



Trojan delivers a surprise in 2014 wheat trials

By Rob Wheeler,
Leader, New Variety Agronomy, SARDI

The widely adapted wheat variety, Corack, which has dominated statewide wheat trials for several years running was just beaten by the new variety, Longreach Trojan when yields were averaged across all trials in 2014.

Another new variety, Cosmick, and the increasingly widely grown Mace, just trailed the two leading varieties.

These varieties were among 28 commercial varieties tested at 28 SARDI managed, National Wheat Variety Trial (NVT) sites across South Australia in 2014.

The trials, funded by GRDC, also tested a further 24 advanced lines from wheat breeding companies operating throughout Australia.

In a season of extremes, 2014 was characterised by excellent rains throughout autumn in most districts, prior to very wet conditions through early winter, followed by extremely dry August and spring conditions in all districts.

Overall annual rainfall was in the decile 4 to 7 range across most of cropping area of SA, slightly higher in the north east of Eyre Peninsula and almost the lowest on record, in large areas of the mid and lower South East.

Long periods of very cold temperatures during August and early September were experienced in many areas and resulted in the failure of 5 trials across the Northern Mallee and central and eastern Eyre Peninsula due to frost damage.

These were at Rudall, Kimba, Warrambo, Nangari and Wunkar, with results from these sites considered invalid for public release despite average yields ranging from 2.02 to 3.25 t/ha across these sites.

In spite of the cold winter, frosts and dry spring conditions, the remaining 23 valid trials all produced surprisingly good results, with grain yields across all sites averaging 3.11 t/ha, which was around 10% below the 5 year (2009-2013) average of 3.46 t/ha and the 3.44 t/ha achieved in 2013.

The individual site yields ranged from 0.57 t/ha at Mitchellville, to 4.79 t/ha at Paskeville, with all trials sown between May 6th and June 17th (Wolseley was resown due to early mice damage).

The majority of trials were sown relatively early, viz, prior to mid-May while very dry conditions in the South East prevented sowing much before the last week of May.



Rob Wheeler

The generally average winter temperatures and above average through to record winter rainfall across much of the State during June and July, favoured the prospects for record yielding crops and wheat fungal diseases.

However very dry conditions commencing in August and proactive disease control, saw little impact from stripe rust or any other disease in trials.

It must be reminded that wheat NVT's are managed for disease control, using up-front (Impact®) and

in-crop fungicides where diseases are detected and have the potential to cause significant yield losses.

Within many districts, well above average crop potential and dense crop canopies in mid-winter, were then subjected to severe frosts and extremely low rainfall events during spring.

Overall, the 2014 seasonal conditions tended to favour mid flowering and maturing varieties, a trend seen in many recent years.

Across all NVT's in SA, the mid to later flowering APW quality new variety, Longreach Trojan, produced the highest average yield of 3.39 t/ha across sites, just above Corack (3.37t/ha) and 2 to 3 percent above the leading AH varieties, Cosmick and Mace respectively.

Generally within each SA region, all of these top four varieties featured in the high rankings and jockeyed for top position although interestingly, Mace and Corack did not perform as well across central and upper Eyre Peninsula and were replaced by Cobra and Katana in the top four rankings.

Sensitivity to very cold temperature leading to lowered pollen production and viability has been implicated in the poorer performance of Wyalkatchem and the derivatives, Corack and Mace in some districts in 2014.

The new midseason flowering Intergrain variety, Cosmick, performed similar to Mace in most regions but was significantly lower ranked on Yorke Peninsula.

Many of these top yielding varieties were also among the highest yielding in 2011, 2012 and 2013 trials

Trailing the four leading varieties were Katana, Wyalkatchem, Scout, Cobra, Shield and Emu Rock, averaging 7 to 9 percent below Trojan respectively.

The commercially still popular varieties, Gladius, Axe, Correll and Yipti, averaged 11 to 14 percent below Trojan and again showed they are well outclassed for yield relative to newer varieties.



Scout has performed well in more recent and wetter seasons, but was again less dominant under drier spring rainfall conditions.

The new imidazolinone tolerant variety, Grenade^{CLPLUS}, continues to demonstrate that it is a good alternative to Justica^{CLPLUS} and Kord^{CLPLUS} with equal or superior yields in most situations, although yielding below Kord^{CLPLUS} in the Mallee in 2014. Grenade^{CLPLUS} also averaged 1.3 kg/hl higher test weights than Justica^{CLPLUS} and similar to Kord^{CLPLUS} on average in 2014.

Despite the low spring rainfall, trials produced surprisingly good grain quality at most sites.

The grain quality in 2014 wheat NVT's was generally similar to that produced in 2013. Across all sites, grain protein varied from 9.5 to 13.4 percent and averaged 11.4 percent, compared with 11.8 percent in 2013.

Test weights averaged 81.9 kg/hl, similar to the average of 82.5 kg/hl in 2013. No site was found to average below the new 76 kg/hl minimum specification for milling wheat, although test weight averages were low at highly stressed Keith and Mitchellville sites and provided some good varietal discrimination. Across all trial sites, grain screenings declined slightly from 2.7 percent in 2013 to 2.4 percent in 2014. Only two sites, Keith, and Conmurra produced average screenings above 5 percent, reflecting the extremely dry winter and spring conditions experienced in the South East.

Again this provided some varietal discrimination, although not greatly. In 2014 NVT grain samples, no black point, sprouted or white grain was observed.

Falling number tests were performed on a range of susceptible varieties from all trials and no sites fell below the 300 minimum standard.

Within trials, Cosmick joined with Corack and Mace to produce grain with relatively low protein while Trojan produced more acceptable protein levels for its high yield.

Corack, Mace and Scout have shown this characteristic in previous seasons also.

While these low grain proteins are mostly a direct result of high yields, higher nitrogen fertilization rates should be considered if growing these varieties for premium high protein grades.

Estoc continues to provide benchmark high test weights along with Trojan, while more moderate test weights were recorded within Cobra, Espada, Justica and Shield.

Correll, which in previous years has shown a propensity for low test weight, was again the lowest ranking variety along with the soft wheats, Barham and Orion.

Cosmick, Shield and Correll produced the highest average screenings across all sites although putting them in perspective they were only around one percent higher than the average of all varieties.

Perhaps of more concern with these varieties was the number of occasions where their screenings equal or exceeded 5%, with Cosmick recording 7 from 23 observations.

Durum wheat

Across the 6 central region durum NVT sites, average site yields were 3.75 t/ha, and 1.5 to 17.5 percent below the bread wheat site averages in the Mid North and Yorke Peninsula sites respectively.

Saintly and W1802 produced the highest average yields within the Mid North and Yorke Peninsula trials respectively, but Yawa joined these varieties with equal highest yields when averaged across all sites.

The newly released variety, DBA Aurora averaged 4 percent lower yield, resulting from lower performances at the two highest yielding sites, Turretfield and Paskeville.

While variety yield rankings were clearly impacted by the dry spring conditions, quality was also affected.

All 6 trials and all varieties exceeded minimum test weight specification but two sites failed to make DR1 for protein but did classify as DR2. As expected, the highest yielding varieties were graded DR2 at sites with average protein around 13 percent.

Discrimination of varieties for screenings was again good, given the dry spring test, but only the Wokurna site produced average screenings above the 5 percent DR1 limit.

The new variety Yawa continues to produce highest screenings and failed to meet DR1 at any site whilst the newest variety DBA Aurora, produced low average screenings similar to Tamaroi and made DR1 at all sites.

Only Caparoi and DBA Aurora made DR1 based on screenings at all sites and Caparoi produced the most consistent high quality grain, meeting DR1 standards based on protein and screenings at most sites.

The average, across sites, receival quality data is presented in tables within this report. ■

■ More information:

Rob Wheeler (08) 8303 9480, 0401 148 935

Rob.Wheeler@sa.gov.au



Wheat

Variety	SA Wheat Variety Yield Performance (2014 and long term, 2010-2014, expressed as a t/ha and % of site average yield)																				
	Yorke Peninsula					Mid North					Murray Malley										
	2014 (% site average)		Long Term average across sites(10-14)			2014 (% site average)		Long Term average across sites(10-14)			2014 (% site average)		Long Term average across sites(10-14)								
Paskeville	Urania	Wokurna	t/ha	%site av.	# trials	Boole Centre	Mintaro	Spalding	Turretfield	t/ha	%site av.	# trials	Geranium	Nangari	Palmer	Pinnaroo	Wanbi	Wunakar	t/ha	%site av.	# trials
AGT Katana	105	102	101	4.52	102	15	101	97	90	108	3.91	102	19	108	100	108	101		2.75	103	24
Axe	100	103	81	4.30	97	15	98	100	94	103	3.80	99	19	100	96	101	92		2.65	99	24
Barham	-	-	-	-	-	-	93	101	95	88	3.58	93	18	-	-	-	-				
Cobra	101	101	101	4.72	107	9	100	109	107	104	4.06	106	11	92	101	74	96		2.69	101	14
Corack	113	114	109	4.88	110	15	105	116	109	111	4.23	110	19	110	111	108	104		2.92	110	24
Correll	92	98	90	4.34	98	15	100	95	91	93	3.71	97	19	99	92	105	106		2.67	101	24
Cosmick	99	106	102	4.85	110	6	112	101	104	107	4.18	109	7	111	107	117	103		2.88	108	8
Emu Rock	107	104	92	4.59	104	15	97	99	87	111	4.01	105	19	106	105	93	83		2.83	106	24
Espada	101	97	108	4.55	103	15	99	90	98	104	3.88	101	19	86	102	100	97		2.80	105	24
Estoc	101	96	105	4.49	101	15	98	100	103	94	3.82	100	19	99	100	96	98		2.71	102	24
Gladius	94	99	108	4.40	99	15	95	89	96	98	3.79	99	19	106	90	96	100		2.68	101	24
Grenade ^{CPUS}	102	99	102	4.30	97	12	103	89	87	99	3.72	97	15	96	92	104	89		2.67	100	20
Harper	98	96	110	4.45	100	9	107	98	100	91	3.75	98	11	92	94	107	102		2.72	102	12
Impala	87	94	102	4.37	99	3	95	91	89	96	3.76	98	19	-	-	-	-				
Justica ^{CPUS}	99	95	105	4.32	98	15	101	90	87	93	3.72	97	19	100	92	81	104		2.63	99	24
Kord ^{CPUS}	97	98	101	4.38	99	12	99	89	93	97	3.76	98	15	109	101	108	101		2.72	102	18
Mace	109	110	118	4.86	110	15	103	109	115	109	4.16	109	19	107	105	106	102		2.94	111	24
Orion	-	-	-	-	-	-	93	100	94	82	3.52	92	19	-	-	-	-				
Phantom	94	98	89	4.39	99	15	96	103	94	97	3.79	99	19	88	93	74	103		2.62	98	24
Scout	100	98	99	4.61	104	15	108	104	108	102	4.01	105	19	89	100	102	100		2.73	103	24
Shield	101	102	97	4.47	101	12	106	99	98	100	3.87	101	15	94	101	112	112		2.77	104	20
Trojan	109	108	111	4.89	110	12	112	101	117	105	4.14	108	15	112	111	107	114		2.87	108	20
Wallup	100	97	81	4.46	101	15	94	100	99	103	3.90	102	19	-	-	-	-		2.61	98	11
Wyalkatchem	107	104	102	4.67	105	15	98	103	105	104	4.02	105	19	84	98	97	101		2.75	103	24
Yitpi	95	91	91	4.28	97	12	98	95	96	92	3.64	95	15	92	96	93	94		2.61	98	18
Gazelle	-	-	-	-	-	-	97	88	97	78				-	-	-	-				
Supreme	107	103	101				99	90	98	101				-	-	-	-				
Viking	86	89	78				94	105	95	91				-	-	-	-				
Zen	108	107	111				99	104	109	105				-	-	-	-				
Site av. yield t/ha	4.79	4.02	4.29	4.43	15	3.62	3.77	3.85	4.57	3.83	19	2.41	2.02	4.17	1.85	2.31	2.09		2.66	2.66	24
LSD (%)	5	4	8			6	7	6	4			16			9	13	9				
Date sown	12 May	13 May	8 May			8 May	19 May	14 May	22 May			12 May	7 May	9 May	16 May	8 May	6 May				
Soil Type	SCL	SCL	CFS			SCL/CLS	SCL/LC	CLS/ LFS/	LFS/			S/SCL	SCL	CL	LMC/GL	SCL/ SCL	SCL				
J-M / A-O rain mm	75/280	97/242	94/263			50/251	110/414	87/308	93/244			46/207	131/133	165/244	74/178	127/177	126/174				
pHwater	8.3	8.2	8.6			7.8	7.1	6	7.7			8.5	8.3	8.5	8.7	8.5	8.7				
previous crop	lentils	lentils	IMI			vetch	beans	IMI	peas			TTcanola	pasture	pasture	wheat	wheat	pasture				
Site stresses			f			dl,f	f,dl	f	bwyv, dl			r,dl	f	n	dl		f				

Abbreviations Soil type: S=sand, L=loam, C=clay, LI=light, M=medium, H=heavy, F=fine Rain recorded in mm, / = separates top soil from sub soil

Site stress factors: bwyv, = barley yellow dwarf virus, dl=dry post anthesis, f=frost, n=N deficiency early, f=rhizoctonia

Data analysis by GRDC funded National Statistics Group

Data source: NVT & SARDI/GRDC (long term data based on weighted analysis of sites, 2010-2014) *Durum varieties trialed separately and not completely valid to compare against bread wheats



Wheat

SA Wheat Variety Yield Performance (2014 and long term, 2010-2014, expressed as a t/ha and % of site average yield)													
Variety	Yorke Peninsula						Mid North						
	2014 (% site average)			Long Term average across sites(10-14)			2014 (% site average)				Long Term average across sites(10-14)		
	Paskeville	Urania	Wokurna	t/ha	as % site av.	# trials	Booloroo Centre	Mintaro	Spalding	Turretfield	t/ha	as % site av.	# trials
DURUMS													
Caparoi	99	97	89	4.13	104	12		99	103	94	4.07	100	13
DBA-Aurora	95	103	102	4.32	109	9		104	106	94	4.31	107	10
Hyperno	87	98	93	4.10	103	12		102	98	95	4.24	105	13
Saintly	107	106	86	4.31	109	12		109	103	108	4.22	104	13
Tamaroi	91	96	91	3.96	100	12		96	100	102	3.97	98	13
Tjilkuri	102	94	107	4.14	104	12		96	99	100	4.13	102	13
WID802	105	102	133	4.22	106	12		95	96	99	4.25	105	13
Yawa	106	107	117	4.35	110	12		105	97	96	4.41	109	13
Site av. yield t/ha	4.17	3.59	3.06	3.97	100	12		3.66	3.65	4.36	4.05	100	13
LSD (%)	3	5	5					8	9	6			
Date sown	12 May	13 May	8 May				8 May	19 May	14 May	22 May			
Soil Type	SCL	SCL	CFS				SCL/CLS	SCL/LC	CLS/FSC	LFSY/SCLFS			
J-M / A-O rain mm	75/280	97/242	94/263				50/251	110/414	87/308	93/244			
pHwater	8.3	8.2	8.6				7.8	7.1	6	7.7			
previous crop	lentils	lentils	IMI canola				vetch	beans	IMI canola	peas			
Site stresses			f				dl,f	f,dl	f	bwyv, dl			
Abbreviations													
Soil type: S=sand, L=loam, C=clay, Li=light, M=medium, H=heavy, F=fine,													
Rain recorded in mm, / = separates top soil from sub soil													
Site stress factors: bydv,= barley yellow dwarf virus, dl=dry post anthesis, f=frost, n=N deficiency early, r=rhizoctonia													
Data source: NVT & SARDI/GRDC (long term data based on weighted analysis of sites, 2010-2014) *Durum varieties trialed separately and not completely valid to compare against bread wheats													
Data analysis by GRDC funded National Statistics Group													



SA Wheat Variety	South East										Upper, Eastern and Western Eyre Peninsula										Lower Eyre Peninsula									
	2014 (as % site average)					Long Term average across sites(10-14)					2014 (as % site average)					Long Term average across sites(10-14)					2014 (as % site average)					Long Term average across sites(10-14)				
	Con-murra	Keith	Sherwood	Wolsley	t/ha	as %site av.	# trials	Minnipa	Pennington	Nunjikompita	Piednippie	Warrambo	Kimba	Mitchellville	t/ha	as %site av.	# trials	Cummins	Ruddall	Ungarra	Wanilla	t/ha	as %site av.	# trials						
AGT Katana	104	105	103	101	4.00	101	15	102	95	99	93			147	2.36	102	28	98		97	114	4.38	102	15						
Axe	79	108	100	99	3.84	97	15	97	96	94	97			142	2.27	98	28	97		99	88	4.20	98	15						
Barham	98	90	96	114	3.73	95	15	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Cobra	106	95	98	96	4.22	107	10	101	103	107	105			45	2.37	103	21	100		98	98	4.57	106	12						
Corack	106	121	117	109	4.28	108	15	97	94	105	92			72	2.50	108	28	104		109	117	4.68	109	15						
Correll	100	101	101	96	3.84	97	15	94	93	97	97			118	2.31	100	28	106		96	88	4.21	98	15						
Cosmick	106	105	115	108	4.35	110	4	100	107	109	109			114	2.48	107	9	111		108	114	4.74	110	6						
Emu Rock	88	109	100	110	4.04	102	15	98	97	93	99			172	2.40	104	28	94		105	105	4.43	103	15						
Espada	98	105	93	106	3.95	100	15	98	95	96	92			123	2.40	104	28	108		99	90	4.35	101	15						
Estoc	105	107	89	111	3.96	100	15	96	96	89	92			68	2.36	102	28	97		98	98	4.33	101	15						
Gladus	102	108	97	99	3.87	98	15	101	93	95	91			100	2.32	101	28	101		92	91	4.24	98	15						
Grenade ^{CLPlus}	98	102	97	102	3.77	95	13	99	99	93	96			91	2.30	99	21	101		95	86	4.14	96	12						
Harper	88	113	107	109	3.91	99	9	-	-	-	-			-	2.36	102	7	95		94	101	4.28	99	8						
Impala	87	94	100	103	3.91	99	15	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Justica ^{CLPlus}	100	99	89	100	3.84	97	15	91	90	90	90			101	2.29	99	28	89		96	95	4.20	97	15						
KordCLPlus	87	106	93	99	3.81	97	12	98	95	91	86			106	2.34	101	21	96		92	96	4.20	97	12						
Mace	99	120	110	106	4.21	107	15	106	104	94	94			65	2.51	109	28	93		109	113	4.62	107	15						
Orion	87	91	102	98	3.73	94	15	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Phantom	104	101	101	87	3.98	101	15	92	93	92	98			92	2.28	99	28	102		99	94	4.32	100	15						
Scout	110	96	103	99	4.18	106	15	98	93	93	91			91	2.36	102	28	103		102	97	4.53	105	15						
Shield	105	105	102	111	3.94	100	10	93	96	95	94			111	2.36	102	21	91		99	100	4.33	100	12						
Trojan	111	108	97	102	4.34	110	13	115	115	114	122			62	2.49	108	21	112		107	89	4.73	110	12						
Wallup	95	99	95	97	4.04	102	15	-	-	-	-			-	2.28	99	11	-		-	-	4.38	102	10						
Wyalkatchem	113	98	107	99	4.13	104	15	96	87	99	85			62	2.39	104	28	99		101	109	4.50	104	15						
Yitpi	94	109	96	105	3.81	96	12	95	94	90	92			72	2.28	99	21	95		92	89	4.16	97	11						
Adagio	106	53	83	43	-	-	-	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Gascoigne	94	92	97	91	-	-	-	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Gazelle	95	80	100	81	-	-	-	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Scenario	91	43	88	47	-	-	-	-	-	-	-			-	-	-	-	-		-	-	-	-	-						
Supreme	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-		102	108	4.45	103	5						
Viking	94	104	101	97	-	-	-	-	-	-	-			-	-	-	-	-		92	92	4.14	96	3						
Zen	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-		105	117	4.62	107	5						
Site av. yield t/ha	4.23	2.25	2.6	1.54	3.95	15	3.44	1.82	2.83	2.24	2.13	2.39	0.57	2.31	2.31	28	4.01	3.25	4.07	2.32	4.31	4.31	15							
LSD (%)	15	11	7	16			7	6	8	8			16							8	11									
Date Sown	30 May	30 May	28 May	17 June			13 May	14 May	14 May	15 May	6 May	6 May	7 May							12 May	15 May									
Soil Type	CL/ limestone	CL/ limestone	Clayed SL/C	grey C			L	SCL	LSCl	LSCl	SL	LS	LS						SL	SL	S									
J-M / A-O rain mm	88/411	40/229	37/249	35/237			102/290	86/198	122/218	124/258	116/231	88/224	72/126							121/315	83/399									
pH/water	7.9	8.1	6.6	6.9			8.6	8.9	8	9	8.6	6.7	8.8							6.2	6.2									
previous crop	beams	beams	beams	canola			medic	wheat	wheat	spistature	wheat	wheat	wheat							wheat	wheat									
Stress factors	de,dl	de,dl	de,dl	de,dl					r	r	f	f	cr,dl							f	f									

Abbreviations
Soil type: S=sand, L=loam, C=clay, LI=light, M=medium, H=heavy, F=fine
Site stress factors: cr=crown rot, de=dry pre anthesis, dl=post anthesis moisture stress, f=frost, n=N deficiency early, wa=waterlogging early
Data analysis by GRDC funded National Statistics Group **Data source:** SARDI/GRDC & NVT (long term data based on weighted analysis of sites, 2010-2014)



Wheat

2014 Wheat variety performance for grain protein (% at 11% moisture) across NVT sites (continued on page 7)

	Lower Eyre Peninsula			Mid North			South East				Yorke Peninsula							
	Cummins	Ungarra	Wanilla	Mean	Booloroo	Mintaro	Spalding	Turretfield	Mean	Connurra	Keith	Sherwood	Wolseley	Mean	Paskeville	Urania	Wokurna	Mean
Adagio										11.7	14.4	11.8	14.2	13.0				
AGT Katana	9.3	11.7	13.4	11.4	10.4	12.1	11.5	11.8	11.5	11.2	11.8	11.0	12.2	11.6	12.4	13.0	11.1	12.2
Axe	10.2	11.7	12.7	11.6	10.7	12.6	11.3	11.6	11.5	11.1	11.7	11.6	11.8	11.6	12.5	12.3	12.4	12.4
Barham					9.5	11.7	10.9	11.8	11.0	10.3	11.9	10.1	11.9	11.1				
Cobra	9.8	11.8	13.5	11.7	11.0	12.0	10.9	12.6	11.6	10.8	12.1	11.4	12.6	11.7	12.6	12.8	11.6	12.3
Corack	9.2	10.8	11.5	10.5	10.5	11.1	9.7	11.2	10.6	10.1	11.4	10.1	11.5	10.8	11.6	11.8	10.4	11.3
Correll	9.1	11.5	12.9	11.2	9.9	12.5	10.3	12.5	11.3	10.4	11.2	10.6	12.3	11.1	13.6	12.6	12.2	12.8
Cosmick	9.9	11.2	12.2	11.1	9.8	11.9	10.3	11.3	10.8	10.2	10.9	10.5	11.4	10.8	12.3	12.4	11.4	12.0
Emu Rock	9.8	11.3	13.3	11.5	11.4	11.9	11.1	12.0	11.6	11.0	11.5	11.2	11.7	11.4	12.4	12.6	11.8	12.3
Espada	9.5	11.7	13.0	11.4	10.6	12.5	10.9	12.3	11.6	11.0	12.3	11.6	12.5	11.9	14.0	13.2	12.2	13.1
Estoc	10.0	11.7	12.6	11.4	10.9	12.1	11.3	11.9	11.5	10.5	12.5	12.2	12.3	11.9	13.4	13.3	11.7	12.8
Gascoigne										11.6	12.2	11.4	12.2	11.8				
Gazelle					9.7	12.1	10.1	11.4	10.8	10.1	12.1	9.9	11.6	10.9				
Gladius	9.2	11.5	13.3	11.3	10.7	12.3	10.8	12.7	11.6	11.0	11.8	11.5	11.4	11.4	13.6	13.3	12.0	13.0
Grenade CL Plus	9.9	11.1	12.4	11.1	10.5	12.8	10.9	11.9	11.5	10.3	11.6	11.1	11.7	11.2	12.4	12.4	11.5	12.1
Harper	10.4	11.5	12.8	11.6	10.4	11.7	10.9	12.5	11.4	10.6	12.0	11.0	12.1	11.4	12.8	12.9	11.6	12.4
Impala					9.8	12.0	10.7	11.1	10.9	10.4	11.3	10.6	11.7	11.0	12.7	12.4	10.6	
Justica CL Plus	10.1	11.5	12.5	11.4	10.8	13.7	11.5	12.0	12.0	10.7	11.9	11.7	11.4	11.4	13.0	13.4	11.8	12.8
Kord CL Plus	9.3	11.5	12.8	11.2	10.5	11.9	10.9	11.6	11.2	11.0	11.8	11.2	12.5	11.6	13.2	13.0	11.7	12.6
Mace	8.5	10.9	11.7	10.4	10.4	11.4	9.8	10.5	10.5	10.1	11.0	10.6	12.5	11.1	11.7	11.7	10.7	11.4
Orion					10.1	11.0	10.3	11.3	10.7	9.8	11.9	9.3	12.1	10.8				
Phantom	8.6	11.0	12.9	10.9	10.3	11.7	10.6	12.1	11.2	10.3	11.3	11.3	13.7	11.7	12.8	12.4	12.2	12.5
Scenario										12.3	15.8	12.5	14.8	13.9				
Scout	9.1	10.9	11.9	10.7	10.3	12.0	10.7	10.9	11.0	10.1	11.7	10.6	12.5	11.2	12.5	12.4	11.5	12.1
Shield	10.5	11.2	12.1	11.3	10.0	12.5	10.9	12.4	11.4	10.9	12.3	11.0	11.8	11.5	12.2	12.6	11.0	12.0
Supreme	9.2	10.6	12.0	10.6	10.3	12.7	10.6	11.2	11.2						11.7	11.9	11.1	
Trojan	9.4	10.9	12.5	11.0	10.0	11.7	9.9	11.2	10.7	10.1	11.3	11.1	12.3	11.2	12.5	12.3	11.1	12.0
Viking	9.4	11.7	12.6	11.2	9.6	11.8	10.8	11.8	11.0	10.9	11.7	11.0	11.7	11.3	13.1	12.7	12.5	12.8
Wallup					11.7	11.8	11.0	13.0	11.9	10.9	13.0	11.6	13.1	12.1	12.7	12.7	12.9	
Wyalkatchem	10.0	11.7	12.5	11.4	11.3	11.9	10.2	11.4	11.2	10.4	11.3	10.9	12.5	11.3	12.4	12.4	11.7	12.1
Yippi	9.7	11.7	12.1	11.2	10.4	12.4	10.8	12.7	11.6	10.9	12.7	11.8	12.3	11.9	12.8	13.1	12.6	12.8
Zen	9.1	10.8	12.5	10.8	10.2	11.5	10.2	11.3	10.8						12.1	11.9	10.4	



Wheat

2014 Wheat variety performance for grain protein (% at 11% moisture) across NVT sites															
	Murray Mallee						Upper Eyre Peninsula						all sites		
	Geranium	Nangari	Palmer	Pimmaroo	Wanbi	Wunkar	Mean	Kimba	Minnipa	Mitchelville	Nunjikompita	Penong	Streaky Bay	Warrambo	Mean
Adagio															
AGT Katana	12.3		9.8	11.7	9.5		10.8		11.7	13.2	9.9	12.1	11.6		11.7
Axe	12.0		10.9	12.3	10.1		11.3		11.2	12.4	10.4	11.7	11.6		11.5
Barham															
Cobra	12.5		10.7	13.3	10.5		11.7		11.0	15.8	9.4	10.9	11.1		11.7
Corack	11.3		10.1	11.6	9.4		10.6		10.7	15.0	9.2	10.4	10.9		11.2
Correll	11.0		10.2	12.3	9.2		10.7		12.3	11.8	10.1	13.0	11.1		11.7
Cosmick	10.4		10.1	11.6	9.0		10.3		11.6	11.8	9.1	10.9	10.4		10.8
Emu Rock	12.5		10.7	12.5	10.0		11.4		11.6	12.1	10.1	11.6	11.0		11.3
Espada	13.2		10.5	12.8	10.4		11.7		12.1	13.3	10.3	12.4	11.7		11.9
Estoc	12.5		10.3	13.3	9.8		11.5		11.7	15.0	10.2	12.8	11.7		12.3
Gascoigne															
Gazelle															
Gladius	11.8		11.1	13.1	9.9		11.5		11.9	13.2	10.0	12.0	11.5		11.7
Grenade ^{CL Plus}	10.5		10.1	12.6	10.1		10.8		11.3	11.5	9.5	11.1	10.6		10.8
Harper	11.2		10.0	12.5	9.6		10.8								
Impala															
Justica ^{CL Plus}	12.2		10.5	13.5	10.1		11.6		12.0	13.1	10.5	12.0	11.2		11.8
Kord ^{CL Plus}	11.7		10.1	12.3	10.0		11.0		12.0	13.2	10.1	12.1	11.7		11.8
Mace	10.9		10.0	12.1	9.6		10.6		10.2	14.2	9.2	10.7	10.7		11.0
Orion															
Phantom	11.9		9.5	13.5	8.7		10.9		11.9	13.1	9.8	11.7	11.0		11.5
Scenario															
Scout	12.0		9.8	12.4	9.2		10.8		11.5	13.1	9.8	11.3	11.1		11.4
Shield	10.5		9.9	11.7	9.3		10.3		11.5	13.1	9.7	11.7	10.9		11.4
Supreme															
Trojan	10.9		9.6	12.1	9.0		10.4		11.5	13.9	9.3	11.4	10.4		11.3
Viking															
Wallup															
Wyalkatchem	11.2		10.8	12.6	10.1		11.2		11.1	14.6	9.5	11.1	10.7		11.4
Yitpi	11.2		10.3	14.0	10.3		11.5		12.5	15.1	10.2	12.5	11.4		12.4
Zen															



Wheat

2014 Wheat variety performance for test weight (kg/ha) across NVT sites (Continued on page 9)																				
	Lower Eyre Peninsula					Mid North					South East					Yorke Peninsula				
	Cummins	Ungarra	Wanilla	Mean		Booleeroo	Mintaro	Spalding	Turretfield	Mean	Commurra	Keith	Sherwood	Wolseley	Mean	Paskeville	Urania	Wokurna	Mean	
Adagio																				
AGT Katana	85.7	83.9	83.5	84.4	86.3	83.9	84.1	84.6	84.7	84.9	80.2	85.3	82.6	83.2	84.5	83.8	84.6	84.3		
Axe	84.0	82.1	79.4	81.8	84.9	82.0	82.8	81.7	82.8	83.3	79.1	84.3	82.5	82.3	82.1	82.1	82.0	82.1		
Barham					81.0	76.8	78.9	75.5	78.1	79.9	73.8	81.9	79.4	78.7						
Cobra	83.7	81.2	80.6	81.8	83.6	79.2	80.9	77.5	80.3	82.9	75.3	83.1	80.3	80.4	79.3	80.7	80.5	80.1		
Corack	84.1	82.7	81.1	82.6	85.7	82.2	82.4	81.5	83.0	83.2	77.9	84.1	82.8	82.0	81.6	82.5	83.3	82.5		
Correll	82.0	79.9	77.8	79.9	82.1	79.7	81.0	77.7	80.1	80.7	77.4	83.4	77.4	79.7	77.7	79.5	77.1	78.1		
Cosmick	83.5	81.4	80.3	81.7	84.4	80.3	81.8	81.3	82.0	84.3	77.6	83.4	79.4	81.2	80.8	81.1	80.9	80.9		
Emu Rock	84.6	82.5	79.3	82.2	84.8	82.4	81.8	82.0	82.7	83.6	77.9	82.7	81.0	81.3	82.0	81.7	82.5	82.1		
Espada	81.9	79.6	80.3	80.6	82.7	79.4	81.4	78.7	80.5	81.9	77.5	82.3	79.4	80.3	77.9	80.1	80.3	79.5		
Estoc	85.9	84.2	83.8	84.6	85.8	84.4	84.6	84.5	84.8	85.6	80.8	84.1	82.9	83.3	83.4	83.6	84.2	83.7		
Gascoigne										83.0	78.7	84.4	81.0	81.8						
Gazelle					80.6	76.9	79.4	75.3	78.1	80.4	73.4	81.7	80.8	79.1						
Gladius	83.0	80.6	79.3	81.0	83.5	80.7	82.3	80.3	81.7	82.9	79.8	83.2	81.5	81.9	80.2	81.0	81.3	80.8		
Grenade CL Plus	83.2	81.6	81.2	82.0	83.8	80.4	81.6	80.4	81.5	83.4	79.1	83.3	80.9	81.7	81.6	81.6	81.7	81.6		
Harper	83.8	82.5	82.1	82.8	85.0	82.6	82.7	80.0	82.6	83.3	77.7	84.4	82.0	81.9	81.6	81.5	82.2	81.8		
Impala					85.6	81.6	82.3	81.4	82.7	83.9	78.4	84.1	81.3	81.9	79.1	78.2	83.6			
Justica CL Plus	81.9	80.4	79.2	80.5	82.6	76.0	79.8	80.4	79.7	81.9	76.2	82.3	79.7	80.0	78.9	79.1	79.7	79.2		
Kord CL Plus	82.8	80.8	79.3	80.9	83.9	81.3	81.9	81.1	82.1	81.8	78.3	83.4	80.9	81.1	79.3	80.8	81.4	80.5		
Mace	83.0	82.7	81.6	82.4	84.6	81.3	82.7	82.6	82.8	82.2	79.2	84.4	81.1	81.7	81.7	82.5	83.4	82.5		
Orion					78.1	74.5	76.4	72.5	75.4	76.6	70.5	79.7	77.2	76.0						
Phantom	83.9	80.6	80.6	81.7	83.7	81.7	82.5	79.1	81.8	84.1	78.3	83.3	79.8	81.4	79.0	79.9	77.5	78.8		
Scenario										78.8	74.9	77.4	76.7	77.0						
Scout	85.3	83.5	81.8	83.6	85.3	84.1	84.1	83.7	84.3	84.3	80.1	85.7	81.6	82.9	81.8	82.6	82.1	82.2		
Shield	82.5	81.4	79.9	81.3	84.0	79.8	81.4	78.5	80.9	82.0	75.5	83.3	80.1	80.2	80.3	80.5	79.8	80.2		
Supreme	84.3	82.6	81.0	82.6	84.3	78.7	81.9	81.3	81.6						82.6	81.8	81.8			
Trojan	85.1	83.0	81.8	83.3	85.8	84.3	84.3	82.0	84.1	84.4	81.8	85.2	82.3	83.4	80.6	81.8	81.3	81.2		
Viking	85.2	82.8	83.3	83.8	86.7	83.6	83.8	80.9	83.7	84.2	80.6	84.4	82.7	83.0	80.4	82.1	80.0	80.8		
Wallup					85.1	83.1	82.9	79.4	82.6	83.5	78.5	83.8	81.2	81.8	81.5	81.8	81.0			
Wyalkatchem	83.9	82.3	81.7	82.6	84.9	82.1	81.9	81.8	82.7	83.4	78.0	83.8	80.3	81.4	81.6	82.5	82.2	82.1		
Yitpi	83.5	82.6	81.9	82.6	83.6	82.2	83.1	78.6	81.9	82.6	78.7	83.7	81.3	81.6	81.7	81.2	80.0	81.0		
Zen	83.4	81.9	81.4	82.2	83.5	81.5	82.0	80.8	82.0						80.9	82.1	81.4			



Wheat

2013 Wheat variety performance for screenings (% < 2mm) across NVT sites (continued on page 11)

	Lower Eyre Peninsula			Mid North			South East				Yorke Peninsula							
	Cummins	Ungarra	Wanilla	Mean	Booleeroo	Mintaro	Spalding	Turretfield	Mean	Conmurra	Keith	Sherwood	Wolseley	Mean	Paskeville	Urania	Wokurna	Mean
Adagio										6.2	5.1	1.0	2.5	3.7				
AGT Katana	1.8	1.2	2.8	2.0	0.8	1.8	2.3	1.8	1.7	5.7	5.3	0.7	2.2	3.5	1.9	0.8	2.4	1.7
Axe	1.0	1.1	3.9	2.0	1.0	1.8	2.0	1.5	1.6	6.3	3.0	0.5	0.9	2.7	0.9	0.7	1.3	1.0
Barham					2.0	2.7	2.2	4.5	2.8	8.0	6.8	0.9	1.5	4.3				
Cobra	1.7	1.3	3.8	2.3	1.6	2.1	2.2	5.1	2.7	3.5	6.0	0.8	2.4	3.2	1.8	1.1	2.1	1.7
Corack	1.4	1.0	5.2	2.5	0.9	2.0	2.3	1.3	1.6	5.1	4.1	1.7	1.4	3.1	1.5	0.9	1.9	1.4
Correll	2.4	2.1	9.4	4.6	2.9	4.2	2.8	4.8	3.7	8.5	7.7	0.6	2.8	4.9	4.2	1.9	5.0	3.7
Cosmick	2.1	1.8	4.8	2.9	2.0	3.6	3.5	5.0	3.5	5.6	7.6	1.1	3.4	4.4	6.0	2.5	5.2	4.6
Emu Rock	1.4	2.3	8.0	3.9	2.0	3.3	2.5	2.8	2.6	6.7	6.2	1.2	2.4	4.1	2.3	1.2	2.8	2.1
Espada	2.3	1.7	4.3	2.7	2.1	3.0	2.2	2.9	2.5	5.2	5.6	0.8	2.7	3.6	2.7	1.1	3.1	2.3
Estoc	2.1	1.0	3.6	2.2	1.0	2.1	2.4	3.0	2.2	4.2	6.1	1.3	2.2	3.5	2.4	0.5	2.2	1.7
Gascoigne										5.3	6.5	0.9	4.6	4.3				
Gazelle					3.2	10.0	3.0	9.3	6.4	6.5	18.8	1.0	3.8	7.5				
Gladius	1.8	2.1	7.8	3.9	2.0	2.5	2.6	2.5	2.4	5.5	4.5	0.8	2.3	3.3	1.7	0.8	2.3	1.6
Grenade ^{CL Plus}	1.0	1.4	4.3	2.2	1.3	2.5	2.3	2.6	2.2	4.5	3.3	0.5	1.7	2.5	1.3	1.5	3.0	1.9
Harper	2.8	2.4	6.6	3.9	2.8	3.3	3.1	7.5	4.2	8.6	7.7	0.9	2.3	4.9	3.1	2.3	2.5	2.6
Impala					1.2	2.9	1.7	1.9	1.9	4.3	4.8	0.4	3.6	3.3	4.9	2.1	2.0	3.0
Justica ^{CL Plus}	1.2	0.9	3.1	1.7	1.2	3.2	2.0	1.3	1.9	3.5	3.8	0.4	2.1	2.5	1.3	1.2	1.5	1.3
Kord ^{CL Plus}	2.0	2.4	6.4	3.6	2.7	2.3	2.6	3.4	2.7	9.0	5.7	1.0	2.5	4.5	1.4	1.1	3.2	1.9
Mace	1.7	0.9	3.7	2.1	1.2	2.6	2.2	2.4	2.1	6.2	5.6	0.4	1.6	3.5	2.2	1.1	2.2	1.8
Orion					2.8	2.8	2.2	4.5	3.1	5.7	5.8	0.6	1.8	3.5				
Phantom	1.7	1.9	4.1	2.6	2.1	1.6	2.3	6.6	3.1	5.9	5.3	0.4	1.3	3.2	3.7	1.3	4.7	3.2
Scenario										6.6	3.8	0.3	2.0	3.2				
Scout	2.6	1.2	5.8	3.2	2.0	1.4	2.3	2.9	2.2	5.6	4.3	0.3	2.5	3.2	2.5	1.6	2.7	2.3
Shield	3.1	2.5	7.5	4.3	2.6	3.6	3.4	5.2	3.7	9.0	6.6	1.0	3.2	4.9	4.0	2.7	5.0	3.9
Supreme	1.4	1.0	6.0	2.8	1.2	3.7	2.4	3.0	2.6						2.3	1.2	2.2	1.9
Trojan	1.7	1.3	4.7	2.5	1.5	2.2	2.1	2.8	2.1	5.0	5.6	0.3	2.2	3.3	2.9	0.8	2.6	2.1
Viking	1.6	1.4	3.1	2.0	1.1	3.1	3.1	4.9	3.0	5.3	6.5	0.5	3.5	4.0	5.9	1.6	7.4	4.9
Wallup					0.5	1.6	1.5	5.3	2.2	3.1	6.3	0.3	1.6	2.8	3.3	1.0	5.5	3.3
Wyalkatchem	0.9	0.5	2.2	1.2	0.7	1.8	1.8	2.0	1.6	3.5	3.0	0.5	1.4	2.1	1.1	0.6	1.2	1.0
Yitpi	4.3	2.1	6.7	4.4	2.6	2.1	2.9	5.1	3.2	8.8	4.5	0.4	2.0	3.9	2.1	1.0	3.7	2.3
Zen	0.8	0.8	2.2	1.3	0.8	1.5	1.7	2.1	1.5						1.2	0.5	2.1	1.3



Wheat

2013 Wheat variety performance for screenings (% < 2mm) across NVT sites															
	Murray Mallee					Upper Eyre Peninsula					all sites				
	Geranium	Nangari	Palmer	Pinnaroo	Wanbi	Wunkar	Mean	Kimba	Minnipa	Mitchelville	Nunjikompita	Penong	Sreaky Bay	Warrambo	Mean
Adagio															
AGT Katana	0.4		0.4	0.9	1.0		0.7		1.6	3.1	1.2	0.9	1.7		1.7
Axe	0.4		0.5	0.5	0.6		0.5		1.1	1.7	1.0	1.4	1.8		1.4
Barham															
Cobra	0.4		0.9	0.7	1.0		0.7		1.5	1.3	1.4	1.8	1.6		1.5
Corack	0.3		0.4	0.6	0.5		0.5		1.2	1.0	1.4	1.7	1.9		1.4
Correll	0.5		2.2	1.2	1.1		1.2		3.8	4.1	2.1	2.5	2.2		2.9
Cosnick	0.4		1.2	1.4	2.0		1.2		5.1	5.4	1.9	3.2	2.4		3.6
Emu Rock	0.4		0.8	1.1	1.1		0.8		2.3	1.8	1.4	1.7	2.4		1.9
Espada	0.5		0.9	1.0	1.0		0.9		1.7	2.0	1.2	1.6	1.8		1.6
Estoc	0.3		0.5	0.5	0.7		0.5		1.0	2.3	1.1	1.2	1.2		1.4
Gascoigne															
Gazelle															
Gladius	0.5		0.7	1.0	0.8		0.7		1.7	3.1	2.1	1.4	1.7		2.0
Grenade ^{CL Plus}	0.6		0.5	1.3	0.7		0.8		1.4	2.6	1.4	1.4	1.3		1.6
Harper	0.5		1.3	1.0	1.6		1.1								
Impala															
Justica ^{CL Plus}	0.3		0.7	0.5	0.7		0.5		1.5	2.3	1.1	1.5	0.8		1.4
Kord ^{CL Plus}	1.0		0.9	1.9	1.1		1.2		1.8	2.2	2.0	2.3	1.9		2.0
Mace	0.5		0.5	0.9	0.7		0.6		1.6	2.2	1.1	1.3	1.6		1.6
Orion															
Phantom	0.4		0.9	0.5	1.3		0.8		3.7	3.1	1.0	1.5	2.1		2.3
Scenario															
Scout	0.5		0.7	0.9	1.2		0.8		2.0	2.1	1.4	1.5	1.7		1.7
Shield	0.8		1.1	2.0	1.1		1.2		3.1	2.6	1.7	2.8	1.6		2.3
Supreme															
Trojan	0.1		0.8	0.3	0.9		0.5		2.8	1.8	1.0	1.2	0.9		1.5
Viking															
Wallup															
Wyalkatchem	0.3		0.2	1.0	0.4		0.5		0.9	1.9	1.2	1.2	1.3		1.3
Yitpi	0.7		1.3	0.6	1.5		1.0		1.3	1.3	1.8	1.3	1.2		1.4
Zen															



Wheat

2014 Durum variety performance for grain protein (% at 11% moisture) across NVT sites

	Mid North				Yorke Peninsula				All sites mean
	Mintaro	Spalding	Turretfield	mean	Paskeville	Urania	Wokurna	mean	
Caparoi	13.4	11.8	11.8	12.4	14.8	13.4	14.7	14.3	13.3
DBA-Aurora	12.9	11.1	11.7	11.9	15.0	12.5	14.1	13.9	12.9
Hyperno	13.1	11.4	12.5	12.3	15.7	13.4	14.2	14.4	13.4
Saintly	12.3	11.0	11.7	11.7	13.8	12.5	14.0	13.4	12.6
Tamaroi	13.4	11.9	12.3	12.5	15.0	13.4	14.4	14.3	13.4
Tjilkuri	13.2	11.4	11.7	12.1	14.6	13.0	13.8	13.8	12.9
WID802	12.7	11.0	11.3	11.7	14.3	12.7	12.3	13.1	12.4
Yawa	12.7	11.7	12.0	12.1	14.2	13.5	13.1	13.6	12.9

2014 Durum variety performance for test weight (kg/hl) across NVT sites

	Mid North				Yorke Peninsula				All sites mean
	Mintaro	Spalding	Turretfield	mean	Paskeville	Urania	Wokurna	mean	
Caparoi	83.04	83.04	82.56	82.88	82.24	83.08	80.39	81.91	82.39
DBA-Aurora	80.45	80.65	78.88	79.99	78.94	80.65	78.78	79.46	79.73
Hyperno	80.93	81.65	78.94	80.51	78.90	80.17	78.84	79.30	79.90
Saintly	81.91	82.56	81.51	81.99	81.27	81.49	80.87	81.21	81.60
Tamaroi	81.53	81.51	79.83	80.96	81.11	81.35	80.03	80.83	80.89
Tjilkuri	80.17	79.91	78.58	79.56	79.32	80.47	78.70	79.50	79.53
WID802	78.44	78.94	78.70	78.69	78.18	79.95	79.22	79.12	78.91
Yawa	80.51	79.26	78.36	79.38	79.16	79.99	79.20	79.45	79.41

2014 Durum variety performance for screenings (%) across NVT sites

	Mid North				Yorke Peninsula				All sites mean
	Mintaro	Spalding	Turretfield	mean	Paskeville	Urania	Wokurna	mean	
Caparoi	1.2	1.4	2.2	1.6	1.1	0.5	2.9	1.5	1.6
DBA-Aurora	2.4	2.7	3.7	3.0	1.8	1.6	3.6	2.3	2.7
Hyperno	4.5	3.7	8.9	5.7	6.1	4.0	9.8	6.6	6.2
Saintly	3.0	3.6	1.5	2.7	1.5	1.2	6.4	3.0	2.9
Tamaroi	2.6	3.1	5.1	3.6	0.7	1.5	3.3	1.8	2.7
Tjilkuri	2.9	3.3	6.5	4.2	3.5	2.8	5.5	3.9	4.1
WID802	4.9	4.7	4.4	4.7	4.0	3.5	7.2	4.9	4.8
Yawa	7.8	9.7	9.9	9.1	7.8	6.0	12.8	8.9	9.0





Compass points the way in 2014 barley trials

By Rob Wheeler,
Leader, New Variety Agronomy, SARDI

For the third consecutive season, the new potential malt barley, Compass, showed its dominance by out-yielding all other varieties in 2014 barley trials across SA.

Compass produced the highest average yield of 4.11 t/ha among 29 released varieties tested at 20, SARDI managed, NVT sites across South Australia. The trials, funded by GRDC, also tested a further 13 advanced lines from barley breeding programs operating throughout Australia.

Excellent autumn rains in most districts except the South East, resulted in the 2014 trials being sown very timely during the period May 8th at Paruna and Darke Peak to June 17th at Bordertown, with the majority sown around the middle to third week of May.

Seeding was followed by widespread very wet conditions through early winter and then very cold, dry and frosty conditions in August and early September.

Spring remained very dry but mild in all districts and while many grain producers were pessimistic of a good harvest, all barley NVT trials were harvested and surprisingly, produced statistically good results.

There were no significant differences in grain yield between varieties for the Cummins trial which was unusual and likely resulted from waterlogging during winter.

Site mean yield across all 20 NVT sites ranged from 1.95 t/ha at Lameroo to 5.6 t/ha at Turretfield with an average across the state of 3.68 t/ha compared to 3.70 t/ha in 2013 and 3.34 t/ha in 2012.

However, the similarity in state grain yield between 2013 and 2014 masked some major differences in regional conditions. Compared to 2013, Upper Eyre Peninsula averaged 0.2 t/ha higher, Lower Eyre Peninsula 0.4 t/ha lower, Yorke Peninsula was the same, the Mid North 1.2 t/ha higher, the Murray Mallee was the same, and the South East a dramatic 2.5 t/ha lower than the previous year.

Good early season rainfall and warmer than average early winter temperatures set up high yield potential and while



Rob Wheeler

conditions were favourable for foliar diseases, the incidence and level of infection was generally low.

Across sites, net form net blotch at Minnipa was the only foliar disease to cause some yield loss but root diseases were more prevalent, with Predicta B tests showing high levels of rhizoctonia at Elliston, Lameroo, Piednippie and Port Clinton.

Many trials were sprayed early with fungicide to control net blotches and leaf rust as seen in grower's crops in many districts, thus preventing significant

damage within trials.

This management strategy was introduced in 2012, and all sites have been additionally treated with fertilizer amended fungicides (flutriafol) since 2012.

While barley trial grain yields in 2014 were generally similar to 2013, the dry spring conditions and generally high yield potential did create significant pressure on grain size and grain receival quality parameters.

Across all trials, average grain protein increased slightly from 11.2 percent in 2013 to 11.9 percent in 2014. Average test weights were improved, from 67.8 to 69.95 kg/hl, screenings increased from 3.4 per cent to 7.3 percent and retentions declined, from 75.7 to 69.0 percent in 2014.

Some of the reduction in average receival quality was due to modest performances by some later maturing and lesser adapted varieties such as Gairdner, Macquarie, Maltstar and SY Rattler.

However, many sites suffered from the dry spring and in particular Bordertown, Brentwood, Crystal Brook, Darke Peak, Keith, Minnipa, Paruna and Port Clinton experience considerable pressure on grain size.

Early season flowering varieties were generally those most favoured by the dry spring conditions in 2014. Even at the locations with grain yield greater than 5 t/ha (Salters Springs, Bute and Turretfield) the later maturing varieties such as Flinders, Gairdner, Oxford, Westminster and Wimmera were lower yielding than the leading early and mid-maturity varieties.

Compass, the most recent release from the University of Adelaide Barley Breeding program, led LaTrobe, a new malting accredited release from the WA based Intergrain Breeding program by 3 percent when averaged across all sites.



LaTrobe was formally accredited as a malt variety in early March 2015 while Compass is still undergoing testing with a final judgement expected in March 2016.

Compass led the next group of regularly high yielding varieties, Hindmarsh, Fathom, Keel and Fleet by 4, 5, 5 and 8 percent respectively.

Midseason flowering Commander and a group of similar or later flowering and maturing varieties comprising Bass, GrangeR and Oxford averaged 13 to 18 percent below Compass with Buloke and Scope also well below, at 12 and 13 percent respectively.

Among the top four leading varieties for yield, Compass, LaTrobe, Hindmarsh and Fathom, Compass led in all districts except the Mid North where only one percent separated these varieties. However across all districts, only in the mallee was there a large difference separating Compass from most varieties.

Within trials, Compass produced grain with relatively low protein, slightly lower than in LaTrobe and Hindmarsh while Fathom produced more acceptable protein levels for its high yield. Compass, Commander and Buloke have shown this characteristic in previous seasons also. While these low grain proteins are mostly a direct result of high yields, lower protein in malting varieties will improve probability of malting classification, but also may produce grain below minimum protein specification where nitrogen nutrition is very low.

Schooner, Bass and Flagship continued to display good test weights in 2014 NVT, along with LaTrobe and Hindmarsh, while more moderate test weights were again seen in Fathom,

Compass, Commander and Fleet.

The top varieties for grain yield achieved Feed1 screenings at high frequency while Hindmarsh exceeding the 10% limit at only three locations, Fathom and LaTrobe at only two locations, and Compass only at Keith.

Grain retention levels also varied considerably between sites in 2014 and average values for individual trials range from 90% for Arthurton down to just 39% at Crystal Brook. Gairdner achieved the 70% retention limit for Malt1 in just 2 of the 13 trials it was tested, while Commander and Compass achieved the grade at 13 of the 20 trial locations. Bass and Skipper continued their good record for plump grain, and Compass returned the highest values among the established and potential malting varieties. Maritime again showed good grain size stability, achieving the retention limit in 17 of the 20 trials, demonstrating further breeding gains in malting barley are possible.

The tables support all of the data cited within this report but further information can be found at the NVT website, nvtonline.com.au. More specific varietal information can be found in the 2015 Crop Variety Sowing Guide, and the recently updated 2015 Crop Variety Disease guide at pir.sa.gov.au ■

■ More information:

Rob Wheeler (08) 8303 9480, 0401 148 935

Rob.Wheeler@sa.gov.au



Barley

Variety	SA Barley Variety Yield Performance (2014 and long term, 2005-2014, expressed as a t/ha and % of site average yield)																		
	LOWER EYRE PENINSULA				UPPER EYRE PENINSULA				MURRAY MALLEE										
	2014 (% site average)	Long Term average across sites(05-14)	t/ha	# trials	2014 (% site average)	Long Term average across sites(05-14)	t/ha	# trials	2014 (% site average)	Long Term average across sites(05-14)	t/ha	# trials	2014 (% site average)	Long Term average across sites(05-14)					
Alestar	107	95	3.73	103	6	88	94	103	99	89	2.41	99	12	-	-	-	-		
Barque	-	-	3.58	99	22	94	90	93	92	-	2.57	106	33	103	88	87	2.37	104	20
Bass	101	102	3.79	104	21	101	84	94	89	95	2.54	105	24	91	72	100	2.30	101	18
Buloke	98	107	3.68	101	28	90	101	88	94	100	2.53	104	37	94	87	97	2.37	104	23
Commander	103	101	3.82	105	28	104	94	100	95	100	2.62	108	37	99	77	87	2.49	109	23
Compass	99	119	4.12	114	8	106	111	119	114	119	2.95	121	12	122	141	113	2.67	117	9
Fathom	104	101	3.98	110	14	114	98	111	108	103	2.86	118	20	97	106	108	2.55	112	15
Flagship	88	97	3.54	97	28	92	93	89	87	96	2.48	102	37	90	98	104	2.22	97	23
Fleet	97	109	3.87	107	28	100	91	105	107	107	2.80	115	37	98	93	96	2.57	112	23
Flinders	91	87	3.69	102	14	80	92	87	87	92	2.42	100	20	77	93	103	2.27	99	15
Gairdner	108	78	3.50	96	26	-	-	-	-	84	2.39	98	9	-	-	-	2.29	100	8
Granger	104	92	3.84	106	14	94	87	101	80	90	2.53	104	20	85	96	87	2.40	105	15
Hindmarsh	100	117	3.99	110	26	110	116	99	109	116	2.76	113	33	102	104	106	2.43	106	23
Keel	98	102	3.70	102	28	106	102	119	99	112	2.63	108	35	106	110	112	2.35	103	23
LaTrobe	106	110	4.04	111	11	113	109	110	110	112	2.77	114	16	118	109	103	2.47	108	12
Macquarie	95	77	3.51	97	10	-	-	-	-	84	-	-	-	-	-	-	-	-	-
Maltstar	98	97	3.75	103	8	103	93	102	102	96	2.41	99	8	-	-	-	-	-	-
Maritime	102	96	3.55	98	28	84	98	84	107	94	2.46	101	37	93	68	78	2.31	101	23
Oxford	97	91	3.82	105	19	89	81	88	82	93	2.41	99	24	88	73	97	2.37	104	18
Schooner	89	91	3.32	91	28	78	85	84	82	87	2.29	94	37	83	69	94	2.08	91	23
Scope	96	104	3.66	101	17	87	94	88	90	98	2.52	104	24	103	90	93	2.37	104	18
Skipper	98	106	3.87	107	14	109	102	106	103	111	2.72	112	20	112	110	123	2.44	106	15
Westminster	93	76	3.56	98	12	-	-	-	-	78	-	-	-	-	-	-	-	-	-
Site av. yield t/ha	4.62	3.07	3.63	28	28	2.94	3.07	3.76	2.93	3.51	2.43	37	37	2.46	1.95	2.85	2.29		23
LSD (%)	15	9				8	7	6	9	6				12	14	11			
Date Sown	16 May	15 May				8 May	13 May	13 May	15 May	14 May				22 May	16 May	8 May			
Soil Type	CL	S				SL	S	L	SL	NWS				SL	S/SCL	SCL/MC			
J-M / A-O rain mm	78/325	83/399				123/260	47/296	102/290	124/258	70/252				60/234	70/186	97/163			
PHW	7.6	6.2				8.4	8.4	8.6	8.6	6.8				7	6.8	7.4			
previous crop	wheat	barley				barley	barley	spasture	spasture	barley				wheat	wheat	medic			
Site Stress factors	f,n,wa	dl				dl		dl,nn,r	r					dl,r	dl,r	dl,f			

Abbreviations
Soil type: S=sand, L=loam, C=clay, L=light, M=medium, H=heavy, F=fine, NW=non wetting / = separates top soil from sub soil
Site stress factors: de= dry preanthesis, dl=dry post anthesis, f=frost, r=rhizoctonia, nn=net form net blotch, r=rhizoctonia, wa=waterlogging early
Data source: SARDI/GRDC & NVT (long term data based on weighted analysis of sites, 2005-2014)
Data analysis by GRDC funded National Statistics Group



Barley

SA Barley Variety Yield Performance (2014 and long term, 2005-2014, expressed as a t/ha and % of site average yield)

Variety	YORKE PENINSULA								MID NORTH						SOUTH EAST				
	2014(% site average)					Long Term average across sites(05-14)			2014(% site average)			Long Term average across sites(05-14)			2014(% site average)		Long Term average across sites(05-14)		
	Arthur-ton	Brent-wood	Bute	Port Clinton	War-ooka	t/ha	as % sites av	# trials	Crystal Brook	Salters Springs	Turret-field	t/ha	as % sites av	# trials	Border-town	Keith	t/ha	as % sites av	# trials
Alestar	101	91	99	98	106	3.31	102	19	92	100	91	3.80	101	12					
Barque	99	100	95	97	91	3.34	103	48	95	97	89	3.83	102	27			4.00	100	8
Bass	88	100	100	105	94	3.39	104	40	106	98	103	3.94	104	24	93	96	4.11	103	17
Buloke	103	98	98	95	103	3.35	103	48	96	99	98	3.90	103	30	105	101	4.08	103	18
Capstan	-	-	-	-	-	3.49	107	31	-	-	-	4.06	108	21	98	87	4.36	109	17
Charger	108	104	107	100	95	3.59	110	20	99	104	98	4.06	108	12	99	97	4.36	109	9
Commander	106	101	102	102	101	3.48	107	48	94	103	105	4.00	106	30	106	99	4.28	108	18
Compass	109	114	107	116	107	3.85	119	15	110	103	102	4.45	118	9	122	110	4.62	116	6
Fairview	-	-	-	-	-				-	-	-		0		86	-	4.12	104	7
Fathom	107	112	111	112	98	3.72	115	24	111	104	103	4.29	114	15	109	112	4.41	111	9
Flagship	85	98	88	90	94	3.24	100	48	94	88	98	3.74	99	30	94	93	3.82	96	18
Fleet	103	103	106	108	111	3.65	112	48	100	100	102	4.15	110	30	119	95	4.33	109	18
Flinders	93	92	92	92	90	3.27	100	24	93	97	98	3.80	101	15	90	90	4.00	101	9
Gairdner	94	88	93	88	88	3.15	97	48	92	95	87	3.65	97	30	95	96	3.94	99	18
Granger	102	94	104	94	94	3.44	106	24	102	103	102	3.92	104	15	92	97	4.16	104	9
Hindmarsh	106	106	98	101	107	3.64	112	44	112	105	110	4.27	113	27	110	122	4.31	108	17
Keel	102	109	103	106	105	3.38	104	48	102	100	106	4.03	107	30	116	105	4.15	104	17
LaTrobe	105	107	100	104	114	3.67	113	19	111	106	110	4.29	114	12	113	110	4.39	110	8
Macquarie	91	87	93	91	92	3.19	98	19	92	90	81	3.64	96	12	100	86	3.98	100	10
Maltstar	103	94	100	96	88	3.33	102	19	88	100	95	3.78	100	12			4.14	104	4
Maritime	92	99	101	95	105	3.24	100	48	95	96	94	3.78	100	30	99	91	3.92	99	17
Navigator	-	-	-	-	-	2.87	88	25	-	-	-	3.54	94	18	99	76	3.98	100	13
Oxford	97	89	94	99	86	3.33	102	34	97	101	92	3.80	101	21	76	85	4.21	106	13
Schooner	89	97	90	94	86	2.98	92	48	98	93	90	3.53	94	30	95	91	3.61	91	18
Scope	99	96	104	99	89	3.34	103	29	95	98	96	3.86	102	18	105	102	4.04	102	11
Skipper	105	109	108	101	100	3.55	109	24	105	103	105	4.15	110	15			4.27	107	7
SY Rattler	-	-	-	-	-	3.20	99	14	95	99	108	3.75	100	15	89	101	3.97	100	11
Westminster	96	81	91	92	91	3.10	95	34	79	90	93	3.56	95	12	92	84	3.87	97	13
Wimmera	93	93	97	98	92	3.31	102	29	88	97	93	3.82	101	18	95	91	4.07	102	13
Site av. yield t/ha	4.67	4.19	5.06	3.81	3.82	3.25		48	4.15	5.09	5.6	3.77		30	3.21	2.93	3.98		18
LSD (%)	7	4	7	5	11				4	4	7				6	11			
Date Sown	6 June	29 May	16 May	12 May	29 May				13 May	19 May	22 May				17 June	30 May			
Soil type	SC/LMC	CL/SCL	S/SL	LFS/L	LFS				SCL/CL	LC/LMC	LC/LMC				red C	CL/limestone			
J-M / A-0 rain mm	88/322	80/236	125/270	107/230	69/271				93/262	81/321	137/347				35/237	40/229			
pHw	8.1	8.4	7.5	8.4	8.3				7.9	7.3	7.7				7.7	8.1			
previous crop	wheat	IMI canola	lupins	wheat	peas				vetch	chick-peas	grass				canola	beans			
Site Stress Factors	ls,dl	dl		bo,dl,r	bo				dl		dl				de,dl	de,dl			

Abbreviations

Soil type: S=sand, L=loam, C=clay, Li=light, M=medium, H=heavy, F=fine, NW=non wetting / = separates top soil from sub soil

Site stress factors: bo=boron toxicity, de= dry preanthesis, dl=dry post anthesis, ls=late sown, r=rhizoctonia

Data source: SARDI/GRDC & NVT (long term data based on weighted analysis of sites, 2005-2014)

Data analysis by GRDC funded National Statistics Group



Barley

2014 Barley variety performance for screenings (% < 2.2mm) across NVT sites																												
Lower Eyre Peninsula				Mid North				Murray Mallee				South East				Central and Upper Eyre Peninsula						Yorkie Peninsula				all sites		
Cummins	Wanilla	mean	Crystal Brook	Salters Springs	Turretfield	mean	Cooke Plains	Lameroona	Parana	mean	Border town	Keith	mean	Darke Peak	Elisdon	Minnipinka	Streaky Bay	Wharminda	mean	Arthurton	Brentwood	Bute	Port Clinton	Warooka	mean	all sites		
Alestar	1.3	5.1	3.2	25.5	1.2	17.4	14.7							4.2	2.2	8.0	1.1	5.0	4.1	0.8	6.0	1.8	8.8	6.3	4.7			
Barque				13.3	2.4	5.5	7.1	2.0	4.0	2.5				5.5	4.1	15.1	2.2			0.9	4.4	2.5	6.2	5.3	3.9			
Bass	0.3	1.2	0.7	11.6	0.3	1.5	4.4	0.3	2.6	1.0	1.3	2.8	20.9	1.2	0.8	13.2	0.6	2.8	3.7	0.6	1.8	0.9	2.8	5.7	2.4	3.6		
Buloke	1.2	4.1	2.7	18.8	1.7	7.2	9.2	1.9	2.6	4.5	3.0	1.5	40.4	4.6	4.7	44.3	1.3	9.6	12.9	1.5	9.0	3.1	12.7	5.4	6.4	9.0		
Capstan												12.2	48.6															
Charger				32.4	4.7	10.3	15.8					5.9	51.1							2.4	12.0	4.3	19.3	14.2	10.4			
Commander	2.8	11.1	6.9	26.4	1.3	2.8	10.2	1.4	3.1	2.0	2.7	12.6	7.7	4.0	5.2	23.4	2.4	8.0	8.6	1.2	7.6	3.2	8.6	8.7	5.8	6.9		
Compass	3.4	6.9	5.2	8.8	0.6	2.1	3.8	0.8	0.7	1.4	1.0	1.4	17.3	3.0	2.9	8.3	0.7	2.3	3.4	0.5	3.3	1.0	3.5	3.6	2.4	3.6		
Fairview											5.1																	
Fathom	2.5	3.1	2.8	12.1	0.9	4.0	5.7	1.7	1.3	1.0	1.3	1.6	9.9	1.8	3.0	14.4	1.8	2.5	4.7	0.9	2.6	2.2	5.1	4.3	3.0	3.8		
Flagship	4.5	7.2	5.8	32.4	1.3	5.1	12.9	1.8	3.9	8.3	4.7	4.8	24.0	11.2	3.8	35.8	1.8	8.6	12.2	1.3	9.0	3.6	14.6	5.8	6.8	9.4		
Fleet	1.6	4.3	3.0	17.6	1.3	3.3	7.4	2.5	2.0	1.5	2.0	1.4	5.8	4.5	2.8	9.0	0.7	6.0	4.6	0.7	2.6	2.2	5.8	2.2	2.7	3.9		
Flinders	0.9	3.6	2.2	16.1	0.6	5.2	7.3	2.9	2.4	3.7	3.0	3.7	27.4	1.8	2.2	27.2	0.8	3.8	7.2	0.8	4.1	3.7	6.7	8.5	4.8	6.3		
Gardner	2.8	7.6	5.2	30.2	7.8	11.9	16.6					6.8	15.1					11.0		2.5	7.0	7.2	15.5	17.9	10.0			
Granger	0.9	3.1	2.0	12.8	0.8	5.0	6.2	3.2	2.4	2.8	2.8	6.7	20.2	3.5	2.0	7.5	1.7	6.2	4.2	1.4	4.1	3.0	3.8	5.5	3.6	4.8		
Hindmarsh	2.5	8.4	5.4	10.1	1.4	4.4	5.3	1.5	2.1	7.6	3.7	3.7	26.3	8.8	3.0	22.2	1.3	4.7	8.0	1.2	4.6	1.8	7.1	5.0	4.0	6.4		
Keel	2.5	17.8	10.1	15.3	2.1	5.1	7.5	5.0	2.5	3.5	3.6	2.4	21.3	14.8	3.3	15.7	2.8	9.6	9.2	1.4	4.6	1.7	9.1	2.7	3.9	7.1		
LaTrobe	1.8	9.8	5.8	14.2	1.9	3.8	6.6	1.3	1.9	5.2	2.8	3.3	8.9	5.4	4.0	21.6	0.9	6.2	7.6	1.4	4.3	1.9	8.2	4.6	4.1	5.5		
Macquarie	9.1	7.3	8.2	36.6	15.6	18.7	23.6					7.8	17.4	12.6				11.0		6.8	8.8	12.2	22.7	16.9	13.5			
Maltstar	2.8	11.4	7.1	55.1	10.4	34.1	33.2							16.3	5.0	37.9	3.3	12.4	15.0	4.3	20.3	10.5	27.2	16.6	15.8			
Maritime	0.9	1.7	1.3	5.0	0.9	1.7	2.5	0.5	0.7	0.8	0.6	0.9	7.1	4.0	1.1	14.5	0.6	1.6	3.7	0.2	1.5	0.5	2.8	2.5	1.5	2.3		
Navigator												2.1	17.2	9.7														
Oxford	3.3	11.8	7.6	38.6	5.5	24.4	22.8	5.0	3.0	5.0	4.3	11.2	28.9	20.1	2.9	28.8	6.3	9.7	10.7	4.7	9.3	13.2	12.4	17.9	11.5	12.4		
Schooner	1.3	4.6	3.0	7.4	1.4	2.0	3.6	1.2	3.1	3.2	2.5	1.7	13.7	7.7	2.4	34.4	0.6	4.2	8.8	0.7	4.3	1.6	11.5	4.5	4.5	5.3		
Scope	1.2	3.6	2.4	16.3	1.5	2.8	6.9	1.1	2.0	3.1	2.1	2.0	20.2	11.1	7.9	39.1	1.6	4.0	11.6	1.5	6.8	3.3	7.5	10.6	5.9	7.1		
Skipper	1.7	7.1	4.4	10.6	0.9	1.5	4.4	2.0	1.4	1.6	1.7			4.7	3.1	24.4	0.7	5.0	7.6	1.3	2.4	2.0	4.0	2.9	2.5			
SY Rattler												9.4	26.7	18.1														
Westminster	2.4	3.0	2.7	27.6	1.4	3.7	10.9					2.9	12.3	7.6				4.9		0.6	3.0	2.6	6.4	7.9	4.1			
Wimmera												3.9	14.2	9.0						1.9	4.1	2.9	7.4	8.2	4.9			



Barley

2014 Barley variety performance for test weight (kg/ha) across NWT sites																													
	Lower Eyre Peninsula					Mid North					Murray Mallee					South East			Central and Upper Eyre Peninsula					Yorke Peninsula				all sites mean	
	Cummins	Wanilla	mean	Crystal Brook	Salters Springs	Turret field	mean	Cooke Plains	Lameroona	Parana	mean	Border town	Keith	mean	Darke Peak	Elliston	Minnipa	Streaky Bay	Wharminda	mean	Arthurton	Brentwood	Bute	Port Clinton	Warooka	mean			
Alestar	72.01	70.50	71.25	65.26	71.01	64.50	66.92	72.07	72.77	71.14	71.99				72.33	71.89	67.39	70.85	69.00	70.29	69.30	70.38	68.76	68.03	64.38	68.17			
Barque				69.48	72.17	69.58	70.41	72.07	72.77	71.14	71.99				70.93	70.40	66.75	70.38			70.36	70.95	69.84	67.75	68.52	69.48			
Bass	73.70	72.09	72.89	70.57	73.68	71.67	71.98	72.45	71.97	72.86	72.43	68.11	65.86	66.98	73.42	72.88	68.32	72.17	70.87	71.53	71.35	71.59	72.17	71.07	69.84	71.20	71.33		
Buloke	72.92	70.71	71.82	69.72	72.27	69.06	70.35	71.03	71.33	71.37	71.25	67.85	64.02	65.93	72.09	70.99	64.88	70.65	68.72	69.47	70.46	69.00	70.75	68.21	68.24	69.33	69.71		
Capstan												65.93	63.13	64.53															
Charger				66.09	69.06	67.89	67.68					66.35	59.74	63.05								67.39	67.87	68.28	65.78	65.06	66.87		
Commander	71.45	68.15	69.80	66.31	71.77	71.41	69.83	69.98	70.83	70.55	70.46	66.27	64.72	65.50	70.42	69.10	64.32	68.92	68.17	68.19	70.55	69.10	70.44	68.44	66.61	69.03	68.88		
Compass	69.66	66.77	68.22	67.57	71.85	69.54	69.65	68.92	70.54	69.54	69.67	67.39	64.70	66.04	70.10	68.88	67.45	70.40	67.11	68.79	69.78	68.22	69.18	68.66	65.36	68.24	68.58		
Fairview												68.62																	
Fathom	71.15	69.52	70.34	68.74	72.55	69.76	70.35	69.52	71.11	70.63	70.42	67.33	66.21	66.77	70.73	69.18	65.86	69.98	70.28	69.20	71.45	70.52	70.04	69.14	68.58	69.95	69.61		
Flagship	72.65	71.43	72.04	68.66	74.18	72.23	71.69	71.45	72.94	72.05	72.15	69.52	67.91	68.71	71.67	71.79	67.09	72.31	70.89	70.75	71.89	71.51	71.61	69.28	70.32	70.92	71.07		
Fleet	72.83	69.20	71.01	65.44	70.36	68.62	68.14	69.42	70.26	69.01	69.56	65.62	65.28	65.45	69.20	69.04	64.28	68.40	67.13	67.61	69.54	67.85	68.42	66.43	68.03	68.05	68.22		
Flinders	73.12	70.38	71.75	69.44	72.39	69.94	70.59	69.30	71.03	69.78	70.04	67.87	65.16	66.51	73.30	71.71	66.37	71.35	69.56	70.46	68.88	70.73	69.04	69.50	66.81	68.99	69.78		
Gairdner	73.00	70.22	71.61	68.84	69.64	69.20	69.23					67.77	65.88	66.82					68.34		69.12	70.79	68.66	68.26	65.88	68.54			
Granger	72.53	71.83	72.18	69.92	71.77	69.56	70.42	70.04	71.95	71.15	71.04	67.67	66.51	67.09	72.47	72.41	69.34	70.83	69.12	70.83	70.61	71.21	70.30	69.66	67.75	69.91	70.33		
Hindmarsh	73.12	70.06	71.59	70.83	73.88	72.43	72.38	71.23	71.87	71.75	71.62	68.92	66.61	67.77	71.35	72.07	65.97	71.81	69.06	70.05	72.15	71.97	72.59	69.76	70.85	71.46	70.91		
Keel	72.29	68.82	70.55	69.50	74.04	71.05	71.53	70.50	71.63	72.11	71.41	68.80	65.74	67.27	69.84	71.55	69.22	72.69	69.72	70.60	72.07	71.27	73.14	70.22	71.25	71.59	70.77		
LaTrobe	74.70	70.06	72.38	71.13	74.06	72.23	72.47	72.33	73.28	71.53	72.38	69.50	68.50	69.00	72.21	72.37	66.89	72.67	71.43	71.11	72.57	71.97	72.85	69.66	70.65	71.54	71.53		
Macquarie	69.70	70.97	70.34	67.87	69.48	67.15	68.17					67.71	66.73	67.22					68.34		69.28	70.50	69.48	67.71	66.35	68.66			
Maltstar	72.23	70.12	71.17	63.35	68.86	64.16	65.46								71.83	71.27	65.26	70.04	69.26	69.53	67.41	68.90	67.27	65.88	64.68	66.83			
Maritime	72.79	70.77	71.78	69.58	71.67	70.14	70.46	72.03	71.17	71.95	71.72	68.09	66.55	67.32	72.41	71.45	65.68	71.35	68.82	69.94	70.63	70.46	70.95	68.72	69.20	69.99	70.22		
Navigator												66.15	64.72	65.44															
Oxford	71.59	71.09	71.34	68.15	69.44	65.10	67.56	69.58	73.38	71.15	71.37	67.17	66.83	67.00	74.52	72.31	67.79	71.21	68.72	70.91	67.77	70.36	65.78	68.15	64.64	67.34	69.24		
Schooner	74.24	71.81	73.02	73.42	74.38	73.44	73.75	72.71	72.57	73.90	73.06	69.68	68.68	69.18	75.27	72.98	66.45	73.04	69.92	71.53	72.19	73.80	73.00	70.10	71.05	72.03	72.13		
Scope	73.24	70.38	71.81	68.96	71.55	69.94	70.15	71.39	72.13	71.13	71.55	67.85	64.54	66.19	71.61	70.77	64.48	71.07	69.20	69.43	70.71	68.68	70.30	68.40	67.07	69.03	69.67		
Skipper	73.14	70.52	71.83	70.04	73.10	71.03	71.39	71.19	71.25	70.38	70.94				73.00	71.75	67.41	72.59	68.88	70.73	71.27	72.17	72.39	69.92	70.38	71.22			
SY Rattler				66.79	71.45	70.48	69.57					66.15	64.96	65.56															
Westminster	71.81	71.65	71.73	67.81	71.25	70.63	69.90					66.95	65.86	66.40					69.54		70.42	71.47	68.86	68.76	65.42	68.99			
Wimmera				67.55	71.93	67.61	69.03					67.95	67.23	67.59							69.40	71.47	69.94	69.10	67.47	69.48			



Barley

2014 Barley variety performance for grain protein (% at 0% moisture) across NWT sites																																
	Lower Eyre Peninsula					Mid North				Murray Mallee			South East			Central and Upper Eyre Peninsula					Yorke Peninsula				all sites mean							
	Cummins	Wanilla	mean	min	max	Crystal Brook	Salter Springs	Turretfield	mean	Cooke Plains	Lameroona	Parana	mean	Border town	Keith	mean	Darke Peak	Elliston	Mintop	Streaky Bay	Wharminda	Wharfedale	mean	Arthurton		Brentwood	Bute	Port Clinton	Warooka	mean		
Alestar	8.8	13.3	11.1			13.5	10.1	12.0	11.9								10.8	12.7	12.9	11.0	14.1	12.3	9.6	12.2	10.8	13.6	10.0	11.2				
Barque						14.3	11.0	12.5	12.6	12.4	14.8	14.7	14.0				11.1	13.7	15.0	12.5			10.4	12.3	12.1	13.8	11.5	12.0				
Bass	10.7	14.1	12.4			14.0	11.0	12.3	12.4	12.7	15.4	12.4	13.5	13.6	14.2	13.9	11.1	13.2	14.1	12.4	14.3	13.0	10.7	13.1	11.5	14.0	10.7	12.0	12.8			
Buloke	10.1	13.1	11.6			13.2	10.1	11.9	11.7	12.2	13.1	12.8	12.7	12.2	12.3	12.3	10.5	12.5	14.0	11.9	13.1	12.4	9.6	11.7	11.2	12.5	9.8	11.0	11.9			
Capstan														13.8	14.9	14.4																
Charger						12.3	10.0	10.9	11.1					12.3	12.7	12.5							9.8	12.0	10.6	12.3	10.6	11.1				
Commander	8.9	13.3	11.1			13.9	9.6	11.2	11.6	11.2	14.2	13.0	12.8	12.0	12.3	12.2	10.5	12.1	13.7	11.2	12.8	12.1	10.0	12.1	10.8	13.1	10.3	11.3	11.8			
Compass	9.4	11.9	10.7			12.3	10.0	11.1	11.1	10.4	11.5	10.5	10.8	11.6	11.7	11.7	9.0	11.5	12.4	10.5	11.8	11.0	9.6	11.4	10.5	12.0	9.8	10.7	10.9			
Fairview														13.3																		
Fathom	10.4	13.6	12.0			13.7	10.4	11.8	12.0	11.5	13.8	13.1	12.8	12.4	12.3	12.4	10.4	13.1	13.5	11.9	13.9	12.6	11.1	12.4	11.6	14.1	10.8	12.0	12.3			
Flagship	10.3	13.7	12.0			13.1	10.6	12.2	12.0	12.3	12.9	12.6	12.6	12.9	12.9	12.9	10.1	13.2	14.7	11.9	12.9	12.6	10.8	12.6	11.8	13.6	10.5	11.9	12.3			
Fleet	8.3	13.6	11.0			13.1	10.5	12.0	11.9	12.8	13.7	13.0	13.2	12.5	12.2	12.4	10.1	12.8	13.6	11.8	13.2	12.3	10.0	11.9	11.3	13.7	10.5	11.5	12.0			
Flinders	10.6	13.6	12.1			14.5	10.3	12.2	12.3	12.9	14.4	13.2	13.5	13.3	13.6	13.5	11.6	13.2	14.9	12.7	14.7	13.4	10.8	12.6	12.0	13.7	11.1	12.0	12.8			
Gairdner	10.2	13.7	12.0			13.3	11.2	12.1	12.2					13.7	13.2	13.5					13.8		11.0	13.1	11.7	13.4	11.0	12.0				
Granger	8.9	14.0	11.5			13.4	9.9	11.8	11.7	12.1	14.0	12.6	12.9	13.8	14.4	14.1	11.0	12.9	13.1	12.1	13.8	12.6	10.1	12.9	11.8	12.7	10.6	11.6	12.3			
Hindmarsh	9.8	13.5	11.7			12.4	10.0	11.4	11.3	11.7	12.9	12.0	12.2	12.2	12.1	12.2	9.5	11.9	13.5	11.2	12.1	11.6	10.1	11.3	11.0	12.5	9.4	10.9	11.5			
Keel	9.6	13.3	11.5			12.2	10.5	11.6	11.4	11.9	12.1	11.7	11.9	11.7	11.8	11.8	9.7	12.1	12.7	11.6	12.1	11.6	10.6	11.6	11.3	12.7	9.8	11.2	11.5			
LaTrobe	8.7	12.9	10.8			12.5	9.9	11.0	11.1	11.3	12.9	11.6	11.9	11.7	11.4	11.6	9.9	11.0	12.8	11.0	12.6	11.5	9.9	10.8	10.7	12.3	9.2	10.6	11.2			
Macquarie	9.9	12.9	11.4			14.0	10.9	12.7	12.5					14.1	13.2	13.7					13.9		10.8	12.8	11.7	14.3	11.5	12.2				
Maltstar	8.3	13.0	10.7			12.9	9.8	11.4	11.4								9.9	11.6	13.0	10.5	13.0	11.6	9.8	11.9	10.4	12.3	10.3	10.9				
Maritime	10.2	13.9	12.1			13.8	10.7	11.8	12.1	12.8	15.4	14.0	14.1	12.5	12.8	12.7	10.6	12.7	13.9	11.9	13.1	12.4	10.2	11.7	11.1	14.0	10.4	11.5	12.4			
Navigator														13.2	14.6	13.9																
Oxford	9.8	12.9	11.4			13.2	9.9	11.8	11.6	12.1	14.2	10.8	12.4	14.0	13.7	13.9	11.0	12.9	13.0	11.6	13.2	12.3	9.9	11.8	11.2	12.8	10.4	11.2	12.0			
Schooner	10.1	14.5	12.3			12.9	10.8	11.4	11.7	13.1	15.7	13.2	14.0	13.5	13.0	13.3	10.6	13.0	15.4	12.8	13.5	13.1	10.8	12.4	12.0	14.2	10.7	12.0	12.7			
Scope	10.5	13.5	12.0			13.3	10.4	11.4	11.7	11.9	13.6	12.4	12.6	12.1	12.7	12.4	10.6	12.7	14.6	12.0	13.4	12.7	10.1	12.3	11.3	12.9	10.7	11.5	12.1			
Skipper	9.3	13.2	11.3			12.6	10.4	11.8	11.6	12.6	13.1	11.7	12.5				9.6	12.7	13.2	11.8	13.6	12.2	10.6	11.5	11.6	12.9	9.8	11.3				
SY Rattler						13.8	9.8	10.5	11.4					12.6	13.1	12.9																
Westminster	10.0	15.0	12.5			14.8	10.6	12.0	12.5					14.1	14.5	14.3					15.0		10.5	13.3	11.4	13.9	11.7	12.2				
Wimmera						14.7	9.7	12.5	12.3					13.7	13.9	13.8							11.0	13.1	11.6	14.8	10.9	12.3				



Diamond, 559 and 44Y89 top canola trials in 2014

By Andrew Ware,
Research Scientist, SARDI, Port Lincoln

NVT canola trials conducted across South Australia in 2014 saw just a few canola varieties performing consistently well in each of the herbicide tolerance groups.

For the second year running Nuseed Diamond and Hyola 559TT topped the conventional and triazine tolerant canola trials respectively, whereas newly released Pioneer 44Y89CL out-yielded the competition in the Clearfield trials.

2014 proved to be a challenging year for canola producers across South Australia. Above average summer rainfall and an early break to the season all parts of the state except the South East saw the season to be set up for high yielding canola crops. However the exceptionally dry finish to the season, and the emergence of abnormally high numbers of Green Peach Aphids (GPA) shortly after seeding and Diamond Back Moth (DBM) at the close of the season saw canola yields across the state averaging around 1t/ha.

High levels of GPA, were thought to have multiplied on host plants over summer and then then transmitted Beet Western Yellows Virus (BWYV) to emerging canola plants. The Lower North saw the most significant damage to canola crops, with large areas in the Mid North and Central Eyre Peninsula also being affected. The lack of summer rain across the South East helped keep levels of the virus seen on canola crops in the region to low levels.

Warm and dry conditions in spring led to the rapid increase of DBM resulting in many South Australian canola growers having to control this pest for the first time. Both of these pests are driven by seasonal conditions and may not be an issue in 2015.

This being said NVT trials across South Australia performed well above the state average; yielding 1.70 t/ha for the conventional trials, 1.95 t/ha for the Clearfield trials and 1.76 t/ha for the triazine tolerant trials.

NVT trials across Eyre Peninsula, the Mid North and Yorke Peninsula were sown between 30th April the 7th May, whereas seeding of the South East trials was delayed until mid-May to match the first rains for the growing season.



Andrew Ware

Trials on the Lower Eyre Peninsula yielded between 1.60 t/ha and 2.32 t/ha. The conventional and triazine trials at Yeelanna experienced some spray drift which affected yields in these trials.

Canola trials on Upper Eyre Peninsula yielded between 0.7 t/ha at Lock to 1.6 t/ha at first time NVT site, Minnipa. The dry finish affected the Lock site more than others across the state.

Trials in the Mid North and Yorke Peninsula all performed well, yielding from 1.97 t/ha at Turretfield and 2.7 t/ha at Arthurton. The site at Turretfield experienced the highest level of visual symptoms for BWYV of all NVT canola trials in 2014.

Site mean yields for the South East trials were generally around 1.5t/ha, but went down to 0.8t/ha for the triazine tolerant trial at Bordertown. The trial site at Keith experienced a number of frosts and dry conditions through maturity. This resulted in low and variable yields, where the triazine tolerant and Clearfield trials did not produce meaningful yields and have not been released. The yield data from the triazine tolerant trial at Moyhall was too variable to be meaningful and that also hasn't been released.

Comparisons across herbicide tolerance groups should not be made. Although the trials are located adjacent to each other and receive many of the same management practices NVT trials are not structured to allow direct comparisons between the herbicide tolerance groups.

NVT canola trials were treated with Impact-in-furrow (Flutriafol at 400 g a.i. per hectare) in 2014. This reduced the effect that blackleg had across trials, an important factor to consider when selecting varieties based on these results.

That said monitoring for blackleg and other diseases took place at eight trials not treated with fungicide adjacent to NVT sites. These were chosen for higher risk of disease in 2014. Blackleg severity in South Australia was higher than the national average in 2014. Cultivars showed high levels of blackleg infection to Groups A, B, D, and S at a number of sites in SA. Growers on Lower Eyre Peninsula are still urged to avoid growing Group D cultivars following the breakdown of resistance in Hyola 50 in that region.

Full details for the blackleg monitoring the occurred in



2014 can be found at the NVT online website. Growers are encouraged to use the blackleg management guide to assist making varietal decisions and to monitor their own crops for blackleg around windrowing time.

Only a few new canola varieties are available for planting in South Australia in 2015. However these, together with a range of existing varieties will still give growers and advisers a wide selection of varieties across all herbicide tolerance groups available for planting in 2015.

Conventional varieties

Conventional canola variety trials were established at nine sites across South Australia in 2014.

Nuseed Diamond produced high yields relative to other conventional varieties at all sites in 2014. Nuseed Diamond was found to flower even earlier than early TT variety, ATR Stingray in NVT trials 2014.

Of the other conventional varieties Hyola 50 again produced high yields across a range of sites. Long term yields reflect this, with Hyola 50 performing well in all regions, only bettered by Nuseed Diamond on Lower Eyre Peninsula.

Clearfield varieties

Clearfield (Imidazolinone tolerant) varieties were evaluated at 13 sites, of which the Keith site had to be abandoned due to frost and low yields.

The stand out Clearfield variety across South Australia in 2014 was newly released Pioneer 44Y89CL. 44Y89CL flowers several days earlier than 44Y87CL and was able to capitalise on the tough finish to the 2014 season.

Long term yields see variety Pioneer 45Y88CL performing well in all mid-season regions and Pioneer 44Y89CL performing well in the early-season regions.

Triazine tolerant varieties

Eleven Triazine Tolerant (TT) canola sites were successfully harvested in 2014, with the sites at Keith having to be abandoned due to frost and low yields and the Moyhall site lost due to high variability.

Hyola 559 TT performed well across all regions in South Australia in 2014, as it did in 2014. Hyola 559 TT has been in widespread evaluation for three years and long term yields show it as having the highest relative yield in all mid-season maturing regions

Pacific Seed varieties Hyola 450 TT and Hyola 650TT also both performed well across the State in 2014.

Growers currently have a choice of five open pollinated TT (ATR Bonito, ATR Gem, ATR Stingray, ATR Wahoo, and Pioneer Sturt TT). ATR Bonito and ATR Wahoo both have end point of \$5 per tonne.

Of the open pollinated varieties, ATR Stingray showed slightly better yield performance than other open pollinated varieties when averaged across all sites. This, in general terms is a few percentage points behind the hybrid TT varieties.

Long term yields show ATR Bonito being higher than ATR Stingray across all regions of South Australia.

In 2014 the specialty TT canola varieties (Monola 314TT and Monola 515TT) yielded below other triazine tolerant varieties. These varieties and the other specialty type varieties would be considered as options based their yields and on the premium price being offered for production. They are only likely to be grown under a closed loop system in selected areas. ■

More information:

Andrew Ware, 0427 884 272

Andrew.Ware@sa.gov.au



Canola

SA Canola Variety NVT Trial Yield Performance (2014, expressed as % of site average yield)														
Variety	LOWER EP		UPPER EP		YORKE PENINSULA		MID NORTH			SOUTH EAST				
	Mid		Early		Mid	Early	Mid			Early	Mid			
	Mt Hope	Yeelanna	Lock	Minnipa	Arthurton	Minlaton	Spalding	Riverton	Turretfield	Keith	Border-town	Frances	Moyhall	
CONVENTIONAL														
AV Garnet	99	88	96	No Trial	90	No Trial	82	No Trial	No Trial	76	73	85	97	
AV Zircon	91	94	75		93		82			55	86	102	94	
Hyola 50	106	113	106		101		104			85	109	108	115	
Hyola 635CC	94	104	77		108		111			74	101	86	96	
Nuseed Diamond	100	102	146		109		122			210	132	121	112	
Victory V3002	94	97			99		98			-	99	98	86	
Site av yield (t/ha)	2.32	1.60	0.96				2.83				2.46		0.59	1.35
LSD (%)	6	15	6		6		8		16	8	12	18		
CLEARFIELD														
Archer	99	91	-	-	100	105	104	89	94	No valid result	89	97	102	
Hyola 474CL	99	107	106	110	97	102	97	109	103		-	-	-	
Hyola 575CL	98	111	107	110	99	109	95	107	103		85	92	94	
Hyola 577CL	95	96	-	-	96	-	103	105	105		77	88	104	
Pioneer 43Y85 (CL)	-	-	88	-	-	93	-	-	-		-	-	-	
Pioneer 44Y87 (CL)	99	103	101	96	99	103	101	97	95		97	111	96	
Pioneer 44Y89 (CL)	102	102	116	109	98	108	105	106	103		122	101	109	
Pioneer 45Y86 (CL)	101	97	-	-	100	-	98	86	97		108	100	92	
Pioneer 45Y88 (CL)	98	93	-	-	102	-	103	93	98		91	103	93	
Site av yield (t/ha)	2.23	2.20	0.95	1.84	2.70	2.29	2.17	2.67	2.23			1.20	1.36	1.50
LSD (%)	6	11	7	5	6.00	7	10	4	6		10	13	22	
TRIAZINE TOLERANT														
ATR Bonito	-	-	91	95	97	94	104	103	93	No valid result	101	103	No valid result	
ATR Gem	96	96	-	-	96	97	-	100	99		92	100		
ATR Stingray	93	85	120	105	80	98	100	-	118		-	-		
ATR Wahoo	93	81	-	-	-	-	-	101	95		73	94		
Hyola 450TT	103	114	114	101	108	108	-	-	-		-	108		
Hyola 559TT	-	-	111	104	117	113	110	111	107		133	113		
Hyola 650TT	108	103	-	-	110	-	108	117	110		120	99		
Hyola 750TT	103	89	-	-	117	-	110	101	102		120	97		
Monola 314TT	-	-	-	-	-	-	93	87	96		99	114		
Monola 515TT	-	-	-	-	84	81	83	92	92		85	83		
Pioneer Atomic TT	-	-	104	93	-	107	106	90	-		-	-		
Pioneer Sturt TT	95	95	84	91	-	97	-	-	-		-	-		
Site av yield (t/ha)	2.06	1.62	0.76	1.61	2.34	2.06	2.42	2.57	1.97			0.81		1.12
LSD (%)	7	15	9	6	7	8	9	4	7			14		17
Date sown	30-Apr	30-Apr	1-May	30-May	7-May	7-May	6-May	5-May	5-May	15-May	15-May	20-May	19-May	
Soil Type	LS	CL	SL	L	CL	SCL	SCL	CL	LFSY	CL	CL	CL	CL	
Jan-Mar/ Apr-Oct rf	(82) 359	(80) 318	(32) 229	(96) 275	(84) 249	(87) 285	(64) 342	(99) 376	(93) 244	(40) 227	(35) 237	(61) 284	(61) 341	
pH (H2O)	5.4	7.1	8.4	8.2	8.1	8.5	6.2	6.9	7.7	6.4	5.7	5.6	8.0	
Previous Crop	Wheat	Wheat	Wheat	Fallow	Lentils	Wheat	Vetch	Wheat	Peas	Barley	Beans	Pasture	Beans	
Stress Factors	-	sd	dl	-	BWYV	-	-	-	BWYV	fr	-	-	-	

Data source: GRDC/NVT.

Comparisons cannot be made across chemistry types as the trials were not structured to allow this

de = pre-flowering moisture stress

dl = post flowering moisture stress

fr = frost damage (reproductive)

sd = spray drift

bwv = beet western yellows virus



Canola

SA Canola Mid-Season Canola Long Term Yield Performance (2010-2014, expressed as % of site average yield)								
	LOWER EP		YORKE PENINSULA		MID NORTH		SOUTH EAST	
	% Site mean	# sites	% Site mean	# sites	% Site mean	# sites	% Site mean	# sites
CONVENTIONAL								
AV Garnet	106	10	105	5	107	5	108	14
AV Zircon	103	8	107	3	107	3	106	11
Hyola 50	111	10	117	5	117	5	114	14
Hyola 635CC	109	3	-	-	-	-	121	4
Nuseed Diamond	113	5	-	-	-	-	112	4
Victory V3002	108	4	108	2	109	2	109	9
Site av yield (t/ha)	2.21		2.65		2.27		2.15	
CLEARFIELD								
Archer	106	4	108	4	104	14	109	13
Carbine	99	4	100	3	101	7	96	6
Hyola 474CL	99	6	102	4	102	12	105	8
Hyola 575CL	102	8	102	6	102	14	107	14
Hyola 577CL	103	2	101	2	102	5	107	5
Pioneer 43Y85 (CL)	92	2	94	2	96	2	95	3
Pioneer 44Y84 (CL)	100	8	104	5	101	11	98	11
Pioneer 44Y87 (CL)	104	2	105	2	104	6	105	6
Pioneer 44Y89 (CL)	-	-	-	-	105	4	105	3
Pioneer 45Y86 (CL)	105	8	108	6	105	14	105	14
Pioneer 45Y88 (CL)	107	4	106	3	105	9	109	8
Site av yield (t/ha)	2.18		2.91		2.42		1.99	
TRIAZINE TOLERANT								
ATR Bonito	103	4	97	3	100	9	98	8
ATR Gem	100	8	95	3	96	10	96	10
ATR Stingray	94	10	90	6	95	13	91	11
ATR Wahoo	102	6	95	2	96	8	99	8
Crusher TT	104	8	98	5	100	11	101	11
Hyola 450TT	99	4	101	2	101	4	101	3
Hyola 559TT	105	5	105	3	105	10	106	8
Hyola 650TT	106	3	-	-	105	5	111	4
Monola 314TT	89	2	-	-	88	5	79	5
Monola 515TT	-	-	-	-	88	3	88	3
Pioneer Atomic TT	-	-	103	2	101	8	97	5
Pioneer Sturt TT	92	2	88	2	93	7	85	2
Telfer	80	2	-	-	82	3	68	6
Thumper TT	93	8	84	4	89	10	96	11
Site av yield (t/ha)	1.97		2.6		2.24		1.81	
Data source: GRDC/NVT.								
Comparisons cannot be made across chemistry types as the trials were not structured to allow this								



Canola

SA Canola Variety NVT Trial Oil Content (2014, expressed as % Oil Content)													
	LOWER EP		UPPER EP		YORKE PENINSULA		MID NORTH			SOUTH EAST			
	Mid		Early		Mid	Early	Mid			Early	Mid		
Variety	Mt Hope	Yeelanna	Lock	Minnipa	Arthurton	Minlaton	Spalding	Riverton	Turret-field	Keith	Border-town	Frances	Moyhall
CONVENTIONAL													
AV Garnet	45.6	46.1	39.5	No Trial	41.6	No Trial	41.0	No Trial	No Trial	37.3	39.0	42.2	44.4
AV Zircon	46.8	46.7	39.9		40.3		40.3			34.7	38.9	42.2	44.4
Hyola 50	46.3	46.9	40.2		42.9		42.6			37.4	40.4	42.3	44.0
Hyola 635CC	47.6	48.4	40.0		43.2		41.9			38.7	40.7	41.3	44.2
Nuseed Diamond	45.3	46.3	40.5		42.7		41.4			40.7	40.3	42.3	44.4
Victory V3002	45.6	45.5	-		42.1		41.8			-	39.9	41.7	43.5
CLEARFIELD													
Archer	45.3	46.0	-	-	40.5	41.2	39.6	43.7	40.8	No valid result	37.5	39.6	43.4
Hyola 474CL	45.3	46.7	40.8	41.9	42.4	43.2	41.3	44.9	43.0		-	-	-
Hyola 575CL	45.2	47.2	40.9	41.2	42.7	43.4	42.0	45.2	43.3		39.7	41.4	44.1
Hyola 577CL	46.4	47.6	-	-	42.4	-	41.5	45.0	42.8		39.0	41.5	44.9
Pioneer 43Y85 (CL)	-	-	39.6	-	-	41.3	-	-	-		-	-	-
Pioneer 44Y87 (CL)	43.4	44.6	38.7	38.3	39.8	40.5	38.9	42.4	40.5		38.1	39.2	42.4
Pioneer 44Y89 (CL)	44.8	45.5	40.2	40.1	40.5	41.3	40.1	43.4	42.1		39.1	41.4	43.1
Pioneer 45Y86 (CL)	45.9	46.7	-	-	41.5	-	40.7	44.4	42.9		40.0	41.5	44.0
Pioneer 45Y88 (CL)	43.4	44.5	-	-	39.6	-	39.1	42.7	40.4		38.2	39.4	41.9
TRIAZINE TOLERANT													
ATR Bonito	-	-	41.0	39.6	42.2	42.5	41.5	44.9	43.7	No valid result	40.8	43.3	No valid result
ATR Gem	46.7	46.4	-	-	41.5	42.8	-	44.3	42.3		39.5	42.1	
ATR Stingray	45.4	45.9	41.2	41.2	41.0	42.6	41.4	-	43.7		-	-	
ATR Wahoo	47.2	47.2	-	-	-	-	-	44.0	41.3		38.9	41.5	
Hyola 450TT	47.5	46.6	41.8	41.2	42.8	42.7	-	-	-		-	42.6	
Hyola 559TT	-	-	41.1	40.0	42.8	42.3	41.3	43.4	41.2		39.1	41.5	
Hyola 650TT	45.8	46.1	-	-	42.0	-	40.4	43.5	40.6		38.2	40.5	
Hyola 750TT	-	-	-	-	-	-	-	-	-		-	-	
Monola 314TT	-	-	-	-	-	-	39.5	42.1	41.0		37.1	40.4	
Monola 515TT	-	-	-	-	40.9	41.0	40.1	42.6	41.0		37.4	40.8	
Pioneer Atomic TT	-	-	40.4	38.3	-	41.0	40.8	42.1	-		-	-	
Pioneer Sturt TT	-	-	-	40.2	-	42.6	-	-	-		-	-	
Data source: GRDC/NVT.													
Comparisons cannot be made across chemistry types as the trials were not structured to allow this													



Canola

SA Canola Early-Season Canola Long Term Yield Performance (2010-2014, expressed as % of site average yield)						
	UPPER EP		YORKE PENINSULA		SOUTH EAST	
	% Site mean	# sites	% Site mean	# sites	% Site mean	# sites
CONVENTIONAL						
AV Garnet	110	5	No Trial		115	5
AV Zircon	97	4			98	4
Hyola 50	119	5			116	5
Hyola 635CC	-	-			-	-
Nuseed Diamond	-	-			121	2
Victory V3002	-	-			110	2
Site av yield (t/ha)	1.15				1.81	
CLEARFIELD						
Archer	-	-	114	2	107	3
Carbine	106	3	103	2	106	3
Hyola 474CL	116	5	110	3	110	4
Hyola 575CL	116	3	111	3	108	4
Pioneer 43C80 (CL)	89	2	-	-	90	2
Pioneer 43Y85 (CL)	100	4	100	3	103	4
Pioneer 44Y84 (CL)	102	3	105	2	106	3
Pioneer 44Y87 (CL)	110	4	107	2	111	3
Pioneer 44Y89 (CL)	121	2	111	2	114	2
Pioneer 45Y88 (CL)	-	-	-	-	101	2
Site av yield (t/ha)	1.18		2.46		1.56	
TRIAZINE TOLERANT						
ATR Bonito	100	3	96	2	91	3
ATR Gem	-		97	2	95	3
ATR Stingray	105	5	98	4	97	5
ATR Wahoo	-		-		-	
Crusher TT	-		102	3	-	
Hyola 450TT	108	2	114	2	112	2
Hyola 559TT	113	3	113	2	114	3
Monola 314TT	-		-		87	2
Pioneer Atomic TT	110	2	107	2	118	3
Pioneer Sturt TT	98	4	92	3	89	4
Telfer	79	3	71	3	67	4
Thumper TT	-		94	2	-	
Site av yield (t/ha)	1.23		2.38		1.53	
Data source: GRDC/NVT.						
Comparisons cannot be made across chemistry types as the trials were not structured to allow this						



PBA Wharton outperforms in 2014 pea variety trials

By Kathy Fischer,
New variety Agronomy, SARDI, Care



Kathy Fischer

The recently released Kasper type dun variety, PBA Wharton was the top performing field pea across all twelve Pulse Breeding Australia (PBA) and National Variety Trial (NVT) sites averaging 19% above Kasper and 12% above PBA Gunyah. All other recently released varieties generally performed better or similar to Kasper.

Grain yields of field pea trials in 2014 were generally similar to their long term averages but perhaps better than expected due to the number of seasonal challenges experienced across the production regions.

Most districts received good rains in April allowing for a full subsoil water profile and also aiding with early weed control.

Potential grain yield was buoyed by above average winter rainfall followed by a cool dry spring across all sites with no significant heat events during the pod filling period.

Post flowering moisture stress was the major yield limiting factor across all sites with frost occurrences in August and October affecting a few sites.

Individual site yields ranged from almost nil at Laura, which was severely affected by frost at both the vegetative and flowering stages (results not included) to 2.71t/ha at Minlaton on the Yorke Peninsula.

Due to the dry spring conditions across the state, fungal spore dissemination did not occur.

There were very few significant disease infections reported that would have impacted significantly on grain yield.

The exception was at the Minnipa site where moderate to high black spot infection levels occurred in the early vegetative stage due to a combination of a relatively early sowing date, close proximity to last year's stubble and above average rainfall from May through to July.

The Blackspot manager disease prediction system ([www.](http://www.agric.wa.gov.au/cropdiseases)

[agric.wa.gov.au/cropdiseases](http://www.agric.wa.gov.au/cropdiseases)) was an effective tool for predicting spore release in 2014.

It is important to sow field peas when there is a low level of spore release predicted for the district to reduce the risk of disease establishing on the emerging crop.

Virus seed testing carried out on seed obtained from field pea research trials in 2014 have shown surprisingly high levels of PSbMV (pea seed-borne mosaic virus)

infection.

Infection levels of over 10% and even up to 17% were detected in Kasper in these trials. At these levels it is likely that reduced plant establishment and plant growth will occur which can lead to grain yield loss.

To overcome this issue, growers with infection levels over the industry standard of 0.5% need to source grain that has been tested free of PSbMV.

PBA Wharton performed particularly well across the sites of Minnipa, Snowtown, Balaklava, Mundulla and Riverton in 2014.

Its attributes of improved boron tolerance and resistance to viruses such as PSbMV over Kasper along with its early maturity is likely to have aided its performance last year.

It also has resistance to powdery mildew however this disease had no impact on variety performance in 2014.

Recent releases PBA Oura, PBA Percy (2011) and PBA Gunyah, PBA Twilight (2010), all with earlier and longer flowering windows than Kasper, showed equal or greater yield to Kasper across sites in 2014.

These varieties are also better suited to the practice of crop topping than Kasper. While Kasper yielded below or equal to these varieties last year, over the longer term average (2010-2014) Kasper has still performed similarly and above Parafield at all sites.

The high yielding white pea, PBA Pearl, performed consistently again yielding 2% above total site means and 14% above Kasper across all sites.

Growers are advised to secure markets before deciding to grow



white peas as they cannot be delivered to bulk dun or Kaspera type export markets.

Over the last two years a SAGIT funded project investigated the potential of recently released forage and dual purpose field pea types in SA.

The trials were held at four locations and compared these types against Kaspera, the old standard dual purpose field pea Morgan and various vetch varieties.

PBA Coogee is a dual purpose field pea which has a better disease profile than Kaspera and Morgan however it only performed similar to these varieties for hay and grain yield in the trials.

It also is earlier flowering and larger seeded compared to Morgan and has a higher tolerance to subsoil salt and boron.

The late maturing forage pea type PBA Hayman, was found to have a higher susceptibility to blackspot disease than all other varieties and this must be carefully managed when growing this variety.

Over the two years of trials PBA Hayman was found to have the highest biomass production potential of all pea varieties evaluated and in some trials it produced higher levels than the vetch varieties.

However there were some situations where its biomass production was only equivalent or even lower than the other pea varieties, particularly where black spot disease pressure was high.

Due to the longer growing season requirement of PBA Hayman it performed best in the areas with long and favorable production conditions providing black spot epidemics were low.

It was disadvantaged in lower rainfall districts or when sown late particularly with early season finishes.

Dual purpose field peas showed equal or lower biomass production but similar or greater grain yields to vetch varieties in these trials.

They also have larger established grain markets and better herbicide weed control options than vetch if being taken through to grain production. ■

■ More information:

Kathy Fischer, (08) 8842 6264

kathryn.fischer@sa.gov.au



Peas

Variety	SA Field Pea Variety Trial Yield Performance: 2014 (as % of site mean) and Long term (2010-2014) Average Across Sites (as % of site mean).																								
	MID NORTH			YORKE PENINSULA			SOUTH EAST			MURRAY MALLEE			LOWER EYRE PEN.			UPPER EYRE PEN.									
	2014		2010-2014	2014		2010-2014	2014		2010-2014	2014		2010-2014	2014		2010-2014	2014		2010-2014							
	Balak-lava	River-ton	Snow-town	Turret-field	% Site mean	Trial #	Min-laton	Kadina	Willamulka	% Site mean	Trial #	Mun-dulla	% Site mean	Trial #	Lame-roo	% Site mean	Trial #	Lock	Yee-lanna	% Site mean	Trial #	Minn-ipa	% Site mean	Trial #	
Kaspa	88	91	89	99	86	22	94	87	79	85	13	100	95	8	76	97	5	86	86	92	10	98	105	4	
Parafield	82	87	87	86	86	22	76	76	85	13	13	81	7	7	84	4	4	85	85	85	8	58	87	4	
PBA Coogee **		119			85	13	77		64	88	9	81	79	3	77	86	3	73	73	91	6	84	84	2	
PBA Gunyah	91	100	92	90	99	23	101	96	103	98	15	103	98	8	72	100	5	96	96	93	10	108	105	4	
PBA Oura	99	91	98	94	100	23	100	107	102	99	15	79	97	8	113	108	5	110	100	106	10	101	99	4	
PBA Pearl	92	95	94	108	107	23	106	104	120	110	15	80	100	8	124	124	5	115	111	123	10	70	102	4	
PBA Percy	101	81	99	94	101	23	91	97	99	98	15	78	91	8	108	111	5	89	89	104	10	93	101	4	
PBA Twilight	90	98	96	100	97	23	94	95	101	94	15	106	97	8	100	95	5	104	91	87	10	113	103	4	
PBA Wharton	102	134	103	104	102	23	96	96	108	95	15	109	103	8	95	93	5	98	102	94	10	139	98	4	
Sturt					100	14				101	5													93	4
Yarrum					101	12				103	7		109	5							105	4			
Site mean yield (t/ha)	2.14	2.10	1.89	2.70	2.58		2.71	2.3	2.18	2.81		1.08	2.59		1.2	1.56		1.96	2.12	1.90		1.89	1.82		
% LSD (0.05)	13	7	8	11			7	9	10			11			15			11	15			18			
Date sown	30/05	10/06	03/06	6/6			30/05	19/5	16/05			18/06			22/05	20/05		12/05	20/05			5/5			
Soil type	CL/L	SCL	L/L	LC/L			SCL	L	SL			CL/L			CL	S/SL		S/SL	S/SL			L			
Previous crop	Wheat	Wheat	Oaten	Pasture			Wheat	Wheat	Oaten			Wheat			Wheat	Wheat		Wheat	Wheat			Barley			
Rainfall (mm)	82/	22/	103/	137/			87/	64/	50/			37/			37/	80/		63/	80/			102/			
J-M/A-0	281	310	396	257			285	232	234			249			196	318		210	318			290			
pH (H2O)	7.2	7.2	7.3	7.7			8.4	8.8	8.7			8.1			8.7	8.4		8	8.4			8.6			
Site stress factors	wl,bs	dl,wl,ur	dl,fr				hd(met)	dl	dl			de,dl			dl,fr	wl,we						bs			

** Dual purpose type (hay production, or green/brown manuring)

Soil type

S = sand, C = clay, L = loam, Z = silty, H = heavy, M = medium, Li = light, F = fine, Lst = limestone, / = over

Site Stress Factors

bs = ascochyta blight (black spot), bb = bacterial blight, dl = post flowering moisture stress, dm = downy mildew (Kaspa strain), fr = reproductive frost damage, hdM = herbicide damage metribuzin
 ha = hail damage during, id = insect damage, ho = hayed off due to excessive biomass, ht = high temperatures during flowering/pod fill, rh = rhizoctonia, wl = waterlogging
 fv = vegetative frost damage, hd(met) = metribuzin herbicide damage, we = weed competition high, ur = variety performance different compared to other similar trials in region treat with caution

Data source: GRDC, PBA & NVT (long term data based on weighted analysis of sites and courtesy National Statistics Program)



PBA Jumbo 2 the giant in 2014 lentil trials

By Larn McMurray,
Research Scientist, SARDI



Larn McMurray

The newly released large seeded red lentil PBA Jumbo 2 was the highest yielding line across all South Australian Pulse Breeding Australia (PBA) and National Variety Trials (NVT) in 2014.

It averaged 12% higher than Nugget, 2% higher than PBA Ace, 3% higher than PBA Blitz and 5% higher than PBA Flash. Its relative yield increase over these varieties was generally less than that recorded in previous years but still impressive given the dry and early season finish that occurred in all areas.

Trial site mean yields ranged from 2.6 t/ha at Maitland and Minlaton on the Yorke Peninsula to less than 0.5 t/ha at the severely frost affected site of Laura in the Mid North.

The Laura site was removed from the 2014 data set, as was the trial at Lameroo which was also frosted and had a high level of variability across the site.

Average mean site yield from the remaining 10 trial sites was 1.77 t/ha, almost 1.0 t/ha lower than the 2013 average and 0.2 t/ha below the 2012 figure highlighting the impact of the dry second half to the season on final grain yield.

The lack of rainfall after July was the major yield limiting factor in 2014 with no trial affected by disease to any significant level.

The only other significant yield limiting factor influencing variety rankings across sites was Group C herbicide damage.

This issue was observed on the lighter textured high pH soils at the sites of Kadina, Willamulka and Snowtown where substantial rainfall events in early winter leached the herbicide into the plants root zone.

Varieties with short plant height and/or increased susceptibility to Group C herbicides (e.g. Nipper, PBA Herald XT) were adversely affected to a greater extent at these sites.

This occurrence, following on from a similar issue in 2012, again highlights the risks involved with the use of pre-emergent herbicides in lentils especially on light textured soils under conditions which favour plant damage. It also stresses the need for improved levels of Group C herbicide tolerance in lentil.

The release of the varieties PBA Herald XT and PBA Hurricane XT with a permit for the post-emergent use of the Group B herbicide imazethapyr in lentil provide an opportunity to change herbicide strategies, even if it is only in situations where weather conditions are conducive to damage from post sowing pre-emergent herbicides.

However, the management of Group B herbicide resistant weeds and the targeted weed spectrum to be controlled must be considered in this approach.

Besides its broad adaptation and high yields across a number of seasons PBA Jumbo 2 has good resistance to both of the major lentil diseases in Australia, botrytis grey mould (BGM) and

ascochyta blight (AB). It is mid-season in maturity with high levels of plant vigour and improved harvestability over Nugget.

PBA Jumbo 2 had high relative yields at all sites in 2014 except for the low yielding Group C herbicide affected Snowtown site.

Its best yields compared with another high yielding mid-season variety, PBA Ace, were at Maitland, Willamulka and Yeelanna where perhaps the latter

hayed off to a greater extent than PBA Jumbo 2 under the dry finishing conditions.

The other recent release, PBA Bolt which has improved tolerance to boron and earlier maturity than PBA Jumbo 2 and improved disease resistance over PBA Flash, also had high yields across most sites in 2014. It was generally 5% lower yielding than PBA Jumbo 2 but equivalent to PBA Flash and as seen in previous years was the highest yielding variety in Victoria.

The imazethapyr tolerant variety PBA Hurricane XT was 3% higher yielding than Nugget, 19% above PBA Herald XT but 9% lower yielding than PBA Jumbo 2 across all sites in SA last year.

It generally performed similarly to PBA Jumbo 2 at all sites except for on the Yorke Peninsula where it ranged from 0-22% below PBA Jumbo 2, indicating it lacks the high end yield potential of this variety. PBA Hurricane XT was higher yielding than PBA Herald XT at all sites in 2014 with its highest yield increases occurring at the sites affected by Group C herbicide damage, highlighting the increased sensitivity of the latter to this group of herbicides.

Two improved green (yellow cotyledon) varieties were released in Australia in 2014.

Their availability provides lentil growers with alternative variety options to the current green standard variety Boomer and different marketing options to the red lentils.

PBA Giant has more uniform large seed size and improved reliability of grain production in lower yielding environments than Boomer. It was 7% higher yielding than Boomer across all sites evaluated in 2014 but long term it yields similarly to this variety in SA.

PBA Greenfield is a medium seed sized green lentil. This is a new market class for Australian lentils but internationally there are significant markets for this type.

PBA Greenfield has long term yields similar to the high yielding red lentils types in SA and averages 7% higher than PBA Boomer and PBA Giant.

In 2014 it averaged 9% higher than Boomer and was similar yielding to PBA Ace at most sites. ■

■ More information:
Larn McMurray (08) 8842 6265,
larn.mcmurray@sa.gov.au



Lentils

SA Lentil Variety Trial Yield Performance: 2014 and Long term (2010-2014) Average Across Sites (as a % of site mean).																		
Variety	MID NORTH					YORKE PENINSULA					SOUTH EAST			MURRAY MALLEE		LOWER EYRE PENINSULA		
	2014		2010-14		Trial #	2014		2010-14		Trial #	2014		2010-14		Trial #	2014		Trial #
	Mail-ala	River-ton	Snow-town	% site mean		Kadina	Mait-land	Mel-ton	Min-laton		Willa-mulka	% site mean	Mun-dulla	% site mean		Lame-roo	% site mean	
Aldinga				97	4				94	7								
Boomer	83	95	101	98	15	93	91	98	94	20	63	84	3					
Nipper	81	95	47	90	18	78	90	88	92	24	71	87	5	91	5	84	94	3
Northfield				85	5				80	9								
Nugget	94	101	107	95	18	96	96	92	96	24	82	94	5	93	5	101	98	3
PBA Ace	110	105	113	106	18	100	100	108	101	24	118	112	5	108	5	99	99	3
PBA Blitz	115	106	104	98	18	109	113	100	101	24	75	93	5	96	5	77	96	3
PBA Bolt	106	105	108	103	18	101	103	103	96	24	106	107	5	106	5	93	96	3
PBA Bounty				99	12				100	15								
PBA Flash	103	108	103	101	18	110	104	106	101	24	82	105	5	102	5	95	106	3
PBA Giant	97	112	110	99	8	109	95	94	91	11	80							
PBA Greenfield	109	83	108	104	12	102	100	117	102	16	103							
PBA Herald XT	73	76	58	84	18	60	80	82	84	24	97	89	5	85	5	83	83	3
PBA Hurricane XT	95	100	92	99	16	97	95	97	100	21	111	108	4	102	4	126	100	3
PBA Jumbo	102	102	117	102	18	112	109	94	106	24	82	90	5	90	5	99	101	3
PBA Jumbo 2	106	105	93	108	13	101	112	108	121	110	102	110	3	112	3	122	108	3
Site mean yield (t/ha)	1.82	2.33	1.06	2.40		1.40	2.6	2.19	2.63	1.77	2.95	1.52		1.35		1.22	1.80	
% LSD (0.05)	9	12	15			17	5	19	5	12						20		
Date sown	6/6	25/5	10/6	3/6		19/5	30/5	29/5	7/5	16/5				22/5		20/5		
Soil type	L/ SCL	ZL/ SCL	L/ SCL	CL		L	CL/ ZCL	CLS/ LC	SCL	SL				CL		S/SL		
Rainfall (mm)	107/310	56/246	22/396	103/257		64/232	87/301	74/280	86/285	49/234				37/196		80/318		
J-M/A-O											37/249							
pH (H2O)	7.2	8.6	7.3	9		8.8	8.3	8.1	8.4	8.7	8.1			8.7		8.4		
Previous crop	Wheat	Wheat	Wheat	Oat/Hay		Wheat	Wheat	Barely	Wheat	Oaten hay	Wheat			Wheat		Wheat		
Site stress factors	frv, fr	dl	w, dl	hdM, dl, fr		hdM, w	dl	dl		dl, hdM				sr, dl		wl, cv		

Soil type: S = sand, C = clay, L = loam, H = heavy, M = medium, Li = light, F = fine, Z = silt, Lst = Limestone, / = over residue

Site Stress Factors: de = pre flowering moisture stress, fr = reproductive frost damage, dl = post flowering moisture stress, ht = high temperatures during flowering/pod fill, hd-lo = herbicide damage-Lontrel

bgmL = botrytis grey mould (low), bgmM = botrytis grey mould (moderate), bgmS = botrytis grey mould (severe), bgmS = botrytis grey mould (severe), ab = ascochyta blight (low), hdM = herbicide damage metribuzin

w = weed competition low, wl = temporary waterlogging, phwd = preharvest weather damage, pe = poor establishment, nbw = native bud worm, fv = vegetative frost damage, cv = trial has high variability use caution

Data source: GRDC, PBA & NVT (long term data based on weighted analysis of sites and courtesy National Statistics Program)



PBA Monarch reigns supreme in 2014 chickpea trials

By Larn McMurray SARDI, Clare and Kristy Hobson, PBA Chickpeas, DPI NSW

The early maturing kabuli type, PBA Monarch was the highest yielding medium to large seeded chickpea variety across all South Australian Pulse Breeding Australia (PBA) and National Variety (NVT) kabuli trials in 2014.

It was 6% higher yielding than the small seeded kabuli variety Genesis™ 090 and 3 and 9% higher yielding than the medium to large sized varieties Almaz and Genesis™ Kalkee respectively.

It was however 3% lower yielding than the early maturing very small seeded Genesis™ 079 but has significantly larger seed size than this variety.

PBA Monarch has long term grain yields equivalent to Genesis 090, but higher than Almaz and Genesis Kalkee. However it has consistently out yielded all these varieties in seasons or regions with dry finishes.

Statewide average grain yields of the kabuli trials last year averaged 1.89 t/ha but did not include the drought affected Mundulla trial.

The lack of significant spring rainfall events at all sites was the main yield limiting factor in 2014 and this favoured the performance of earlier maturing varieties such as PBA Monarch and Genesis 079.

The major chickpea disease, ascochyta blight (AB), was not present at any site due to the dry conditions however early season waterlogging and cold temperatures did slow growth at sites such as Riverton, Yeelanna and Mundulla.

Effective and timely weed control was also difficult to achieve on these heavier textured sites and weed competition also reduced yields to some extent.

Weed control continues to be a major constraint to chickpea production in SA and careful paddock selection and effective management strategies are essential when growing this crop.

PBA Monarch is rated as moderately susceptible to AB, similar



Larn McMurray

to Almaz and Genesis Kalkee but inferior to Genesis 090.

PBA Monarch has seed size similar to Almaz, larger than Genesis 090 but smaller than Genesis Kalkee.

In shorter growing seasons such as seen in 2014, PBA Monarch will have larger and more consistent seed size than other medium sized varieties due to its earlier pod filling timing.

Across the four NVT trials last year PBA Monarch had an average grain weight of 42.4g per 100 seeds (compared with 45.7g in 2013) and was 5% higher than Almaz, 26% higher than Genesis 090 but 7% lower than Genesis Kalkee.

Despite the dry finish to the season desi chickpea yields were respectable averaging 1.9 t/ha across all sites.

These yields were generally 10-20% lower than lentil and field pea yields achieved at the same sites reflecting the later maturity timing of chickpeas.

As for the kabuli trials the favourable winter conditions and absence of AB disease pressure produced high amounts of vegetative growth and set up high yield potentials at most sites.

The dry but generally mild finish to the season reduced maximum yield potential significantly but still allowed most trials to finish off.

Of particular note was the trial at Rudall on the central Eyre Peninsula where an impressive site mean yield of 1.7 t/ha was achieved highlighting the potential of chickpeas in these regions when correct paddock selection and good agronomic management occurs.

The early maturing desi variety PBA Striker was the highest yielding variety averaging 5% higher than the AB resistant mid maturing PBA Slasher.

It was also higher yielding than the small seeded kabuli variety Genesis 090 at all sites, except for the waterlogged and weed infested Yeelanna site where it was equivalent.

PBA Striker averaged 15% higher than Genesis 090 across all sites in 2014, a similar result to that achieved in 2013.



These findings show the general improved adaptation of desi types over kabuli types in SA, particularly in areas or seasons prone to rapid and dry finishes.

The very small seeded kabuli, Genesis™ 079 was 3% lower yielding than PBA Striker across all sites but 2% higher than PBA Slasher.

PBA Striker is well adapted to all chickpea growing areas of SA however it only has moderate resistant to AB and will require a higher level of disease management than Genesis 090 and PBA Slasher in disease prone areas.

The large seeded, early to mid flowering desi type variety PBA Maiden with a seed size 30% greater than PBA Slasher performed similarly to this variety at all sites except for Yeelanna where it was slightly lower yielding.

PBA Maiden is targeted for whole seed markets where its large, angular shaped and bright yellow-tan coloured seed coat is well suited to their specific requirements.

It has moderate resistance to AB and long term yields similar to PBA Slasher but lower than PBA Striker.

Growers are advised to investigate delivery and marketing options for PBA Maiden prior to growing this variety due to its unique and favourable seed characteristics.

A number of chickpea options are now available, both desi and kabuli, and they offer a range of marketing and agronomic differences to growers to suit individual needs and preferences.

These variety options will help chickpea to remain an alternative pulse option to lentil and field pea in most pulse growing areas of SA providing soil type, weed and season length limitations are allowed for. ■

■ **More information:**

Larn McMurray (08) 8842 6265,

larn.mcmurray@sa.gov.au



Chickpeas

SA Chickpea Variety Trial Yield Performance: 2014 (as a % of site mean) and Long term (2010-2014) Average Across Sites (as a % of site mean).																		
Variety	MID NORTH				YORKE PENINSULA				SOUTH EAST			LOWER EYRE PENINSULA			UPPER EYRE PENINSULA			
	2014		2010-2014		2014		2010 - 14		2014	2010 - 14		2014	2010 - 14		2014	2010 - 14		
	Balak-lava	River-ton	% Site mean	Trial #	Mel-ton	Min-laton	% Site mean	Trial #	Mundulla	% Site mean	Trial #	Yee-lanna	% Site mean	Trial #	Rudall	% Site mean	Trial #	
Desi trials																		
Ambar	91	93	106	6	94	100	109	6	High variability in trial	98	4	110	115	5	97			
Genesis 079	107	107	129	5	108	111	104	9		105	5	97	99	3	101			
Genesis 090	91	87	126	5	92	94	96	9		104	5	93			86			
Genesis 509	95		93	7	83		96	6		93	1							
Howzat	98		97	6	99		100	5										
Neelam	102	97	109	7	109	99	109	7		100	5	95	115	6	101	117	3	
PBA Boundary			98	6			97	5										
PBA HatTrick			95	7			95	6		97	1							
PBA Maiden	115	111	103	11	113	105	105	10		102	5	88	106	6	98	99	3	
PBA Slasher	109	108	107	11	104	103	108	10		103	5	105	112	6	104	111	3	
PBA Striker	109	103	107	11	117	104	110	10		100	5	99	111	6	99	112	3	
Site mean yield (t/ha)	2	2	2.45		1.92	2.33	2.67			1.47		1.52	1.69		1.69	1.08		
% LSD (0.05)	19	16			14	4						13			11			
Kabuli trials																		
Almaz		103	100	9	98	93	96	9	High variability in trial	101	5	101	100	3				
Genesis 079		103	107	9	105	109	109	9		105	5	99	105	3				
Genesis 090		90	103	9	103	90	100	9		104	5	100	108	3				
Genesis 114			95	9	96		94	8		97	4							
Genesis Kalkee		91	96	9	93	93	93	9		98	5	92	91	3				
PBA Monarch		109	103	9	99	107	104	9		107	5	84	92	3				
Site mean yield (t/ha)		2.08	2.88		2.44	1.98	2.35			1.47		1.04	1.22					
% LSD (0.05)		NS			10	5						18						
Date sown	30/5	10/6			5/6	30/5				18/6		20/5			12/5			
Soil type	CS/SC	SCL			CLS/LC	SCL				CL/Lst		S/SL			S/SL			
Rainfall (mm) J-M/A-O	82/281	22/396			75/280	86/285			37/249		80/318			63/210				
pH (H2O)	7.2	7.3			8.1	8.4			6.3		8			8				
Previous crop	Wheat	Wheat			Barley	Wheat			Wheat		Wheat			Wheat				
Site stress factors	wl	we,dl,wl			dl,md				dl,de		we,dl,wl							
Soil type																		
S = sand, C = clay, L = loam, H = heavy, M = medium, Li = light, F = fine, Z = silt, Lst = Limestone, / = over																		
Site Stress Factors																		
de = pre flowering moisture stress, fr = reproductive frost damage, dl = post flowering moisture stress, ht = high temperatures during flowering/pod fill																		
bmho = high biomass and premature hayoff due to dry finish, ls = late sown, we=weed competition high, w = weed competition low, wl = temporary waterlogging, phwd = preharvest weather damage, pe = poor establishment, nbw= = native bud worm, md=mice damage																		
*** Data not available at time of publishing																		
NS = no significant variety effect																		
Data source: SARDI/GRDC, PBA & NVT (long term data based on weighted analysis of sites and courtesy National Statistics Program)																		



PBA Barlock shadows Mandelup in 2014 lupin trials

By Amanda Pearce,
Senior Research Officer, SARDI, Struan

PBA Barlock was the highest yielding lupin variety across South Australia in 2014, beating Mandelup by 6% when averaged across all sites.

Eight released varieties and 22 advanced lupin breeding lines were evaluated at eight sites across South Australia in 2014.

All sites average yields were below long term averages, ranging from 1.16 t/ha at Tooligie to 1.84 t/ha at Wanilla.

Results at two sites in South Australia did not meet the standard required by NVT protocols for public release of data in 2014; Keith and Mundulla, both due to moisture stress.

Seeding of 2014 sites occurred over a seven week window, starting at Spalding on 22 April and concluding at Mundulla on 6 June.

All seeding was completed within a day or so of the co-operating farmer. Establishment was largely good at all sites with the exception of Keith.

Above average rainfall was experienced across the Eyre Peninsula and Mid North through April to July, with Ungarra experiencing waterlogging.

However, from August through to crop maturity rainfall was well below average.

The Mallee had average rainfall until August, after which it had below average rainfall coupled with average temperatures.

The South East had dry conditions from August, which resulted in pre-flowering and post-flowering moisture stress at Keith and Mundulla. Frosts were recorded at Ungarra, Spalding, Lameroo and Frances.

There were few obvious symptoms of virus infection in lupin crops in 2014. Virus testing found Beet Western Yellow Virus (BWYV) in one crop tested.



Amanda Pearce

PBA Barlock performed similarly to Mandelup at Wanilla, Ungarra, Lameroo and Frances. At Tooligie and Spalding it yielded considerably higher than Mandelup.

Long term averages show PBA Barlock performing better than Mandelup only on the Eyre Peninsula. PBA Barlock was released in September 2013.

It has been widely evaluated in South Australia for five years. It was released as a Tanjil/Wonga

replacement, having good resistance to anthracnose and high yields.

PBA Gunyidi has been released as a potential Mandelup replacement that improves on Mandelup by having more shatter resistant pods, giving growers the option of being able to harvest without incurring significant losses.

Across the state Mandelup performed better than PBA Gunyidi by 2%, with similar yields at most sites, except with Mandelup having an advantage at Lameroo.

The contribution of data and information for this report from the Pulse Breeding Australia Lupin Breeding Program by Dr. Jon Clements (DAFWA) and Mark Richards (NSW DPI) is greatly acknowledged. ■

■ More information:
Amanda Pearce (08) 8762 9105,
amanda.pearce@sa.gov.au



Lupins

SA Lupin Variety Trial Yield Performance (2014 and predicated regional performance, expressed as % of site average yield)																
Variety	Lower Eyre Peninsula			Upper Eyre Peninsula			Mid North			Mallee			South East			
	2014			2014			2014			2014			2014			
	Wan-illa	Ung-arra	Long term average across sites	Tool-igle	Spal-ling	Long term average across sites	Lam-eroo	Keith	Mun-duilla	Frances	Long term average across sites	Long term average across sites	Long term average across sites	Long term average across sites	Long term average across sites	
	t/ha	% of Site Mean	No. Trials	t/ha	% of Site Mean	No. Trials	t/ha	% of Site Mean	No. Trials	t/ha	% of Site Mean	No. Trials	t/ha	% of Site Mean	No. Trials	
Danja	92	1.81	87	6	73	1.66	88	3	78				104	1.98	103	6
Jenabillup	101	2.09	100	12	96	1.89	101	6	106	2.06	121	7	97	2.00	104	22
Jindalee	92	1.72	82	12	62	1.50	80	6	85	1.71	101	7	99	1.63	84	23
Mandelup	104	2.08	100	12	87	1.87	99	6	92	2.02	119	7	99	2.00	104	23
PBA Barlock	102	2.20	105	10	106	2.00	106	6	115	1.97	116	5	95	1.99	103	16
PBA Gunyidi	100	2.18	104	12	86	1.94	103	6	91	1.97	116	7	98	1.93	100	22
Quilnook	92	2.08	100	4	101	1.88	100	3	98				103	1.99	103	3
Wonga	99	1.92	92	12	104	1.75	93	6	101	1.70	100	7	93	1.77	92	22
Site av yield (t/ha)	1.84	1.76	2.09		1.16	1.88			1.58	1.97			1.29	1.55	1.93	
LSD (0.05) (t/ha)	0.23	0.21			0.19				0.13				0.14			
Date Sown	15 May	8 May			5 May				22 April				5 May		6 June	3 June
Soil Type	S	S			SL				LFS/SCL				CL		S/C	S
pH(water)	5.8	5.9			6.7				6.0				7.1		6.0	5.7
J-M/A-O rain (mm)	83/399	121/315			64/264				95/327				45/200		40/229	35/237
Previous Year	-	canola			lupin				wheat				barley		canola	pasture
Site Stress Factors	wa, dl	wa, fr							fr, fr				fr		de, dl	fr

Abbreviations

Soil Type: S - Sand C - Clay L - Loam F - Fine K - Coarse M - Medium LI - Light H - Heavy Z - silt / - divides topsoil from subsoil

Stress Factors: frv - frost damage vegetative, fr - frost damage (reproductive), de - pre-flowering moisture stress, dl - post-flowering moisture, wa - waterlogging

Data source: SARDI/GRDC, NVT and PBA Australian Lupin Breeding Program.

2008-2014 MET data analysis by National Statistics Program.



New PBA Samira equals Farah for highest yielding faba bean in 2014

By Amanda Pearce,
Senior Research Officer, SARDI, Struan

Farah and new variety, PBA Samira, equaled as the highest yielding released faba beans evaluated in NVT and PBA faba bean breeding sites across South Australia in 2014.

Eight NVT faba bean trials and seven PBA breeding trials were conducted across South Australia in 2014. In addition a specialty broad bean trial was conducted at Millicent in the South East, where PBA Kareema was the best performing released broad bean variety. Results from Cockaleechie PBA faba bean breeding site did not meet the standard required by NVT protocols for public release of data in 2014.

Seeding of faba bean NVT trials and breeding sites started on 5 May at Lameroo, with all trials sown by 16 May, except for Strathalbyn (29 May), Millicent (2 June) and Bool Lagoon (10 June). Establishment was largely good across all sites.

Above average rainfall was experienced across the Eyre Peninsula and Mid North/Central through April to July, with Cockaleechie experiencing waterlogging. However, from August through to crop maturity rainfall was well below average. The Mallee had average rainfall until August, after which it had below average rainfall coupled with average temperatures, experiencing five frosts (-1.5C) in September. The South East had dry conditions from August, which resulted in pre-flowering and post-flowering moisture stress at Wolseley and Keith.

Average yields at South Australian faba bean NVT and breeding sites ranged from 0.94 t/ha at Lameroo to 4.07 t/ha at Millicent in 2014. Across the state average site yields were generally below long term averages, a consequence of the unusually dry warm conditions in spring.

New release PBA Samira performed favorably across all sites, although slightly down on its long term average yield performance, where it has shown a five percent advantage over all over varieties in most districts of South Australia. Results suggest it is well suited to higher yielding environments (Saddleworth, Freeling, Tarlee, Bool Lagoon and Millicent) where it can out yield Farah. Despite this, averaged across the state PBA Samira failed to gain any advantage over Farah. The average Fiesta VF yield across the state was below that of PBA Samira and Farah.

Nura and PBA Rana showed similar yield performance to each other, with Nura being the higher yielder of the two. PBA Rana 2014 yields tend to be the lowest of all varieties, consistent with long term results, however its performance tends to improve at higher rainfall sites in the South East and Mid North. PBA Rana



Amanda Pearce

produces large, plump and light brown seed suited to Egyptian market requirements for that grade. It represents a unique and different category for the faba bean market.

It appears that the slightly larger seeded and relatively later flowering varieties, PBA Samira and PBA Rana may have suffered more in the dry finish compared to Farah and Fiesta VF.

Necking, where the lower stem of the faba bean plant remains erect but a proportion of the stem 'necks' over between 90 and 180 degrees in the podding zone, was prevalent in research trials and commercial crops in 2014. This phenomenon is thought to be due to moisture stressed plants being subjected to heat and wind events during the reproductive phase. The results from across a number of trials in 2014 showed a range of variety responses to necking, with Nura the most susceptible and sometimes PBA Samira and PBA Rana worse than Farah. Interestingly the results for necking were different to lodging with generally Nura and PBA Samira showing improved results over Farah, although apart from at Maitland lodging was generally low in 2014. The effect of necking on grain yield and seed size is largely unknown although harvestability is often reduced.

Ascochyta blight leaf spot was observed at high levels in many crops in mid-winter, as a result of spread during ongoing rain. Some crops of Farah and PBA Rana were affected in the lower and mid north of South Australia where a new virulent strain of the fungus has been identified. Farah should now be considered susceptible to the disease, comparable with Fiesta VF and managed accordingly viz. early fungicide sprays ahead of rain events during late July and early August to slow the spread of disease, with follow up sprays ahead of rain events to prevent pod infection. Disease assessments of field trials located in affected areas confirmed Nura and PBA Samira are resistant to the new virulent strain of ascochyta. Chocolate spot lesions were identified in the lower north region of South Australia, but the disease did not progress to the aggressive stage.

The contribution of data and information for this report from the Pulse Breeding Australia Faba Bean Breeding Program by Jeff Paull (University of Adelaide) and Dr. Rohan Kimber (SARDI), is greatly acknowledged. ■

■ More information:
Amanda Pearce (08) 8762 9105,
amanda.pearce@sa.gov.au



SA Faba Bean Variety Trial Yield Performance (2014 and predicted regional performance, expressed as % of site average yield)																																	
Variety	Lower Eyre Peninsula			Upper Eyre Peninsula			Yorke Peninsula			Mid North/Central			Mallee			South East																	
	2014	Long term average across sites	2014	2014	Long term average across sites	2014	2014	Long term average across sites	2014	2014	Long term average across sites	2014	2014	Long term average across sites	2014	2014	Long term average across sites																
	Cocka-lee-chie	t/ha	No. Site Trials	Lock t/ha	% of Site Mean	No. Site Trials	Maitland	Minlaton	t/ha	% of Site Mean	No. Site Trials	Laura	Pinery	Saddleworth	Tarlee	Free-lining	Strathalbyn	t/ha	% of Site Mean	No. Site Trials	Lameroo	t/ha	% of Site Mean	No. Site Trials	Keith	Woolley	Boon	Milli-cent	t/ha	% of Site Mean	No. Site Trials		
Farah		1.68	97	10	97	1.48	101	5	105	101	3.66	102	15	108	74	99	103	92	101	2.74	100	34	101	1.42	101	6	110	108	100	96	3.07	101	28
Fiesta VF		1.65	95	10	97	1.48	101	5	96	95	3.64	102	15	111	91	91	96	93	103	2.72	99	34	97	1.42	101	6	113	99	107	3.06	101	27	
Nura		1.67	96	10	109	1.38	94	5	98	98	3.63	101	15	112	107	103	87	100	85	2.69	98	34	93	1.42	101	6	80	89	80	104	3.00	99	28
PBA Rana		1.60	92	8	89	1.34	91	4	77	87	3.34	93	14	55	66	94	87	79	90	2.55	93	31	82	1.31	94	6	93	76	93	96	2.84	94	26
PBA Samira					107	1.48	101	3	91	94	3.72	104	6	86	97	107	103	96	96	2.92	106	13	94	1.52	109	3	105	110	105	106	3.20	106	13
Site av yield (t/ha)		1.74			1.17	1.47			2.54	3.52	3.58			1.14	1.76	3.41	3.10	2.38	1.78	2.75			0.94	1.40		1.04	1.34	2.43	4.07	3.03			
LSD (0.05) (t/ha)					0.13				0.27	0.17				0.10	0.22	0.29	0.26	0.26	0.16				0.15			0.18	0.26	0.30	0.58				
Date Sown					12	May			13	7	May			8	May	8	May	12	13	29	May		5	May		15	16	10	2				
Soil Type					SL				CL/ ZCL	SCL				L/SCL	CL	HC	LMC/ MC	CL	CL				CL			CL	C	C	Peat				
pH(water)					8.0				8.3	8.5				7.2	-	-	8.1	-	-				8.7			8.1	7.9	6.9	8.0				
J-M/A-O rain (mm)					64/ 264				87/ 301	87/ 285				107/ 310	91/ 275	95/ 341	90/ 349	116/ 311	81/ 279				45/ 200			37/ 249	35/ 237	61/ 340	93/ 453				
Previous Year					wheat				wheat	wheat				wheat	wheat	wheat	wheat	wheat	wheat				wheat			wheat	wheat	-	-				
Site Stress Factors					ld				ld, nk					frv, fr	dl, nk	dl	abl	dl	dl				dl, nk			de, dl	de, dl						

Abbreviations
 Soil Type: S - Sand C - Clay L - Loam F - Fine K - Coarse M - Medium Li - Light H - Heavy Z - silt / - divides topsoil from subsoil
 Stress Factors: abl - ascochyta blight low level, de - pre-flowering moisture stress, dl - post-flowering moisture stress, frv - frost damage (reproductive), ld - lodging, nk - necking
 Data source: SARDI/GRDC, NVT and PBA Australian Faba Bean Breeding Program.
 2007-2014 MET data analysis by National Statistics Program.



Oat varieties share success in 2014 trials

By Sue Hoppo and Pamela Zwer,
SARDI National Oat Breeding Program

Oat variety performance in 2014 was very site specific making variety selection for a region difficult to predict. Mitika[®] was the highest yielding variety in the Paskeville, Crystal Brook and Kybybolite trials, Wandering did well at the Bordertown and Frances trials in the South East, Potoroo did well at Pinery and Bannister[®] was the highest yielding variety at Riverton and Lowbank.

Williams[®] did not perform as well this year compared to 2013 but did yield above the site average at Pinery, Riverton, Bordertown and Lowbank.

Bannister[®] was the only variety to yield above the site average at all eight trial sites.

Grain quality for all varieties was better than expected given the lack of rainfall through the late winter/spring period in South Australia.

Averaged across all Stage 4 grain trials conducted by the National Oat Breeding Program in South Australia, the tall varieties Carrolup and Yallara[®] had the best hectolitre weights while Mitika[®] and Wombat[®] averaged the highest hectolitre weight of the dwarf varieties.

Mitika[®] averaged the highest grain weight of all varieties tested and Possum[®] averaged the lowest screenings. Possum[®], Mitika[®], Wombat[®], Dunnart[®], Kojonup[®] and Yallara[®] all averaged lower than 10% screenings.



Sue Hoppo

New variety Wombat[®] had the second highest groat percent and was only slightly less than Yallara[®].

Newly released, high yielding WA varieties Bannister[®] and Williams[®] can be high in screenings depending on the finish. They showed this in 2014 although they are an improvement compared to varieties such as Echidna and Potoroo.

Surprisingly, yields in 2014 at most trial sites were similar to the long term average for the region. Only

Kybybolite was well below average and Riverton well above average.

Factors such as grain quality, disease resistance and maturity as well as grain yield should be considered before selecting the variety best suited to your district and end use.

The sowing guide published each year in October/November or available on the SARDI component of the new PIRSA website www.pir.sa.gov.au/research provides comprehensive notes on each variety and is your best guide to choosing oat varieties for both grain and hay production. ■

■ More information:
Sue Hoppo (08) 8303 9386
sue.hoppo@sa.gov.au



Oats

SA Oat Variety Yield Performance: 2014 and long term (2010-2014), expressed as a % of site average and as t/ha								
2014								
Region	Yorke Pen.	Mid North*			South East			Murray Mallee
Variety	Paskeville	Crystal Brook	Pinery	Riverton	Bordertown	Frances	Kybybolite	Lowbank
Bannister	102	104	105	114	106	101	105	123
Carrolup	-	-	85	88	95	102	96	-
Dunnart	96	100	113	107	104	100	99	111
Echidna	109	107	115	106	96	92	94	102
Kojonup	-	-	105	103	97	101	102	-
Mitika	114	110	97	104	105	102	114	100
Possum	112	108	105	98	102	97	109	78
Potoroo	-	-	123	104	-	-	92	-
Wandering	-	-	120	111	107	108	90	-
Williams	89	91	115	110	105	85	100	118
Wombat	110	104	109	100	94	87	99	82
Yallara	73	85	93	103	99	114	100	90
Site Mean (t/ha)	3.29	3.19	3.16	4.38	3.17	3.34	1.76	1.79
LSD (t/ha)	8	9	13	12	6	9	29	7
Date sown	12 May	7 May	26 May	30 May	29 May	3 June	17 June	1 May
Soil type	SCL	SCL/CL	CL	CL	red C	brown C	SL	LS/LS
J-M / A-O rain mm	75/280	93/262	91/275	90/349	35/237	61/284	44/329	75/195
pH (water)	8.3	7.9	6.1	7.1	7.7	5.6	6.1	8.7
previous crop	lentils	vetch	barley	beans	canola	pasture		barley
Stress factors		dl	de	de	de,dl	de,dl	de, dl	dl,f

* 2014 Turretfield trial abandoned due to severe washing of plots post seeding

SA Oat Variety Yield Performance: Long Term average grain yield across sites within regions (2010-2014) as % site average and number of trials												
Variety	Lower Eyre		Upper Eyre		Yorke Pen.		Mid North		South East		Murray Mallee	
	%sites av.	# trials	%sites av.	# trials	%sites av.	# trials	%sites av.	# trials	%sites av.	# trials	%sites av.	# trials
Bannister	117	3	113	3	114	4	118	17	118	13	125	4
Carrolup							95	13	102	9		
Dunnart	105	4	109	4	107	5	110	18	112	13	125	5
Echidna							101	4	106	4		
Euro	94	3	106	3	87	3	92	3	99	6	98	3
Kojonup							107	13	109	9		
Mitika	110	4	100	4	111	5	112	18	106	13	111	5
Mortlock							92	11	95	4		
Numbat	77	3	67	3	91	3	65	14	69	11	11	3
Possum	109	4	102	4	110	5	109	18	106	13	106	5
Potoroo	101	4	107	4	110	4	106	17	113	10	113	4
Quoll									109	4		
Wandering							104	13	109	9		
Williams	115	3	113	3	111	4	117	17	120	13	126	4
Wombat	111	4	111	4	109	5	106	18	111	13	109	5
Yallara	95	4	100	4	85	5	98	18	98	13	102	5
region mean t/ha	2.85	4	1.46	4	3.82	5	3.14	18	3.14	13	1.47	5

Abbreviations

Soil types: S=sand, C=clay, L=loam, F=fine, K=coarse, M=medium, Li=light, H=heavy, / =divides topsoil from subsoil

Stress factors: d=dry spring, de=drought early, dl=drought late, f=frosts

Data source: NVT, GRDC and SARDI Crop Evaluation and Oat Breeding Programs (long term data based on weighted analysis of sites)

Data analysis by GRDC funded National Statistics Group

SA Oat Variety Yield Performance: Grain quality for varieties sown in Stage 4 Grain trials (data is unanalysed means)							
2014							
Variety	Hectolitre Weight (kg/hl)	1000 Grain Weight (g)	Screenings (% <2mm)	Protein (% db)	Oil (% db)	Groat Percent	Minolta L
Bannister	47.1	28.0	14.9	11.1	8.1	70.1	63.7
Carrolup	49.4	30.7	12.7	12.6	6.3	72.2	64.1
Dunnart	47.2	31.3	8.1	10.9	7.2	72.7	64.3
Echidna	46.0	27.9	18.8	11.3	7.1	68.4	65.2
Kojonup	45.9	30.6	8.8	12.4	6.6	72.8	64.8
Mitika	47.8	32.4	7.8	12.0	7.2	70.7	62.3
Possum	47.0	32.1	5.9	11.6	6.7	72.7	63.0
Potoroo	42.7	29.7	18.8	11.0	7.6	69.0	65.3
Wandering	46.2	30.6	11.8	11.4	7.2	68.7	65.6
Williams	45.4	26.5	17.5	11.0	7.8	68.2	64.4
Wombat	47.8	31.2	9.4	11.7	7.0	74.3	64.4
Yallara	49.0	30.5	9.1	10.7	5.9	74.6	66.1



Bogong and Fusion triticale inseparable in 2014 trials

By **Charlton Jeisman, Senior Research officer, SARDI,** and **Rob Wheeler, Leader, New Variety Agronomy, SARDI**

Fusion and Bogong have jostled for the top position across the six triticale National Variety Trial (NVT) sites in South Australia in 2014.

Fusion was highest yielding at three of the six sites although Bogong gave Fusion some strong competition.

All six triticale NVT sites in SA were sown between mid to end of May 2014 with adequate moisture at sowing, thanks to a timely seasonal break and widespread summer rain across much of SA.

Site average yields ranged from 2.03 t/ha at Pinnaroo in the Murray Mallee to 4.88 t/ha at Bute on northern Yorke Peninsula (although a series of frosts and a tough spring limited yield potential at Pinnaroo).

Average yields for sites at Minnipa, Bute and Turretfield were at least 32% above their long term average, while Conmurra was 25% below average due to a lack of rain at flowering and grain fill.

When comparing the site yields with long term averages for Eyre Peninsula, note that the long term averages include results from sites at Streaky Bay (Upper Eyre) and Greenpatch (Lower Eyre).

These two triticale sites were not sown in 2014 and will not be continued however the potential of varieties in these districts is still reflected in the long term averages.

Despite post-flowering moisture stress at Pinnaroo, Fusion yielded 13% above the site mean, followed by Bison (11%) and Canobolas (8%).

Bison is a new variety released by AGT and was included in all SA triticale NVT sites for the first time in 2014.

Chopper performed well across most sites, exceeding the site average at four of the six sites.

Chopper has very early maturity and makes it well suited to finishing in tough spring conditions.

Bogong was 7-11% higher yielding than the average for each site (except Pinnaroo) with test weights at least 1 kg/hL above Fusion.

Bogong has been a high yielding variety for a number of seasons and is broadly adapted with an ability to finish well



Charlton Jeisman

across a wide range of growing environments in SA.

Grain quality was excellent for most varieties across sites, and except for Bison and Chopper at Bute which had high screenings levels (10% and 11% respectively), no other varieties were below minimum receival standards.

Grain protein levels averaged around 11-12% although there are no triticale receival standards for protein.

Notable thousand-grain-weights (40 g and above)

include Bison at Pinnaroo and Conmurra, Bogong at Bute and Conmurra, and Fusion at Conmurra, Minnipa and Turretfield.

Site average test weights ranged between 72 kg/hL (Wharminda) and 77 kg/hL (Conmurra) with Bison 4% lower than the site average at Wharminda and Goanna 3% higher at Conmurra.

Triticale varieties that have been released in the past five years continue to dominate in most districts, suggesting many older varieties such as Tahara are beginning to become outclassed; particularly in relation to yield.

Some varieties however are dual purpose (such as Yukuri, Endeavour, Rufus and Abacus), and will never compete for yield as their grazing tolerance features influence how they set up for grain yield.

These varieties are generally only grown in the wetter, longer season districts.

Always consider long term averages when evaluating yield performance of individual varieties to reduce any seasonal influences.

Additionally, refer to SARDI's 2015 Sowing Guide for updated information on rust classifications as they can change between seasons as new rust pathotypes develop. These have largely remained unchanged for varieties in 2015. ■

■ **More information:**

Charlton Jeisman (08) 8303 9475 or 0438 875 290
charlton.jeisman@sa.gov.au



Triticale

Variety		Long Term average across sites within region (2008-2014) as % site average and No of trials													
		2014													
		LEP	UEP	Yp	MN	MM	SE	Lower Eyre	Upper Eyre	Yorke Pen.	Mid North	Murray Mallee	South East	# trials	%sites av.
Wharminda	Minnipa	Bute	Turretfield	Pinnaroo	Commurra										
-	-	-	-	-	99										
Berkshire	97	105	99	105	103	-	104	102	11	100	6	106	6	103	6
Bison	105	109	104	105	111	107				108	2				
Bogong	107	109	109	108	101	111	108	107	13	110	7	106	7	105	7
Canobolas	93	97	101	100	108	91	104	102	13	102	7	103	7	102	7
Chopper	117	109	98	107	102	-	101	102	13	100	7	106	7	105	7
Endeavour	-	-	-	-	-	97	77								
Fusion	109	106	109	111	113	108	112	109	9	110	5	115	5	116	5
Goanna	100	98	98	86	95	97	98	98	7	100	4	97	4	102	4
Hawkeye	100	95	99	96	101	113	103	100	13	100	7	103	7	106	7
Jaywick	89	86	91	89	93	93	98	96	13	97	7	97	7	102	7
Rufus	89	96	95	97	103	90	97	98	13	100	7	96	7	101	7
Speedee	-	-	-	-	-	-		96	4	96	2				
Tahara	100	98	94	94	97	102	97	98	13	99	7	96	7	100	7
Tuckerbox	-	-	88	88	-	88	86			92	4	82	4		
Yowie	91	89	89	92	89	113	93	93	9	94	5	91	5	97	5
Yukuri	-	-	-	-	-	82	78								
Site av Yield (t/ha)	3.26	3.25	4.88	4.72	2.03	4.29	3.32	2.45	13	3.3	7	3.37	7	2.49	7
LSD (%)	4	5	5	8	11	23									
Date Sown	14 May	13 May	16 May	22 May	15 May	30 May									
Soil Type	NWS	L	S/SL	LC/LMC	LMC/CL	CL/ limestone									
J-M / A-O	70/252	102/290	125/270	137/347	74/178	88/411									
rain mm															
pHwater	6.8	8.6	7.5	7.7	8.7	7.9									
previous crop	barley	pasture	lupins	pasture	wheat	beans									
Stress factors					dl	de,dl									

Abbreviations
 Soil types
 S=sand, C=clay, L=loam, F=fine, K=coarse, M=medium, L=light, H=heavy, / =divides topsoil from subsoil NWS= non wetting sand
 Site stress factors
 de=pre-flowering moisture stress dl=post-flowering moisture stress, r=rhizoctonia, yr= stripe rust,wl=waterlogging b=boron lb=late break
 Data source: SARDI/GRDC & NWT (long term data based on weighted analysis of sites)
 Data analysis by GRDC funded National Statistics Group