

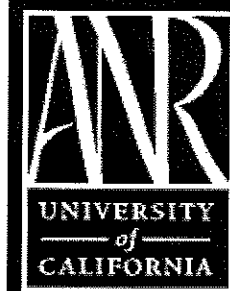
COOPERATIVE EXTENSION

University of California – Yolo, Solano & Sacramento Counties

South Sacramento Valley

Field Crops Report

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Office Notes

Happy Holidays!

The UCCE Yolo Office will be closed from December 20, 2008 through January 4, 2009. The office will re-open at 8:00am on Monday, January 5, 2009. To contact me during the break, please email me at klbrittan@ucdavis.edu or call me at (530) 681-8807.

Website Updates

Historical corn trial data from 2001 to the present are available at:
http://ceyolo.ucdavis.edu/Custom_Program724/Corn_Studies.htm.

2008 Corn Variety Trials Results

UC Davis Grain Corn Variety Trial

Nineteen grain corn varieties were planted on April 15, 2008 into Yolo loam soil at the UC Davis Agronomy Farm near HWY 113. Plots were planted with a 4-row John Deere 71 plate planter using plate sizes recommended by the cooperating seed company. Most stand counts were in the expected 36,000 to 38,000 plants/A range (Table 1). However, Mycogen TMF2N804 seed was obviously smaller than what plate size was recommended and I ended up with a plant population of 64,469 plants/A. This high plant population may have added to its lateness and lodging problem later in the season. Weather during the growing season was fairly typical warm to hot April to June with 9 days above 95°F in June through July during peak pollen shed (tasseling). This year during bloom we were having many wildfires in the north part of the state causing heavy smoke partially shading the entire Sacramento Valley. It appears that this shading reduced some of the adverse effects of the high heat and most varieties produced full ears. All except Hytest 68-06RR (87days) and Mycogen TMF2N804 (90days) took within 75 to 85 days to reach bloom.

Late season disease ratings of plants and ears described few problems. This was a relatively low year for Fusarium ear rot so any variety with levels greater than 4% should be suspect. I noted a bit more common smut than usual this season. Lodging is usually an issue with in my Davis plots and this season was no exception. As you look at Table 1 you can see 6 varieties had unacceptable levels of lodging. Even with 6 row plots some varieties knocked down neighboring plots creating highly variable results. I use this data only

as a weakness indicator, not as an absolute value with coefficients of variation (CV) over 102. I would be hesitant to use any variety that lodged over 15%.

Average yield for this trial was a modest 6 tons/acre corrected to 15% moisture. Bushel weight (test weight) averaged 59.6lb/bu. I have a new Dickey-john GAC2100B grain analyzer so I feel confident in my moisture and bushel weight analysis. More variability in the yield data reduced the statistical separation of varieties giving clumping of 8 at the top. It took 12059lbs/ac to make a significant difference this year.

Solano County Glyphosate Resistant Grain Corn Variety Trial – Hastings Island

This year's Solano corn trial was planted with the cooperation of Mark Boyd, Farm Manager for Hastings Island Land Company. Even though this trial was in the delta area it was on mineral soils and furrow irrigated. With cooler night time temps bloom took an average 89 days from planting with the range 85 to 95 days. Fusarium ear rot averaged 3% with the Mycogen TMF2N804 the high at 17% (Table 2). This is in the Head Smut area with only one variety, Mycogen TMF2L844, at an unacceptable 12%. There were no lodging problems here, very high levees on the south and southwest sides which blocked the prevailing delta breeze.

Not as productive soil type at this location, so average yield for the Solano trial was 5.5 tons/acre with a bushel weight (test wt.) of 60.4 lb/bu. I wish to thank Mark and HILC for providing space and taking such good care of this trial.

Tyler Island Grain Corn Variety Trial – Sacramento County

Delta Grain Corn Variety was once again planted with Steve Mello on Tyler Farms. This is the eighth year that Steve has been willing to host this and the Fusarium screening trial. I greatly appreciate his support. Table 3 describes this year's trial. Plant population was quite more variable with an average of 37,636plants/acre with a range of 33,106 to 41,818. Croplan 7505RB had the low stand count yet it was in the top group of varieties for yield. It looks like Steve's old White air planter needs some adjustment. Average days to bloom were 84 days with a fairly tight range of 79 to 89 days for all 20 varieties. Very low Fusarium ear rot but high head smut. It is important for all growers to pay attention to these 2 diseases. It appears that the head smut is slowly increasing in area and spreading further south and north. I am now finding it in on campus in Davis. Lodging was only seen in the Mycogen TMF2N804 at 5%. This was not a lodging year in the delta so this variety clearly has a problem.

Average bushel weight was 60.53lbs/bu with a range of 58.1 to 62.3lbs/bu. Yields for the trial averaged 6.7tons/acre with a high of 7.7tons/A to a low 4.9tons/A.

Steve annually takes my best yielders, plants them and has been doing quite well. I am happy to have returned the favor for all his help.

**61st Annual Conference California Weed Science Society
"Lowering the Boom on Weeds"**

**January 12-14, 2009
Double Tree Hotel
2001 Point West Way
Sacramento, CA 95815**

Conference registration forms are available at www.cwss.org.

Table 1 2008 UCD Corn Variety Trial

Cooperator: Jim Jackson, UCD Plant Sciences
 Experimenters: Kent Brittan, Mark Kochi
 Soil Type: Yolo silt loam, Class I
 Planting Date: April 15, 2008
 Planter: John Deer 71 plate planter, 6 rows
 Planting Depth: 2 inches
 Rows Per Plot: 6
 Fertilizer: 250 lbs N preplant broadcast and disked
 Irrigation: By furrow
 Location: UCD Vegetable Crops Field facility, Hutchison Rd. 0.5mi west of HWY 113
 Maze

Harvest Date: September 23, 2008
 Seed drop: 7 inches
 Length of Plots: 225 feet
 Row Width: 2-30" per 60" bed
 Replications: 2
 Previous Crop: Wheat
 Herbicide: 1.5 oz Dual/ac PPL
 Insecticide: None

²Days above 95°F between June thru July 9

Initials	Entry Name/NO.	Company Name	Stand Plants/A	Days to Bloom	Dwarf			Fusarium Common Smut			Ear Height (in)	Moisture at Harv. (%)	Weight lbs/bu	Yield ¹ (lbs/A)	Duncan's Multiple Range Test (5%)
					Mosaic (%)	ear rot (%)	Smut (%)	Lodged (%)	Plants (%)						
GA	82K79GT	Garst	37462	82	0	9	1	0	0	60	11.9	60.90	14794	A	
ES	ES-7548RR	Eureka Seeds	35719	79	0	1	2	1	1	52	10.5	58.10	14196	AB	
HT	HT68-06RR	Hyttest Seeds	36590	87	0	0	2	15	53	53	11.4	59.05	13449	ABC	
PI	33H23	Grower	36590	78	0	5	0	2	43	43	11.4	60.50	13165	ABC	
GA	82R45GT	Garst	36590	81	0	2	0	40	69	69	11.2	59.25	13117	ABC	
CP	7505RB	Croplan	35719	85	0	0	1	10	45	45	11.3	61.25	13001	ABC	
CP	6818RR	Croplan	38333	80	0	1	1	1	47	47	11.3	59.75	12949	ABC	
PI	33T55	Grower	38333	76	0	2	0	0	48	48	10.5	59.50	12908	ABC	
INT	9662RB	Integra	38333	77	0	0	0	1	56	56	10.4	58.20	12377	BCD	
HT	HT68-68RB	Hyttest Seeds	36590	79	0	1	0	2	58	58	11.0	60.25	12287	BCD	
DK	DKC69-43	Dekalb	36590	85	0	1	0	19	60	60	12.2	62.05	12209	CD	
DK	DKC67-86	Dekalb	39204	81	0	2	0	6	56	56	11.4	60.30	12165	CD	
CP	591RR2/BT	Croplan	35719	80	0	0	0	2	52	52	10.8	61.45	12133	CD	
DG	57K58	Dyna-Gro	36590	85	0	2	1	8	64	64	10.9	57.05	12000	CD	
ES	ES-7590RR	Eureka Seeds	38333	82	0	0	0	43	62	62	10.7	59.60	10896	DE	
DG	CX6517	Dyna-Gro	39204	84	0	2	1	5	63	63	11.0	59.65	10534	DEF	
INT	9673R	Integra	36590	84	0	1	2	44	53	53	11.0	59.15	10020	EF	
MY	TMF2N804	Mycogen	64469	90	0	2	0	26	58	58	10.8	58.65	8810	FG	
MY	TMF2L844	Mycogen	38333	80	0	1	2	87	66	66	11.7	58.25	8116	G	
Average															
Coefficient of Variation			1.7	0.4	NA	157	NA	103	1.1	3.2	0.81	7			
LSD @ 5%			1385	0.6	4.6	NS	34.8	1.3	0.8	1.12	1723				
Probability of Significance			**	*	NS	NS	NS	**	**	**	**				
Rep effect			*	*	*	*	*	*	*	*	*				
Non-additivity			*	*	*	*	*	*	*	*	*				

¹Yield adjusted to 15% moisture

NS= Not Significant, NA= Not Analyzed

No significant problems for: Maize Dwarf Mosaic, or Common Smut.

If Coefficient of Variation is greater than 15% note the trend but doubt the significance.

² July 6 to 10th hot spell plus wood smoke cloud cover

Table 2 2008 Solano RR Field Corn Trial

Cooperator: Mark Boyd, Hastings Island Land Company

Experimenters: Kent Brittan, Mark Kochi

Soil Type: Egbert silty clay loam

Planting Date: April 17, 2008

Planter: Monosim Air planter

Planting Depth: 2.5 inches

Rows Per Plot: 6

Fertilizer: 50gal/A 3-8-11+0.25%Zn planting, sidedressed 50gal/A UN32

Irrigation: By furrow

Location: South end Hastings Island 1st field north of bridge on east side behind houses

Harvest Date: October 16, 2008

Seed drop: 7 inches

Length of Plots: 1000 feet

Row Width: 2 rows on 60 inch beds

Replications: 2

Previous Crop: Safflower

Herbicide: Roundup

Insecticide: None

Initials	Entry Name/NO.	Company Name	Stand Plants/A	Days to Bloom	Mosaic (%)	Ear Rot (%)	Fusarium Head Smut (%)	Common Smut (%)	Lodged Plants (%)	Ear Height (in)	Moisture at Harv. (%)	Bushel Weight lbs/bu	Yield ¹ (lbs/A)	Duncan's Multiple Range Test (5%)
DK	DKC69-43	Dekalb	32234	88	0	2	1	0	0	37	13.7	62.60	12128	A
ES	ES-7548RR	Eureka Seeds	33106	85	0	1	1	0	0	40	12.6	58.25	11686	B
GA	82R45GT	Garst	33106	91	0	4	0	1	0	41	12.3	60.35	11618	B
INT	9674R	Integra	33106	90	0	2	2	0	0	33	13.4	58.70	11616	B
ES	ES-7590RR	Eureka Seeds	33106	87	0	1	0	0	0	38	12.1	60.45	11487	B
CP	6818RR	Croplan	32234	89	0	1	0	0	0	37	12.8	60.95	11374	BC
DG	58P59	Dyna-Gro	32234	93	0	1	0	0	0	29	13.1	58.05	11360	BC
DG	58K02	Dyna-Gro	33106	90	0	1	0	0	0	42	14.1	58.20	11138	CD
DK	DKC67-86	Dekalb	30492	89	0	3	3	0	0	42	13.1	61.55	11053	CDE
PI	33D47	Grower	32234	91	0	3	0	0	0	37	12.9	62.05	10951	DE
CP	7505RB	Croplan	33106	83	0	1	0	0	0	31	12.9	62.60	10949	DE
INT	9641R	Integra	33977	86	0	9	0	2	0	30	13.0	59.45	10831	DEF
HT	HT6105VT3	Hytast	33106	87	0	1	0	0	0	30	11.4	60.85	10795	DEF
GA	82K79GT	Garst	32234	92	0	7	2	0	0	37	12.8	61.55	10779	EF
CP	591RR2/BT	Croplan	33106	90	0	1	0	0	0	36	11.8	63.05	10604	F
MY	TMF2N804	Mycogen	33977	93	0	17	0	0	0	38	12.0	59.20	9239	G
MY	TMF2L844	Mycogen	31363	95	0	1	12	0	0	40	14.6	58.90	8578	H
Average			32696	89	0	3	1	0	0	36	12.8	60.40	10952	
Coefficient of Variation			3	1	NA	122	101	NA	NA	2	1.8	0.77	1	
LSD @ 5%			1847	3		8	3			1	0.5	0.99	311	
Probability of Significance			NS	**	NS	NS	NS			**	**	**	**	
Replication effect										**	*		**	
Non-additivity										**			**	

¹ Yield adjusted to 15% moisture

NS= Not Significant, NA= Not Analyzed

No significant problems for: Maize Dwarf Mosaic, Common Smut or Lodged plants.

If Coefficient of Variation is greater than 15% note the trend but doubt the significance.

Table 3 2008 Mello Corn Variety Trial - Tyler Island

Cooperator: Steve and Gary Mello
 Experimenters: Kent Brittan, Mark Kochi
 Planting Date: April 14, 2008
 Planting Method: White air planter, 8 row
 Planting Depth: 2 inches
 Rows Per Plot: 4

Harvest Date: October 7, 2008
 Location: Tyler Island
 Length of Plots: 1200 feet
 Row Width: 30 inches
 Previous Crop: Corn

Fertilizer: 25 gallons per acre of 8-24-6 with 1/2% zinc banded 1.5 inches and 1.5 inches to the side of seed.

Insecticide: None
 Seed drop: 6 inches, 35,000seed/acre
 Herbicide: Accent and Shark
 Soil Type: Rindge mucky silt loam, 10-25% Organic matter, Storie index 57, Grade 3
 Irrigation: By spud ditch

Entry Initials Name/NO.	Company Name	Stand Plants/A	Days to Bloom	Fusarium Head Common				Ear Height (in)	Moisture at Harv. (%)	Bushel Weight lbs/bu	Yield ¹ (lbs/A)	Duncan's Multiple Range Test (5%)
				ear rot (%)	Smut (%)	Smut (%)	Lodged (%)					
CP 6818RR	Croplan	40075	84	0	0	0	0	48	13.0	61.05	15393	A
DK DKC61-22	Dekalb	41818	84	0	8	0	0	47	12.6	61.15	14799	AB
ES ES-7590RR	Eureka Seeds	35719	85	0	10	0	0	52	13.1	61.00	14749	AB
CP 7505RB	Croplan	33106	82	0	5	0	0	46	13.0	61.50	14665	AB
LA L-9H48RR	Laser	38333	85	1	0	0	0	52	12.9	60.30	14663	AB
DK DKC64-82	Dekalb	35719	84	0	4	0	0	42	13.2	62.25	14521	ABC
PI 33T55	Grower	39204	83	0	7	0	0	49	12.9	60.70	14455	ABC
HT HT63-13RR	Hylfest Seeds	40075	85	1	2	0	0	46	13.1	59.00	14295	ABCD
INT 9673R	Integra	35719	85	0	8	0	0	54	13.9	59.35	14237	ABCD
ES ES-7548RR	Eureka Seeds	38333	82	0	0	0	0	51	12.7	59.20	14149	BCDE
GH H-9190HX/LL	Golden Harvest	36590	87	0	5	1	0	43	13.1	59.45	13959	BCDE
PI 33H23	Grower	35719	80	0	2	0	0	44	13.3	62.20	13429	CDEF
CP 591RR2/BT	Croplan	39204	85	0	9	1	0	48	12.4	62.25	13126	DEF
GH H-9180	Golden Harvest	40075	82	0	4	0	0	50	12.8	59.70	12972	EF
INT 9602RB	Integra	38333	85	1	11	1	0	64	12.4	59.85	12721	FG
HT HT62-62VT3	Hylfest Seeds	37462	79	0	3	1	0	45	12.9	62.05	12687	FG
GA 82K79GT	Garst	36590	80	0	30	0	0	56	13.5	61.65	11696	GH
MY TMF2N804	Mycogen	37462	89	0	7	3	5	50	12.5	59.05	11033	H
NK N78N-GT	NorthrupKing	33106	82	1	32	1	0	62	13.4	61.15	10775	HI
MY TMF2L844	Mycogen	40075	89	0	30	1	0	60	14.3	58.05	9797	I
Average		37636	84	0	9	0	0	50	13.0	60.55	13406	
Coefficient of Variation(%)		10	0.6	NA	34	63	NA	2	1.9	0.77	4	
LSD @ 5%		7844	1		6	1		3	0.5	0.98	1068	
Probability of Significance		NS	**		NS	NS		**	**	**	**	
Rep effect											*	
Non-additivity											*	

¹ Yield adjusted to 15% moisture NS= Not Significant, NA= Not Analyzed
 No significant problems for: Maize Dwarf Mosaic, Common Smut or Lodged plants.

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

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