

# **R**EGIONAL SITE WHEAT VARIETY TRIAL RESULTS 2006

**Ken Motley, NSW DPI Forbes**  
**Rachael Whitworth, NSW DPI Griffith**

## **Variety trials and tribulations**

4 early sown and 7 main season wheat variety trials were sown on the CWFS regional sites in 2006. This represents a significant effort on the part of CWFS to provide members with local data on the performance of new wheat varieties. Unfortunately severe drought conditions meant that out of these trials only 2 of the early sown and 3 of the main season trials were harvested. Rainfall figures at the harvested sites were very low with typically less than 120mm falling in the May to October period. The results from the trials that could be harvested are presented and discussed below.

When looking at the results, be sure also to note the LSD (least significant difference) figure. Varieties within this yield range of each other are not statistically different.

## **Early sown variety results**

The early sown wheat variety trial results from Rankin Springs and Wurrinya are presented in table 1. These trials were not sown early as the season did not break until early June. The term “early sown” represents the ideal sowing window for these types of wheats, rather than the actual sowing time of these trials. In a perfect world these trials would have been sown in late April. The results from the late sowing of these trials showed that EGA Gregory, Petrie and Strzelecki were consistently the top three performers at the Rankin Springs and Wurrinya in 2006. In terms of stripe rust (SR) resistance EGA Gregory and Strzelecki are top grade, having good resistance to all known SR strains, as well as resistance to the recently discovered Yr17 SR pathotype. Strzelecki is an older variety released in 2000 and has been widely grown in the CW region since then. EGA Gregory is a newer variety having been released in 2004 with a provisional grain quality classification of AH in the central and southern silo groups. It has been given an APH quality classification in the northern silo group. It is encouraging to see the varieties that have robust SR resistance yield well locally. Long term NSW DPI trial data shows they have also been strong performers. Petrie is susceptible to SR and as such it is not a suggested variety.

Varieties such as Whistler, EGA Wedgetail and Marombi have a longer maturity than EGA Gregory and Strzelecki and would have been disadvantaged in such a dry finish. This may account for their relatively poorer performance in last years CWFS trials as compared to the NSW DPI long term data.

The newly released variety Sunzell was not included in the CWFS early sow variety trials, but will be in future as it fits into this sowing category. It was included in the main season variety trial (Table 2) where it performed reasonably well against varieties with a distinct maturity advantage in the dry year. Sunzell has an APH quality classification for the southern silo group and AH for the central and northern silo groups (similar quality classification as EGA\_Wedgetail).

**Table 1. Early sown wheat variety results at Rankin Springs and Wirrinya CWFS regional sites 2006. NSW DPI regional results have been added for comparison.**

Variety	Rankins Springs				Wirrinya				NSW DPI Regional Results	
									2000 - 2005	
	Yield		Protein	Screen	Yield		Protein	Screen	Silo Group South (West)	
	T/ha	%	%	%	T/ha	%	%	%	%	
EGA_GREGORY	0.98	141	13.5	3.1	0.60	185	13.6	7.7	105 (21)	
EGA_WEDGETAIL	0.68	98	15.2	2.0	0.14	44	14.3	11.0	99 (21)	
GILES	0.82	118	13.6	3.3	0.49	153	13.0	8.0	106 (32)	
JANZ	0.92	133	14.8	3.3	0.39	121	13.0	6.8		
MAROMBI	0.69	100	13.6	2.5	0.29	89	12.9	11.0	102 (6)	
PETRIE	1.00	145	14.7	4.8	0.50	155	14.3	8.6		
ROSELLA	0.64	93	14.8	1.7	0.22	67	15.3	5.0	98 (36)	
STRZELECKI	0.97	140	14.0	3.9	0.54	169	13.2	12.5	103 (33)	
WHISTLER	0.72	105	14.5	3.4	0.27	85	14.3	11.8	103 (37)	
WYLAH	0.69	100	14.9	1.9	0.32	100	14.6	4.9	100 (37)	
LSD	0.18	25	0.7	0.8	0.15	48	0.6	4.9		
%CV		12.2	2.5	12.7	REML analysis					
Cooperator	Michael & Larissa Pfitzner				Matt and John Duff					
2005 history	Fallow				Canola					
Sow Date	04-Jul-06				02-Jun-06					
Fertiliser	60kg/ha MAP				80kg/ha MAP					

## Main season variety results.

The main season trial results are presented in table 2. These trials contained released and possible varieties to be released.

H46 was the highest yielding commercial variety at all three sites. The statistic analysis shows H46 was not significantly different than H45 in yield. Both H45 and H46 were amongst the shortest maturing varieties in these trials and it is no surprise that they were consistently amongst the top yielding varieties.

Ventura didn't perform as well as H46 in any of the CWFS sites in 2006. This is contrary to the long term DPI data which suggests Ventura has a yield potential equal to or better than H46. The relatively poor performance of Ventura in the CWFS 2006 trials compared to H45 and H46 may have been as a result of small maturity differences. Ventura is a day or two longer in maturity than H45 and H46 and in a severe season such as 2006 this small difference could have had an impact on yield.

Such low yielding trials need to be interpreted carefully. For example the yield benefit from H45 and H46 over Ventura looked relatively large when expressed as a percentage but was small in terms of actually quantity. The other important factor to consider is that the long term NSW DPI data comes from trials that did not have any chemical SR control applied. In a wetter year when SR is a problem you would expect Ventura to out yield H46 and leave H45 well behind in the absence of a chemical SR control program.

## **Possible new releases.**

It was a similar story with the possible new release varieties included in these trials. WW12410 looked very impressive in all three trials yielding equally as well as H45 and H46. WW12410 is reported to have a similar maturity to H45 and H46. It was bred by NSW DPI at Wagga and is expected to be released with small quantities of seed available in 2008. NSW DPI data shows it has been high yielding in southern NSW. It is awaiting final quality classification, but is expected to be either APW or possibly AH. Its SR resistance is based on adult plant resistance genes and it is not expected to be susceptible to the recently discovered Yr17 SR pathotype.

The short maturity line LBP423 out of the Longreach Plant Breeding program also performed well. LBP423 is reported to have a short maturity similar to H45 and so it is not surprising that it looked the best of the LBP lines.

The one variety that didn't seem to benefit from its short maturity was Sunstate. Despite having a short maturity Sunstate yielded poorly at all three sites. Long term trial data has shown Sunstate to be a lower yielding variety.

The new varieties Ellison and Carinya appeared to have performed reasonably well at all three sites. These varieties have a Janz type maturity. Experimental lines with Janz type maturities included C643 and SUN435D. C643 is reported to have improved rust resistance and higher yield than Janz, and also has similar grain quality to Janz with preliminary AH classification in S NSW. It is up for possible release in 2008. SUN435D has good rust resistance and maybe released in 2008. It has preliminary APW classification for northern NSW.

Privatisation of the breeding programs means information on the unreleased lines is difficult to obtain. The above comments on the unreleased varieties are based on a scant amount of information and should only be used as a guide to their likely features.

**Table 2. Main season wheat variety results at Rankin Springs, Wurrinya and Tottenham CWFS regional sites 2006. NSW DPI regional results have been added for comparison.**

Variety	Rankins Springs			Wurrinya			Tottenham			NSW DPI Regional Results
	Yield			Yield			Yield			2000 - 2005
	T/ha	%	Rank	T/ha	%	Rank	t/ha	%	Rank	Silo Group South (West)
Annuello	1.07	115	8	0.33	74	25	0.39	136	11	102 (23)
Arrivato	0.85	91	29	0.31	69	27	0.28	96	28	
Babbler	0.67	72	33	0.25	57	31	0.12	43	34	
Baxter	0.93	100	24	0.59	134	4	0.43	149	7	
Bowerbird	1.06	115	9	0.33	75	24	0.26	88	31	
C643	1.01	108	15	0.47	106	9	0.43	149	8	
Carinya	1.02	110	12	0.33	75	23	0.39	136	12	106 (20)
Chara	0.85	92	27	0.27	62	29	0.31	109	24	
CLF Janz	0.94	102	22	0.49	111	8	0.38	131	15	101 (10)
Cunningham	0.85	91	28	0.38	87	19	0.32	111	22	
Diamondbird	0.98	105	18	0.26	59	30	0.37	127	17	
Drysdale	0.98	106	17	0.37	84	20	0.44	152	5	
EGA Bellaroi	0.64	69	34	0.21	47	33	0.12	42	35	
EGA Hume	0.89	96	26	0.28	62	28	0.32	110	23	
EGA Wentworth	1.10	119	5	0.43	98	16	0.25	87	32	103 (21)
EGA Wylie	1.06	114	10	0.56	127	7	0.44	151	6	
Ellison	0.97	105	20	0.41	92	17	0.41	140	10	105 (7)
GBA Ruby	1.01	108	14	0.44	99	13				103 (12)
GBA Sapphire	1.06	114	11	0.46	105	10	0.33	116	19	99 (18)
H45	1.17	126	2	0.59	133	5	0.46	158	4	
H46	1.20	129	1	0.68	154	2	0.46	159	3	102 (22)
Janz	0.93	100	23	0.44	100	12	0.29	100	27	100 (51)
Lang	0.77	82	31	0.34	76	22	0.14	47	33	99 (51)
LBP423	1.15	124	4	0.44	98	14	0.49	169	1	
LBP602	1.07	115	7	0.39	88	18	0.38	132	14	
LPB780	1.01	109	13				0.33	113	20	
Pugsley				0.64	144	3				106 (18)
Ruby							0.30	104	26	
Strzelecki	1.09	117	6	0.37	83	21	0.39	135	13	100 (37)
Sunzell	0.92	99	25	0.46	104	11	0.31	108	25	
SUN4320				0.13	29	34	0.41	142	9	
SUN435D	1.00	107	16	0.59	133	6				
Sunco	0.95	103	21				0.35	121	18	
Sunstate	0.83	90	30	0.24	53	32	0.27	94	30	
Sunvale	0.70	75	32	0.31	69	26	0.28	96	29	97 (26)
SW_Odiel							0.33	112	21	
Ventura	0.98	105	19	0.43	98	15	0.37	129	16	105 (19)
WW12410	1.16	125	3	0.71	160	1	0.48	166	2	
Average	0.97			0.41			0.34			
LSD	0.19	20		0.18	40		0.14	48		
%CV		11.1		REML analysis			REML analysis			
Cooperator	Michael & Larissa Pfitzner			Matt & John Duff			David and Pam Fishpool			
2005 history	Fallow			Canola						
Sow Date	04-Jul-06			22-Jun-06			28-Jun-06			
Fertiliser	60kg/ha MAP			80kg/ha MAP			75kg/ha Granuloc 12			

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