



University of California

Agriculture & Natural Resources

Cooperative Extension – Kings County

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U.S. Department of Agriculture, University of California, and Kings County Cooperating



Dear Kings County UC Cooperative Extension Agronomy Review newsletter recipients:

With the departure of Bruce Roberts as a UCCE Farm Advisor in Kings County, we are currently in a state of transition. I have assumed Bruce's administrative duties as County Director, and we are relying on staff in other counties to provide technical assistance. Should you have technical needs in any agronomic crops, please contact this office, and we will direct you to the appropriate person for assistance. In the meantime, I am happy to enclose the Field Crop Notes authored by Carol Frate, UC Farm Advisor in Tulare County.

Peggy Gregory
County Director, Kings County

University of California Cooperative Extension • Tulare County

Field Crop Notes

Volume I, Issue 5

August 04

Alfalfa Field Day

Kearney Agricultural Center - 9240 S Riverbend Ave, Parlier, CA
Wednesday, September 15, 2004 - 8:00 a.m. – Noon

- 8:00 A.M. Registration**
PCA/QAC/PAC/CCA Credit Forms
- 8:30 Tram ride to tour Alfalfa Variety Trial**
Dan Putnam, Alfalfa & Forage Crops Specialist, UC Davis
- Return to conference room for refreshments & presentations**
- Roundup Ready Weed Control Studies**
Kurt Hembree, Farm Advisor, UCCE, Fresno County
- Stewardship of Roundup Ready Traits in Alfalfa**
Ron Vargas, Farm Advisor, UCCE, Madera County
- Insect Update**
Charlie Summers, Entomologist, UC Davis & Kearney Ag Center
- Weevil Management in Alfalfa**
Larry Godfrey, Entomologist, UC Davis
- When is "Too Soon" to Replant Alfalfa?**
Carol Frate, Farm Advisor, UCCE, Tulare County
- Triple Cropping**
Marsha Mathews, Farm Advisor, Stanislaus County
- Nitrate Issues in Hay and Forage**
John Adaska, Vet Diagnostician, CAHFS, Tulare
- California Recognized Program**
Dan Putnam, Alfalfa & Forage Crops Specialist, UC Davis
- Noon Adjourn**

PCA/QAC/PAC/CCA Credit Requested

Tips for New Alfalfa Plantings

Time of Planting

Several studies from the Central Valley have demonstrated that alfalfa planted and emerged by October 15 produces higher yields in the first year of production than later plantings. Sometimes these yield advantages even carried through the second year of production. With a September planting, alfalfa emerges quickly, competing better with weeds. (If herbicides are needed in winter, the alfalfa is large enough so that it is not necessary to wait for it to reach the growth stage required by herbicide labels.) Roots have all winter to grow and develop (cool temperatures promote root development over top growth) prior to harvest.

Besides limitations of crop rotation, the other big factor that makes early planting questionable is the disease Sclerotinia stem and crown rot. Around here this disease is more commonly referred to as white mold because of the obvious white fungus growing on infected plants. Under wet and/or foggy winter conditions, alfalfa stands established in September and October may be thinned significantly by this disease during winter months. The severity of stem and crown rot in any given year is highly dependent on the type of winter that occurs with more disease occurring in wet and foggy conditions. There is no research information to definitively say whether or not the advantages of early planting are, in part or totally, lost when high levels of this disease occur in the winter following planting. We do know that in a field with good emergence, commonly used seeding rates result in more plants/sq. ft. than are needed. Research on seeding rates has shown that, by the end of the first year, the number of plants/sq. ft. are about the same regardless of the seeding rate used or the number of plants/sq. ft. prior to the first harvest. Therefore, the loss of some plants to white mold may not be detrimental. To get emergence in September and October usually requires a pre-irrigation or, more commonly, the field is irrigated up with flood irrigation (works on many soils but shallow planting is a must) or sprinklers (costly!).

If the early planting date is not an option due to crop rotations or by choice, the second next best window for planting, considering the growth of alfalfa, lower potential for weed competition as alfalfa emerges, and first season yields, is early February. Experience says that November-January plantings are risky due to unpredictable weather (too wet, too dry, too cold, etc.), slow alfalfa growth, and rapid weed growth that can cause problems with competition. Plantings in March and April result in first season yields that are substantially lower than what can be obtained with early plantings and have spring weeds emerging which can cause problems throughout the summer.

Advantages to Early Planting

- Better root development
- Higher yields in first year
- Higher yields in second year sometimes
- Better alfalfa competition against weeds
- Improved herbicide choice available due to larger size of alfalfa

Disadvantages to Early Planting

- Losses due to Sclerotinia?
- Cost of water to get emergence
- Crop rotation limitations

Fertilizer Needs

The most common nutrient that is deficient in our soils for alfalfa is phosphorus. An 8 ton/acre alfalfa hay crop removes close to 100 pounds of phosphorus (P_2O_5). Alfalfa removes even more potassium: the same 8 tons/acre crop will remove almost 350 pounds of potassium (K_2O). Because of the soil types in the county and the fertilizer practices in cotton, potassium deficiency is not as common as phosphorus deficiency.

How to know if fertilizers are needed? For these 2 nutrients, soil tests are very good predictors. If soil test results show a level less than 10 ppm phosphorus (P) or 80 ppm potassium (K), then crops will likely respond to applied fertilizer.

Alfalfa Variety Trial Results

UC Cooperative Extension Alfalfa Specialist Dan Putnam conducts variety trials at 5 locations in the state: Tulalake at the northern border, U.C. Davis in the Sacramento Valley, the Kearney and West Side U.C. Field Stations in the San Joaquin Valley, and the Imperial Valley U.C. Field Station in the southern end of California. Yield results from the U.C. Kearney Field Station near Parlier and Reedley from 2000-2001-2002 are listed in Table 1. Yield results from the U.C. West Side Field Station from 1999-2000-2001 are in Table 2. Soils at Kearney are sandy loams and at West Side are clay loams. . First year data is not published because it can be very misleading to choose a variety based only on the first year of production. Data from 2004 is still being collected.

New Pest in Alfalfa?

For the past few years we have been finding an insect called the three-cornered alfalfa hopper, *Spissistilus festinus*, in local alfalfa fields. The adult is about ¼ inch long and is green. It has been described as “wedged-shaped” or in my words it has a high forehead. Nymphs are tan in color with spines along the top of their bodies. Damage occurs with their feeding (pierce and suck) and egg laying on stems. Occasionally they will girdle the stem, causing wilting and a reddening of the upper stem and leaves. So far, no damage has been observed in fields that have an average of 1 adult per sweep. (The bad news is that this is a new insect that we’ve been finding fairly regularly in alfalfa that has the potential to cause damage; but the good news is that so far it hasn’t caused any significant damage.)

Other September Meetings of Interest

Dry Bean Meeting for Several Bean Types

Friday, September 3, 2004

UC Davis

8:30 am – Noon

Topics include:

- Mite Management Study
- 5 Rhizobium Inoculation studies with limas, blackeyes, and commons
- Lygus management in bush and vine baby limas
- Yellow Bean Origin/Legalities
- Lygus breeding in Limas
- New weed control studies
- Cranberry breeding and trials
- Seed increases of UCD LRK and Pink release candidates
- Non-conventional grain legumes: lablab, mothbean, cover crop cowpea, lupin, and crotellaria

Davis is a long way to travel for this meeting that mostly covers bean types not grown in our area but if you want directions, please call our office at 559/685-3303.

Conservation Tillage

September 8 & 9, 2004

UC Westside Research and Extension Center

You should have received this announcement in a separate mailing – if you did not or have questions, please contact our office at 559/685-3303.

Carol Frate, Farm Advisor

Table 1. UC Kearney Alfalfa Cultivar Trial 2000-2001 Yields. Trial planted 9/16/99

Note: In this trial, there are varieties with varying Fall Dormancy (FD) scores, which may affect quality, persistence, as well as yield.

These FD scores were provided by the companies.

ENTRY	FD SCORE	2000	2001	2002	AVERAGE																					% of CUF 101	
						Dry Ton/acre																					
WL 625 HQ (C349)	9	11.12 (01)	14.08 (03)	12.37 (2)	12.51 (1)	A																				118.7	
SW 8718	8	11.00 (2)	14.19 (1)	12.15 (3)	12.45 (2)	A																					118.1
Mecca II	9	10.58 (10)	13.28 (08)	11.53 (5)	11.79 (7)	A	B	C	D	E																	111.8
DynaGro AL999	9	10.58 (07)	12.98 (12)	11.36 (8)	11.63 (9)		B	C	D	E	F	G															113.3
Dura 843	8	9.83 (35)	13.60 (07)	11.27 (9)	11.56 (11)		B	C	D	E	F	G	H														109.6
PGI 481	8	10.28 (22)	13.27 (09)	10.88 (15)	11.48 (13)		B	C	D	E	F	G	H	I													108.8
Pershing	8	10.58 (08)	12.53 (24)	10.98 (12)	11.36 (14)			C	D	E	F	G	H	I	J												107.8
Ameristand 802 (ZX9886)	8	10.48 (13)	12.63 (20)	10.92 (14)	11.34 (15)			C	D	E	F	G	H	I	J												107.6
SW 9500	9	10.35 (19)	12.73 (17)	10.72 (19)	11.26 (16)			C	D	E	F	G	H	I	J	K											106.8
Magna 901	9	10.32 (20)	12.55 (23)	10.74 (18)	11.20 (18)			C	D	E	F	G	H	I	J	K	L										106.2
57Q77	7	10.14 (27)	12.44 (27)	10.93 (13)	11.17 (21)				D	E	F	G	H	I	J	K	L										105.9
ADF 99-801	9	10.53 (12)	12.73 (16)	9.89 (37)	11.05 (25)					E	F	G	H	I	J	K	L	M	N	O							104.8
WestStar	9	10.16 (25)	12.49 (26)	10.41 (25)	11.02 (26)						F	G	H	I	J	K	L	M	N	O	P						104.5
El Tigre Verde	8	9.40 (41)	12.64 (21)	10.69 (20)	10.90 (29)							G	H	I	J	K	L	M	N	O	P						103.4
Achiever	7	10.17 (24)	11.97 (38)	10.32 (27)	10.82 (31)									H	I	J	K	L	M	N	O	P	Q				102.6
58N57	8	9.92 (32)	12.12 (34)	10.09 (34)	10.71 (33)											J	K	L	M	N	O	P	Q				101.5
Yolo	8	9.42 (40)	12.51 (25)	10.18 (32)	10.70 (34)											J	K	L	M	N	O	P	Q				101.5
Falcon	8	9.61 (38)	12.11 (36)	10.00 (35)	10.57 (35)												K	L	M	N	O	P	Q				100.2
CUF 101	9	9.64 (37)	12.12 (35)	9.89 (36)	10.54 (36)												K	L	M	N	O	P	Q				100.0
Magna 8	8	9.60 (39)	12.30 (31)	9.66 (40)	10.52 (37)												K	L	M	N	O	P	Q				99.7
Highline	9	10.21 (23)	12.37 (29)	8.85 (45)	10.47 (38)													L	M	N	O	P	Q				99.3
SW 9301	9	8.87 (45)	11.92 (40)	10.28 (28)	10.35 (41)															N	O	P	Q	R			98.2
ADF 98-801	7	9.04 (44)	11.67 (42)	10.19 (31)	10.30 (42)															N	O	P	Q	R			97.7
Dura 765	7	10.04 (30)	11.15 (44)	9.66 (41)	10.28 (43)																	P	Q	R			97.5
Tulare	8	9.15 (42)	11.43 (43)	9.74 (39)	10.10 (44)																		Q	R			95.8
Fiesta (8G519)	8	9.13 (43)	11.07 (45)	8.92 (44)	9.70 (45)																			R			92.0

Variety X Year Interaction is significant

Trial seeded at 25 lb/acre viable seed on Hanford fine sandy loam at the UC Kearney Agricultural Center, Parlier, CA.

Entries followed by the same letter are not significantly different at the 5% probability level according to Fishers (protected) LSD.

Numbers in () adjacent to yields indicate the ranking of the variety in that year's trial. Experimental lines are not included in this table.

Table 2. UC WESTSIDE ALFALFA CULTIVAR TRIAL 1999(2001 YIELDS. TRIAL PLANTED 9/29/99																																			
ENTRY	1999		2000		2001		AVERAGE																				% of MOAPA 69								
Released Varieties	Dry Ton/acre																																		
CutMor (FG99-1)	5.7	(10)	12.6	(9)	15.6	(4)	11.3	(5)	A	B	C	D	E																	114.7					
SW 9628	5.7	(11)	12.5	(13)	15.8	(2)	11.30	(6)	A	B	C	D	E																	114.6					
Beacon	5.9	(04)	13	(4)	14.9	(14)	11.3	(7)		B	C	D	E	F																114.2					
Mecca III	5.50	(19)	12.4	(15)	15.5	(7)	11.1	(10)		B	C	D	E	F	G															112.8					
Magna 901 (DS 691)	5.6	(15)	12.9	(6)	14.5	(25)	11.00	(12)		B	C	D	E	F	G	H	I													111.5					
Dura 843	5	(46)	12.6	(10)	15.4	(8)	11	(14)		B	C	D	E	F	G	H	I	J												111.5					
Mecca	5.2	(34)	12.1	(18)	14.9	(17)	10.7	(20)				D	E	F	G	H	I	J	K	L	M	N									108.7				
El Tigre Verde	5.3	(26)	12	(20)	13.9	(29)	10.4	(24)								H	I	J	K	L	M	N	O	P	Q					105.6					
WestStar	5.4	(25)	11.7	(29)	14.1	(28)	10.40	(25)								H	I	J	K	L	M	N	O	P	Q					105.5					
58N57	5.3	(27)	11.7	(28)	14.1	(27)	10.40	(26)								H	I	J	K	L	M	N	O	P	Q					105.5					
WL 525 HQ	5.1	(41)	11.2	(38)	14.8	(18)	10.4	(27)								H	I	J	K	L	M	N	O	P	Q					105.1					
57Q77	5.1	(36)	11.7	(30)	13.7	(33)	10.2	(32)												L	M	N	O	P	Q	R	S	T			103.2				
Maricopa	5.1	(42)	11.3	(37)	13.8	(31)	10	(35)														N	O	P	Q	R	S	T	U	V		101.9			
SW 9720	5.10	(38)	11.00	(44)	13.8	(32)	9.96	(36)															O	P	Q	R	S	T	U	V		101			
Highline	5.9	(3)	11	(45)	12.9	(44)	9.93	(37)																P	Q	R	S	T	U	V		100.7			
Magna 8	5.6	(16)	11.4	(35)	12.60	(47)	9.87	(39)																P	Q	R	S	T	U	V		100.1			
Moapa 69	5.2	(35)	11.5	(32)	12.9	(45)	9.86	(40)																P	Q	R	S	T	U	V		100.0			
5939	5.5	(20)	11.1	(41)	13	(43)	9.84	(42)																P	Q	R	S	T	U	V		99.8			
DK 191	5	(45)	10.9	(46)	13.2	(38)	9.67	(45)																		R	S	T	U	V	W		98.1		
DK 180ML	4.9	(49)	10.6	(50)	11.4	(54)	8.98	(52)																							X	Y	Z	91.1	
Dura 765	4.4	(53)	10.3	(52)	11.9	(51)	8.87	(53)																								Y	Z	90.0	
Y5Q10	4.2	(55)	10	(54)	11.9	(50)	8.71	(54)																								Z	88.4		
Rio Grande	4.4	(54)	9.71	(55)	11.2	(55)	8.45	(55)																								Z	85.7		
VARIETY X YEAR INTERACTION IS SIGNIFICANT																																			
Trial seeded at 25 lb/acre viable seed on Panoche clay loam soil at UC West Side Research and Extension Center, Five Points, CA.																																			
Entries followed by the same letter are not significantly different at the 5% probability level according to Fishers (protected) LSD.																																			
Numbers in () adjacent to yields indicate the ranking of the variety in that year's trial. Experimental lines are not included in this table.																																			

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August 04

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