



So. Sacramento Valley Field Crops Report

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IN THIS ISSUE:

*Falling Numbers

*Small Grain Cultivars

*Small Grains Meeting – 9/22/2011 8am

*2011 Small Grain Trial Results

*Yield vs. Test Weight and Protein

*Regional Trial Discussions

Southern Sacramento Valley Small Grains Trial

Principal Investigator - Kent L. Brittan, UC Cooperative Extension Director Yolo County and Farm Advisor

This year's Southern Sacramento Valley Small Grain trials show the effects of a complex weather season. Good growth occurred from planting through the winter with ample rainfall. However, three to four frost events in April, fifteen days of rain (5.48") in March and 2.45" of rain in May and June on a maturing crop caused an assortment of problems. Please refer to the Regional Minimum Temperatures (page 6) and Regional Accumulated Rainfall (page 7) tables. In low-lying fields in northern Yolo County, I found up to 25% of the emerged heads frosted in part or completely. The last rain in June was on the 28th at 0.85 inch. We saw evidence of sprouting in some commercial fields from this late rain. Damage from this weather was more severe on fields planted before November 1st and particularly bad on heavy soils with poor drainage. I spoke about some of this damage and diseases caused by the March rain in my May newsletter at our website <http://ceyolo.ucdavis.edu>. Click on Newsletters and then South Sacramento Valley Field Crops Newsletter. In addition to sprouting we observed low falling numbers and lower than expected grain protein.

2011 Small Grain Trial Results

This 2010-11 grain season, I looked at 22 varieties, at 4 locations. There were 17 varieties common to all four locations. In this newsletter I will discuss the results of the over-locations analysis and highlight particular regional problems. The over-locations and regional analysis summaries are included in this newsletter and are available on our website <http://ceyolo.ucdavis.edu>. Click on Field Crops and Small Grain Studies.

Weather conditions highlighted the potential problems with some of the varieties and made it difficult to get good protein levels. Please look at the Falling Number values for each entry and notice how much they varied from location to location. In the Over Location Summary, (please see page 8), I have highlighted the notable values in color.

Plant growth at all locations was very good until the March rains. I noted low plant stands for Espresso, Desert King HP, and Trical 118. Blanca Grande 515, returning with 2 new stripe rust genes (SR5 & SR15), tends to lodge four inches up from the ground. At the non-irrigated locations, it just bent at that point, but went down at Gnos. This variety is liked by the mills, but for us Sacramento Valley growers, this variety with its low falling numbers and lodging is not for us.

Disease levels were low in most of my trials, but I saw fungicide applications for Stripe Rust put on Camelot, Trical 118 and Redwing this season. Durum Volante continues to struggle with severe Stripe Rust leaf reaction. The disease is still not sporulating on the leaves but it is killing the chlorophyll. In the Hunn trial, on Sacramento Clay soil, we saw severe bacterial blight, black chaff, and crown rot in the trial and it was especially bad in the late October planted field variety Cal Rojo. Larry Hunn got less than one ton yield off that field. There was also a little frost at that location.

Falling Numbers

Falling Numbers refers to a flour characteristic - its viscosity, measured by how fast a metal bar, viscometer stirrer, falls through a known volume of hot, aqueous flour gel. If it takes less than 300 seconds to fall, it is an indication of increased alpha-amylase activity usually caused by pre-harvest sprouting. Alpha-amylase activity negatively affects bread production.

A good description can be found at:

<http://www.ars.usda.gov/SP2UserFiles/Place/36070500/InfoDianehasuploaded/2010ResearchReviewAnnualReport/MKweon-FN-012810.pdf>

Research by Sam Huang, California Wheat Commission, and I have shown that grain maturity also affects the Falling Number value. White wheat and certain hard red varieties are most susceptible. In Sacramento Valley, Blanca Grande and Summit historically have low Falling Numbers. If you choose to grow either variety please check the FN value before harvest and delay harvest until the value reaches 300 sec. In many cases, this value may be so low (less than 250) and never reach the minimum of 300 sec. and the load may be rejected for milling quality.

Falling Number values were particularly low at the Gnos trial. I harvested 2 weeks prior to the grower harvesting the WB-Cristallo field where the trial lay. Even though the grain moisture averaged 9.5% it appears this field was still not mature enough to harvest.

Yield vs. Test Weight and Protein

Southern Sacramento Valley is a difficult area to produce high quality wheat with high yields compared to other parts of the state. From County Road 14 south it becomes more and more difficult to get more than 11% protein. South of Interstate 80, with the current varieties, I only see 10.5-11% protein in stressed grain. Look at the dry farmed McCormack trial in the Montezuma Hills to see consistently greater than 10.5% protein due to stress. In my over location analysis, only three varieties - Blanca Grande, Espresso and Rockland - gave 11% or greater. Espresso is only for the areas north of Yolo with very low yields and Rockland shows great promise with a consistently high average of 12% protein, good Test Weight at 63.3 lbs/bu. and high average FN values. When you look at the dockages due to low FN, pinched grain, low bushel weight, and low protein a lower yielding consistently high quality variety like Rockland looks better and better. I have always said "South of I-80 and west of I-5, consider tonnage to be your goal." I have worked hard to prove triticale grain production is a wise choice for that area.

Recommended Small Grain Cultivars

Hard Red varieties

Cal Rojo, Syngenta – good yields and disease resistance, fair protein, good test weight, OK FN

Redwing, Syngenta – good yields, some stripe rust, fair protein, good test weight, marginal FN, lodging

Rockland, West Bread – low yields, good disease resistance, very good test weight, highest protein, good FN

Espresso, WB – very low yields, good disease resistance, very good test weight, high protein, marginal FN – discontinued

Hard White varieties – check with buyer before planting

WB-Cristallo, - OK-good yields, good disease resistance, fair protein, very good test weight, marginal FN

Blanca Fuerte, Syngenta – best white yield, good disease resistance and test weight, fair protein, marginal FN

Patwin, UC - good yields, good disease resistance, fair protein, good test weight, good FN

Triticale – check with buyer before planting

05T14058, Syngenta – very good yields and disease resistance, low protein, OK test weight – new name?

Camelot, Syngenta - very good yields, some stripe rust, fair protein, OK test weight

Trical Brand 118, Syngenta - very good yields, some stripe rust, fair protein, OK test weight

Durum – Do not plant without a contract

Fortissimo – good yields and disease resistance, fair protein, good test weight, fair quality

Regional Trial Discussions

UCCE Gnos Small Grain Trial (page 9) – Located three-quarters mile north of Sievers Rd. on the east side of Curry Rd. about 1 mile north of Dixon, CA. Soil: Yolo silty clay loam. One irrigation. 22 varieties, 3 Replications.

I use this location as an indicator of what the maximum yield potential is for each of the varieties grown in the lower Sacramento Valley. This year was no exception with an average yield of 7031 lbs/acre. Protein and FN were unusually low for this location this season. Late season rain and an irrigation induced lodging and slowed maturity.

Three **Triticale** varieties topped out at 8971 lbs/ac with an average yield of 8856 lbs/ac. These varieties are bred for forage production but have turned out to be great feed grain producers. As of this writing, I have not heard what Syngenta's plans are for the 2 numbered varieties: 05T14058 and 05T14084. The 1458 significantly out yields 14084, but 14084 gets better protein. If you choose to grow triticale grain please check with your grain handler before you plant to see that they are willing to buy it. This season we saw some stripe rust on Camelot and Trical Brand 118, but not enough to spray for. However, I was at one location in Clarksburg, CA where it paid to apply fungicide to control the disease on Camelot. You definitely want to watch out for stripe rust if you plant this grain.

Syngenta's 05W90192 and Redwing were the highest yielding **Hard Red** varieties. Both varieties had OK test weights, low FN and low protein. Redwing lodged and had to be sprayed for stripe rust at a commercial field in nearby Yolo, CA. Summit 515 and Cal Rojo yielded well but Summit has low FN and Cal Rojo has low protein. Rockland did well here at 6074lbs/ac with the highest protein, 11.9%, good test weight and high FN.

I looked at 8 **Hard White** selections, some with different stripe rust gene combinations to see the effects of those gene additions on performance. UC Patwin was evaluated in 3 different combinations: Patwin without additional stripe rust genes; Patwin 5 SR, Sr5 stripe rust gene and the Slow Rusting (SR) gene; Patwin 515 SR, both the Sr5 and Sr15 stripe rust genes and the SR gene. There does not appear to be a significant difference between the three selections. Patwin's yield at 7264 lb/ac was one of the best. It had good test weight but low protein and FN at this location. Patwin appears to have good milling quality. Blanca Fuerte and Blanca Royale are not as popular with the mills. Please check with your handler/buyer before planting.

Durum wheat really needs the heat of the Central Valley or Desert to get the high protein and quality. Fortissimo is the only durum I would grow in this area and it does not produce enough protein here. Do not plant durum without a contract.

UCCE Hunn, Merwin & Merwin Small Grain Trial (page 10) – Located north of grapes on Courtland Road 0.86miles west of Jefferson Blvd 3mi. southwest of Clarksburg, CA. Soil type: Sacramento silty clay loam. No irrigation, 17 varieties, 3 replications. This location had standing water for 3.5 weeks following the March rains totaling 5.5". I observed severe crown rot, bacterial streak and some heads with black chaff all caused by this flooding. In looking at the wheat yields at this location I would estimate at least a 50% reduction from this event. Interestingly, only 5% of Cal Rojo lodged and no other variety. Low FN and low protein also plagued this location; this is the only site that Rockland had low FN and very low protein.

Triticale varieties were on top but were about one ton below what I would expect. They appeared to be a bit more tolerant to the flooding with their larger root systems. Trical Brand 118 and 05T14058 were the top yielders at 6500 lbs/ac.

UCCE McCormack Small Grain Trial (page 11) – Location on the north side of Montezuma Hills Road 0.78 miles east of Anderson Rd., west of Rio Vista, CA. Soil type: Clear Lake clay A and Diablo-Ayar on slopes. No irrigation, 20 varieties, 3 replications. Rolling hills topography, with very good rainfall for dryland conditions, wheat-fallow-sheep rotation. Heavy grass-weed competition despite two herbicide applications decreased plot uniformity.

Two **Triticale** varieties were on top followed by Blanca Fuerte, Summit 515 and Fortissimo. Trical Brand 118 did not do well at this location due to grass weed pressure and some late stripe rust. Cristallo and Blanca Grande were the only two varieties with low FN at this site. When this area gets enough rainfall grain quality is good, dockage is down and so, unfortunately, is the protein. If we knew when we were going to have good rainfall in the hills I would recommend nitrogen topdressing to increase the protein. This is a gamble that rarely pays in the low yielding dryland grain areas.

This is an area where Summit 515 might have a place. Given the late harvest times this variety's FN might have time enough to reach the minimum threshold of 300 sec. on a consistent basis. It has a record of high adaptability and a favorite of mine in the upper Delta, but has low protein. Rockland brought in the best protein at 11.3% with low yield, 2999 lbs/ac.

UCCE Rominger Small Grain Trial (page 12) – Location Southwest corner of County Roads 29 and 89, north of Winters, CA. Soil type: Marvin silty clay loam & Tehama loam. No irrigation, 20 varieties, 3 replications. No irrigation. Tomato-wheat rotation. No-till planter on 60" beds. This site had the best grain quality of all the locations and very high plot uniformity.

Five varieties topped 4 tons per acre at this site, three were Triticale one was Blanca Fuerte and the other Fortissimo. We had 5 varieties with 12% or greater protein, Rockland was the best at 12.9%. This is the location that shows which varieties have a constant problem with low FN: Espresso and Volante marginal; Summit 515 usually and Blanca Grande 515 always. The Triticale and Cal Rojo were the only varieties with low test weights every other variety did better than 61lbs/bu. Blanca Grande 515 lodged at several locations the worst here at 75% down. It lodges at a joint about 3" above the soil surface after heading. With consistent low falling numbers, low yield and lodging I would not plant this variety in this area.

For a more in-depth discussion on small grain production please come to my **Southern Sacramento Valley Small Grains Meeting, September 22st** right here in Woodland, CA.

UC Cooperative Extension Yolo/Solano/Sacramento Counties
Southern Sacramento Valley Small Grains Meeting

September 22, 2011 8:00am-12:00pm

Norton Hall, UCCE Yolo Office, 70 Cottonwood Street, Woodland, CA 95695

CDFA DPR Continuing Education Hours approved – 0.5 hours ‘Laws’ and 2.0 hours ‘Other’

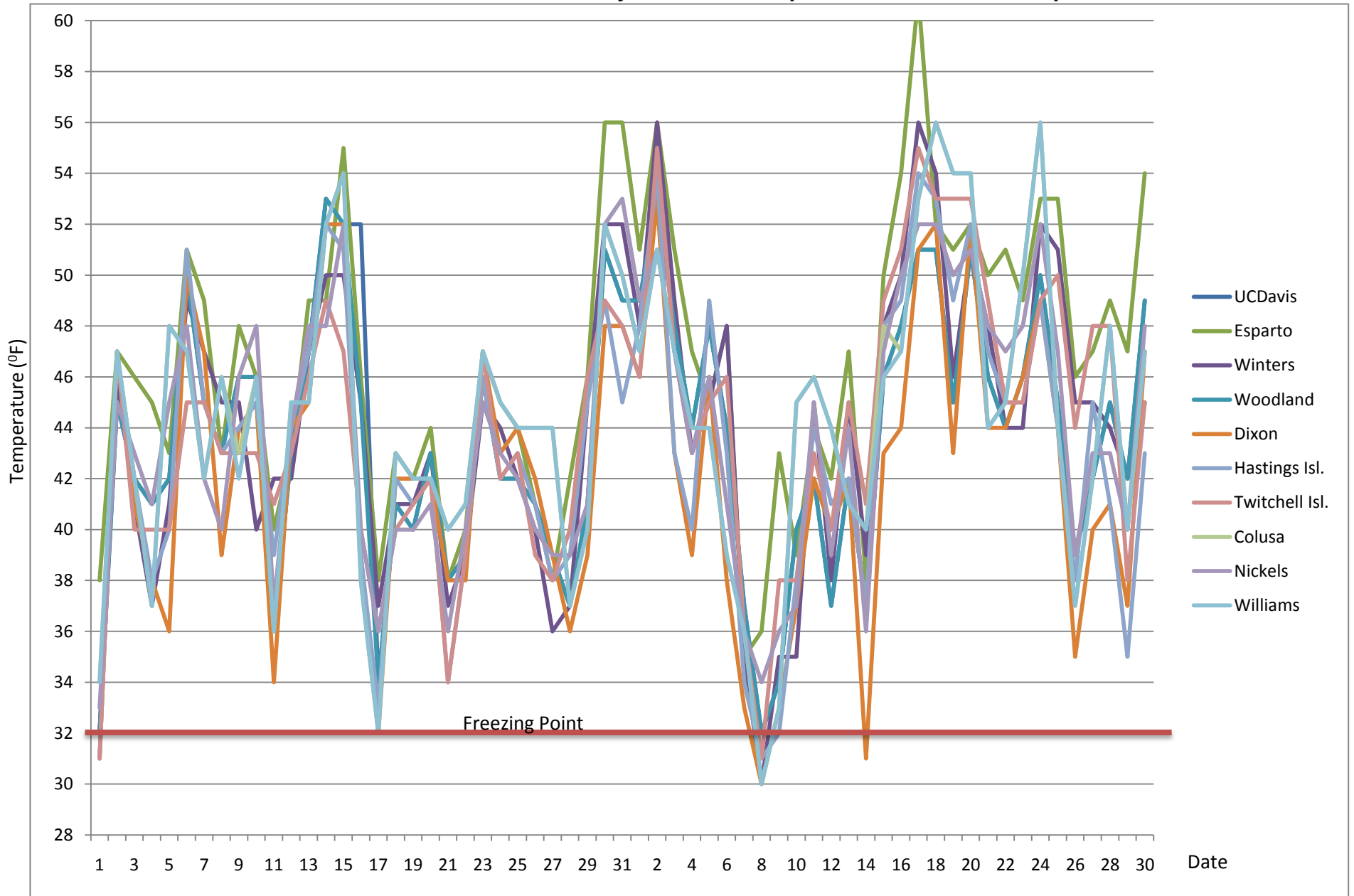
CA Certified Crop Adviser Hours approved – 4.0 hours total

Time	Topic
7:45 – 8:05am	Registration, Welcome, & Introductions <i>Kent Brittan, UCCE Yolo County Director and Farm Advisor, Yolo, Solano, and Sacramento Counties</i>
8:05 – 8:20am	Wheat Industry Updates <i>Janice Cooper, Director, California Wheat Commission</i>
8:20 – 9:00am	Alternative Uses for Small Grains – Insectaries, cover crops, dust control <i>Tom Johnson, Field Agronomist, Kamprath Seeds, Inc.</i>
9:00 – 9:20am	Results of Statewide Program – Statewide Disease Resistance <i>Phil Mayo, Staff Research Associate, UC Davis, Statewide Small Grains Program</i>
9:20 – 9:45am	Wheat Breeding Program for Plant Disease Resistance <i>Oswaldo Chicaiza, PhD, Wheat Breeder, UC Davis</i>
9:45 – 10:00am	Break for Refreshments
10:00 – 10:30am	Small Grains Pesticide Handling Use – Laws and Regulations <i>Jenni King, Agricultural and Standards Specialist, Yolo County Ag Commissioner</i>
10:30 – 11:20am	Small Grain Varieties for the Southern Sacramento Valley and Delta – Pest and Disease Resistance <i>Kent Brittan, UCCE Yolo County Director and Farm Advisor, Yolo, Solano, and Sacramento Counties</i>
11:20 – Noon	Seed Company and Handlers Updates

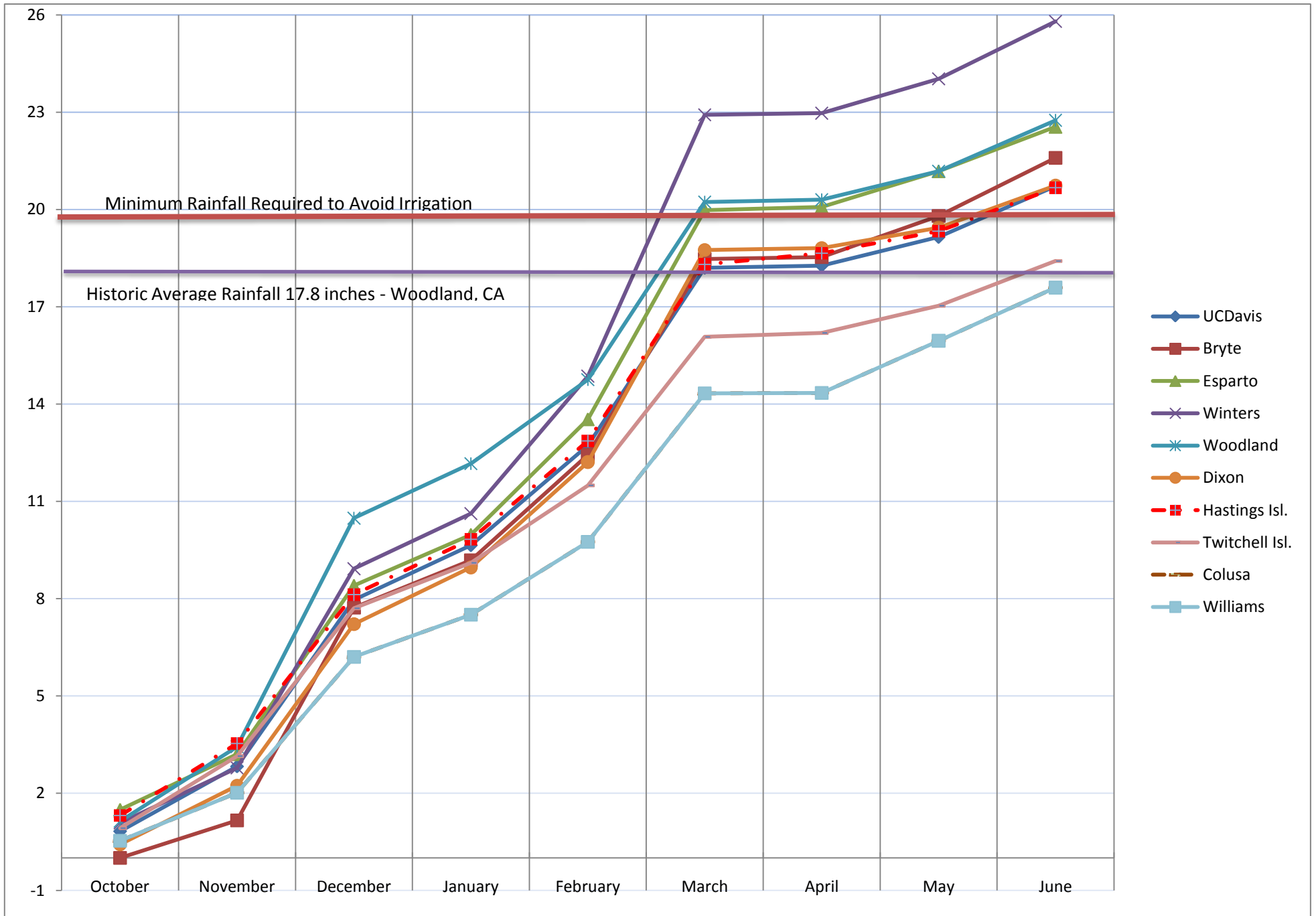
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University of California and U.S. Department of Agriculture cooperating.

2011 Southern Sacramento Valley Minimum Temperatures - March thru April



2010 to 2011 Southern Sacramento Valley Small Grain Season Rainfall



2010 - 2011 SOUTHERN SACRAMENTO VALLEY SMALL GRAINS RESEARCH

Over Locations Summary by Variety Sorted By Yield

Variety	Stand (Plants/ft2)	Days to Heading	Plant Height (in)	Lodging (harvest)	Frost (%)	Rating (1-8) ¹				UC Harvest Moisture (%)	Adams Grading Results (NQI)			Duncan's Yield (lbs/ac)	Duncan's Means@5% Separation
						Stripe	Rust	BYDV	Septoria		Falling No. (sec)	Protein (%)	Weight (lbs/bu)		
05T14058	TR	32	146	36	0	0	1	1	1	10.1		9.2	60.7	6978	A
Trical Brand 118	TR	29	142	38	0	1	2	1	1	9.9		10.0	60.3	6726	B
Camelot	TR	33	141	40	0	1	2	1	1	9.8		10.3	60.2	6597	B
05T14084	TR	33	145	37	0	0	1	1	1	9.8		10.2	60.1	6270	C
Fortissimo	DR	30	152	33	1	0	1	1	2	10.0	356	10.0	62.9	6165	C
Blanca Fuerte	HW	34	143	33	1	0	1	1	2	10.1	300	10.0	63.9	5925	D
Summit 515	HR	35	142	33	8	0	1	1	2	10.1	281	10.5	62.6	5852	D
Volante	DR	30	149	33	2	0	3	1	2	10.0	338	9.7	62.9	5500	E
Redwing	HR	35	143	32	16	0	1	1	2	9.6	304	10.5	61.4	5494	E
Blanca Royale	HW	34	142	33	17	0	1	1	2	10.2	345	10.8	61.7	5453	E
05W90192	HR	34	144	34	0	0	1	1	2	10.3	303	10.8	62.5	5436	E
Patwin	HW	31	148	35	2	0	1	1	2	9.9	327	10.5	62.1	5422	E
Cal Rojo	HR	33	140	32	2	3	1	1	3	10.2	339	10.7	61.1	5353	E
WB-Cristallo	HW	32	143	35	10	0	1	2	2	9.9	311	10.7	63.1	5337	E
Desert King HP	DR	29	156	35	2	0	1	1	2	9.9	419	10.8	61.7	4902	F
Blanca Grande 515	HW	35	137	34	60	0	1	1	4	10.3	240	11.0	63.1	4875	F
Rockland	HR	34	141	32	0	0	1	1	2	10.1	312	12.0	63.3	4707	FG
Expresso	HR	27	145	36	1	0	1	1	2	10.1	306	11.1	63.0	4656	G
Average		32	144	34	7	0	1	1	2	10.0	320	10.5	62.0	5647	
C.V.		5	1	4	115	na	29	na	29	0.9	11.0	3.8	0.9	4	
L.S.D @5%		1.3	1.1	1.1	6.3		0.3		0.5	0.4	28.1	0.3	0.5	196	
Significance by Rep							**								
Significance by Location	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Significance by Variety	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Significance by Interaction	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**

2 Factor Factorial Analysis - A = Location, B = Variety

** = significant 99% of the time

* = significant 95% of the time

¹ Foliar Disease Rating (1-8): 1=0-3%, 2=4-14%, 3=15-29%, 4=30-49%, 5=50-69%, 6=70-84%, 7=85-95%, 8=96-100%

Grain color/type: **HR** = Hard Red Wheat

HW = Hard White Wheat

DR = Hard Durum

TR = Triticale

No significant Shatter, Leaf Rust, Loose Smut detected

NQI = National Quality Inspections, Inc.

Not recommended

Excellent	Dk. Green
Very Good	Lt. Green
Check	Lt. Yellow
Caution	Yellow
Problem	Lt. Red
Not recommended	Dk. Red

UCCE E & H FARMS SMALL GRAIN TRIAL - HARVEST YEAR 2011

Funding: California Wheat Comission

Cooperators: Craig Gnos, and Sam Beukelman
Experimenters: Kent Brittan, Jorge Dubcovsky, Mark Kochi, Syngenta (Resource Seeds Int.),
 West Bread and World Wide Wheat LLC. and John Gilbert of Adams Grain
Soil Type: Yolo silty clay loam
Planting Method: Drilled with 10" single disk grain drill planted flat
Previous Crop: Processing tomatoes
Fertilizer: Pre-plant 500lbs/ac ammonium sulfate, topdress 150lbs/ac urea. Total 174lbs N/ac applied
Herbicide: 4.75oz Osprey/ac plus 0.5pts MCPA/ac
Location: Three-quarters mile north of Sievers Rd.on Curry Rd.and just to the east of walnut trees along the roadside and north of Dixon, CA.

Planting Date, Rate: 11/19/2010 120lbs/ac
Harvest Date: 7/7/2011
Irrigation: 04/03/11
Length of Plots: 126 feet
Plot Width: 9 feet
No.of drill rows: 14 rows
Replications: 4
Field Variety: WB-Cristallo

2010 to 2011 Gnos Wheat Variety Trial Summary Sorted by Yield

Variety	Grain Type	Stand (Plants/ft ²)	Days to Heading	Plant Height (in)	Harvest Lodging (%)	Stripe	Leaf	BYDV	Septoria	Grain Moisture (%)	Test Weight (lbs/bu)	Adams Grain Grade		Yield (lbs/ac)	Duncan's Means@5% Separation
						Rust	Rust		Blotch			Falling No. (300 min)	Protein (%)		
						Disease Rating (1-8)									
05T14058	TR	36	148	39	0	1	1	1	1	9.5	60.10	na	8.1	8971	A
Trical Brand 118	TR	29	140	40	1	2	1	1	1	9.3	59.60	na	9.0	8926	A
Camelot	TR	35	141	44	0	3	1	1	1	9.3	59.47	na	9.5	8670	A
05T14084	TR	32	145	40	0	1	1	1	1	9.2	59.40	na	8.9	7950	B
Fortissimo	DR	30	153	37	4	1	1	1	2	9.6	62.37	369	8.7	7721	BC
05W90192	HR	34	144	36	0	1	1	1	2	9.9	61.33	292	10.0	7381	CD
Redwing	HR	37	142	34	51	1	1	1	2	9.2	60.30	244	9.5	7359	CD
Patwin 515 SR	HW	35	147	34	0	1	1	1	2	9.5	61.37	274	9.9	7264	DE
Patwin	HW	28	148	37	5	1	1	1	2	9.3	61.87	290	9.3	7220	DE
Blanca Fuerte	HW	34	142	35	2	1	1	1	2	9.6	61.80	244	9.1	7183	DE
Summit 515	HR	34	141	34	37	1	1	1	3	9.4	61.27	254	10.3	7109	DEF
Cal Rojo	HR	34	140	32	2	1	1	1	3	9.7	59.83	325	9.7	7078	DEF
Blanca Royale	HW	33	143	34	59	1	1	1	2	9.9	60.97	310	9.7	7051	DEF
Patwin 5 SR	HW	32	147	34	0	1	1	1	3	9.5	61.43	271	9.9	6836	EF
Volante	DR	27	148	36	7	4	1	1	2	9.5	61.53	351	8.5	6705	F
Kern 515 HP2NS	HR	34	140	32	6	1	1	1	6	9.8	60.53	233	11.0	6224	G
Clear White 515 HP2NS	HW	32	140	37	5	1	1	1	4	9.6	60.97	270	10.9	6173	G
WB-Cristallo	HW	30	144	38	36	1	1	1	2	9.4	61.83	285	9.7	6167	G
Rockland	HR	35	141	33	1	1	1	1	2	9.6	62.13	352	11.9	6074	G
Espresso	HR	24	147	39	4	1	1	1	1	9.6	62.17	259	10.4	5643	H
Desert King HP	DR	28	157	37	11	1	1	1	3	9.5	60.37	449	9.9	5601	H
Blanca Grande 515	HW	36	140	34	86	1	1	1	6	9.7	62.17	235	10.8	5367	H
Average:		32	145	36	14	1	1	1	2	9.5	61.04	295	9.8	7031	
C.V.%		4.92	0.71	3.48	NA	31.7	NA	NA	19.45	1.25	0.37	2.50	1.90	3.79	
L.S.D @5%		2.249	1.443	1.777		0.55			0.625	0.169	0.319	10.437	0.262	376.144	
Significance by Variety		**	**	**		**			**	**	**	**	**	**	
Significance by Rep		**	*							**					

** = significant 99% of the time

* = significant 95% of the time

¹Disease Rating (1-8): 1=0-3%, 2=4-14%, 3=15-29%, 4=30-49%, 5=50-69%, 6=70-84%, 7=85-95%, 8=96-100%

Grain color/type: **HR**= Hard Red

MR= Medium hard Red

T=Trical= triticale

DR = Durim

NQI = National Quality Inspections, Inc.

No Frost, Loose Smut detected this season.

UCCE HUNN, MERWIN & MERWIN SMALL GRAIN TRIAL - HARVEST YEAR 2011

Funding: California Wheat Commission

Cooperators: Pete and Larry Hunn
Experimenters: Kent Brittan, Jorge Dubcovsky, Mark Kochi, Syngenta (Resource Seeds Int.), West Bread and World Wide Wheat LLC. and John Gilbert of Adams Grain
Soil Type: Sacramento silty clay loam
Planting Method: Drilled with 10² single disk grain drill planted flat
Planting Rate: 120 Lbs/Acre
Herbicide: 1pt/a MCPA + 3oz/a Clairty in 10gal/a water
Fertilizer: 125 units nitrogen preplant as Aqua
Location: Second field north of grapes on Courtland Road 0.86miles west of Jefferson Blvd south of Clarksburg, CA.

Planting Date: November 12, 2010
Harvest Date: June 23, 2011
Irrigation: None
Length of Plots: 120 feet
Plot Width: 18 feet
No. of drill rows: 28 rows
Replications: 3
Previous Crop: Safflower

2010 to 2011 Hunn, Merwin & Merwin Wheat Variety Trial Summary Sorted by Yield

Variety	Grain Type	Stand (Plants/ft ²)	Days to Heading	Plant Height (in)	Harvest Frost (%)	Lodging (%)	Stripe	Leaf		Septoria	Grain Moisture (%)	Test Weight (lbs/bu)	Adams Grain Grade		Yield (lbs/ac)	Duncan's Means@5% Separation
							Rust	Rust	BYDV	Blotch			Falling No. (300 min)	Protein (%)		
Trical Brand 118	TR	26	147	37	3	0	2	1	1	1	9.5	60.1	na	10.4	6588	A
05T14058	TR	27	150	34	0	0	1	1	1	2	9.8	60.7	na	8.8	6555	A
Camelot	TR	33	147	39	3	0	2	1	1	1	9.4	59.5	na	10.7	5669	B
05T14084	TR	33	150	35	1	0	1	1	1	2	9.5	59.7	na	10.8	5153	C
Fortissimo	DR	29	155	31	0	0	1	1	1	3	10.0	63.3	333	10.0	5095	C
Summit 515	HR	35	147	33	0	0	1	1	1	4	9.5	63.3	257	10.5	4739	D
Patwin	HW	30	153	33	0	0	1	1	1	3	9.5	62.3	290	10.2	4515	DE
Blanca Royale	HW	34	147	33	0	0	1	1	1	4	9.5	62.5	260	10.7	4507	DE
Volante	DR	32	154	29	0	0	5	1	1	4	9.7	63.2	357	9.7	4490	DE
Blanca Fuerte	HW	34	148	33	0	0	1	1	1	3	9.7	64.4	308	10.6	4450	DE
Desert King HP	DR	30	165	34	0	0	1	1	1	2	9.6	63.2	257	10.9	4361	EF
WB-Cristallo	HW	33	148	34	0	0	1	1	3	4	9.5	63.1	362	11.0	4354	EF
Redwing	HR	33	148	31	0	0	1	1	1	4	9.2	62.2	268	10.5	4333	EF
05W90192	HR	35	148	31	0	0	1	1	1	3	9.7	63.2	294	10.8	4082	FG
Cal Rojo	HR	30	144	30	10	5	1	1	1	5	10.4	62.1	316	10.9	3938	G
Rockland	HR	37	144	31	0	0	1	1	1	5	9.5	63.8	246	12.2	3799	G
Expresso	HR	30	150	36	0	0	1	1	1	3	9.5	62.8	321	11.6	3754	G
Average		32	150	33	1	0	1	1.0	1	3	9.6	62.3	298	10.6	4728	
C.V.%		4.48	1.03	4.05	NA	NA	32.7	NA	15	34.83	2.99	0.97	14.24	2.06	3.91	
L.S.D @5%		2.38	2.569	2.228			0.72		0.29	1.811	0.479	1.1	10.618	0.364	307.376	
Significance by Variety		**	**	**			**	**	**	Varies	*	**	NS	**	**	
Significance by Rep		*		**							*	**	**	**	**	

** = significant 99% of the time

* = significant 95% of the time

¹Disease Rating (1-8): 1=0-3%, 2=4-14%, 3=15-29%, 4=30-49%, 5=50-69%, 6=70-84%, 7=85-95%, 8=96-100%

Grain color/type: **HR**= Hard Red **MR**= Medium hard Red **T**=Trical= triticale **DR** = Durim

NQI = National Quality Inspections, Inc.

No Frost, Loose Smut detected this season.

UCCE McCORMACK SMALL GRAIN TRIAL - HARVEST YEAR 2011

Funding: California Wheat Comission

Cooperators: Jennie McCormack, Al Medvitz

Experimenters: Kent Brittan, Jorge Dubcovsky, Mark Kochi, Syngenta (Resource Seeds Int.),
West Bread and World Wide Wheat LLC. and John Gilbert of Adams Grain

Soil Type: Clear Lake clay A and Diablo-Ayar on slopes

Planting Method: Drilled with 10" single disk grain drill planted flat

Planting Rate: 120 Lbs/Acre

Previous Crop: Fallow grazing for sheep

Fertilizer: 80 units NH3 preplant, 50lbs 11-52-0 at plant

Herbicide: 2pt/ac Glyphosphate at planting, 0.5pt/a MCPA + 4.5oz/a Oberion in 15gal/a water ground

Location: Located on the north side of Montezuma Hills Road 0.78 miles east of Anderson Rd., west of Rio Vista, CA.

Planting Date: 12/7/2010

Harvest Date: 8/3/2011

Irrigation: None

Length of Plots: 120 feet

Plot Width: 18 feet

No.of drill rows: 28 rows

Replications: 3

Field Variety: PR1404

2010 to 2011 McCormack Wheat Variety Trial Summary Sorted by Yield

Variety	Grain Type	Stand (Plants/ft ²)	Days to Heading	Plant Height (in)	Harvest Lodging (%)	Disease Rating (1-8)				Grain Moisture (%)	Test Weight (lbs/bu)	Adams Grain Grade		Yield (lbs/ac)	Duncan's Means@5% Separation
						Stripe Rust	Leaf Rust	BYDV	Septoria Blotch			Falling No. (300 min)	Protein (%)		
05T14058	TR	30	136	32	0	1	1	1	1	10.9	59.9	9.0	4175	A	
Camelot	TR	30	133	35	0	2	1	1	1	10.4	59.6	10.0	3945	AB	
Blanca Fuerte	HW	34	135	29	0	1	1	1	1	10.9	63.2	333	3899	ABC	
Summit 515	HR	35	135	30	0	1	1	1	1	10.8	61.4	325	3863	ABCD	
Fortissimo	DR	26	141	31	0	1	1	1	1	10.5	62.4	324	3809	ABCDE	
Volante	DR	26	135	33	0	1	1	1	1	10.8	62.8	351	3774	ABCDE	
WB-Cristallo	HW	30	135	32	0	1	1	1	1	10.6	62.7	280	3748	ABCDEF	
05T14084	TR	35	135	33	0	1	1	1	1	10.7	58.9	9.6	3703	ABCDEF	
Desert King HP	DR	27	142	34	0	1	1	1	1	10.4	62.0	454	3643	BCDEFG	
Patwin 5 SR	HW	34	137	31	0	1	1	1	1	10.6	60.8	330	3424	CDEFGH	
Redwing	HR	36	136	30	0	2	1	1	1	10.2	61.1	319	3404	DEFGH	
Patwin 515 SR	HW	33	136	30	0	1	1	1	1	10.7	61.3	340	3385	DEFGH	
Cal Rojo	HR	33	135	30	0	1	1	1	2	11.0	60.7	350	3385	DEFGH	
05W90192	HR	31	135	33	0	1	1	1	1	10.9	61.7	302	3354	EFGH	
Trical Brand 118	TR	28	135	33	0	2	1	1	1	10.7	59.5	9.7	3287	FGHI	
Blanca Royale	HW	31	134	30	0	1	1	1	1	10.8	59.8	386	3202	GHI	
Blanca Grande 515	HW	31	131	32	0	1	1	1	2	11.1	62.3	230	3076	HI	
Rockland	HR	31	136	31	0	1	1	1	1	10.8	62.6	307	2999	HI	
Patwin	HW	30	136	32	0	1	1	1	1	10.6	61.0	365	2864	I	
Expresso	HR	25	135	33	0	1	1	1	1	10.8	62.5	350	2854	I	
Average		31	136	32	0	1	1	1	1	10.7	61.3	334	10.1	3490	
C.V.%		7.1	0.8	4.5	NA	11.3	NA	NA	15.8	1.2	1.2	12.2	4.13	7.2	
L.S.D @5%		3.6	1.8	2.3		0.2			0.3	0.2	1.2	65.7	0.687	414.266	
Significance by Variety		**	**	**		**			**	**	**	**	**	**	
Significance by Rep										**			**		

** = significant 99% of the time

* = significant 95% of the time

¹Disease Rating (1-8): 1=0-3%, 2=4-14%, 3=15-29%, 4=30-49%, 5=50-69%, 6=70-84%, 7=85-95%, 8=96-100%

Grain color/type: **HR**= Hard Red

MR= Medium hard Red

T=Trical= triticale

DR = Durim

NQI = National Quality Inspections, Ir
No Frost, Loose Smut detected this sea

UCCE ROMINGER SMALL GRAIN TRIAL - HARVEST YEAR 2011

Funding: California Wheat Comission

Cooperators: Rick and Bruce Rominger and Nick Charles
Experimenters: Kent Brittan, Jorge Dubcovsky, Mark Kochi, Syngenta (Resource Seeds Int.), West Bread and World Wide Wheat LLC. and John Gilbert of Adams Grain
Soil Type: Marvin silty clay loam & Tehama loam
Planting Method: Drilled with 10² single disk grain drill planted flat
Planting Rate: 120 Lbs/Acre
Previous Crop: Processing tomatoes
Fertilizer: 75lbs11-52-0/ac preplant, 200lbs Urea/ac topdress. Total 100.25lbs N/ac applied
Herbicide: 1.5 pts MCPA/ac
Location: Southwest corner of County Roads 29 and 89, north of Winters, CA.

Planting Date: 11/16-17/2010
Harvest Date: June 25, 2011
Irrigation: None
Length of Plots: 150 feet
Plot Width: 13 feet
John Deer No-till drill No.of drill rows: 28 rows
Replications: 3

2009 to 2010 Rominger Brothers Wheat Variety Trial Summary Sorted by Yield

Variety	Grain Type	Stand (Plants/ft ²)	Days to Heading	Plant Height (in)	Harvest Lodging (%)	Stripe Rust	Leaf Rust	BYDV	Septoria Blotch	Grain Moisture (%)	Test Weight (lbs/bu)	Adams Grain Grade		Yield (lbs/ac)	Duncan's Means@5% Separation
												Falling No. (300 min)	Protein (%)		
05T14084	TR	34	149	39	0	1	1	1	1	9.9	59.9	na	11.6	8275	A
05T14058	TR	35	151	37	0	1	1	1	1	10.2	60.1	na	10.9	8213	A
Blanca Fuerte	HW	34	147	36	0	1	1	1	2	10.3	64.6	314	10.7	8168	A
Trical Brand 118	TR	33	144	40	0	2	1	1	1	9.9	59.9	na	11.0	8104	A
Fortissimo	DR	36	160	35	0	1	1	1	2	10.0	62.3	398	11.6	8035	A
Summit 515	HR	38	145	36	0	1	1	1	2	10.5	63.6	286	11.5	7696	B
Patwin	HW	36	153	37	0	1	1	1	2	10.1	61.9	364	12.2	7088	C
WB-Cristallo	HW	36	145	36	0	1	1	2	3	10.2	63.6	315	11.8	7080	C
Blanca Royale	HW	37	144	35	0	1	1	1	2	10.6	61.8	424	11.9	7053	C
Volante	DR	35	159	33	0	1	1	1	2	10.1	62.6	291	11.3	7031	C
Cal Rojo	HR	35	142	34	0	1	1	1	3	9.9	60.0	364	12.1	7011	C
05W90192	HR	37	147	37	0	1	1	1	2	10.7	63.0	324	11.7	6926	C
Redwing	HR	35	146	35	0	1	1	1	3	9.9	60.7	385	12.0	6879	CD
Blanca Grande 515	HW	40	139	35	75	1	1	1	3	10.6	64.3	260	12.1	6629	DE
Expresso	HR	30	148	38	0	1	1	1	3	10.5	63.3	294	11.7	6376	E
Desert King HP	DR	32	161	34	0	1	1	1	2	10.1	60.9	517	11.7	6002	F
Rockland	HR	33	144	35	0	1	1	1	2	10.4	63.6	342	12.9	5956	F
Average		36	147	36	9	1	1	1	2	10.3	62.3	348	11.7	7244	
C.V.%		2.99	0.82	3.25	NA	13.15	NA	6.67	19.04	2.77	0.90	11.45	5.10	2.30	
L.S.D @5%		1.745	2.20	1.944		0.227		0.12	0.658	0.471	0.931	64.714	0.992	275.85	
Significance by Variety		**	**	**		*		**	**	**	**	**	*	**	
Significance by Rep									*						

** = significant 99% of the time

* = significant 95% of the time

¹Disease Rating (1-8): 1=0-3%, 2=4-14%, 3=15-29%, 4=30-49%, 5=50-69%, 6=70-84%, 7=85-95%, 8=96-100%

Grain color/type: **HR**= Hard Red **MR**= Medium hard Red **T**=Trical= triticale **DR** = Durim

NQI = National Quality Inspections,

No Loose Smut detected this season