



## Kings and Tulare Small Grain Variety Performance Trials

Steve Wright, Lee Jackson

The 2005 California wheat crop was 558,000 acres including 90,000 acres of Durum wheat, 100,000 acres of barley, and 250,000 acres of oats. Triticale acreage for green chop for dairies continued to expand to 60,000 acres. The fall planted wheat acreage was dominated by stripe rust resistant varieties Summit (169,000 acres or 35%) and Blanca Grande a hard white spring wheat (86,500 or 18%). Durum acreage was dominated by Kronos with 28,700 acres or 37% of total durum acreage.

Small grain variety tests were conducted at multiple locations throughout California. The results from Kings and Tulare Counties small plot trials are shown on the following pages. The regional wheat, barley and triticale trials in Kings County were conducted at Hansen Farms near Corcoran. The dryland wheat and barley trials were conducted at Changala Farm near Ducor. An Agronomy Progress Report containing more detailed results from all trials is available at <http://agric.ucdavis.edu/crops/cereals/cereal.htm> or on the Tulare County website at <http://cetulare.ucdavis.edu>. The 2005 season was wet and cool resulting in a late maturing crop with high disease pressure from stripe rust, septoria tritici, leaf rusts, and barley yellow dwarf virus. Wheat varieties have different levels of

genetic resistance to stripe rust and as new races of rust develop, the resistance breaks down.

Generally, our best wheat silage varieties are also the high yielding grain varieties with high protein, resistance to disease and resistance to lodging.

- First and foremost, select and plant resistant varieties.
- Secondly, a well-timed fungicide application was shown to reduce the yield loss even in resistant varieties.

Stripe Rust resistance based on observations from the University of California statewide variety tests:

**Highly Susceptible:** Dirkwin, Bonus, Brooks, Cavalier

**Susceptible:** Yecora Rojo, Anza, Klasic, Eldon, Yolo, Kern, Serra, Stander

**Moderately Susceptible:** Express

**Moderately Resistant:** Stellar, Wincal 14, Clear White, Plata

**Resistant:** Summit, Blanca Grande

**TABLE 1. 2005 KINGS COMMON WHEAT AND TRITICALE TEST**

Entry	Name	Yield (lbs/acre)	Test Wt (lbs/bu)	1000		Lodging		BYDV	Leaf Rust	Stripe Rust
				Kernel Wt (g)	Plant Ht (in)	soft dough	harvest			
<u>CULTIVARS</u>										
20	ANZA	3160 (38)	58.4	27.1	36	6.3	4.3	2.0	1.0	4.5
112	YECORA ROJO	3760 (31)	60.8	41.2	32	6.5	5.0	1.3	1.5	5.8
431	PAVON	2580 (39)	57.1	28.7	38	5.3	3.8	4.8	1.0	6.0
788	EXPRESS	4120 (24)	59.6	37.5	38	3.8	3.0	2.8	1.0	1.0
1155	SUMMIT	5460 (5)	60.6	41.0	34	2.3	1.5	2.3	1.0	1.0
1156	BLANCA GRANDE	4720 (13)	63.1	43.0	37	7.8	7.5	1.3	1.3	1.0
1255	PLATA	5000 (9)	61.5	36.1	36	4.0	2.3	1.5	1.3	2.0
1258	BETH HASHITA	4260 (23)	58.7	39.2	33	4.0	3.0	2.8	1.0	1.0
1341	DASH 12	3570 (34)	57.5	34.8	41	6.5	4.3	2.5	1.0	1.0
1361	CLEAR WHITE	4370 (22)	60.4	35.0	37	1.8	1.3	2.3	1.0	1.0
1392	SOLANO	4530 (17)	60.4	35.0	35	2.8	1.3	2.3	1.0	1.0
1413	WINCAL 14	3790 (29)	59.8	28.6	33	7.0	5.0	1.8	1.0	1.0
<u>ADVANCED LINES</u>										
1296	UC 1296	4480 (20)	60.8	37.9	39	6.0	4.3	1.5	1.0	1.0
1340	WWW BR3677	2510 (40)	56.5	32.0	41	5.8	3.8	3.0	1.0	1.0
1418	UCD 03010/18	4730 (12)	59.3	34.9	32	1.0	1.0	1.0	1.0	1.0
1419	UCD 03010/24	5050 (8)	58.6	34.1	33	4.5	2.5	2.3	1.0	1.0
1423	YU999-158	4670 (14)	59.6	38.4	35	6.5	4.8	1.8	1.0	1.0
1424	YU999-178	5230 (7)	60.9	37.2	36	5.8	4.3	1.5	1.0	1.0
1457	MLO41-37A	3990 (26)	57.3	32.8	40	6.3	5.3	1.5	1.0	1.3
1458	PAVON IRS.1AL	2230 (41)	56.4	30.9	36	4.8	3.0	4.5	1.0	5.5
1459	PAVON IRS.1BL	3200 (36)	57.2	31.1	38	3.8	2.3	4.3	1.0	5.3
1460	PAVON IRS.1DL	2170 (42)	57.5	30.5	40	4.8	2.5	4.8	1.0	6.3
1461	WB DA902-42	4490 (19)	58.3	35.2	39	7.5	5.3	1.8	1.0	1.0
1462	WB DA902-7	4750 (11)	59.8	34.3	34	2.5	2.0	1.8	1.3	1.8
1463	WB DA902-72	3970 (27)	58.5	34.0	41	7.0	6.0	1.8	1.0	1.0
1464	WB YU901-379	4520 (18)	59.8	36.0	38	5.5	4.3	2.5	1.3	1.0
1465	WB YU902-209	4630 (15)	59.5	43.2	36	7.0	6.0	1.0	5.3	1.0
1469	WWW CHBR1315	3770 (30)	58.1	28.9	41	6.0	4.8	1.8	3.3	1.0
1470	WWW BR0061	3160 (37)	58.2	36.1	41	5.3	5.5	2.8	1.0	1.0
1471	WWW CHBR1975A	3820 (28)	56.9	38.8	40	6.8	5.8	2.0	1.0	1.0
1472	WWW BR6000W	3710 (32)	58.3	33.0	41	4.8	3.5	1.8	1.0	1.0
1476	RSI 96WV52303A	5250 (6)	62.0	38.3	35	4.0	2.5	1.0	1.3	1.0
1477	RSI 97WY63520D	4910 (10)	60.4	34.7	33	2.3	1.3	1.0	1.0	1.0
1478	RSI 00WWB80404	4020 (25)	54.6	33.7	33	5.0	2.5	1.5	1.0	1.0
1480	APB W02AZ-228MT	4540 (16)	59.0	37.0	34	4.8	2.5	3.3	1.0	1.0
1481	APB W02GE-19-1	3600 (33)	59.3	34.3	31	4.3	2.3	2.5	1.0	1.0
1482	APB W02GE-19-6	3430 (35)	59.2	36.4	33	6.3	4.3	2.5	1.0	1.0
<u>TRITICALE</u>										
3097	TRICAL 105	4380 (21)	54.7	41.9	43	3.3	2.8	2.8	1.0	1.0
3143	TRICAL 96	7400 (2)	59.5	42.8	38	1.0	1.0	1.0	1.0	1.0
3156	RSI TRICAL 118	8170 (1)	58.9	38.1	40	1.3	1.3	1.0	1.0	1.0
3157	RSI TRICAL 116	6410 (3)	55.0	39.6	39	1.0	1.0	1.0	1.0	1.0
3158	RSI 00TV60147	6250 (4)	53.4	31.9	37	1.0	1.0	1.0	1.0	1.0
	MEAN	4350	58.7	35.6	37	4.6	3.4	2.1	1.2	1.7
	CV	8.8	1.5	5.6	5	18.3	27.3	28.3	25.4	35.1
	LSD (.05)	540	1.7	4.1	4	1.2	1.3	0.8	0.4	0.8

Rating scale for diseases (area of flag-1 leaf affected) and lodging: 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.

BYDV ratings (see scale above) were based on percentage of plants showing foliar symptoms.

Numbers in parentheses indicate relative rank in column.

**TABLE 2. 2005 DURUM WHEAT TEST**

Entry	Name	Yield (lbs/acre)	Test Wt (lbs/bu)	1000		Plant Ht (in)	Lodging		BYDV	Stripe Rust
				Kernel Wt (g)	Black Point		soft dough	harvest		
<u>CULTIVARS</u>										
819	BRAVADUR	5320 (20)	60.6	42.4	1.0	36	7.5	7.8	1.0	1.5
878	DURAKING	5760 (16)	60.6	40.8	1.0	36	1.5	1.3	1.8	1.3
944	CORTEZ	6320 (11)	60.6	46.0	1.0	38	3.5	4.5	1.0	1.0
951	KRONOS	4090 (29)	57.6	48.7	1.0	35	7.5	7.8	1.3	3.0
983	RIA	6800 (3)	58.7	40.9	2.0	33	2.5	2.3	1.0	1.8
1024	MOHAWK	4780 (25)	57.6	45.5	1.0	36	8.0	8.0	1.0	4.3
1166	CROWN	6800 (2)	58.0	45.9	2.0	37	1.3	2.0	1.0	1.0
1210	PLATINUM	6660 (6)	61.8	43.5	1.0	33	3.3	2.8	1.0	1.0
1211	TOPPER	5900 (13)	60.6	36.8	1.5	37	4.0	3.5	1.8	2.3
1215	ORITA	5220 (21)	58.6	47.3	1.5	33	5.5	4.3	1.0	6.0
1253	CANDURA	4890 (23)	60.5	40.5	1.5	36	7.0	7.3	1.5	4.0
1375	DESERT KING	6520 (8)	61.3	46.5	1.0	37	2.3	3.8	1.3	1.0
<u>ADVANCED LINES</u>										
1304	WWW D5384-2	5150 (22)	58.2	36.3	1.5	37	5.0	7.3	2.8	5.3
1405	GD 007	4600 (26)	60.5	40.5	1.0	38	8.0	8.0	1.0	2.3
1429	RSIOOWV50064	6450 (9)	59.4	39.7	1.0	36	2.5	3.0	1.3	1.0
1430	RSIOOWV50059	6300 (12)	61.2	43.6	1.5	34	5.3	3.5	1.0	1.5
1431	RSIOOWV50014	6420 (10)	61.4	51.6	1.0	34	1.8	1.3	1.0	1.3
1439	APB D99-425	6850 (1)	60.6	46.7	1.5	32	5.8	4.8	1.0	1.0
1452	UCD 04201/18	6660 (5)	59.6	41.0	1.0	35	2.8	3.8	1.3	1.0
1466	WB YU899-170	5870 (14)	59.8	45.3	2.0	37	2.5	3.3	1.8	5.5
1467	WB YU803-11	6710 (4)	61.7	51.6	1.0	36	1.8	2.5	1.3	1.0
1468	WB YU803-15	5500 (19)	58.2	39.6	1.0	37	5.0	5.0	2.0	1.0
1473	WWW D3117A	6590 (7)	57.9	44.5	1.5	39	1.8	2.8	1.8	1.3
1474	WWW D6575B	5560 (18)	59.5	40.3	2.0	33	6.0	5.8	1.5	1.0
1475	WWW CHD1978A	5860 (15)	58.8	38.1	1.5	36	4.8	4.8	1.0	1.0
1483	APB D01AZ-474-7	4790 (24)	61.1	51.0	1.0	38	7.5	7.3	1.3	1.3
1484	APBD257-11	5590 (17)	61.0	40.6	1.5	35	7.3	7.0	1.3	1.0
1485	GD 008	4420 (27)	60.8	43.3	1.0	35	7.8	8.0	1.3	3.5
1486	GD 009	4300 (28)	61.0	45.6	1.0	36	8.0	8.0	1.0	1.8
	MEAN	5750	59.9	43.6	1.3	36	4.7	4.9	1.3	2.1
	CV	9.3	1.6	5.0	27.9	6.1	20.3	22.8	32.8	30.3
	LSD (.05)	750	2.0	4.5	0.7	-	1.4	1.6	0.6	0.9

Rating scale for diseases (area of flag-1 leaf affected) and lodging: 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.

BYDV ratings (see scale above) were based on percentage of plants showing foliar symptoms.

Black Point ratings (see scale above) were based on percentage of seeds showing symptoms.

Numbers in parentheses indicate relative rank in column.

**TABLE 3. 2005 TULARE RAINFED COMMON WHEAT AND TRITICALE TEST**

Entry	Name	Yield (lbs/acre)	Test Wt (lbs/bu)	Plant Ht (in)
<u>CULTIVARS</u>				
20	ANZA	3420 (19)	63.7	35
112	YECORA ROJO	3270 (27)	62.6	31
431	PAVON	3950 (5)	63.1	37
788	EXPRESS	3360 (24)	62.9	35
1155	SUMMIT	3500 (15)	61.3	32
1156	BLANCA GRANDE	3690 (10)	64.8	37
1255	PLATA	3400 (22)	63.3	35
1341	DASH 12	3730 (8)	62.5	38
1361	CLEAR WHITE	3260 (28)	61.1	35
1392	SOLANO	3430 (18)	63.5	33
1413	WINCAL 14	3180 (30)	64.1	36
<u>ADVANCED LINES</u>				
1296	UC 1296	3660 (11)	62.2	38
1340	WWW BR3677	3480 (16)	61.5	40
1418	UCD 03010/18	3540 (14)	62.3	27
1419	UCD 03010/24	3400 (21)	61.7	35
1423	YU999-158	3610 (12)	61.6	34
1424	YU999-178	3830 (6)	63.5	37
1458	PAVON 1RS.1AL	3570 (13)	63.6	36
1459	PAVON 1RS.1BL	3220 (29)	63.1	34
1460	PAVON 1RS.1DL	3270 (26)	63.0	36
1469	WWW CHBR1315	3700 (9)	63.7	42
1470	WWW BR0061	2970 (31)	62.8	42
1471	WWW CHBR1975A	4000 (3)	60.7	38
1472	WWW BR6000W	3970 (4)	61.7	38
1480	APB W02AZ-228MT	2650 (32)	63.0	32
1481	APB W02GE-19-1	3420 (20)	63.7	31
1482	APB W02GE-19-6	3390 (23)	62.6	30
<u>TRITICALE</u>				
3097	TRICAL 105	3440 (17)	59.6	39
3143	TRICAL 96	3750 (7)	57.3	35
3156	RSI TRICAL 118	4270 (1)	59.0	37
3157	RSI TRICAL 116	3280 (25)	56.5	35
3158	RSI 00TV60147	4010 (2)	56.2	35
	MEAN	3520	61.9	35
	CV	12.5	0.7	5
	LSD (.05)	620	0.9	4

Numbers in parentheses indicate relative rank in column.

**TABLE 4. 2005 TULARE RAINFED BARLEY TEST**

Entry	Name	Yield (lbs/acre)	Test Wt (lbs/bu)	Plant Ht (in)
<u>CULTIVARS</u>				
603	UC 603	3670 (7)	51.6	29
816	MAX	3030 (21)	52.6	21
885	PATTI	3300 (19)	53.0	24
933	UC 933	3620 (10)	49.3	29
937	UC 937	3530 (12)	48.1	26
951	MELTAN	3850 (4)	55.7	28
969	UC 969	3520 (14)	50.6	27
1085	COMMANDER	3110 (20)	50.0	27
<u>ADVANCED LINES</u>				
1047	UCD PYT99 A-13	4100 (2)	50.3	26
1052	WWW BA8017	2910 (22)	52.7	20
1090	UCD PYT01 C6	3930 (3)	49.1	29
1095	23 IBYT 7	3620 (9)	50.2	28
1108	UCD C108	3580 (11)	48.9	30
1109	UCD C109	3410 (15)	47.6	26
1115	UCD C135	3850 (5)	49.8	29
1116	UCD C140	4120 (1)	49.0	30
1118	UCD C147	3710 (6)	48.3	30
1131	UCD YP03-9/16	3620 (8)	49.7	31
1132	UCD YP03-8/16	3300 (18)	49.9	29
1133	UCD YP03-9/9	3410 (16)	48.0	27
1134	UCD YP03-9/3	3520 (13)	50.7	28
1170	UCD 03YP5/13	3330 (17)	49.0	33
	MEAN	3550	50.2	27
	CV	18.2	1.1	11.1
	LSD (.05)	-	1.1	-

Numbers in parentheses indicate relative rank in column.

**Table 5. 2005 Kings Cereal Forage Test  
Steve Wright, Gene Askland, Carol Collar**

Varieties	Type	Grain Yield (lbs/a)	Forage Yield (green tons/a)	Stage of Harvest	Plant Ht. (in.)	Lodging (harvest)
<b>Summit</b>	Wheat	5660 (3)	25.55	Soft Dough	36.3	1.5
<b>Trical 96</b>	Triticale	7870 (2)	26.62	Soft Dough	36.5	1.3
<b>Trical 118</b>	Triticale	7940 (1)	30.15	Soft Dough	41.3	1.8
<b>Blanca Grande</b>	Wheat	4060 (4)	16.68	Soft Dough	39.0	6.5
<b>Super Dirkwin</b>	Wheat	1950 (6)	17.83	Soft Dough	38.5	4.0
<b>PR 1404</b>	Wheat	3590 (5)	19.61	Milk	40.5	4.0
<b>Mean</b>		5180				3.2
<b>CV</b>		8.0				23.3
<b>LSD (.05)</b>		630				1.1

**Table 6. 2004 Small Grain Silage Trial - Plot Size 20 X 1200' 4 Reps  
Steve Wright, Gene Askland, Carol Collar**

Varieties	Type	Tons/A at 70% H <sub>2</sub> O	% H <sub>2</sub> O at Harvest	% Lodging at Harvest)
<b>Summit</b>	Hard Red Wheat	19.94	64.4	0
<b>Stellar</b>	Hard Red Wheat	18.64	62.4	0
<b>Plata</b>	Hard White	21.6	68.1	0
<b>Trical 96</b>	Triticale	20.03	66.5	0
<b>Crown</b>	Durum	19.76	70.9	40
<b>Blend</b>	HR, White, Triticale	19.42	63.6	0

The forage yields above are based on as cut basis so moisture was not adjusted.

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