

## Variety Demonstration

**Aim:** to demonstrate a wide variety of crop types and varieties in the Southern Mallee

### Variety Descriptions:

#### Durum Wheats

Kronos	Generally lower yielding than Yallaroi except in very low rainfall situations.
Wallaroi	Very short coleoptile, resistant to stem, stripe and leaf rust, susceptible to CCN.
Kamillaroi	Very short coleoptile, resistant to stem and leaf rust, moderately resistant to stripe rust.

#### Hybrid Wheats

Apollo	Hybrid variety, medium maturity, potential prime hard wheat. Protein content, flour extraction, flour colour, dough handling properties and baking performance are similar to Hartog.
Mercury	Hybrid variety, quick maturing cultivar with higher yield than presently grown Prime Hard cultivars in northern NSW. Provides an alternative to Hartog.
Gemini	Hybrid variety, high yielding, quick maturing cultivar with quality suitable for the domestic milling industry. Approved for receipt into the "Australian Hard Class" in northern NSW. Expected to replace Banks, with similar dough characteristics but a slightly longer bake mixing time and excellent baking characteristics.

#### Triticale

TX 9319, 420.17 and OX 83.50.2 are experimental lines.

Tahara	Mid-season, widely adapted grain triticale variety. Resistant to CCN, a poor host for <i>Pratylenchus neglectus</i> . Resistant to stem, leaf and stripe rusts. May lodge in high rainfall or high yield situations.
Maiden	Long-season, dual purpose grain / grazing triticale. Acid soil tolerant. Resistant to stem, leaf and stripe rusts.
Madonna	Long-season, dual purpose grain / grazing triticale. Not approved because it is an impure line with a proportion of stem and stripe rust susceptible plants.
Muir	Mid-season, widely adapted grain triticale variety. Resistant to stem, leaf and stripe rusts. A poor host for <i>Pratylenchus neglectus</i> . Tolerant of acid and waterlogged soils. Resistant to lodging.
Abacus	Late-mid season grain variety which 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 <i>Pratylenchus neglectus</i> .

#### Cereal Rye

Bevy	Semi-dwarf cereal rye variety. Higher yielding than SA Commercial Rye. Resistant to CCN, poor host for <i>Pratylenchus neglectus</i> . Resistant to stripe and leaf rust but susceptible to stem rust.
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## Barley

Namoi	Moderate resistance to barley scald, very susceptible to powdery mildew, susceptible to leaf and stem rusts.
Tantangara	Feed variety best suited to early sowing in those areas with annual rainfall greater than 400mm. Relatively susceptible to trifluralin, resistant to barley scald.
Galleon	High yielding feed variety with resistance to CCN. Generally out-yields Chebec on well structured fertile soils. Has relatively weak straw and heavy crops may lodge.
Schooner	Widely adapted malting variety. Susceptible to CCN.
Dash	High yield potential for the feed market. Late-mid season variety, maturing slightly later than Schooner. Resistant to CCN, improved resistance to Barley leaf scald over Schooner and Arapiles, is resistant to leaf rust and powdery mildew.
Galaxy	High yield potential, moderately resistant to scald, but susceptible to the spot form of net blotch, and has a tendency to produce small grain in lower rainfall districts. Galaxy has superior straw strength to both Arapiles and Schooner, potential malting quality. Production by contract arrangement only, seed available through Barrett Burston Malting Co.
Venture	Selected for improved malting quality and high yield potential. Mid season variety maturing slightly later than Schooner and Arapiles. Resistant to leaf rust and powdery mildew, but has a similar susceptibility to barley leaf scald as seen in Schooner and Arapiles.
Stirling	Malting variety, widely grown in WA. Intolerant of high soil boron. Not recommended for Victoria.
Sloop	Final brewing trials will be available on this variety in November, and will be commercialised as a malting variety only if these tests are satisfactory. It will not be commercialised as a feed variety. Sloop has similar straw strength to Schooner but improved head retention. With strong early vigour, it does not show tolerance to high soil boron, nor has it resistance to CCN, powdery mildew, spot form of net blotch or leaf scald. However, Sloop does have the potential to be a significantly better quality malting variety than Schooner.
Barque	High yielding, CCN resistant, feed quality cultivar derived from a cross between Triumph and Galleon. Yield potential greater than Galleon particularly in areas where barley leaf scald frequently affects grain yield. Slightly taller than Galleon, and may be better adapted to light soils. Produces larger grain than Galleon, but often retains awns after thrashing. Moderately resistant to powdery mildew and the spot form of net blotch.

### **Sloop and the world market**

- ◆ Markets in China identified higher diastatic power as their single most pressing requirement for improvement in ABB grain. Sloop will be an improvement over Schooner
- ◆ Domestic requirements are for higher extract, high DP and low wort B-glucan. Sloop delivers higher DP and very low wort B-glucan. The latter is a key requirement for cold filtered beers. Sloop has higher fermentability than Schooner – this may cause difficulties for low alcohol beers but should be an advantage in other beer styles.
- ◆ Japanese requirements are for higher extract, high DP, low wort B-glucan and high fermentability. The high DP is a key requirement for dry beers popular in Japan which are brewed with a high level of rice adjunct in the brew. However, Sloop will not match Franklin, Japanese barley or some European varieties for extract

## Oats

**Euro** Short variety, yields on average 89% of Echidna and has better straw strength than other non-dwarf varieties, but will lodge more readily than semi-dwarf types. Produces a large, plump grain with high kernel percentage, medium protein content and is very low in fat, good quality for milling and export. Moderately resistant but not tolerant to CCN, good shattering resistance, susceptible to phenoxy-type herbicides (2,4-D amine, MCPA and dicamba) and is very susceptible to stem rust.

**Bettong** A tall, multipurpose variety, particularly suitable for hay, well suited to a wide range of environments. Prone to shattering but compares favourably with other tall varieties for yield, grain quality and disease resistance. Resistant and tolerant to stem nematode. Resistant but not tolerant to CCN. Wide spectrum of resistance to foliar disease which enables it to maintain green leaf area for a longer period than other varieties. This is especially beneficial for export hay where green appearance is a vital quality attribute.

**Potoroo** Dwarf type with CCN resistance and tolerance. Very high yielding relative to other varieties. Grain has high digestibility making it suitable for animal feeding, but its high screenings and low hectolitre weight precludes the grain from being classed as milling quality. Slightly taller than Echidna and slightly more prone to lodging.

**Wallaroo** Early flowering and maturing, with grain quality adequate for milling (although inferior to Mortlock and Swan). Moderately tolerant and resistant to CCN.

**Echidna** Usually the highest yielding variety. A dwarf variety, very resistant to lodging and shattering. Grain is smaller than that of Euro and Swan, but is plump and bright in colour. Suitable for milling, however susceptible to CCN, Septoria and crown rust.

## Linola

**Eyre** White flower variety. Slightly shorter season and better suited than Wallaga in low rainfall areas (unlikely to be suited to the southern Mallee and northern Wimmera).

**Wallaga** Blue flower variety. Susceptible to lodging, especially in high rainfall areas with high fertility (unlikely to be suited to the southern Mallee and northern Wimmera).

## Lathyrus

Lathyrus or grasspea is a grain and forage legume adapted to low rainfall areas (300 mm). Suited to alkaline soils. Current varieties of Lathyrus are

high in neurotoxins but new varieties low in neurotoxins may soon be available. 'Correll' lathyrus is a line that IAMA hold provisional Plant Breeders' Rights (PBR) over, with some seed available for commercial production in 1997.

Fenugreek Fenugreek is used as an ingredient in curry powder (also potential as sprouts, as are mung beans and lucerne). Information on the agronomy of fenugreek is scarce.

#### Medic

Caliph (Barrel medic) early maturing variety, best suited to the short season districts of the Mallee and northern Wimmera. More productive than Parabinga, aphid resistant. Excellent seedling vigour, suitable for loamy or clay soils. Rainfall (275+mm).

Mogul (Barrel medic) mid season variety best suited to medium rainfall areas (400+ mm) with heavy soils. Excellent production, with dry matter production up to 40% better than Paraggio. Aphid resistant.

Santiago (Burr medic, smooth podded polymorpha type) mid season cultivar, best suited in areas with 325 to 425 mm rainfall, suited for a wide range of soil types. Very hard seeded.

Sava (Snail medic) mid maturity, moderate resistance to RLEM and lucerne flea, suited to most alkaline soils in an annual rainfall region of 250mm and above producing good winter production.

Herald (Strand medic) Strand medic is adapted to neutral to alkaline sandy soils in low to medium rainfall areas.

#### Lucerne

Siriver Highly winter active. Best suited to intensive rotational grazing system and as the pasture phase in cropping rotations (released in 1980 by CSIRO Canberra). Poor tolerance to waterlogging and saline conditions.

Aquarius Highly winter active variety bred at Yanco Research Institute NSW. Has high resistance to phytophthora root rot and excellent persistence.

Genesis Broadly adapted lucerne, capable of producing higher yields over longer duration than other varieties. A superior alternative to other winter-active varieties such as Aurora and Trifecta.

#### Clovers

Prolific persian Able to withstand wet and waterlogged conditions, neutral to alkaline soils preferred. Minimum 300mm rainfall, very high levels of hard seed. Highly tolerant to clover scorch and resistant to sub clover root rot.

Nitro persian Able to withstand wet and waterlogged conditions, neutral to alkaline soils preferred. Minimum 400mm rainfall, very high levels of hard seed. Highly tolerant to clover scorch and resistant to sub clover rootrot.

Spike A cultivated species with no hard seeds, this variety has an Autumn / Spring growth cycle, and prefers heavy neutral soils, but can grow in acid and alkaline soils, as well as saline soils. It yields a single cut, in late Spring. Good for haymaking due to a high leaf to stem ratio.

- Canta Crimson** Winter growing variety, will grow equally well on many soils ranging from sandy loams to clays, provided there is good drainage. Seed coat is very permeable and allows germination following the lightest rains. Subsequently many seedlings die from lack of moisture. This type of seed does not allow the species to reseed itself satisfactorily in the following season.
- Bolta Balansa** Large seeds, tolerant of moderately saline soils, highly waterlogging tolerant, excellent for hay production. High rainfall required (550-600mm) prefers acid to neutral soils but can withstand alkaline conditions.

**Results:**

Variety	Yield (t/ha)	Protein (%)	Variety	Yield (t/ha)
<i>Durum Wheat</i>			<i>Triticale</i>	
Kronos	1.10		Tahara	0.87
Wallaroi	0.91	14.5	Maiden	0.19
Kallimaroi	1.07	13.9	Madonna	0.16
<i>Hybrid Wheat</i>			Muir	0.55
Apollo	1.32	14.3	Abacus	0.55
Mercury	1.17	14.1	TX 9319	0.81
Gemini	1.13	14.2	420.17	1.17
<i>Barley feed</i>			OX 83.50.2	0.38
Namoi	1.11		<i>Oats</i>	
Tantangara	1.95		Euro	1.10
Galleon	1.22		Bettong	0.83
Barque	2.87		Potoroo	0.43
Dash	1.02		Wallaroo	0.34
<i>Barley malting</i>			Echidna	0.16
Stirling	2.08			
Schooner	1.01			
Sloop	2.31			
Venture	1.41			
Galaxy	1.13			

References: Southern Region Winter Crop Summary (DNRE)  
 South Australian Field Crop Evaluation Program 96/97 Post Harvest Report.  
 (PISA / SARDI)  
 Winter Crop Variety Sowing Guide 1997 (NSW Agriculture)