Wheat varieties - the best bets in 2012 and what are the options in 2013

By Ed Hilsdon - SFS

Take home messages:

- 2012 saw high yields across all varieties and across all three SFS trial sites with a Western District average of 7.3 t/ha.
- The red grained feed varieties topped the yields. Beaufort was the top performer across all of the sites in 2012, with Revenue and Preston also producing high yields.
- Amongst the white wheats, Bolac and Forrest produced the best gross margins in a year where there was a good premium for growing quality wheat.

Background

To evaluate a range of commercially available varieties. These reflect the most widely grown varieties in the area and include others that may be considered in the future. Choosing an appropriate variety is an integral part of maximising performance for this grade. This trial was specifically looking at the shorter season varieties and those most commonly sown in May sowing time.

Method

The trial was sown on the 29th of May at Westmere following canola, 15th May at Inverleigh following canola and 22nd May at Dunkeld following peas. The following varieties were used; Revenue, Preston, Beaufort, Forrest, Derrimut, Lincoln, Bolac, Espada, Kellalac and Scout (Inverleigh & Westmere only). The trials were sown using the SFS cone seeder on 20cm row spacing's using 2.5cm knifepoints.

Agronomic inputs were applied as per industry standard to ensure weeds, disease and nutrition were not influencing variables. Registered products were used at recommended rates and timings (see appendix)

Inverleigh & Westmere were harvested on the 3rd January. Dunkeld was harvetsed on the 7th January.

Results

Beaufort was the highest yielding variety across the sites in 2012, performing at 8.16 t/ha or 111.3% of the average site mean. Revenue and Preston were closely ranked in 2nd & 3rd respectively. Bolac, Forrest, Scout and Derrimut performed similarly at 97-99% of the average site mean. Kellalac, Lincoln and Espada were the lowest ranked varieties across the three SFS trial sites in 2012.

Disease pressure in the spring was low this year due to the drier conditions. In the winter and early spring, wet conditions favoured Septoria tritici and this was noticeable in many varieties, particularly Forrest.

Table 1 Variety performance across all sites

	Inverleigh		Westmere		Dunkeld		All sites average yield (t/ha)	Rank
Variety	**Yield t/ha)**	**% of Site mean**	**Yield t/ha)**	**% of Site mean**	**Yield (t/ha)**	**% of Site mean**		
Beaufort	8.20 a	115	7.90 ab	106	8.37 a	113	8.16	1
Revenue	7.58 b	107	8.16 a	110	8.01 ab	108	7.92	2
Preston	7.77 ab	109	7.75 ab	104	8.18 a	111	7.90	3
Bolac	7.29 bc	103	7.20 bc	97	7.09 cd	103	7.19	5
Forrest	6.98 c	98	7.34 bc	99	7.35 bc	99	7.22	4
Scout	6.76 cd	95	7.52 abc	101	-	-	7.14	6
Derrimut	6.91 cd	97	7.25 bc	98	7.08 cd	96	7.08	7
Kellalac	6.92 cd	98	7.34 bc	99	6.45 d	87	6.90	8
Lincoln	6.53 de	92	6.87 c	92	7.02 cd	95	6.81	9
Espada	6.09 e	86	7.01 c	94	7.04 cd	95	6.71	10
Mean	**7.10**		**7.43**		**7.4**		**7.30**	
LSD (P=.05)	**0.58**		**0.73**		**0.88**			
CV(%)	**6.08**		**6.21**		**7.4**			

Means followed by same letter do not significantly differ (P=.05, LSD). All yields treated with fungicide

Inverleigh:
Beaufort and Preston were the top performing varieties, yielding at 8.2 and 7.77t/ha respectively. Revenue and Bolac also performed well and were not statistically different to Preston. Both Bolac and Derrimut didn't make their intended grade in this trial due to protein levels below the minimum required. Espada was also downgraded due to a slightly low test weight. Bolac produced the highest gross margin in this trial. The greater price for APW over feed ($60/t) made up for its lower yield compared to the feed varieties this year.

Table 2 Grain yield (treated) and quality results from Inverleigh

Variety	Intended grade	Yield Treated (t/ha)		Protein (%)	Test Weight (kg/hl)	Screenings (%)	Actual Grade	Gross Income ($/ha)
Beaufort	Feed	8.20	a	10.9	72.9	6	Feed	2050
Preston	Feed	7.77	ab	11.1	73.8	1.8	Feed	1942
Revenue	Feed	7.58	b	9.7	74.5	3.8	Feed	1895
Bolac	AH	7.29	bc	11.4	76.8	1.3	APW	2260
Forrest	APW	6.98	c	11.2	76.3	4	APW	2164
Kellalac	APW	6.92	cd	11.2	77.7	2	APW	2145
Derrimut	AH	6.91	cd	11.1	77.5	2.8	APW	2142
Scout	AH	6.76	cd	11.9	78.8	2.3	AH	2163
Lincoln	AH	6.53	de	11.5	76.1	4.3	AH	2090
Espada	APW	6.09	e	12.7	73.8	2.3	AGP	1797

Means followed by same letter do not significantly differ (P=.05, LSD). Grain yields were corrected to 12.5% moisture. Gross incomes represent the mean yield of each variety. Grain prices for H2=$320/t, APW=$310/t, AGP1=$295/t, FEED=$250 (As of 1.1.13, Harvest delivery to Geelong Port. Source: SQP)

Westmere:
Revenue was the highest yielding variety, alongside Beaufort, Preston and Scout. Espada and Lincoln produced the lowest yields on the site, yielding at 92% of the site mean and statistically lower than the three red grained feed wheats. For the white wheats there was a tendency for high screenings, which meant many were downgraded into AGP grade. Once again, due to the higher price this year for quality over feed, Bolac produced the highest gross income in the trial.

Table 3 Grain yield (treated) and quality results from Westmere

Variety	Intended grade	Yield Treated (t/ha)		Protein (%)	Test Weight (kg/hl)	Screenings (%)	Actual Grade	Gross Income ($/ha)
Revenue	Feed	8.16	a	9.7	77.2	5.7	Feed	2040
Beaufort	Feed	7.90	ab	10.2	76.5	8.3	Feed	1975
Preston	Feed	7.75	ab	10.6	76.8	5	Feed	1937
Scout	AH	7.52	abc	11.1	79.6	5.3	AGP	2218
Kellalac	APW	7.34	bc	11.1	78.9	5.3	AGP	2165
Forrest	APW	7.34	bc	11.1	78.9	8.3	AGP	2165
Derrimut	AH	7.25	bc	10.5	80.4	7	AGP	2139
Bolac	AH	7.20	bc	11.3	78.4	4.7	APW	2232
Espada	APW	7.01	c	12.1	76.9	4.7	APW	2173
Lincoln	AH	6.87	c	10.9	77.8	8	AGP	2027

Means followed by same letter do not significantly differ (P=.05, LSD). Grain yields were corrected to 12.5% moisture. Gross incomes represent the mean yield of each variety. Grain prices for H2=$320/t, APW=$310/t, AGP1=$295/t, FEED=$250 (As of 1.1.13, Harvest delivery to Geelong Port. Source: SQP)

Dunkeld:
Beaufort and Preston were the top performing varieties. Kellalac was the lowest ranked variety at Dunkeld, yielding statistically less than the top four varieites. Bolac, Derrimut and Lincoln were downgraded from their intended grade due to low proteins. There were no issues with screening's or test weights. Forrest produced the highest gross margin in this trial, with the decent spread between quality and feed price being the main reason.

Table 4 Grain yield (treated) and quality results from Dunkeld

Variety	Yield Treated (t/ha)	Intended grade		Protein (%)	Test Weight (kg/hl)	Screenings (%)	Actual Grade	Gross Income ($/ha)
Beaufort	8.37	Feed	a	10.4	76.4	4.7	Feed	2092
Preston	8.18	Feed	a	10.4	76.3	2.3	Feed	2045
Revenue	8.01	Feed	ab	9.3	74.4	6	Feed	2002
Forrest	7.35	APW	bc	10	81.1	4.7	APW	2278
Bolac	7.09	AH	cd	10.5	79.8	3	APW	2198
Derrimut	7.08	AH	cd	11	80.4	2.7	APW	2195
Espada	7.04	APW	cd	11.5	76.9	2.7	APW	2182
Lincoln	7.02	AH	cd	10.8	78.7	4.3	APW	2176
Kellalac	6.45	APW	d	11	78.5	3	APW	1999

Means followed by same letter do not significantly differ (P=.05, LSD). Grain yields were corrected to 12.5% moisture. Gross incomes represent the mean yield of each variety. Grain prices for H2=$320/t, APW=$310/t, AGP1=$295/t, FEED=$250 (As of 1.1.13, Harvest delivery to Geelong Port. Source: SQP)

Take home messages from 2012 trials

For feed varieties, Beaufort & Preston yield well when sown in May. Although Revenue still performed strongly, it is a late maturing winter type means that it is more suited to an earlier sowing date. There was a tendency for low proteins in the feed wheats. This suggests that N limited grain yield in these cultivars. Protein levels should still be used as a guide to see where your nitrogen management could have been improved in order to maximise yields.
For the white wheats, Bolac and Forrest were the best options this year. Although Bolac didn't make its intended AH grade there was still enough spread between APW and Feed harvest price to return the highest gross margin at 2 out of 3 of the sites. Forrest met its grade at 2 sites and returned the highest gross margin at one. Its susceptibility to septoria tritici is a concern and if sowing earlier and in wet winters fungicide strategies will need adapting to ensure control.

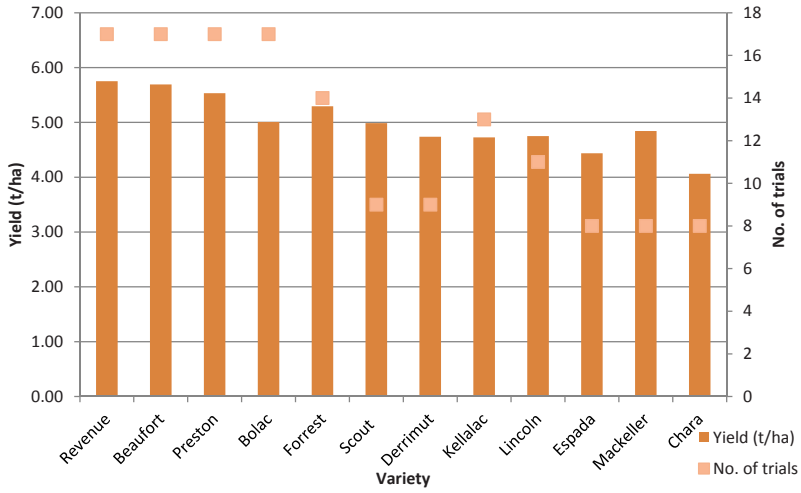
Scout is a milling variety to keep an eye on, with acceptance into the AH grade in 2013. Its performance at Westmere was comparable to its two main competitors in this grade, the well-known Bolac and Derrimut. Stripe rust and

septoria tritici susceptibility will need to be managed.

Commercial application - what does this mean for the grower?

Graph 1 has been created to help growers choose a variety based on a number of trials over more than one season. The greater number of trials the more reliable and repeatable the performance of the variety is likely to be.

Revenue, Beaufort, Preston and Bolac have all performed consistently over a number of trials in the past three



seasons.

Graph 1 Yield performance of wheat varieties in Western Districts (3 yr average of SFS & NVT yields 2010-2012)

Of the newer varieties, Forrest has been the most commonly adopted by growers in 2012. Feedback has been that some have been disappointed with yields of long season wheat adapted for the high rainfall zone. Having said that, it has a 3 year average of over 5t/ha from trials across the Western Districts.

A potential Derrimut/Bolac replacement in the AH grade could be a new variety called Phantom.

As with other crops it is important to consider a number of key issues when deciding on a variety to grow. These include:-

- How proven is it? Don't just pick a variety based on one year's trial data. Where possible evaluate and compare the performance of a variety over a number of seasons and using a number of trials within the district or areas of similar season length. Use all resources available to you to help you make this decision including National Variety Trials (NVT) which publish results online soon after harvest (www.nvtonline.com.au)
- Intended market. This may have implications for in crop management of inputs but also marketability and storage.
- Specific agronomic management. Consider your inputs and how these might vary between varieties and can be season dependent, particularly with disease control where, depending on the ratings, you may need to adapt your control programmes.
- Maturity – flowering dates relative to environment. Yield environment. Some will do better in drier years. What are the implications for sowing dates.