

Comparison of barley varieties

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Key Findings

- Fathom, Keel, Hindmarsh and Fleet were the highest yielding feed barley varieties at Hart averaging 4.8 t/ha.
- La Trobe, Charger and SouthernStar were the highest yielding commercially available malt varieties averaging 4.6 t/ha.
- Compass (pending malt classification) also yielded similar at 4.85 t/ha.

Why do the trial?

To compare the performance of new barley varieties and lines against the current industry standards.

How was it done?

Plot size	1.75 m x 10 m	Fertiliser	DAP (18:20) + Zn 2% @ 100 kg/ha
Seeding date	6 th May 2015		UAN (42:0) @ 95 L/ha, 8 th July UAN (42:0) @ 48 L/ha, 11 th August

The trial was a randomised complete block design with 3 replicates and 21 varieties. Fungicides and herbicides were applied as necessary to keep the crop canopy free of disease (ie. net blotch) and weeds. All plots had the edge rows removed prior to harvest and were assessed for grain yield, protein, test weight, screenings with a 2.2 mm screen and retention with a 2.5 mm screen.

Results and discussion

Fathom, Keel, Hindmarsh and Fleet were the highest yielding feed barley varieties at Hart in 2015, ranging from 4.7-4.9 t/ha (Table 1). The site average yield across all feed varieties was 4.6 t/ha. The lowest yielding feed variety was Oxford at 3.93 t/ha. The long-term yield data reflects the trends seen for feed varieties at Hart in 2015.

The highest yielding malt varieties were La Trobe, Charger, SouthernStar, Bass and Schooner ranging from 4.4-4.7 t/ha. Compass and Spartacus, currently pending malt accreditation were also high yielding at 4.85 t/ha and 4.65 t/ha. The average yield across all malt varieties at Hart was 4.24 t/ha. Both La Trobe and Compass are also high yield in the long-term yield results (Table 1).

Grain protein for all malt barley varieties averaged 11.8% across the trial. All malting varieties except Admiral, Schooner and Westminster fell between the allowable protein range of 9-12% for malt 1 and 2 classification.

A number of malting varieties fell below the minimum test weight specification of 65 kg/hL including, Charger, Commander, Navigator, Westminster and Admiral. The only feed varieties to fall below the minimum test weight specification for F1 feed barley of 62.5 kg/hL (Table 1) were Oxford and Fleet.

Screening levels across the trial averaged 12.5%. Consistent with previous seasons Oxford produced higher screenings of 42.8% followed by Buloke (23.8%), Scope (20.1%) and Westminster (20.0%).

Retention levels across the trial were low. For the commercially available malt varieties, Bass was the only variety to exceed the minimum retention level for malt 2 (>62%). As reported in previous years Compass had a high retention percentage of 79.2% to meet malt 1 standard.



Table 1. Grain yield (t/ha), protein (%), test weight (kg/hL), screenings and retention (%) of barley varieties at Hart 2015. Mean grain yield (% of trial average) of Hart barley variety trials (2010-2015) and number of trials.

Quality	Variety	Grain yield		Protein		Test Weight		Screenings		Retention		Mean yield 2010-2015	No. of trials	
		t/ha	% of site average	%	% of site average	kg/hL	% of site average	%	% of site average	%	% of site average			
Feed	Fathom	4.91	112	11.4	98	65.3	100	6.9	55	68.4	137	115	5	
	Fleet	4.69	107	11.8	101	60.2	92	8.5	68	52.2	104	111	6	
	Hindmarsh	4.74	108	11.4	98	68.4	104	14.6	117	48.4	97	110	6	
	Keel	4.88	112	11.6	100	70.5	108	4.7	37	80.9	162	109	6	
	Maritime	4.17	95	12.0	104	66.8	102	4.4	35	78.8	158	94	6	
	Oxford	3.93	90	12.1	104	62.2	95	42.8	342	5.9	12	95	6	
		<i>F1 receival standard</i>		NA		>62.5		<15		NA				
Malting	Admiral	3.64	83	13.1	113	59.1	90	15.1	120	32.6	65	-	4	
	Bass	4.40	101	11.7	101	67.3	103	3.0	24	67.5	135	99	4	
	Buloke	4.22	96	11.5	99	65.0	99	23.8	191	40.3	81	102	6	
	Charter	4.59	105	11.3	98	64.2	98	12.3	99	53.4	107	103	3	
	Commander	4.36	100	11.8	101	63.5	97	16.7	134	48.8	98	107	6	
	Granger	4.09	93	11.2	97	66.1	101	6.2	49	44.7	89	93	5	
	La Trobe	4.70	107	11.3	97	68.4	104	14.8	118	40.1	80	108	4	
	Navigator	4.03	92	11.8	102	62.5	95	8.7	70	33.8	68	103	6	
	Schooner	4.37	100	12.2	105	68.7	105	5.7	46	58.8	117	94	6	
	Scope	4.32	99	11.3	98	66.0	101	20.1	161	29.6	59	99	6	
SouthernStar	4.50	103	11.3	97	70.4	108	9.1	73	54.8	110	110	6		
Westminster	3.61	83	12.7	110	63.4	97	20.0	160	22.9	46	85	5		
		<i>Malt 1 receival standard</i>		9-12%		>65.0		<7.0		>70.0				
Unclassified	EB1401	4.29	98	10.6	91	61.1	93	8.6	69	57.7	115	-	6	
Pending malt accreditation	Compass	4.85	111	10.9	94	65.6	100	4.0	32	79.2	158	107	6	
	Spartacus CL (GB1334T)	4.65	106	10.8	93	70.8	108	12.4	99	51.7	103	-	6	
		Site Average		4.38	100	11.6	100	65.5	100	12.5	100	50.0	100	
		LSD (P<0.05)		0.35		1.0		1.7		3.2		11.5		

- first included at Hart in 2015