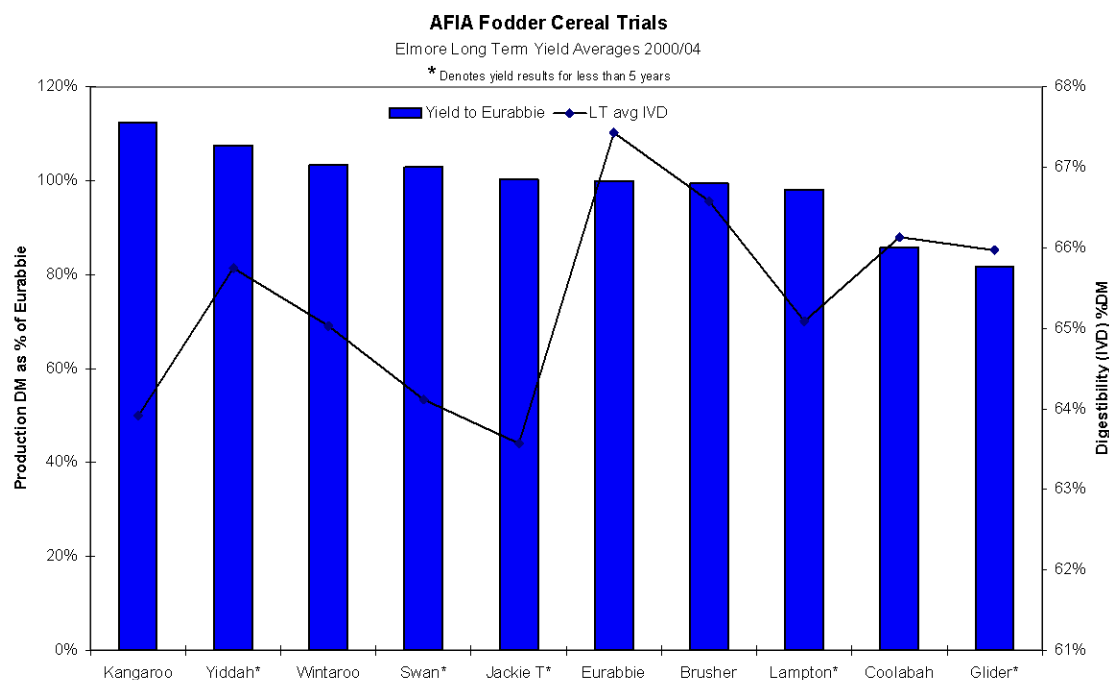


Review of Fodder Trials

Cereal Trials

Over the past 5 years, the Elmore Fields Site has hosted the Australian Fodder Industry Association's (AFIA) trials of cereal and legumes varieties suitable for hay and silage production. Small strips have been sown each autumn in a randomised pattern and cut at a time to optimise the quality of conserved fodder. These results below represent the long term results of the cereal trials.



In terms of the ranking of both yield and quality, the results from the 2004 season were consistent to those of the previous years. The relative yields show the consistent performance of the varieties bred by the team at SARDI. Kangaroo and Wintaroo have performed well in the past five years as has the variety Yiddah that originates from the Temora breeding program. Coolabah continues to be out performed by more prolific varieties. Although differences between varieties are small, one surprise result here is the lower ranking of Lampton. Local producers have reported a consistently high yield from Lampton in the Elmore district.

In terms of quality, these trials reinforce the results of other trials. Eurabbie continues to be a benchmark for digestibility (IVD) and Brusher also ranks highly for digestibility.

Southern Region Oat Breeding Program

After this five year period, the AFIA and the Field Days Committee have sought to incorporate these trials with the variety evaluation program of the Southern Region Oat Breeding Program based at SARDI in Adelaide. The information below provides some background on the program and the results from trials.

The focus of the Oat Breeding Program is to improve productivity and quality in new oat varieties developed for hay, feed, and human consumption. This work encompasses evaluation trials conducted in four states and is supported by GRDC, RIRDC, The Uncle Tobys Company, the Elmore Field Day Committee and the SA, WA and Vic state governments.

The site at Elmore is a focus for oaten hay variety development. The stage 5 hay trial sown at Elmore in 2005 forms an integral part of oaten hay variety development and has been sown with the support of the Elmore Field Day Committee. This year the trial comprises 10 varieties and 11 breeders lines including the new varieties Wintaroo, Brusher and Kangaroo. Variety development for hay end use is focussed on hay and grain yield, hay quality and disease resistance with a range of maturities. These varieties are commercialised by AEXCO and features include:

Wintaroo is a tall midseason oat averaging 6% higher hay yield and 11% higher grain yield production compared to Marloo. It is similar to Marloo for early vigour, heading, resistance and tolerance to CCN, and resistance to stem rust. Wintaroo is better than Marloo for tolerance to stem nematode and barley yellow dwarf virus, leaf rust, septoria and bacterial blight resistance. It resists brown leaf tipping by hot northerly winds better than other varieties and is adapted to low, medium, and high rainfall locations. Wintaroo also has low grain lignin. Wintaroo now constitutes about 70% of the total area sown to export hay in both SA and Vic.

Brusher is a tall line about three to four days earlier to head than Marloo. It is similar to Marloo for early vigour but shows improved hay yield, hay quality, stem rust, leaf rust, bacterial blight and septoria resistance compared to Marloo and Wallaroo. It is resistant to cereal cyst nematode but its tolerance of cereal cyst and stem nematode is inferior to both Wallaroo and Marloo. As found in the Elmore trials, Brusher has consistently higher digestibility than current early to midseason oat varieties. It has moderately low grain lignin and is popular in the earlier regions of SA, Vic.

Kangaroo (seed available 2006) is a tall mid-late season advanced breeding line four days later to head than Marloo with good early vigour. Its later flowering time makes it less suited to low rainfall environments. Kangaroo has improved hay yield, grain yield, stem nematode tolerance, septoria, bacterial blight, stem rust and leaf rust resistance compared to Marloo and Wallaroo. It is similar to Marloo and Wallaroo for CCN resistance and tolerance, and BYDV resistance. Hay cut from this variety tends to be high in neutral detergent fibre (NDF) and lower in water soluble carbohydrates (WSC) requiring a hay quality management program. This may include cutting at an earlier growth stage than other varieties and managing the canopy to limit excess growth. Trials to examine the effect of nitrogen application on hay quality are under way.

Comparison of new oat varieties with Wallaroo and Marloo
(shading indicates similar to or an improvement over Marloo)

Variety	Heading	Hay yield(% Marloo) ¹			Hay quality ³	CCN		Stem nematode ⁵	BYDV
		SA	Vic	Overall		R ⁴	T ⁵		
Wallaroo	Early	101	101	102	=Marloo	R	MT	MI	MS
Marloo	Mid	100	100	100	=Marloo	R	MT	MI	MS
Wintaroo	Mid	106	106	106	=Marloo	R	MT	MT	MR
Brusher	Early-mid	103	103	104	Higher DMD	R	MI	I	MS
Kangaroo	Mid-late	104	104	104	Higher NDF lower WSC	R	MT	MI-MT	MR

¹Hay yield averaged from trials conducted 1998-2004 ²Grain yield averaged from trials conducted 1998-2004 ³Hay quality measurements include dry matter digestibility (DMD), crude protein, neutral detergent fibre (NDF), acid detergent fibre (ADF), and water soluble carbohydrates (WSC)

⁴R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible ⁵T = tolerant, MT = moderately tolerant, MI = moderately intolerant, I = intolerant
For further information see www.sardi.sa.gov.au