

# Cereal variety demonstration

## METHOD

*Birchip*: sown June 10; *Sea Lake*: sown June 2; *Charlton*: sown May 12. The crops were not replicated. A few older varieties were included to show the difference in yield to new releases. Only a limited number of wheat and barley lines were included in this demonstration to avoid duplication with the VIDA advanced breeding trials located at the main site.

## RESULTS

**Table 1.1** Wheat variety yields (t/ha), proteins (%) and screenings (%) at Birchip, Sea Lake and Charlton

Variety	Birchip			Sea Lake			Charlton		
	Yield	Protein	Screen	Yield	Protein	Screen	Yield	Protein	Screen
Krichauff	3.16	15.5	1.0	2.82	10.5	6.8	4.39	12.2	2.2
Janz	3.00	14.3	0.9	2.92	10.2	2.6	3.72	11.4	2.0
Bencubbin	1.89	14.5	1.6	1.00	9.6	8.6	0.97	11.4	9.0
Federation	2.41	14.5	2.4	2.39	10.1	7.4	3.18	11.7	5.6
Insignia	2.62	14.2	1.0	2.35	9.7	6.6	3.24	11.9	2.2
Kamillaroi	2.23	-	-	1.75	-	-	3.01	-	-
Sunvale	2.82	14.5	1.0	2.37	11.0	3.0	3.70	12.2	3.2

## OBSERVATIONS

The highest yielding wheat overall was Janz at Charlton at 3.72t/ha. At Birchip the highest yielding wheat was Krichauff, at 3.16t/ha and at Sea Lake, Janz with 2.92t/ha. The highest protein was at Birchip, with Krichauff at 15.5%. Sea Lake's highest protein was Sunvale at 11% and at Charlton, Krichauff and Sunvale came in equally highest at 12.2%.

## WHEAT VARIETY DESCRIPTIONS

**Bencubbin** Release in 1929. Bred in Western Australia.

**Federation** Released in 1901. The first bred under Australian conditions. Tall and produces many tillers. Used before herbicides so naturally more competitive than some of the new varieties. In the future, breeders may use for dealing with herbicide resistance.

**Insigna** Released in 1946. Bred by Alan Raw at Werribee. Widely grown variety in Australia for many years.

**Kamillaroi** Durum variety. Very short coleoptile. Resistant to stem and leaf rust, moderately resistant to stripe rust.

**Sunvale** Mid season variety. Prime hard quality (in NSW). Rust resistant and tolerant to RLN.

**Table 1.2** Barley yields (t/ha), proteins (%) and screenings (%) at Birchip, Sea Lake and Charlton

Variety	Quality	Birchip			Sea Lake			Charlton		
		Yield	Prot	Scr	Yield	Prot	Scr	Yield	Prot	Scr
<b>Arapiles</b>	Malt	2.22	17.2	40.5	3.64	-	22.3	2.03	13.6	10.7
<b>Galaxy</b>	Malt	2.80	16.2	49.2	3.80	12.2	24.0	3.69	13.3	10.0
<b>Schooner</b>	Malt	2.88	16.4	32.1	3.68	11.9	10.0	2.48	12.8	6.0
<b>Sloop</b>	Malt	3.84	15.7	20.5	3.84	11.8	5.0	3.16	13.2	3.0
<b>Gairdner</b>	M/F	2.30	17.1	34.1	3.32	12.4	25.0	3.26	14.1	6.0
<b>Barque</b>	Feed	3.43	17.2	7.2	4.08	11.8	18.5	3.57	12.9	4.5
<b>Chebec</b>	Feed	3.43	16.7	33.1	3.84	11.9	13.5	2.29	13.2	6.1
<b>Galleon</b>	Feed	2.63	17.3	17.6	4.08	11.3	14.7	2.76	12.6	4.2

## OBSERVATIONS

Galleon and Barque (4.08t/ha) at Sea Lake were the highest yielding barley varieties overall and Galleon at Birchip had the highest protein at 17.3%. High soil nitrate levels increased protein levels well above malt grade (11.8%) at both Birchip and Charlton.

**BARLEY VARIETY DESCRIPTIONS**

- Galaxy** High yield potential but has a tendency to produce small grain in lower rainfall districts. Galaxy has superior straw strength to both Arapiles and Schooner. Moderately resistant to scald but susceptible to the spot form of net blotch (SFNB).
- Chebec** Widely adapted feed barley. Higher yielding than Galleon on light soils in low rainfall regions. Resistant to CCN.
- Galleon** High yielding feed variety. Generally out-yields Chebec on well-structured, fertile soils. Has relatively weak straw and heavy crops may lodge. Resistance to CCN.

**Table 1.3** Oat, triticale and rye yields at Birchip, Sea Lake and Charlton

Variety	Yield (t/ha)			Variety	Yield (t/ha)		
	Birchip	Sea Lake	Charlton		Birchip	Sea Lake	Charlton
<b>Oats</b>				<b>Triticale</b>			
Echidna	2.18	2.88	2.75	Muir	2.46	2.01	3.05
Potoroo	2.25	3.24	2.12	Abacus	2.13	2.35	4.19
Wallaroo	1.96	2.76	1.69	Credit	2.30	2.35	3.61
Bettong	1.20	2.36	0.47	Treat	2.51	2.39	1.05
Bandicoot	1.37	-	-	Tahara	2.79	2.38	3.56
Saia	-	1.44	0.66	<b>Rye</b>			
				Bevy Rye	2.54	2.29	2.44

**OAT VARIETY DESCRIPTIONS**

- Echidna** Usually the highest yielding, dwarf variety. Very resistant to lodging/shattering. Grain is plump and bright in colour. Suitable for milling. Susceptible to CCN, septoria and crown rust.
- Potoroo** High yielding dwarf type variety. Prone to lodging. Grain has high digestibility. Has high screenings and low hectolitre weight. Resistant and tolerant to CCN.
- Wallaroo** Early flowering and maturing. Grain adequate for milling. Moderately tolerant and resistant to CCN.
- Bandicoot** First naked oat variety bred in Australia. Medium maturity high energy feed variety. Suited to medium and high rainfall areas. Very susceptible to CCN.
- Bettong** Tall, multipurpose variety, particularly suitable for hay. Well suited to a wide range of environments. Prone to shattering. Resistant and tolerant to stem nematode. Resistant but not tolerant to CCN.

**TRITICALE VARIETY DESCRIPTIONS**

- Tahara** Mid-season, widely adapted variety. May lodge in high rainfall or high yield situations. Resistant to CCN, and stem, leaf and stripe rusts. Poor host for *Pratylenchus neglectus*.
- Muir** Mid-season, widely adapted variety. Tolerant of acid and waterlogged soils. Resistant to lodging. Resistant to stem, leaf and stripe rusts. Poor host for *Pratylenchus neglectus*.
- Abacus** Late-mid season variety that can also be grazed. Most appropriate choice for early sowing in cool long season areas. Resistant to stem, leaf and stripe rusts and a poor host for *Pratylenchus neglectus*.
- Credit** Widely adapted mid-season variety. Should handle waterlogged conditions. Good rust resistance. Susceptible to CCN. Moderately resistant to *Pratylenchus neglectus*. Commercial rights held by Australian Field Crops Association.
- Treat** Earlier maturing than Tahara. Higher grain weight than other triticale varieties. Good rust resistance but not fully resistant to CCN.

**RYE VARIETY DESCRIPTION**

- Bevy Rye** Semi-dwarf cereal rye variety. Higher yielding than SA Commercial Rye. Resistant to CCN. Poor host for *Pratylenchus neglectus*. Resistant to stripe and leaf rust but susceptible to stem rust.

# VARIETIES

**Table 1.4** Wheat, triticale and rye variety characteristics

Variety	Rust			CCN		Boron tol	Prats		Yellow leaf spot	Maturity	Max quality	Other features
	Stem	Stripe	Leaf	Res	Tol		<i>neg</i>	<i>tho</i>				
<i>Wheat</i>												
Bencubbin	S	S	S	S								
Federation	S	S	S	S		I						
Insignia	S	S	S	S		MT						
Janz	R	MR	R	S	I	I	MS	MS/S	S	E-M	AH	
Kamillaro	R	MR	R	S							Durum	Very short coleoptile
Krichauff	MR	MR/MS	MR	S	MT	MT	MR	MR	MS/S	E	ASW	Early vigour
Sunvale	R	R	R	S			MR/MT				PH	
<i>Triticale</i>												
Muir	R	R	R				MR			M		Tolerant to acid & waterlogged soils
Abacus	R	R	R				MR			M-L		Early sowing in cool, long season
Credit				S			MR			M		
Treat	R	R	R	MR								New higher grain weight
Tahara	R	R	R	R			R			M		May lodge
<i>Rye</i>												
Bevy Rye	S	R	R	R	T		MR			L		Semi-dwarf

Key:

R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, VS= very susceptible

T= tolerant, MT= moderately tolerant, MI= moderately intolerant, I= intolerant, VI= very intolerant

References: Crop Harvest Report 1997/98

## VARIETIES

**Table 1.5** Barley variety characteristics

Variety	Leaf rust	CCN	Leaf scald	Net blotch	Prats		Powdery mildew	Maturity	Max quality	Other features
					<i>neg</i>	<i>tho</i>				
Arapiles	S	S	MS/S	MS	MR	R	MS/S	M	Malt	High extract
Galaxy			MR	S					Malt	Small grains in low rainfall
Schooner	S	S	MS/S	MS	MS	R	MS/S	M	Malt	Widely adapted, sus to head loss and sprouting
Sloop	S	S	S	S	S	MR	S	M	Malt	New malting variety
Gairdner	S	S	MR	S	MS	MR		M-L	F/m	Feed quality pending malt test
Barque	S	R	MR/S	MR		MR	R	M	Feed	High yield potential but low extracts
Chebec	S	R	MS/S	MS/S	MR		MS/S	M	Feed	Part to low fertility sands
Galleon	MS/S	R	S	MR	MR/MS		MR/MS	M	Feed	Widely adapted, ex deep sands, Mn def intolerance

**Table 1.6** Oat variety characteristics

Variety	Rust		CCN		BYD virus	Blight	Stem nematode		Septoria	Maturity	End use	Other features
	Stem	Leaf	Res	Tol			Res	Tol				
Bandicoot	MS	MR	S	VI	MR/MS	S	VS	VI	MS/MR	E-M	Naked feed	Med-high rainfall, high energy feed
Bettong	MS	R	R	VI	MR	MR	R	T	MS	M	Hay/grain	
Echidna	MR/MS	S	S	VI	MR	S	R	T	VS	E-M	Milling	
Potoroo	VS	S	R	MT	MR/MS	S	MR	MT	S	E	Feed	
Saia	S	R	MS	I	T	-	MS	MR	R	L	Hay/Feed	
Wallaroo	S	S	R	MT	MR/MS	MS	MS	MT	S	E	Hay/grain	

Key:

R= resistant, MR= moderately resistant, MS= moderately susceptible, S= susceptible, VS= very susceptible

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References: Crop Harvest Report 1997/98