Agenda*

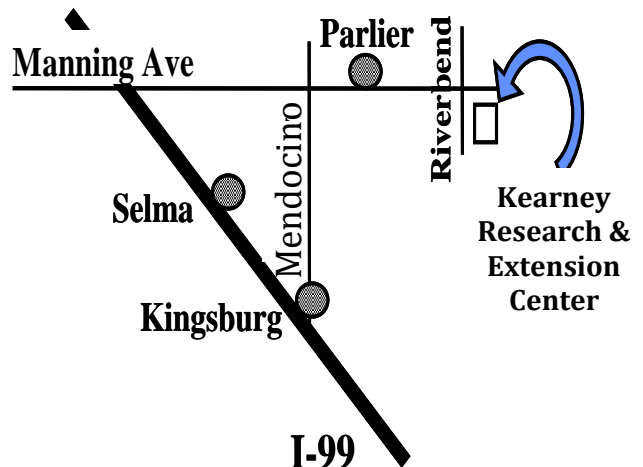
- 7:30 a.m.     **Registration**
- 8:00           **Field Tour Departs**  
Alfalfa Variety Development and Selection – *Dan Putnam, UC Davis*  
Forage Sorghums: Not What Your Parents Grew! – *Jeff Dahlberg, Director, Kearney Ag Center*
- 10:00          **Conference Room Presentations**  
DIY On-Farm Research– *Shannon Mueller and Carol Frate, UCCE Fresno & Tulare Counties*  
Gopher and Vole Control in Alfalfa – *Roger Baldwin, IPM Kearney Research & Extension Center* (tentative)  
What Do You Want to Know and How Do You Want to Know It? – *Shannon Mueller, UCCE Fresno County*  
Got Weeds? Let’s Talk! (bring your weeds & questions) – *Kurt Hembree, UCCE Fresno County*  
Sclerotinia Crown & Stem Rot of Alfalfa and Date of Planting – *Carol Frate, UCCE Tulare County*  
Optimizing Small Grain Yields (herbicides, stripe rust) – *Steve Wright, UCCE Tulare County*
- 12:00          **Adjourn**

**2.5 PCA Hours and 3.5 CCA Hours have been requested**

## **Directions to Kearney REC**

*From the North:* Take State Route 99 southbound. Exit State Route 99 at the Manning Avenue exit, and go east eight miles to Riverbend Avenue. Turn right on Riverbend, and continue one-quarter mile.

*From the South:* Take State Route 99 northbound. Exit State Route 99 at the Manning Avenue exit, and go east eight miles to Riverbend Avenue. Turn right on Riverbend, and continue one-quarter mile.



## **Field Days – Mark Your Calendars!**

Included in this newsletter are the agendas for two morning meetings to be held at the Kearney Research & Extension Center near Reedley, CA. Both meetings will start in the field and then move to the cool indoors!

The *bean meeting on Wednesday, August 10<sup>th</sup>* will cover many of the trials that are supported with funds from the Blackeye Council of the California Dry Bean Advisory Board – these funds are from YOUR assessments. Come and see what is being done with your money. A market update is included, and an update from the California Dry Bean Advisory Board and the University on replacing Steve Temple, the Extension Specialist who has been breeding and selecting common and lima bean varieties, will be presented. Refreshments will be provided by Cal Bean Warehouse.

The *alfalfa and small grain meeting on Thursday, September 8<sup>th</sup>* will cover varieties, production practices, weed control and rodent control.

### **Reduced Risk from Sclerotinia Stem and Crown Rot When Planting Alfalfa in Early Fall**

University of California trials have shown that the best time to plant alfalfa in the San Joaquin Valley is September through early October. With warm soil temperatures in September, seedlings emerge in a few days. Weed pressure is less at this time of year because summer weeds are phasing out and few winter weeds are emerging. By the time winter weeds do begin to grow, the alfalfa is already established. Yield trials demonstrated that first season yields were increased compared to November and later plantings.

After these studies, many growers began to plant early due to these advantages. Farmers arranged their crop rotation so that fields were ready for planting alfalfa in September. Another difficulty in switching to an early fall planting was the lack of rain for germination. To solve that problem, some growers pre-irrigated and planted to moisture, some pre-irrigated and then irrigated again after planting, and some skipped pre-irrigation and only irrigated after planting. Some rented sprinklers and others used flood irrigation for emergence. Stands were established successfully, and more and more growers were planting early – until we had some wet, foggy winters in 2004-2005.

Foggy conditions promoted a fungus-caused disease called Sclerotinia Stem and Crown Rot. Many growers call it “white mold” because white strands of the fungus are often visible on the plants. This fungus kills alfalfa stems and can, when favorable conditions persist, kill seedling plants. (Established plants are less likely to be killed because of their large crowns). Early plantings have lots of canopy by December and January, when the environmental conditions are most likely to be favorable for disease. The canopy keeps moisture high even when the fog burns off and the sun shines, enabling the fungus to continue growing and infecting more plants.

In the past, once the disease appeared in a field, there was little growers could do except to try to burn down the canopy with a contact herbicide and hope for dry, sunny weather. After the investment in establishing a seedling stand, hoping was not enough. Growers who had severe Sclerotinia problems stopped planting early.

But now there are improved options for managing this disease. There is one fungicide registered on alfalfa hay and another that is about to be approved that will provide substantial protection from Sclerotinia should weather conditions favor disease development. These tools will provide “insurance” if Sclerotinia should appear in seedling fields, allowing growers to plant early without risking the success of their planting to disease. If it is not a “disease year”, growers will get full advantage of the benefits of early planting. If it’s a foggy year and Sclerotinia develops, these fungicides are a tool to minimize damage from this disease.

In the next newsletter, data on the advantages of early planting and results of trials with the new fungicides will be presented.

## Corn and Spider Mites

Last year I conducted a trial comparing Comite, Onager, and Oberon spider mite materials to each other and to an untreated control in a grower's field in the Tulare area. Each plot was 12 rows wide by the length of the field (about ¼ mile) and each treatment was replicated 3 times. Treatments were applied June 23, 2010, by a commercial applicator, Vieira Custom Spraying, with a high boy rig using drop nozzles at 20 gpa volume when the corn was 5-6 ft tall.

Leaves were collected on a weekly basis from both ends of the field for determining the spider mite pressure. From week to week the number of leaves per plot and/or the height of the leaf chosen for counting varied, so that on any specific date the treatments can be directly compared, but between two different dates there shouldn't be a direct comparison.

At harvest on August 31, 2010, rows 4, 5, 6, & 7 of each plot were harvested for yield and quality data. The results of spider mite counts, yield, and quality are in Tables 1, 2, and 3 respectively.

Insect counts can be difficult to analyze because of the variability from plot to plot and some of the assumptions of the statistical analysis don't hold true. However, looking at Table 1 with the spider mite counts, it is obvious that all the materials provided significant control compared to the untreated check. The highest count occurred on August 3<sup>rd</sup> in the untreated control. At subsequent counting dates, we continued to sample the same leaf stage so in the untreated control the leaves had pretty much already been sucked dry by the spider mites, which is why the August 10<sup>th</sup> and August 17<sup>th</sup> dates had such low counts in the untreated plots. In the treated plots, it is hard to say, based on these counts, if any treatments were significantly better than the others.

Although the lower leaves in untreated plots were dried up, there was no difference in plant moisture at harvest (Table 2). The explanation is that the majority of the moisture is in the plant stalk. Whether one considers the weights taken at harvest, converts those weights to dry matter, or adjusts them to 70% moisture, the yield result is the same: Treatment with any of the miticides resulted in significantly higher yields than the untreated check. It didn't matter which miticide was used, but the end result was about a 6 ton/A difference when adjusted to 70% moisture or an almost 2 tons/A dry matter increase in yield when spider mites were controlled.

When analyzed individually, there were no differences in quality among the treatments. However, when the miticide treatments were lumped together and analyzed against the untreated check, controlling spider mites resulted in significantly lower Acid Detergent Fiber (ADF) and significantly higher Total Digestible Nutrients (TDN) than when spider mites were not controlled. Neutral Detergent Fiber (NDF) was also reduced although not quite to the certainty we like before we call something significant. To be "significant", we like the probability that the difference was not due to the treatments to be 5% (P=0.05) or lower. With the NDF, there was a 6% chance that the difference was not due to the miticide treatments.

These results confirm that controlling spider mites protects yield, and to a smaller extent, quality of silage corn. From our counts and the yield results, it is difficult to say if any of the miticide treatments were superior to the others. Towards the end of the season, the spider mite population began to increase – especially along a frequently travelled dusty road, but it was so close to harvest that the grower decided not to treat. In this trial, one application by ground provided excellent control. Coverage is very critical to getting the most "bang for your buck" regardless of the miticide selected. Ground application with drop nozzles will ALWAYS provide better control than application by air.

## 2010 Silage Corn Spider Mite Trial

Carol Frate, UCCE Farm Advisor, Tulare County

Cooperator: Frank Pacheco

Plot size: 12 38-inch rows x ¼ mile; 4 replications

Treatments applied on June 23, 2010 by ground with drop nozzles at 20 gpa

**Table 1. Spider Mite Count from 2010 Spider Mite Trial in Silage Corn, Tulare County, CA**

Based on: Date collected	Average Number of Mites per Leaf							
	16 leaves	16 leaves	16 leaves	10 leaves	10 leaves	10 leaves	10 leaves	10 leaves
	2-Jul	9-Jul	16-Jul*	23-Jul	3-Aug	10-Aug**	17-Aug**	23-Aug**
<b>Untreated</b>	7.6	28.5	139.4	189.4	573.4	68.2	2.1	0.4
<b>Oberon @ 12.8 oz/A<sup>1</sup></b>	1.2	1.4	1.1	9.3	88.6	26.3	36.9	7.1
<b>Oberon @ 16 oz/A<sup>1</sup></b>	0.6	0.0	0.3	0.6	18.2	20.4	28.5	3.9
<b>Onager @ 16 oz/A<sup>1</sup></b>	2.1	0.7	2.4	3.6	34.4	18.2	14.0	0.5
<b>Comite @ 3 pt/A</b>	1.8	1.25	0.1	0.6	36.6	25.8	35.8	3.5

<sup>1</sup> ANIS at 0.25% v/v was included in the Oberon and Onager treatments

\* July 16 counts were from reps 1-3 only

July 2 through August 3: mites on the entire leaves were counted

\*\* Only 6 inch section of each leaf was counted and then multiplied by 5 to simulate a whole 30 inch leaf.

Counts in untreated checks declined after August 3 due to predators and leaves in poor condition.

**Table 2. Yield Summary from 2010 Spider Mite Trial in Silage Corn, Tulare County, CA**

Treatment and rate	Surfactant	Moisture at harvest (%)	Tons/Acre at harvest	Tons Dry Matter/A @ harvest	Tons/A adjusted to 70% Moisture
<b>Untreated</b>		67.8	30.70 b	9.9 b	33.0 b
<b>Oberon @ 12.8 oz</b>	<a href="#">NIS@0.25% v/v</a>	68.2	37.25 a	11.8 a	39.4 a
<b>Oberon @ 16 oz/A</b>	<a href="#">NIS@0.25% v/v</a>	67.4	35.42 a	11.5 a	38.4 a
<b>Onager @ 16 oz/A</b>	<a href="#">NIS@0.25% v/v</a>	67.9	36.81 a	11.7 a	39.3 a
<b>Comite @ 3 pt/A</b>	none	68.0	36.51 a	11.7 a	38.9 a
<i>Probability</i>		>50	0.000	0.017	0.017
<i>LSD</i>		NS	1.88	1.16	3.86
<i>Coefficient of variation (%)</i>		2.95	3.46	6.62	6.62

<sup>1</sup> Values within a column followed by a common letter are not significantly different from each other at the 5% level of probability (P=0.05). LSD = least significant difference and NS = not significant.

**Table 3. Silage Quality from 2010 Spider Mite Trial in Silage Corn, Tulare County, CA**

Treatment and rate	Surfactant	ADF <sup>1</sup> (%)	Total N <sup>2</sup> (%)	TDN <sup>3</sup> (%)	NDF <sup>4</sup> (%)	Starch (%)
Untreated		30.1	1.2	53.8	47.6	24.5
Oberon @ 12.8 oz	<a href="#"><u>NIS@0.25% v/v</u></a>	28.0	1.2	55.2	44.4	25.3
Oberon @ 16 oz/A	<a href="#"><u>NIS@0.25% v/v</u></a>	28.5	1.2	54.8	46.0	22.8
Onager @ 16 oz/A	<a href="#"><u>NIS@0.25% v/v</u></a>	27.9	1.2	55.3	45.0	25.2
Comite @ 3 pt/A	none	28.4	1.2	54.9	46.0	24.7
	<i>Probability</i>	<i>0.33</i>	<i>0.756</i>	<i>0.32</i>	<i>0.26</i>	<i>0.75</i>
	<i>LSD</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
	<i>Coefficient of variation (%)</i>	<i>5.59</i>	<i>4.49</i>	<i>1.96</i>	<i>3.08</i>	<i>11.95</i>

<sup>1</sup> ADF = Acid Detergent Fiber

<sup>2</sup> N = Nitrogen

<sup>3</sup> TDN = Total Digestible Nutrients

<sup>4</sup> NDF = Neutral Detergent Fiber

**Probability Values for Orthogonal Comparison**

(lumping all the miticide treatments together and comparing them to the untreated control)

	ADF (%)	Total N (%)	TDN (%)	NDF (%)	Starch (%)
All miticides vs the untreated	0.05	NS	0.05	0.06	NS

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Cooperative Extension  
Tulare County  
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# Field Crop Notes

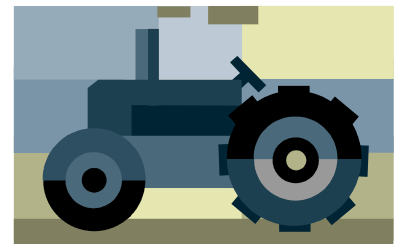
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July 2011

**Dry Bean/Blackeye Field Day**  
*Wednesday, August 10, 2011*

**Alfalfa Field Day**  
*Thursday, September 8, 2011*

**Carol Frate, Farm Advisor**



Inside this issue: ♦ Reduced Risk from Sclerotinia Stem and  
Crown Rot When Planting Alfalfa in Early Fall  
♦ Corn and Spider Mites