

“Wheat Variety Trials”

Trent Potter, SAHRI, 08 8762 9132, trent.potter@sa.gov.au

Rob Wheeler, SAHRI

Key Outcomes:

- Look at stripe rust scores and yield with and without stripe rust control
- Barley Yellow Dwarf Virus (BYDV) had a large effect on yield at many sites

Trial Objectives: To assess the yield of a range of wheat varieties at several sites

Trial Duration: 2010-11

Location: Various

Farmer Co-operators: Kim Makin, Ross Lutt,

Soil Type: Various

Peter & Jim McLellan, Lachie Seears,

Paddock History: Various

Martin & Kirsty Flower,

James & Chris Gilbertson

Monthly Rainfall:

Rain	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	April-Oct	Total
Kath, 2010	15.6	31.3	28.4	55.2	32.4	38.8	40.4	96.2	57	18.8	27.4	137.8	338.8	579.3
Sherwood, 2010	13	33.5	33.5	58.5	33.5	40.5	31.5	113	57.5	30	90	105	364.5	599.5
Wolseley, 2010	14	28.8	26.8	70.8	26.8	35.6	39.8	111	45.8	27	59.6	129.6	356.8	615.6
Frances, 2010	14.4	40.8	26.8	60.6	31.6	57.6	43.8	119.2	55.4	29.8	29.2	92.2	398	601.4
Conmurra, 2010	18	35.2	24.8	65.2	42	77.4	48.8	146.8	74.8	29.4	27.4	130.2	484.4	720
Millicent, 2010	16	30.8	23.2	89.2	44.4	74	76.2	192.8	83.8	22.4	51.4	105.2	582.8	809.4

Yield Limiting Factors: Dry September and October.

BYDV at Conmurra, Millicent and Frances.

Type of Trial: Replicated Plot Trial

Trial Design: 8m Long Plots x 8 Rows at 15cm Spacings (1.2m);
3 or 5 Replicates (depending on site)

Treatments:

All trials were sown with small plot equipment and managed as per usual agronomic treatment. All sites were sprayed with fungicides to control any stripe rust. Grain yield was determined by machine harvest.

Rankings of wheat varieties within the individual trials at Frances, Conmurra and Millicent were determined and detailed in Table 6.

Table 1: 2010 Upper South East Wheat Trials and Long Term Results

Variety	2010 (% site average)			Long Term average across sites (2004-2010)		
	Keith	Sherwood	Wolseley	Yield (T/ha)	as %site av.	# trials
AGT Katana		100	108	3.94	104	10
Aze		90	109	3.84	101	16
Barham		92	76	3.7	97	13
Catalina		94	93	3.8	100	11
Clearfield Jnz		103	102	3.69	97	8
Cornell		99	91	3.89	103	13
Derrimut	VARIABLE	99	108	3.93	104	13
España	NO	95	101	3.95	104	11
Estoc		105	107	3.91	103	8
Frame	VALID	93	79	3.7	97	16
Gladius	RESULT	86	95	3.95	104	13
Guardian		104	108	4.01	106	11
Justica CL PLUS		108	106			
Kord CL PLUS		83	88			
Lincoln		100	93	3.89	102	10
Mace		111	119	4.1	108	5
Magenta		96	96	3.86	102	11
Pealoe		99	101	3.93	103	13
Pugsley		105	89	3.93	104	16
Scout		114	109	4.09	108	5
Wyalkatchem		109	122	3.99	105	16
Yitpi		100	96	3.89	103	16
Young		102	101	3.87	102	16

Site av. (Yld t/ha)	5.91	4.58	3.79
LSD (%)	7	7	

	Keith	Sherwood	Wolseley
Date sown	31-May	17-May	17-May
Soil Type	L	delved S	C
A-O Rain (2010)	339	365	357
pHwater	8.2	7.2	8.3
Site stresses		wg	

Abbreviations**Soil type:**

S=sand, L=loam, C=clay,
 Li=light, M=medium, H=heavy,
 F=fine

Site stress factors:

e=emergence(eg. mice),
 lr=leaf rust,
 r=rhizoctonia,
 wg=grassy weeds,

**Data source: NVT & SARDIRODC long term data based on weighted analysis of sites,
 2000-2010; Data analysis by GRDC funded National Statistics Group.**

Table 2: Connamra Wheat Variety Trial 2010

Variety	Sprayed replicated trial		Single rep, unsprayed	
	Yield (kg/ha)	% site mean	kg/ha	Stripe rust
AGT-Scythe	5794	82	2278	6
Aze	5723	81	4056	2
Barham	5432	77	5371	5
Beaufort	8466	119	8547	1
Bogong	10280	145	8315	Mix 1-8
Bolax	8028	113	7843	1
Bowie	5774	81	2306	7
Brennan	6578	93	6732	1
Bullet	5501	78	1519	6
Catalina	5905	83	1926	5-6
Chara	7521	106	5584	5
Cl-Janz	7059	99	4528	6
Correll	5842	82	2908	4
Derrimut	7663	108	1954	6
EGA-Gregory	7639	108	6213	1
EGA-Kidman	6190	87	3982	5
Einstein	8244	116	8371	1
Espada	7527	106	6982	4
Frame	5809	82	3297	6
Gascongne	8615	121	7630	1
Gladius	7881	111	5815	4
Guardian	7851	111	5723	5-6
HRZ02.0014	7985	113	7890	3
HRZ03.0058	8548	120	6510	1
HRZ03.0065	7713	109	7501	3-4
HRZ03.0069	8102	114	7667	mix 4
HRZ03.0086	6418	90	6899	1
IGW3073	9222	130	8686	3
IGW3097	5818	82	1130	9
IGW3119	8151	115	6343	3-4
Janz	7428	105	3102	mix
Krichauff	6734	95	1482	8
Lincoln	6748	95	7102	1
Mace	6835	96	3074	8
Mackellar	7476	105	6797	1
Magenta	7190	101	5176	mix 5/6
Peake	5788	82	3741	mix 4
Preston	9325	131	9047	1
Pugsley	6088	86	3065	8
Rend	7171	101	7084	1
Sentinel	8794	124	8751	1
SDP-Revenue	7750	109	8547	1
Tennant	6335	89	6815	1
Wyallichem	7501	106	1537	7
Yenda	5208	73	824	9
Yitpi	5382	76	3769	4-5
Young	4662	66	2148	6

Site mean (kg/ha)	7100
CV%	8.195
Isd(0.05)	966.9

Disease Scale:

1 = R, 3 = MR, 5 = MS, 7 = S, 9 = VS

Table 3: Commurra Wheat Variety Trial 2010, Grain Quality

Variety	1000 grain wt	Screenings	Test Weight	Protein
AGT-Scythe	34.12	1.77	73.68	15.2
Aze	37.78	1.3	72.85	16.5
Barham	30.8	2.64	70.63	12.9
Beaufort	36.3	3.1	72.14	14.1
Bogong	43.36	2.01	70.76	12
Bolac	29.52	4.75	73.83	13.5
Bowie	34.26	1.8	69.12	12.9
Brennan	37.68	1.87	75.3	14.2
Bullet	34.46	1.44	73.87	15.3
Catalina	41.1	1.25	74.7	14.8
Chara	33.88	2.54	72.61	13.8
CL-Janz	39.92	1.32	75.2	14.3
Correll	36.66	3.34	71.94	14.2
Dennit	32.3	2.21	74.78	13.9
EGA-Gregory	38.96	2.52	75.7	13.5
EGA-Kulman	36.66	2.16	75.39	14.2
Einstien	32.7	2.26	70.4	11
Espeada	37.64	1.27	72.72	14.5
Frame	34.9	3.65	73.86	14.4
Gasgogne	43.26	1.97	78.13	14.4
Gladius	38.18	2.67	72.34	15.4
Guardian	35.54	2.55	75.92	13.3
HRZ02.0014	42.66	1.03	76.22	13.8
HRZ03.0058	36.78	1.43	77.19	13.4
HRZ03.0065	32.62	5.64	74.24	13.9
HRZ03.0069	30.6	4.99	72.28	13.6
HRZ03.0086	34.14	3.21	74.2	14.2
IGW3073	39.58	1.88	77.22	12.7
IGW3097	47.62	0.33	73.02	17.5
IGW3119	44.7	1.23	76.78	14.1
Janz	33.18	3.9	74.81	14
Krichauff	33.8	2.01	72.51	14.2
Lincoln	41.82	0.77	76.68	13.1
Mace	39.46	1.56	75.65	14.5
MacKellar	33.38	4.83	73.07	12.7
Magenta	39.18	3.49	75.09	14.2
Peake	36.94	2.02	74.72	14.7
Preston	36.6	2.32	72.8	13.4
Puglsey	30.44	5.12	73.2	14.2
Rurid	35.96	1.07	72.16	13.1
Sentinel	42.2	1.78	73.85	13.1
SOB-Revenue	36.84	3	72.07	12.7
Tennant	42.22	0.57	71.46	13.4
Wyalkatchem	44.84	0.84	76.01	14.8
Yenda	25.18	8.4	67.13	14.2
Yitpi	36.54	3.78	73.72	13.5
Young	32.42	2.7	74.84	15.6

Table 4: Frances Wheat Variety Yield and Grain Quality Trial 2010

Variety	Yield (kg/ha)	% site mean	1000 grain wt	Screenings	Test Weight	Protein
IGW3073	6673	123	39.94	0.89	77.35	11.3
Preston	6636	122	38.14	1.17	74.51	12.1
IGW3119	6469	119	44.88	0.67	77.38	12
Bogong	6281	116	41.06	2.63	70.95	10.7
Denimut	6226	115	34.22	0.68	77.35	11.7
Beaufort	6168	114	35.98	3.59	73.09	11.5
AGT-Scythe	6011	111	36.24	1.69	76.23	12
Guardian	6036	111	37.34	1	76.9	12
MacKellar	6025	111	33.88	4.15	75.42	10.9
Pugsley	5990	111	37.28	1.3	76.85	12
Bullet	5945	110	36.5	1.19	77.62	12.4
Young	5946	110	34.84	0.55	77.44	12.3
Chara	5864	108	34.76	1.09	75.14	12.1
CL-Janz	5853	108	38.9	0.13	76.2	12.5
Magenta	5799	107	39.22	1.69	76.89	12.5
Peake2	5816	107	37.3	1.05	76.66	12.1
Bolac	5755	106	30.52	1.67	74.8	12
SQP-Revenue	5751	106	35.88	2.71	74.83	11.3
Wyalkatchem	5729	106	46.48	0.12	77.41	14.3
Janz	5708	105	36.1	0.45	76.7	12.4
Ruid	5673	105	36.44	0.44	73.31	11.2
Mace	5585	103	43.06	0.86	77.44	12.9
Yenda	5559	103	33.44	1.19	73.86	11.6
Gascoigne	5532	102	40.6	1.22	77.98	13
Peake1	5497	101	35.42	1.53	76.31	12.5
Krichauff	5387	99	34.74	0.78	76.53	13.5
Espada	5300	98	39.42	0.08	74.49	13.2
Lincoln	5329	98	39.76	1.09	77.14	12.4
Yitpi	5312	98	40.08	1.77	75.81	11.9
Excalibur	5200	96	37.74	1.32	74.86	13
Frame	5114	94	39.28	2.86	76.37	11.9
Catalina	4878	90	40.24	0.9	76.96	13.3
Aze	4700	87	40.06	0.03	75.05	14.1
Correll	4720	87	40.34	1.43	73.93	12.6
Gladius	4650	86	42.94	0.73	74.97	13.7
Sentinel	4612	85	41.96	0.41	74.54	12.5
Barham	4511	83	35.32	0.84	73.71	12
Brennan	4455	82	37.2	1.97	78.22	12.7
Bowie	4386	81	35.78	1.23	72.97	12.3
EGA-Gregory	4409	81	40.58	0.9	76.95	12.7
Tennant	4308	80	40.92	1.65	73.78	12
EGA-Kilmarnock	4095	76	35.64	1.08	77.11	13.1
IGW3097	3201	59	50.32	0.1	75.33	17.9

Site mean (kg/ha)	5421
CV%	4.47
Isd(0.05)	408.7

Table 5: Millicent 2010 Wheat Variety Yield and Grain Quality Trial

Variety	Yield (kg/ha)	% site mean	1000 grain wt	Screenings	Test Weight	Protein
IGW3119	8724	128	46.74	0.79	75.49	11.8
Sentinel	8705	127	47.34	0.6	75.21	12
SQP-Revenue	8342	122	42.32	3.04	72.17	10.7
Casquige	8174	120	47.44	0.66	76.72	12.2
Lincoln	8228	120	47	1.19	76.93	11.5
Bogong (trit)	7979	117	49.62	0.61	71.44	10.8
HR203.0065	7945	116	35.48	1.71	74.65	10.9
IGW3079	7685	112	45.48	0.27	77.54	11.4
Beaufort	7506	110	38.76	1.85	70.63	11.4
Magenta	7545	110	44.76	1.6	75.06	12.3
Preston	7551	110	39.86	5.85	72.44	10.7
Bobax	7477	109	35.56	2.95	75.52	12.7
Espada	7436	109	46.14	0.6	73.79	13.2
HR202.0014	7466	109	45.32	0.7	76.91	12.3
HR203.0058	7287	107	38.16	0.73	76.72	12.2
Guardian	7237	106	39.36	2.27	76.06	12.1
HR203.0069	7227	106	38.22	2.98	73.52	11.8
MacDelar	7249	106	37.4	2.78	70.74	11.4
HR203.0086	7173	105	44.44	1.04	75.03	11.2
Firestein	7132	104	34.52	1.57	71.67	10.7
Rudd	7121	104	42.88	0.1	70.56	10.8
Aze	7042	103	47.7	8.04	73.87	13.5
Brennan	7021	103	43.66	0.72	75.52	12
HR206.2489	7025	103	38.26	1.06	77.67	12
Tennant	7043	103	44.98	1.21	71.54	11
Chara	6964	102	39.56	2.13	74.24	12.3
Frame	6942	102	45.5	1.65	75.62	11.8
HR206.2534	6952	102	49.36	0.36	76.58	11.2
Puglsey	6857	100	44.26	0.48	75.7	11.4
Barham	6668	98	41.9	0.2	73.06	11.4
Janz	6695	98	39.14	1.57	75.5	12.7
Correll	6532	96	47.52	1.36	73.37	12.6
Yitpi	6594	96	43.38	1.28	76.16	11.9
Young	6541	96	34.22	2.94	75.24	12.5
Bullet	6525	95	36.58	1.63	74.22	12.6
CL-Janez	6500	95	44.14	0.62	74.91	12.8
Derrimut	6442	94	36.98	0.5	74.36	12.5
Cladina	6368	93	46.64	1.07	74.62	12.9
Peake	6337	93	39.82	1.57	74.48	13.1
Catalina	6233	91	42.28	1.65	76.29	13.4
EGA-Gregory	6237	91	45.62	0.86	76.83	12.2
AGT-Scythe	6160	90	38.88	1.05	70.48	13.6
Excalibur	6135	90	44.28	2.21	72.46	12.8
Wyallichem	6165	90	41.94	1.23	72.56	13.9
HR206.2480	6056	89	40.66	0.6	75.93	11.7
Mace	6030	88	39.52	2.06	74.33	12.9
HR206.2551	5781	85	33.84	2.84	73.35	11.3
Erichauff	5032	74	34.4	1.85	71.98	13
Bowie	4971	73	39.26	1.28	69.92	11.9
Yenda	4954	72	30.6	4.21	68.4	12
IGW3097	4833	71	43.68	0.35	73.08	14.7
EGA-Richman	4798	70	39.5	1.34	76.08	13.6

Site mean 6843

CV% 3.122

lsd(0.05) 474.9

Table 6: Rankings of Wheat Varieties in South East Trials 2007-2010

Variety	Millicent				Conmurra				Frances			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
AGT-Scythe	17	13	14	42	49	17	27	38	25	11	14	8
Anzurok	4	25			25	39			55	38		
Annuello	14	28			34	9			3	8		
Aze	50	20	41	22	56	15	28	41	29	5	31	33
Barham			40	30			19	43			22	36
Beaufort	10		2	10			1	6	46		5	5
Bolac	25	16	27	11	21	32	33	10	21	21	16	16
Bowie			42	48			11	40			18	39
Brennan	57	14	34	24	23	49	35	29	56	36	36	37
Bullett			12	34			10	42			2	11
Camm	18	3			37	38			18	28	28	
Carinya	44	38			43	21			32	24	10	
Catalina			28	40			15	34			17	31
Chara	6	46	5	25	18	13	7	19	10	9	23	12
Cleanfield-Janz	19	12	30	35	39	31	24	25	33	29	4	13
Cornell	31	24	32	33	29	51	20	35	30	31	39	32
Derrinut	35	1	17	36	27	29	18	16	8	13		4
EGA-Gregory	51	37	43	39	45	46	37	17	44	22	27	38
EGA-Wentworth	42	44			46	7			6	14		
Einstein				19				7				
Elison	13	8			14	42			45	33		
Espeada	20	17	6	13	32	19	17	18	17	1	3	28
Excalibur	16	2	35	43	47	30	8		36	23	32	29
Frame	49	35	36	27	31	45	29	37	39	18	6	30
Frelon	3	18			9	24			49	35		23
Gascoigne			20	5			16	4			33	
GBA-Ruby	53	4	46		30	33	25		22	12	26	
GBA-Sapphire	39	15			44	25			13	26		
Giles	15	26			15	28			12	7		
Glades	41	10	11	37	50	40	21	12	4	2	20	34
Guardian	45	34	21	16	8	5	22	13	2	6	11	6
H46	52	11	10		51	3	30		28	16	15	
Janz	26	31	31	29	38	47	6	22	23	4	12	
Krichauff			29	47			32	28			30	25
Kulori	46	19			33	53			27	27		
Lincoln			38	4			12	27			9	26
Mace				45				26				21
MacKellar	11	30	9	15	2	1	38	21	48	37	38	7
Magenta			26	9			4	23			13	15
Peake	54	45	39	38	54	23	23	39	1	19	19	20
Preston			7	8			2	1			1	2
Pugsley	9	23	22	28	22	48	3	33	24	10	7	9
SQP-Revenue	1	6	3	2	6	27	5	14	53		29	17
Sentinel	8	42	18	3	16	52	34	3	31	25	34	35
Wyalkatchem	24	29	13	41	42	2	26	20	11	3	24	18
Yitpi	29	41	33	31	24	8	14	44	16	17	21	27
Young	34	22	19	32	35	26	13	46	19	20	25	10