

8. MFMG Barley Variety Trials

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Four MacKillop Farm Management Group (MFMG) barley variety trials were sown in 2016 at Conmurra, Millicent, Frances and Sherwood. These trials are conducted annually to enable growers to evaluate a selected number of varieties under specific local conditions.

The importance of reviewing long term data was evident at Conmurra with the mid-late maturing varieties being the highest yielding (Table 1), in contrast to 2015 results when Bass, Commander and Compass were in the top four yield performers. The Julian Day measurement (the day of the year that 50 % of the plants are flowering) has been included for the Conmurra

site, and shows that those varieties that had a longer growing season (> 280 Julian Days) were the varieties that achieved the site mean (5.96 t/ha) or greater. The new varieties from Elders; Alestar (medium-long season), Maltstar (long season) and the experimental line SMBA-4557A (medium-long season) all performed well at Conmurra.

Table 1: MFMG 2016 Conmurra Barley Variety Trial (sown 17 May 2016), Grain Yield and Quality.

Variety	Yield t/ha	% site mean	1000 grain weight (g/1000 seeds)	Test weight (kg/hl)	Protein (%)	Screenings (%<2.0mm)
Beckom	5.13	117	41.02	80.03	8.7	0.4
Cutlass	5	114	50.82	82.8	8.5	0.24
Cobra	4.8	110	44.05	81.93	9.2	0.46
DS Pascal	4.7	108	43.47	80.85	9.5	0.17
Cosmick	4.58	105	42.24	81.01	8.8	0.48
Trojan	4.57	105	53.26	83.62	8.7	0.24
LRPB Arrow	4.56	104	45.4	81.91	9.3	0.44
Scout	4.56	104	47.82	82.24	8.9	0.49
Barham	4.55	104	47.03	79.99	9	0.36
Scepter	4.53	104	50.8	81.97	8.8	0.61
Harper	4.44	102	47.44	82.34	8.9	0.49
Correll	4.37	100	50.87	79.87	9.2	0.32
Justica CL Plus	4.36	100	44.35	81.65	9.4	0.38
Tungsten	4.34	99	52.92	69.62	9.1	0.37
Yitpi	4.33	99	50.71	81.97	8.6	0.48
DS Darwin	4.31	99	49.26	81.19	9.1	0.41

At both Conmurra and Millicent (Table 2) in both 2015 and 2016 Capstan had high yields. In 2016 seasonal conditions resulted in a delayed harvest; the short stiff straw and excellent head retention properties of Capstan can minimise yield loss when compared to other varieties.

At Millicent all malting grade varieties met malting receival standards. Of the malting/food grade barley varieties evaluated at Conmurra Bass and Hindmarsh protein levels were outside the required receivable standard of 9.0 % - 12.0 %.

RGT Planet was not included at these sites in 2016, however it performed very well at Wolseley and may have a fit in the higher rainfall environments. This variety will be included in MFMG barley variety trials in 2017.

Table 2: MFMG 2016 Millicent barley variety trial (sown 14 June 2016), Grain Yield and Quality.

Variety	Yield		1000 grain weight (g/1000 seeds)	Test weight (kg/hl)	Protein (%)	Screenings (%<2.0mm)
	t/ha	%				
Cobra	5.86	111	39.8	83.1	10.4	0.44
Trojan	5.86	111	44.44	84.83	9.5	0.48
LRPB Arrow	5.74	109	41.83	83.48	9.9	0.84
DS Pascal	5.68	108	38.87	83.76	10.2	0.39
Beckom	5.67	107	35.6	84.2	9	0.79
Chief CL Plus	5.54	105	50.85	83.6	10	0.21
Scout	5.53	105	43.16	85.17	9.8	0.5
Cutlass	5.48	104	41.82	83.62	9.2	0.33
Harper	5.36	102	40.44	84.24	9.3	1.28
Impala	5.28	100	37.85	84.2	10.1	0.61
Phantom	5.28	100	41.98	81.79	9.5	0.88
Yitpi	5.25	100	39.34	82.74	10.1	0.61
Corack	5.24	99	47.77	83.24	10	0.18
Mace	5.24	99	43.68	82.2	9.8	1

The Frances site was sown on 16 May 2017. The site experienced widespread waterlogging throughout the season resulting in a relatively high variability. As such, the results should be interpreted with caution. All varieties were feed quality, due to the high protein levels. Rosalind, a new feed barley, has the potential to yield well in high rainfall environments, and this was evident at

Frances, where it was the highest yielding (4.67t/ha), however it only achieved F2 due to high screenings. This was the same for Alestar and Commander. Maltstar and SMBA-4557A both had very high screenings and would have been F3 classification.

Table 3: MFMG 2016 Frances Barley Variety Trial, Grain Yield and Quality.

Variety	Yield		1000 grain weight (g/1000 seeds)	Test weight (kg/hl)	Protein (%)	Screenings (%<2.0mm)
	t/ha	%				
Trojan	7.9	112	47.7	85.25	11.5	0.53
Cobra	7.87	111	40.02	82.8	12.4	0.8
Scout	7.56	107	43.43	85.27	11.5	0.79
LRPB Arrow	7.46	105	42.24	82.82	12.1	0.58
Beckom	7.43	105	35.22	84.24	11.5	1.28
Corack	7.42	105	49.08	83.26	11.9	0.68
Mace	7.35	104	42.83	82.98	11.9	0.85
Emu Rock	7.31	103	46.06	83.06	12	1.55
Scepter	7.29	103	48.24	84	11.6	0.99
DS Darwin	7.24	102	45.54	84.79	12.6	0.77
DS Pascal	7.18	101	40.15	84.81	12.1	0.61
Cosmick	7.14	101	36.79	84.3	11.7	1.55
Estee	6.91	98	40.11	85.11	12.8	0.92

The Sherwood site was sown on 23 May 2016 and the site experienced good growing conditions throughout the season. Figure 1 shows the site on 5 October. The crops made use of the available moisture achieving a site mean of 13.6 kg/ha/mm April-

October rainfall. This compared to 10.2 kg/ha/mm (April-October rainfall) in 2015. All malt varieties achieved Malt1 classification and the feed varieties achieved maximum feed grade (F1).

Table 4: MFMG 2016 Sherwood barley variety trial, grain yields and quality data.

Variety	Yield		1000 grain weight (g/1000 seeds)	Test weight (kg/hl)	Protein (%)	Screenings (%<2.0mm)
	t/ha	%				
Manning	6.68	120	45.78	77.78	7.4	0.11
SQP Revenue	6.66	119	48.24	77.66	6.9	0.16
Beaufort	6.58	118	45.5	75.45	8.2	0.59
RGT Accroc	6.58	118	49.1	76.95	6.9	0.25
SF Adagio	6.44	115	44.51	77.23	8.6	0.27
SF Ovalo	6.31	113	45.09	78.68	7.6	0.31
Trojan	5.87	105	52.26	79.93	9.1	0.12
SF Scenario	5.8	104	47.83	80.09	7.6	0.16
Kiora	5.69	102	42.35	79.5	8.8	0.46
Preston	5.68	102	48.13	77.88	9.2	0.28
Coolah	5.67	102	48.11	79.95	8.7	0.31
Beckom	5.56	100	41.06	78.54	8.5	0.49
Brennan	5.55	99	46.3	79.79	8.4	0.36
Cutlass	5.49	98	52.16	80.83	8.5	0.1
Forrest	5.43	97	45.89	80.81	8.5	0.46
Bolac	5.42	97	38.35	79.85	8.8	0.37
Chara	5.28	95	46.03	78.48	9.4	0.59
Elmore CL Plus	5.27	94	42.72	81.17	9.2	0.33
DS Pascal	5.25	94	43.38	79.2	9.4	0.4
Gazelle	5.24	94	44.55	74.8	8.4	0.22
QAL2000	5.19	93	49.16	77.03	8.1	0.28
EGA Wedgetail	5.18	93	45.86	77.54	8.8	0.15



Figure 1: Sherwood Barley Site.

Notes on Selected Varieties

Alestar* is a medium-long season barley with malt potential (malt accreditation pending), and has good straw quality with high resistance to lodging and straw breakage with excellent head retention. It is resistant to powdery mildew, resistant to leaf rust (Rph3, Rph DSash and Rph20(APR) genes) and is rated MR-MS for spot form of net blotch and MR to scald. Seed is marketed by Elders.

Maltstar* is a long season barley with malt potential (malting accreditation pending). Maltstar is resistant to powdery mildew and leaf rust (Rph3 and RphDash genes). It is moderately resistant to spot and net forms of net blotch and rated MS-MR for scald. Seed is marketed by Elders.

Oxford is a feed quality variety which has shown very high yield potential in seasons with high spring rainfall. Oxford has late maturity, good straw strength and low shattering. While Oxford is susceptible to CCN, leaf scald and spot form of net blotch. In recent years, it has shown to be susceptible to strains of net form of net blotch that are found in the south east. Seed is available through Heritage Seeds.

SMBA-4557*

Pre-commercial long season variety similar to Baudin with export malt quality.

**Information kindly supplied by Elders*



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