

HINDMARSH STILL DOMINATES: BARLEY VARIETIES FOR 2013

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TAKE HOME MESSAGES

- Hindmarsh, Skipper and Fathom all yielded consistently better than other varieties across all the trial sites.
- Commander performed the best out of the malt varieties and achieved Malt more often.
- Hindmarsh dominated the yields and is still worth selecting over any other variety, even in the Wimmera. At current Malt premiums, growing Hindmarsh is a good alternative to most malt varieties.

BACKGROUND

As part of a funded tri-state initiative, BCG, NSW DPI and SARDI compared new barley lines with current varieties to determine whether specific management packages were required. Increasingly, variety specific management is an important consideration when deciding whether new varieties fit into particular farming systems. Hindmarsh is a perfect example of a variety that needs to be managed in a specific way in order to reach its yield potential. If recommended management options for this variety had not been adopted, Hindmarsh is unlikely to have become so widely grown.

This paper will report on the performance of varieties at several BCG research sites, with reference to additional information (available on the BCG website), complementing the findings.

AIM

To evaluate the performance of new and current barley varieties in the Wimmera and Mallee.

METHOD

Five trials were established at BCG research sites across the Wimmera and Mallee. All trials were sown using a twin cone seeder with knife point and press wheel assemblies on 30cm row spacings. Each trial was replicated four times and managed to maximise yield (e.g. weed and disease free). Nitrogen (N) applications were based on crop requirements determined by Yield Prophet®. Emergence date, phenology, canopy 'greenness' (measured as NDVI), grain yield and quality were measured. Crop details and applications for each site are listed in Table 1. The Horsham trial was baited for mice after sowing, as mouse activity was high.

Table 1. Agronomic and management details of BCG barley evaluation trials conducted at five Victorian locations.

Site	Sea Lake	Quambatook	Birchip
Soil type	Sandy loam	Clay loam	Clay loam
Paddock history	Vetch (hay)	Wheat	Wheat
Sowing date	29 May	2 May	30 April
Emergence date	12 June	6 June	6 June
GSR (mm)	150	144	109
Starting soil N (as nitrate)	128kg N/ha	98kg N/ha	51kg N/ha
Varieties	13	11	6
Fertiliser (per ha)	26/4 MAP @ 55kg 14/8 Gran Am @ 90kg	23/5 SuPreme Z @ 55kg 9/7 urea @ 90kg 14/8 urea @ 90kg	23/5 MAP @ 55kg 8/8 urea @ 90kg 4/9 ZincSol @ 1L
Herbicides (per ha)	26/4 Triflur X @ 2 L 19/8 Velocity @ 670ml Uptake @ 0.5% v/v Lontrel @ 100ml	2/5 Triflur X @ 2L 7/8 Axial @ 175ml Adigor @ 0.5% v/v 3/9 Velocity @ 670ml Uptake @ 0.5% v/v Liase @ 1% v/v	23/5 Avadex Xtra @ 2L Triflur X @ 2L 19/8 Agritone @ 600ml Affinity @ 50ml
Fungicides (per ha)	26/4 Impact @ 400ml 2/8 Prosaro @ 150ml BS1000 @ 0.25% v/v 11/9 Prosaro @ 300ml BS1000 @ 0.25% v/v	2/5 Jockey @ 4L/t 7/8 Prosaro @ 150ml BS1000 @ 0.25% v/v 3/9 Prosaro @ 150ml BS1000 @ 0.25% v/v 2/10 Prosaro @ 150ml BS1000 @ 0.25% v/v	23/5 Impact @ 400ml 21/8 Prosaro @ 300ml BS1000 @ 0.25% v/v

Site	Yanac	Horsham
Soil type	Clay (red)	Clay (black)
Paddock history	Vetch	Canola
Sowing date	8 May	9 May
Emergence date	15 June	10 June
GSR (mm)	203	222
Starting soil N (as nitrate)	65kg N/ha	49kg N/ha
Varieties	17	16
Fertiliser (per ha)	8/5 SuPreme Z @ 55kg 14/8 urea @ 50kg	9/5 MAP @ 55kg 9/7 urea @ 90kg 8/8 urea @ 90kg
Herbicides (per ha)	8/5 Triflur X @ 2L Avadex Xtra @ 3.2L 1/8 Hussar OD @ 100ml Lontrel @ 100ml BS1000 @ 0.25% v/v	9/5 Triflur X @ 2L Avadex Xtra @ 3.2L 24/7 MCPA LVE @ 350ml Ally @ 5g Lontrel @ 100ml Wet As @ 0.5% v/v
Fungicides (per ha)	8/5 Impact @ 400ml 1/9 Prosaro @ 300ml BS1000 @ 0.25% v/v	9/5 Jockey @ 4L/t 7/8 Prosaro @ 150ml BS1000 @ 0.25% v/v 1/9 Prosaro @ 150ml BS1000 @ 0.25% v/v 1/10 Prosaro @ 150ml BS1000 @ 0.25% v/v

Table 2. Summary of the Victorian agronomic and disease ratings for each variety reported in this trial.

Variety	Company	Grade	Maturity	CCN resistance	Powdery mildew	Leaf scald	Leaf rust	Net blotch	
								Spot form	Net form
Bass	InterGrain	Malt	M-L	S	S	MSS	MR#	MSS	MSS
Buloke	Seednet	Malt	ME	S	MR	MS	SVS	MSS	MR
Commander	Viterra	Malt	M-E	R	MRMS	S	S	MS	MS-S
Fairview	Grainsearch	Malt	M-L	-	MR	MS	R-MR	MSS	MR
Fathom	Uni Adelaide	Feed	E	R	MS	MR#	MSS	MR	MSS
Fleet	Viterra	Feed	ME	R	MRMS	MSS	MSS	MR	MRMS
Flinders	InterGrain	Pending	M-L	S	R	S	MS	MSS	MS
Gairdner	Seedmark	Malt	M-L	S	MR	SVS	S	S	MRMS
Grange	Heritage Seeds	Pending	M-L	-	R	MSS	MR	S	MRMS
Henley	Seedmark	Pending	M-L	-	R	S	MR#	S	MS
Hindmarsh	Seednet	Food	E	R	MS	R-S	MSS	SVS	MRMS
IGB1101	InterGrain	Pending	E	R	MRMS	R-S	MSS	S	MR
Navigator	Viterra	Malt	M-L	R	R	MR#	VS	MRMS	MR
Oxford	Seedmark	Feed	L	S	R	MSS#	MR	S	MRMS
Scope	Seednet	Feed	ME	S	MR	MSS	S-VS	MSS	MR
Skipper	Viterra	Pending	E	R	MR	S	S-VS	MRMS	MR
Westminster	Grainsearch	Pending	M-L	-	RMR	MR#	MR	S	MRMS
Wimmera	Vic DPI & Uni Adelaide	Pending	M-L	S	S	MSS	MR#	MSS	MRMS

#These varieties may be more susceptible if alternative strains are present.

Source: DPI – Victorian Cereal Disease Guide

RESULTS AND INTERPRETATION

Sea Lake

The information presented in this report is based on the findings from BCG's 2012 barley time of sowing trials (see 'Timing is everything: barley and canola time of sowing', pp. 27). The data for this report was based on the April time of sowing, as it aligned with regional experiences. At sowing, the seed bed moisture was excellent and consequently establishment was good.

Despite receiving below average growing season rainfall, the varieties still yielded exceptionally well, with the site mean of 3.1t/ha. Of the varieties included in this trial, the yields of Buloke, Fathom, Commander, Scope and Skipper were equal to that of Hindmarsh (when sown in April). Generally, a 0.5t/ha penalty was incurred for delayed sowing/emergence ($P < 0.001$, $LSD = 0.2t/ha$, $CV 5.8\%$). The mean of the varieties for each sowing time shows the decline in yield (April 3.0t/ha, May 2.5t/ha and June 1.8t/ha). Commander, Gairdner and Navigator suffered the greatest penalty when sowing was delayed by four weeks, losing 1t/ha compared with other varieties whose yield losses were closer to 0.5t/ha (variety x time of sowing: $P = 0.001$, $LSD = 0.4t/ha$, $CV 10.8\%$). Hindmarsh, IGB1101, Flinders and Fathom suffered the least.

Grain quality was reasonable (Table 4). All varieties had excellent retention (greater than 85%). Protein was higher than the maximum Malt range of 12%. Flinders, Skipper, Buloke, Navigator, Gairdner and Henley all exceeded 12%. Henley, Navigator and Fathom failed to meet the minimum test weight standard of 65kg/hl. Retention was exceptional in Flinders (95kg/hl) and Henley (96kg/hl). Wimmera, Commander, IGB1101, Scope, Grange and Hindmarsh each had the appropriate quality to achieve the highest grade possible for that variety. Commander is the only variety included in this investigation that is currently Malt accredited. Screenings were all below 4%.

Quambatook

Despite being sown dry, establishment was good across all plots sown at BCG's Quambatook trial site. Despite being sown on 2 May, emergence did not occur until early June, following rainfall in late May. There was heavy competition from wild oats across the site in late July before it was controlled in early August.

Spot form of net blotch was present in susceptible varieties at this site. Differences were observed between varieties, with Fathom being least infected (<5% leaf area affected, LAA) throughout the season. Hindmarsh, IGB1101, Grange and Gairdner had the highest infection (>10% LAA). A very low level of scald (less than 3% LAA in susceptible varieties) was observed in the trial, despite infected straw being spread post sowing. Leaf rust was not observed in the trial throughout the season. The data presented in this report is based on the plots that were regularly treated with fungicide.

In terms of grain yield, Hindmarsh (4.4t/ha) out-yielded all varieties, apart from Fathom and IGB1101, by more than 10%. The site mean yield was 3.5t/ha. The lowest yielding varieties were Gairdner (2.7t/ha) and Wimmera (2.8t/ha), which is not surprising given their late emergence.

Protein was too high in each variety, exceeding the 12% threshold. The mean protein across the trial was 14.1%. The last application of N is believed to have contributed to the higher protein. In a commercial situation, the additional N would not have been applied because the paddock had a reasonable level of soil N from a previous vetch crop in 2010. Retention was moderate with all varieties except Grange, achieving levels higher than the minimum Malt standard of 70%. Test weights for all varieties were greater than 65kg/hl and screenings were less than 3%.

Birchip

Despite being sown on 30 April, the Birchip trial emerged only in early June, following 10mm of rain on 25 May. Establishment was initially staggered, but after the second week of June, it was even across all varieties and the target plant density of 120plants/m² was achieved. Moderate levels of spot form of net blotch were present in susceptible varieties such as Hindmarsh and IGB1101.

This trial, having been late to emerge, was favoured by the soft 'cool' finish to the season. There was a spread between varieties in terms of grain yield. Fathom, Skipper and Hindmarsh performed very well, yielding 3.6 to 3.7t/ha. Navigator was the lowest yielding at 2.7t/ha.

Protein levels were generally high across the varieties, ranging between 11% (Skipper) to 13.5% (Wimmera). Only Hindmarsh and Skipper produced proteins within the Malt range. All varieties had acceptable levels of retention. Test weights for all varieties were also above the minimum receival standard of 65kg/hl; the mean of all varieties was 68kg/hl. Screenings were all below 5%.

Yanac

Similarly to the other sites, this trial was sown in the first week of May, but did not emerge until June. The site received 57mm rainfall in August which was well above the long-term average. September and October rainfall was below average, but managed to fall at the right time, allowing the crop to achieve its potential. The trial was harvested on 28 November, two days before the area received heavy rain (greater than 25mm) and hail.

The site had a known ryegrass problem, with suspected group A and D resistance. Whilst the addition of Avadex Xtra® with Triflur X® improved control, substantial ryegrass emerged in the crop row. Hussar®, applied in-crop, suppressed the ryegrass for sufficient time to allow the development of crop competition. At flowering, the ryegrass population was low and sparse, having little impact on yield. No pests affected this trial. The trial was sprayed once with a fungicide as a preventative. No disease was found in the trial.

Given the season, the yields achieved in this trial were exceptional. The site mean was 4.1t/ha. Of the varieties grown, only two out-yielded Hindmarsh. Skipper (5.2t/ha) and Fathom (4.9t/ha) topped the yields, while Hindmarsh also performed well at 4.6t/ha. IGB1101, Scope and Commander also produced good yield results. Gairdner and Westminster yielded poorly, a not unexpected outcome given their longer season maturity, coupled with the late emergence and dry finish.

Protein was high in the trial, preventing many of the varieties from achieving Malt. Generally, those varieties that yielded well had protein levels of less than 12%. Commander, Scope, Fleet, Hindmarsh, IGB1101 and Skipper all had good levels of protein. Retention was relatively good across all varieties except Gairdner and Westminster, which were both low yielding. Test weights were between 65-70kg/hl, and all varieties were above 65kg/hl. Screenings were exceptionally low across all varieties (less than 5%). Gairdner and Westminster were higher than the other varieties.

Horsham

Again, this trial was sown dry and did not emerge until the second week of June. Being a disease tolerance trial, each variety had eight 'plots/replicates'. Four replicates were sprayed with fungicide and the remaining plots were unsprayed. Dr Mark McLean (DPI) regularly assessed each variety and checked for diseases. Heavy mice damage occurred prior to emergence and the trial site was subsequently baited. The trial was not affected by weeds throughout the season.

Similarly to the Quambatook site, spot form of net blotch was present in susceptible varieties (Hindmarsh, Oxford and IGB1101). Low levels of scald and net form of net blotch were found at the site but, by grain filling, these diseases had failed to progress. Fathom, as it did at Quambatook, had the least amount of infection (<2% LAA) throughout the season. Leaf rust was not present. The data presented in this report is based on the plots that were regularly treated with a fungicide.

Despite only 222mm of growing season rainfall, yields across the site were very good. The site mean of the varieties was 4.8t/ha. Hindmarsh topped the yields with 5.8t/ha, significantly higher than all the other varieties. Fathom, IGB1101 and Skipper also yielded well, as they did across the other sites. Of the accredited Malt varieties, Commander was the highest yielding with 5.1t/ha. Gairdner was excluded from the trial due to a seed packing error which meant another variety was sown instead. Lodging was observed in Fleet and Skipper.

Protein levels were again high in this trial, which principally was caused by the last application of urea, applied to maximise the crop canopy to favour the incidence of diseases. This meant all the varieties exceeded the maximum protein level for Malt of 12%. Retention for all varieties was excellent. Oxford (70%) and Fairview (74%) were lower than the other varieties. Test weights were very low for all varieties. Hindmarsh and IGB1101 were the only varieties to meet the 65kg/hl standard. All other varieties were below 65kg/hl.

Table 3. Summary of BCG barley variety trials in 2012. Bolded values indicate that the variety yielded significantly (P<0.001) greater than or less than Hindmarsh (Hind.).

Variety	Sea Lake		Quambatook		Birchip		Yanac		Horsham	
	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.
Bass	*	*	*	*	*	*	4.0	87	4.5	78
Buloke	3.5	109	3.3	75	*	*	*	*	*	*
Commander	3.4	106	3.6	82	*	*	4.4	96	5.1	88
Fairview	*	*	*	*	*	*	3.7	80	4.4	76
Fathom	3.4	106	4.2	95	3.7	103	4.9	107	5.4	93
Fleet	*	*	*	*	*	*	4.1	89	4.9	84
Flinders	2.7	84	3.3	75	*	*	3.9	85	4.7	81
Gairdner	2.8	88	2.7	61	*	*	3.0	65	*	*
Grange	*	*	3.0	68	*	*	4.0	87	4.3	74
Henley	2.5	78	3.2	72	*	*	3.6	78	4.1	71
Hindmarsh	3.2	100	4.4	100	3.6	100	4.6	100	5.8	100
IGB1101	2.9	91	4.2	95	3.3	92	4.5	98	5.4	93
Navigator	2.9	91	*	*	2.6	72	3.7	80	4.1	71
Oxford	*	*	*	*	*	*	3.7	80	4.3	74
Scope	3.2	100	3.8	86	*	*	4.5	98	5.0	86
Skipper	3.3	103	*	*	3.6	100	5.2	113	5.3	91
Westminster	*	*	*	*	*	*	3.3	72	4.2	72
Wimmera	3.0	94	2.8	64	3.0	83	3.8	83	4.9	84
Sig. diff.	P<0.001		P<0.001		P<0.001		P<0.001		P<0.001	
LSD (P<0.05)	0.5t/ha	16%	0.5t/ha	11%	0.4t/ha	11%	0.3t/ha	7%	0.4t/ha	7%
CV%	10.8		9.4		8.4		3.7		5.8	

Table 4. Grain quality data of the varieties at each site.

Variety	Sea Lake			Quambatook			Birchip		
	Protein %	Ret %	TW kg/hl	Protein %	Ret %	TW kg/hl	Protein %	Ret %	TW kg/hl
Bass	*	*	*	*	*	*	*	*	*
Buloke	12.1	89	65	13.2	72	68	*	*	*
Commander	10.8	92	66	13.5	86	69	*	*	*
Fairview	*	*	*	*	*	*	*	*	*
Fathom	11.8	92	64	14.0	91	67	11.2	88	68
Fleet	*	*	*	*	*	*	*	*	*
Flinders	12.9	95	67	15.1	71	70	*	*	*
Gairdner	13.2	87	67	15.0	78	69	*	*	*
Grange	12.0	92	66	15.4	63	69	*	*	*
Henley	13.0	96	63	14.1	87	66	*	*	*
Hindmarsh	11.3	93	66	13.5	83	72	13	73	70
IGB1101	11.7	94	67	13.5	84	71	12	73	69
Navigator	12.9	94	64	*	*	*	14.7	85	63
Oxford	*	*	*	*	*	*	*	*	*
Scope	11.8	89	66	13.0	75	69	*	*	*
Skipper	12.2	93	65	*	*	*	11.9	70	71
Westminster	*	*	*	*	*	*	*	*	*
Wimmera	11.7	92	66	15.3	73	69	12.9	81	70
Sig. diff.	P<0.001	P<0.001	P<0.001	P=0.006	P<0.001	P<0.001	P=0.003	NS(P=0.457)	P=0.037
LSD (P=0.05)	1	3	2	1.4	10	2	1.5	-	4.7
CV%	5.6	2.1	1.6	6.9	9.2	1.9	7.6	18.7	4.6

See page 69 for Yanac and Horsham data.

Variety	Yanac			Horsham		
	Protein %	Ret %	TW kg/hl	Protein %	Ret %	TW kg/hl
Bass	13.5	90	67	13.9	90	60
Buloke	*	*	*	*	*	*
Commander	11.4	88	67	12.2	87	60
Fairview	13.0	70	69	13.8	74	64
Fathom	12.0	90	66	12.7	91	63
Fleet	11.3	88	65	13.3	91	58
Flinders	12.3	80	69	13.8	81	64
Gairdner	13.4	61	67	13.8	89	64
Grange	12.7	79	68	13.5	78	60
Henley	12.2	84	66	13.9	84	58
Hindmarsh	11.0	81	70	12.6	89	65
IGB1101	10.5	82	68	12.5	84	66
Navigator	12.8	74	68	15.1	84	61
Oxford	12.9	75	70	13.7	70	64
Scope	11.5	70	68	12.3	85	64
Skipper	10.3	89	68	12	89	64
Westminster	13.8	69	68	14.5	81	61
Wimmera	13.8	72	70	13.9	85	64
Sig. diff.	P<0.001	P<0.001	P<0.001	P<0.001	P=0.014	P<0.001
LSD (P=0.05)	1.2	9	2	1	11	2
CV%	5.9	6.9	1.5	5	9.3	2.7

Table 5. 2012 NVT data with yields expressed as a percentage of Hindmarsh (a). Bolded values indicate that the variety yielded significantly (P<0.001) greater than Hindmarsh

Nearest town	Birchip		Hopetoun		Manangatang		Ultima	
	27-May		8-Jun		22-May		1-Jun	
Sowing date								
Variety	t/ha	% Hindmarsh	t/ha	% Hindmarsh	t/ha	% Hindmarsh	t/ha	% Hindmarsh
Hindmarsh	3.6	100	2.2	100	2.4	100	2.9	100
Barque	3.8	105	2.1	97	2.3	94	2.9	99
Bass	3.7	102	1.7	79	2.1	89	2.6	91
Baudin	3.5	98	-	-	-	-	-	-
Buloke	3.9	107	2.2	104	2.3	97	2.9	98
Commander	3.9	109	2.2	101	2.4	100	2.9	100
Fairview	-	-	-	-	-	-	-	-
Fathom	3.9	108	2.2	103	2.5	105	3.1	106
Flagship	3.5	96	1.6	75	2.2	92	2.6	89
Fleet	4.0	109	2.3	105	2.4	99	3.1	107
Flinders	3.6	100	1.7	80	2.2	90	2.6	90
Gairdner	3.4	95	1.8	84	2.1	89	2.6	90
Henley	-	-	-	-	-	-	-	-
Keel	3.7	104	1.9	89	2.4	99	2.9	100
Macquarie	-	-	-	-	-	-	-	-
Maritime	3.8	106	2.1	95	2.4	100	2.7	94
Oxford	3.7	104	1.8	82	2.1	86	2.3	80
Schooner	3.4	93	1.6	75	2.0	85	2.5	86
Scope	4.0	110	2.3	106	2.3	98	2.8	97
Sloop SA	3.2	90	-	-	-	-	-	-
Sloop VIC	3.6	98	-	-	-	-	-	-
SY Rattler	3.8	106	2.1	97	2.2	93	2.5	88
Westminster	-	-	-	-	-	-	-	-
Wimmera	3.3	92	1.9	86	2.0	85	2.2	75
Site mean (t/ha)	3.7		2.0		2.3		2.7	
CV%	4.3		7.2		4.9		4.1	
LSD (t/ha)	0.3	7	0.3	15	0.2	8	0.2	7

Table 6. 2012 NVT data with yields expressed as a percentage of Hindmarsh (Hind.) (b).

Nearest town	Walpeup		Charlton		Brim		Horsham		Minyip	
Sowing date	23-May		24-May		6-Jun		15-Jun		8-Jun	
Variety	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.	t/ha	% Hind.
Hindmarsh	1.5	100	2.7	100	3.5	100	5.6	100	3.5	100
Barque	0.9	62	-	-	-	-	-	-	-	-
Bass	1.0	68	1.8	67	3.3	92	4.7	84	3.6	102
Baudin	-	-	1.7	64	3.1	88	5.0	88	3.7	104
Buloke	1.1	76	1.7	62	3.4	95	5.0	89	4.0	114
Commander	0.9	60	1.6	59	3.7	104	5.2	93	3.9	111
Fairview	-	-	-	-	-	-	4.4	78	-	-
Fathom	1.3	85	2.2	82	3.8	106	5.4	95	4.0	113
Flagship	1.1	72	1.7	62	2.6	75	4.2	74	2.8	79
Fleet	0.9	61	-	-	-	-	-	-	-	-
Flinders	1.1	77	2.1	78	2.9	83	4.7	83	3.5	99
Gairdner	1.1	75	1.8	66	3.1	89	4.5	80	3.8	107
Henley	-	-	1.4	51	3.1	89	4.5	80	3.6	101
Keel	1.0	70	-	-	-	-	-	-	-	-
Macquarie	-	-	-	-	2.9	83	4.4	79	3.5	99
Maritime	1.0	66	-	-	-	-	-	-	-	-
Oxford	0.9	62	1.3	47	3.2	90	4.7	84	3.7	105
Schooner	1.1	72	2.2	83	3.0	85	4.6	82	3.3	92
Scope	1.3	85	1.7	64	3.3	92	4.9	87	3.6	102
Sloop SA	-	-	-	-	-	-	-	-	-	-
Sloop VIC	-	-	-	-	-	-	-	-	-	-
SY Rattler	1.2	78	1.7	62	3.5	98	4.8	85	3.9	112
Westminster	-	-	1.1	41	2.8	80	4.2	75	3.3	93
Wimmera	1.0	68	1.4	52	3.0	86	4.5	80	3.4	97
Site Mean (t/ha)	1.1		1.6		3.2		4.7		3.6	
CV (%)	9.8		12.4		5.4		2.5		6.6	
LSD (t/ha)	0.2	16	0.3	21	0.3	9	0.2	4	0.4	11

COMMERCIAL PRACTICE

Several new varieties are showing promise as higher yielding varieties suitable for Malt accreditation. Skipper performed consistently well in all the trials reported in this paper. Taking the average of all five trials, it performed similarly to Hindmarsh. Skipper is currently undergoing Malt accreditation and is expected to be finalised by 2014 (at the earliest). If successful, it will offer growers a high yielding Malt variety that performs well in all areas where Hindmarsh has been successful. Based on its performance at the Horsham site, it may be prone to lodging, which may have complications if harvest is delayed. Lodging was not observed in Skipper plots at any other site.

IGB1101, exhibits a number of similarities to Hindmarsh and, while it may not have yielded as well, it still yielded satisfactorily. This variety is undergoing Malt accreditation and if it is accredited (earliest date 2014), it is certainly a feasible alternative. Both Hindmarsh and IGB1101 have the erect 'wheat-like' appearance that allows a substantial amount of light through the canopy. This means that they will not compete well with the weeds and should not be grown in weedy paddocks. In such scenarios, varieties like Skipper or Scope have a potential fit. Additionally, given the minimum price differential between feed and malt, growers may consider the new feed variety Fathom. Fathom is an early maturing dedicated feed variety with good early vigour and weed competitiveness. It yields similarly to Hindmarsh, but lower test weights may be a problem in some environments.

Of the Malt varieties, Commander is still superior to all other varieties. For most growers, it has been a variety that has caused logistical issues in terms of delivery to sites in Victoria. Commander performed the best out of all the Malt varieties (with the exception of Buloke) but ensuring there is a suitable delivery point nearby is critical, especially with current freight costs. There was, again, minimal premium returns for growing Malt this year over Feed, or at least Hindmarsh Malt. Until there are Malt varieties which yield comparably to Hindmarsh, or the premium increases dramatically, Hindmarsh is the variety that should be grown in most areas, including the Wimmera.

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