

Barley varieties in the Mallee



The aim of this trial was to compare the performance of seven barley varieties in a Mallee environment (Berriwillock).

Summary

At the Berriwillock site none of the barley varieties sown achieved malting quality. The yields were exceptionally good (in excess of 3.5t/ha) but retention levels were low (less than 70%) and screenings high (more than 7%).

Gairdner barley performed poorly, in terms of yield and quality, in comparison to the other malting varieties tested. Gairdner is marketed for the medium to higher rainfall areas and is unlikely to find a niche in the Mallee. Gairdner barley is better suited to southern Mallee and Wimmera environments.

SloopSA is a CCN resistant malting variety suited to the low rainfall districts (<350mm) and performed the best of the malting barley varieties at Berriwillock, both in terms of yield and grain plumpness.

Of the feed barley varieties, Keel performed exceptionally well. Keel is suited to low (<350mm) to medium (350-450mm) rainfall regions. Warning: Keel is very susceptible to leaf rust.

Background

Variety evaluation has always been critical to the work undertaken by the BCG-WFS. With the advent of many new seed companies it is now even more important to have an independent group evaluating new varieties.

Methods

This trial was conducted using a fully replicated (x4) randomised block design at the Berriwillock site. Seven barley varieties (Table 1) were sown on May 19 at a target plant density of 150plants/m² (approximately 65 kg/ha depending on seed weight) with Mallee Mix 1 at 50kg/ha. Triflur 480[®] was applied at 0.6L/ha prior to sowing and Lontrel[®] at 100ml/ha on June 11. Plots were harvested to determine grain yield and quality.

Results

There were significant differences between the barley varieties in yield and quality (Table 1).

Table 1. Grain yield and quality of barley varieties.

Variety	Yield (t/ha)	Protein (%)	Retention (%)	Screenings (%)
Schooner	3.9	11.8	30.3	13.2
SloopVic	3.6	11.9	36.9	7.7
Sloop SA	3.9	11.8	47.3	9.3
Gairdner	3.5	12.1	9.3	33.0
Baudin	3.9	11.3	19.3	19.6
Barque [#]	3.6	11.9	55.7	7.3
Keel [#]	4.2	10.9	36.9	13.2
LSD (5%)	0.2	0.8	12.2	8.6

= feed variety

Interpretation

Malting barley has tight specifications and in a Mallee environment it is difficult to achieve. The specifications for Malt 1 are: Protein 9.0 – 12.0%; Retention minimum 70%; Screenings maximum 7.0%. For other Malt categories the specifications are slightly easier to achieve.

At the Berriwillock trial site the yields of the barley varieties was excellent (generally above 3.5 t/ha) and protein was in the acceptable range for Malt 1. However, retention levels were too low and screenings too high for Malt delivery.

Gairdner yielded the lowest of the malt varieties at the Berriwillock trial in 2003. The yield of Gairdner was down compared to SloopSA and Schooner and it had extremely high screenings compared to the other varieties. Gairdner is marketed as a medium to high rainfall variety and may not be the best variety of choice for Mallee environments. SloopSA, a new early maturing malting barley for South Eastern Australia, yielded well (3.9 t/ha), had a good protein percentage and reasonably low screenings. Sloop SA is marketed for low rainfall cropping regions.

Baudin, a new malting variety released at the BCG-WFS 2003 Murtoa field day, appeared stunted all year however it also performed well in terms of yield (3.9t/ha).

Of the feed varieties, Keel, suited to a medium to low rainfall (under 450mm), yielded the best at 4.2 t/ha. Keel is not suitable for sandy soils, where Barque is preferred. It performs best on heavier soils and is relatively drought tolerant. Keel is susceptible to leaf rust which is a real problem in SA where it is one of the most common varieties sown.

Commercial Practice

The following table gives an indication of the variety of choice for Victorian cropping regions.

Variety	Quality	Low rainfall (<350mm)	Medium rainfall (350-450mm)	High rainfall (>450mm)
Gairdner	Malting		✓	✓
Baudin	Malting		✓	✓
Schooner	Malting	✓	✓	
Sloop	Malting	✓	✓	
SloopSA	Malting	✓		
SloopVic	Malting		✓	
Barque	Feed	✓	✓	
Keel	Feed	✓	✓	