

3.5 TRITICALE VARIETY EVALUATION (SYMMONS PLAINS, TAS)

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Location: Symmons Plains, Tasmania

GSR: (April-Nov): 472 mm

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Summary:

Five triticale varieties and lines were evaluated. Crackerjack in its first year of evaluation was significantly higher yielding than Tahara. Tickit and Breakwell also yielded well and show potential as replacements for Tahara. Unlike 2004-05 there was no stripe rust in the triticale trial.

Background/Objectives:

Triticale is recognised for its tolerance to waterlogging, better resistance to leaf and root disease and greater tolerance to acid soils compared with wheat. There are also perceived to be fewer difficulties associated with feeding of triticale grain to some livestock compared with wheat. The aim of this trial was to further compare existing triticale varieties and evaluate new breeding material. Following stripe rust damage in most triticale varieties in 2004-05 there was interest in assessing responses in 2005-06.

Methodology/Treatments:

As a consequence of the severe stripe rust in some varieties in 2004-05 a number of entries were dropped from further trials.

2005-06 entries and their origin are listed below:

Tahara Vic

Tickit, Tx94-98 SA

Breakwell Waratah Seeds

Crackerjack Heritage Seeds

The trial design was a randomised complete block with 3 replicates. Final plot sizes were 8m x 1.2m wide.

Sowing date	20 May, 2005
Basal fertiliser	250kg/ha 9:13:17
Topdressing	50 kg N/ha
Fungicides	None -to assess resistance
Harvest date	26 January 2006

Results and Discussion:

The season was characterised by a dry autumn (Decile 2) which delayed sowing and the low rainfall continued through early winter. The very wet spring (Decile 9) caused some damage to roots in wheat plants both directly and indirectly through increased take-all whereas in comparison the triticale appeared to retain a better root system. Consequently the grain yield of the triticale tended to be higher than for the wheat although the triticale trial was sited in an area with less grass weeds.

The highest yielding variety was Crackerjack but yields were only significantly higher than for Tahara and Tx94-98. In the dual purpose trial (reported elsewhere) Crackerjack tended to be lower yielding than Breakwell although this was not statistically significant. Crackerjack was intermediate in flowering date and being the first year of trials requires further evaluation.

**Table 3-30: Triticale Trial Results - Grain
Yields From Symmons Plains, 2005-06**

Variety	Yield (t/ha)	% Tahara
Crackerjack	7.73	115.7
Tickit	7.23	108.2
Breakwell	6.99	104.6
Tahara	6.68	100.0
Tahara + Tx94-98	6.50	97.3
Tx94-98	6.26	93.7
LSD	0.84	
CV%	6.60	

It has proven difficult to select a new triticale variety that is consistently higher yielding than Tahara. This appears to be complicated by greater variety by site interaction as well as variety by year interaction in comparison with wheat trials. With the new strain of stripe rust most of the previous front runners ie Kosciusko, W47 and AT509 became obsolete in 2004-05. Tickit tends to out-yield Tahara but the long-term average is only 3-4 % higher than Tahara. Breakwell has now also outperformed Tahara in two out of three season of evaluation and shows potential.

Tahara tends to rank highly in the seasons with lower rainfall and when there are no frosts at flowering.

In seasons with frosts at the end October/early November, later flowering lines perform relatively well. If in addition there is a reasonable finish to the season some of the later lines have yielded as much as 50% higher than Tahara. Over the last 4 seasons frost damage at flowering has not been a serious problem and so Tahara has yielded relatively well.

Due to the large variation in ranking of cultivars between years, seed from an early maturing (Tahara) and a late maturing cultivar (Tx94-98) was mixed with the idea that if the early line was affected by frosts the later flowering line could (at least partially) compensate for the grain losses. Conversely, in a season with no frosts and a dry finish the early line could compensate for the lower yields of the late line. Such composite lines could provide a means of minimising fluctuations between years. In four years of trialing the yield of the composite line has ranged from 91% to 101% of Tahara. A season with frost damage at flowering and/or a good finish will be necessary to test the theory.

As there was no rust observed in any of the varieties no further information on stripe rust susceptibility was gained. Lodging was severe in plots of Tahara and to a lesser degree in Tickit. All other varieties showed little or no lodging.