



Established and supported under the Australian Government's Cooperative Research Centres Program



Pork CRC Research Summary

1A-102: Improved triticale production through breeding and agronomy

Principle Investigators:

Professor Richard Trethowan and Dr Jeremy Roake

Background:

Triticale is recognised as an excellent feed for pigs, and there is potential to increase its effectiveness through improved quality, in terms of available energy for livestock, through higher yielding varieties, and through better agronomy. Addressing these three issues should increase the supply of triticale to the pork industry, and benefit both pig producers and growers with better returns through improved pig growth and a higher yielding better priced crop, respectively.

The objectives of this program were to:

- Deliver new high yielding rust resistant cultivars which meet the quality needs of the pork industry using rapid breeding methodologies

To produce technical information covering all issues of triticale agronomy, growth and management to yield grain which optimizes pork production

Methodology:

- 1) Release higher yielding, improved energy triticale varieties for pigs.

Inbred spring triticale lines were yield tested over multiple sites over years, and also screened for resistance to stem, leaf and stripe rust and energy content.

- 2) Begin development of a hybrid triticale to improve yield.

Selected spring triticale lines that were high yielding (in normal wheat (*Triticum aestivum*) cytoplasm) were crossed to a male sterile triticale (in *T. timopheevi* cytoplasm). The F1 hybrids were yield tested at Cowra and assessed for their ability to restore fertility or were male sterile.

- 3) Develop an improved agronomy package for triticale.

Using all available data from this project together with the results of previous yield trials and a survey to farmers, an agronomy package was produced for triticale growers and their agronomy advisors.

Key Findings/Conclusions:

The variety Berkshire was released in 2009 and grown by suppliers to the pork industry. Berkshire has 15% improvement in yield compared to the benchmark variety, Tahara, and also has 0.25 MJ DE/kg greater energy levels for pigs. An agronomy package was developed that will be used by triticale growers. Further promotion of Berkshire as a triticale variety suitable for the pork industry will be carried out in 2010. Berkshire was also developed as the maintainer for the hybrid program, and will be used to develop hybrid varieties.

Potential Users of Information (including value assessment):

Users will be grain growers who will grow the variety Berkshire, agronomists who will advise their grower clients and pork producers and feed millers who will buy the new variety to improve pork production.