

**COOPERATIVE EXTENSION**

**University of California – Yolo, Solano & Sacramento Counties**

***South Sacramento Valley***

***Field Crops Report***

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**Early Wheat Crop**

This year's wheat crop is finally starting to green up and look like it is suppose to, it is further along in development then is usual for the first of March. The lack of freezing temperatures has allowed the crop to develop at a faster rate. We can only hope that we might have a light frost season this year.

Early February wheat stands looked chlorotic and growth slowed. It appeared that the early planted fields had run out of nitrogen. Many of you top dressed at this time, taking advantage of a break in the weather and the approaching rain storm. Now the question is should you add more nitrogen for the protein boost at the boot stage? That's a tough one, and it depends on several factors: How much money do you have invested in this crop already? Is this rental ground or do you own it? I'm betting we are going to have to irrigate at least once this season and what will be your water cost? If you do add Nitrogen what would that cost? Now that you have at least that in mind, let's look at what variety you have. Nitrogen added at the boot - flowering stage of Express and Summit will usually add 1-1.5% to the expected base protein level. No other current varieties have the protein quality to achieve this. Past research has shown that Express can reach 13 - 13.5% protein range and for Summit about 12 -12.5% when every thing works right. I hope I have been clear enough in saying not to add any more fertilizer this season unless you have either of these varieties. Unless you can figure that the added 1% increase in protein will be enough to increase the price to pay for the fertilizer. I also do not know how much the Hard Red Winter Wheat payment program helps this equation season.

Due to the relatively dry conditions the disease levels are low. At the Gill trial, stripe rust is starting to show up in the early planted Bonus and Express. You can see heavy irregular yellow spotting on the lower leaves. This is characteristic of the infection, but few spores are produced. I hope Express adult-plant resistance to stripe rust will contain the disease. I started seeing aphids and lady bugs the first week of February.

## 2002-2003 Wheat Variety Trial Locations

### Northern Yolo County – Dan Best Jr. cooperator

County Rd 14 one-half mile west of HWY113 on the south side

18 varieties and 2 fertilizer plots for 20 plots per rep with 4 reps

### Western Yolo County - Charley Rominger cooperator, no-till into corn

County Rd 29A one-quarter mile north on Co Rd 90A the west side

15 varieties and 2 fertilizer plots for 17 plots per rep with 4 reps

### Southern Yolo County – Hunn, Merwin & Merwin cooperators

NW of the intersection of North Courtland Rd and Widgeon Rd.

14 varieties for 14 plots per rep with 4 reps

### Eastern Solano County – Roy Gill cooperator

East side of Pedrick Rd one-quarter mile north of E.Dixon Ave. south of sod farm.

14 varieties and 2 fertilizer plots for 16 plots per rep with 4 reps

### Southern Sacramento County, Delta – Steve Mello cooperator

SE side of Tyler Island, Race Track Rd. one-half mile SW of his shop

18 varieties and 2 fertilizer plots for 20 plots per rep with 4 reps

## 2002 Yolo/Solano/Sacramento Field Corn Production Trial Results – are available.

Results of last year's field corn variety strip tests and basic corn production guidelines are available in my annual field corn production book. This year I did not reproduce the UC Pest Management Guidelines for Field Corn because there were no changes from last year. If you need them they are available at: <http://ipm.ucdavis.edu> or in our office.

## Corn Head Smut Update

Head smut is caused by the fungal pathogen *Sphacelotheca reiliana* and it over winters as teliospores in the soil. The spores germinate and infect the young or mature corn plants, which destroys the inflorescences. When the spores germinate in the soil a pathogenic specialization can occur. This means that some germinated spores can only infect corn, and others can only infect grain sorghums, forage-sorghum hybrids, and Sudan grass cultivars. Additionally the sorghum infecting pathogen can also infect **Johnson grass**. If you look closely this year, you occasionally might notice a smutted Johnson grass floret. Unfortunately for corn growers, this means that Johnson grass is acting as a **host plant to head smut**. This is one more reason to control Johnson grass.

Each year I conduct two corn disease screening trials and two field corn variety strip trials. I evaluate for resistance to head smut at all four locations. Varietal resistance to head smut is the best to control strategy. According to the literature, seed treatment with systemic fungicides and in-furrow treatment (not recommend) with some fungicides have been effective.

## Corn Stunt Found In Sacramento County

Last year, I joined the statewide effort monitoring for the corn stunt. Our region became the first in northern California to do so. I put out sticky traps for corn leaf hoppers in a line across the southern part of all three counties: south of Dixon, UCD and Walnut Grove. Results of the weekly catches from Charlie Summers, UCCE Entomology Specialist at the Kearney Ag Center, indicated that we had corn leaf hoppers the primary vector for corn stunt. Some of the leaf hoppers were sent to Dan Opgenorth, Senior Plant Pathologist for CDFA, who evaluated them for the presence of the corn stunt pathogens. He has recently informed that corn **stunt has been found in leaf hoppers from Walnut Grove**. I will be continuing the program this season.

## 2002 Mello Corn Variety Trial

**Cooperator:** Steve Mello  
**Experimenters:** Kent Brittan, Mark Kochi  
**Planting Date:** 4/18/02  
**Planter:** White air planter, 8 row  
**Seed Depth:** 2 inches  
**Rows per Plot:** 4  
**Replications:** 2  
**Insecticide:** 5 lbs Thimet 20G at planting  
**Soil Type:** Rindge mucky silt loam, 10-25% Organic matter, Storie index 57, Grade 3  
**Fertilizer:** 25 gallons per acre of 8-24-6 with 1/2% zinc banded 1.5 inches and 1.5 inches to side of seed.  
**Irrigation:** Sub irrigation by spud ditch

**Location:** Tyler Island  
**Harvest Date:** 10/8/2002  
**Seed drop:** 6 inches  
**Length of Plots:** ~1500 feet  
**Row Width:** 30 inches  
**Previous Crop:** 2001-Wheat  
**Herbicide:** Accent

	Entry Name/NO.	Stand (Plants/A)	Days to Bloom	Fusarium Ear Rot (%)	Head Smut (%)	Common Smut (%)	Ear Height (in)	Moisture at Harvest (%)	Bushel Wt. lbs/bu	Yield** (lbs/A)	Duncan's Multiple Range Test (5%)
CP	818RR	35749	73	0	2	0	51	13.3	60.7	14069	A
DK	DKC6410RR	34247	74	0	1	2	56	12.9	60.3	14056	AB
DK	DK6650	35749	73	1	5	0	62	12.6	60.9	13895	AB
AS	RX813	34648	76	0	5	0	51	13.0	61.9	13771	AB
NK	N67-H6	32945	71	0	8	0	52	12.8	60.6	13574	AB
NC	5411	29641	75	0	1	0	58	12.6	62.2	13520	AB
PI	31G98	36951	77	0	3	0	63	12.6	60.5	13480	AB
PI	31G98 *	34047	85	0	4	1	64	13.5	61.8	13390	AB
ST	7570	34447	76	0	10	0	54	12.6	60.3	13250	AB
NC	7101	32244	75	0	14	0	59	13.4	60.8	13195	ABC
ST	7515	32345	75	1	6	1	55	13.0	61.5	13193	ABC
NK	N83-N5	34548	88	1	2	0	62	13.6	61.4	13166	BC
TB	SX5420	35249	73	0	1	1	63	13.3	61.1	12375	CD
SI	7720	38553	74	0	0	0	51	12.7	60.3	12341	D
US	7114	33346	75	1	2	0	58	12.9	62.3	12145	D
PI	34B97	34848	75	0	10	0	60	13.2	62.0	12110	D
TB	SX5426	36951	72	1	1	0	55	13.3	60.8	11735	DE
CP	827	34848	89	0	3	0	63	13.9	60.2	11110	EF
AS	RX897RR	31944	88	1	1	0	62	13.2	61.3	11108	EF
US	6615	29541	84	7	6	1	63	13.5	60.7	10663	F
	Average	34142	77	1	4	0	58	13.1	61.1	12807	
	C.V.%	3	3.1	ND	85	ND	12	3.6	2.0	3	
	LSD @ 5%	2155	4.955		7		14	1.0	2.5	774	

\* Grower's standard variety

\*\* Yield adjusted to 15% moisture

### Participating Seed Companies:

AS=Asgrow Seeds; CP=Croplan (Stanislaus Farm Supply); DK=DEKALB; NC=NC<sup>+</sup> Hybrids (Lockwood Seed and Grain); NK=NorthrupKing; PI=Pioneer Hybrids; SI=Sieben (Kellogg's Seed Service); ST=SeedTec (Eureka Seeds); TB=Tuleburg (Baglitto Seed); US=Unity Seeds Direct

## 2002 UC Davis Corn Variety Trial

**Cooperator:** UC Davis Plant Pathology  
**Experimenters:** Kent Brittan, Mark Kochi  
**Planting Date:** April 22, 2002  
**Planter:** John Deer 71 plate planter  
**Seed Depth:** 2.5 inches  
**Rows Per Plot:** 4  
**Row Width:** 30 inches  
**Previous Crop:** 2001-Tomatoes & Fallow  
**Insecticide:** None  
**Fertilizer:** 250 lbs N preplant broadcast and disked

**Location:** UCD Armstrong Tract  
**Harvest Date:** 10/9/2002  
**Seed drop:** 7 inches  
**Length of Plots:** 340 feet  
**Irrigation:** By furrow  
**Replications:** 2  
**Soil Type:** Yolo silt loam, Class I  
**Herbicide:** None

	Entry Name/NO.	Stand (Plants/A)	Days to Bloom	Fusarium Ear Rot (%)	Head Smut (%)	Common Smut (%)	Ear Height (in)	Moisture at Harvest (%)	Bushel Wt. lbs/bu	Yield** (lbs/A)	Duncan's Multiple Range Test (5%)
US	7114	28539	77	1	0	0	61	11.5	59.8	10190	A
NC	7101	23032	80	0	0	0	65	14.0	59.0	9759	AB
DK	DKC64-10RR	40456	80	2	0	2	67	11.5	58.1	9404	ABC
PI	31G98	33046	83	0	0	1	69	11.3	58.4	9393	ABC
NC	5411	25235	82	0	0	0	67	12.5	57.2	9359	ABC
CP	818RR	35749	84	0	0	0	67	13.3	58.2	9110	ABC
NK	N83-N5	40055	84	2	0	0	79	12.7	59.8	8842	ABC
ST	7515	35849	75	1	0	1	63	12.3	57.3	8742	ABC
DK	DK66-50	32745	79	2	0	0	61	13.0	58.1	8658	ABC
ST	7570	36250	82	0	0	0	62	12.8	58.3	8579	ABC
SI	7730	37752	84	0	0	0	61	11.8	58.2	8523	ABC
TB	SX5426	32945	76	0	0	1	69	12.1	56.8	8503	ABC
AS	RX813	35349	86	0	0	0	65	11.9	57.0	8284	ABC
PI	34B97	38653	81	0	0	0	65	11.6	61.1	7992	BC
TB	SX5420	36250	76	0	0	1	70	12.1	56.1	7783	CD
AS	RX897RR	29641	85	2	0	0	74	12.1	59.0	7630	CDE
PI	31G98	33346	85	0	0	1	70	11.4	58.9	7575	CDE
NK	N8214	33646	87	0	0	0	73	11.9	59.0	7521	CDE
US	6615	32445	87	7	0	1	66	13.2	58.0	6094	DE
CP	827	31443	86	0	0	0	82	14.2	56.4	5840	E
	Average	33621	82	1	0	0	68	12.3	58.2	8389	
	C.V.%	9	3	65		177	2	2.3	1.2	9	
	LSD @ 5%	6231	5	1		1	2	0.6	1.4	1640	

\* Grower's standard variety

\*\* Yield adjusted to 15% moisture

## 2002 UCD Safflower Variety Trial

**Cooperators:** Arthur Hill, SaffTech; Art Weisker, SeedTec  
**Experimenters:** Kent Brittan, Mark Kochi  
**Planting Date:** 3/29/2002  
**Length of Plots:** 90 feet  
**Replications:** 4 reps  
**Planting Method:** JD 71 Planter with modified seed plates  
**Seeding Rates:** Hybrids-10lbs/ac, Nonhybrids-25lbs/ac  
**Seed Depth:** 1<sup>3</sup>/<sub>4</sub> inches into moisture  
**Fertilizer:** 60 lbs of N per acre as NH<sub>4</sub>NO<sub>3</sub>, 3-29-2, Preplant broadcast disked in  
**Herbicides:** Treflan

**Harvest Dates:** 9/4/2002  
**Plot Width:** 15 feet (6 - 30" rows)  
**Previous Crops:** 2001 – Wheat Variety Testing  
**Irrigations:** None

Brand Name	Variety Name	Yield (lbs/A)	Duncan's Mean		Duncan's Mean		Moisture (%)	Oil (lbs/A)	Plant Ht.(in)	Stand Count (plants/A)
			Separation (0.05)	Bu Wts (lbs/bu)	Separation (0.05)	Bu Wts (lbs/bu)				
SeedTec	S-345	2926	A	40.3	G	4.3	895.2	43	168577	
SeedTec	8150	2859	AB	42.9	CD	4.6	869.2	40	175982	
SeedTec	S-518	2831	AB	41.5	F	4.6	662.5	39	163786	
SeedTec	9055	2811	AB	42.6	DE	4.3	691.7	38	186001	
SaffTech	9022 F1	2811	AB	43.4	BC	4.6	1095	42	61420	
SaffTech	9022 F2	2749	AB	43.9	BC	4.7	1167	40	66211	
SeedTec	8140	2712	AB	41.0	F	4.4	1128	38	181210	
SeedTec	S-555	2487	BC	42.3	E	4.6	1181	41	160736	
SaffTech	9023 F2	2278	C	43.7	B	4.7	1146	39	50965	
SaffTech	9023 F1	2236	C	45.0	A	4.8	978.2	40	68427	
Average		2670		42.7		4.5	981.3	40	130332	
*CV%		10		1.0		4.6	10	5	13	
**LSD at 5%		369		0.6		0.3	142.3	3	25516	

\*CV-Coefficient of Variability

\*\*LSD – Least Significant Difference test

For the first time I tried to compare the SaffTech hybrids with the SeedTec varieties at planting rates similar to what I would recommend. Normally for non-hybrid safflower varieties grown on Class I soils I recommend 25lbs/for hybrids and 15-18lbs/a. Take a look at the stand counts to compare the plant populations between the two. In years past we have seen significant differences between the two, but this year under the dry non-irrigated conditions the hybrids were not significantly higher yielding on a per-acre basis.

### Note from Rick Landon, Ag Commissioner:

The Regional Water Quality Control Board will be conducting water quality monitoring in Yolo County from March through October. This monitoring will include a bioassay with Ceriodaphnia dubia. Ceriodaphnia dubia is very sensitive to organophosphate pesticides. It is particularly sensitive to chloropyrifos (Lorsban, Lock-On). Pyrethroid insecticides such as Warrior have an extremely low potential to move offsite. You may want to consider the possibility of using a pyrethroid in those locations where runoff is likely to occur. Listed below are locations where monitoring is taking place in Yolo County.

1. I-505 to Rd 19, east on Rd 19 (Lateral to Gordon Slough @ Rd 19) Off concrete bridge south of Rd 19.
2. I-505 to Rd 19, east on Rd 19 (Gordon Slough @ Rd 19) East side of bridge off road
3. Rd 27 to bridge east of Rd 96 (Willow Slough @ Rd 27) Off downstream side of bridge
4. I-5 to Rd 13 @ Zamora, east on Rd 13, south on Rd 97, east on Rd 14 (Drain south of Rd 14) Off north side of bridge
5. Rd 102, east on Rd 16 (Knight's Landing Ridge Cut @ Rd 16 South) Off south pump platform
6. Rd 102, east on Rd 16 (Knight's Landing Ridge Cut @ Rd 16 North) Off north pump platform

Submitted by,

Kent Brittan

Farm Advisor, Yolo, Solano and Sacramento Counties

To simplify information, when trade names have been used, no endorsement of products named is intended, nor is criticism implied of products which are not mentioned.

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**University of California and U.S. Department of Agriculture cooperating.**

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