

## 5.2 WHEAT VARIETY DEMONSTRATION AND BYDV TRIAL - GNARWARRE

**Location:** "South Roxby" Gnarwarre

**Researchers:** Dominic Bolton (SFS Ltd)  
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### Background:

The demonstration blocks are designed to view commercial varieties on a relatively large scale. They are used to complement the varietal evaluation work being undertaken by Department of Primary Industries.

BYDV is a disease which can affect cereal yields in some years where aphid pressure is high. It is a virus disease spread by aphids which can cause yellowing and stunting of cereal plants. The normal control strategy is to delay sowing until later in the season to miss the main flight periods of the aphids. This does not always work, as aphids populations and occurrence is determined by climatic conditions.

Some producers are using insecticides to control aphid populations. The effectiveness of this programme is unclear. There is some evidence to suggest that insecticide use could be detrimental to beneficial predators, particularly those which could give some control against slugs and RLEM.

### Discussion:

#### Varietal Yield and Grain Quality

It must be remembered that this is a demonstration trial, so statistical analysis cannot be applied to the trial results.

Emergence was patchy on the beds due to inconsistency in soil moisture. The northern side of the bed was worse than the southern side. Despite the poor early establishment, by harvest there was a reasonable population of plants. All varieties were similar in population and no one variety was disadvantaged.

There was a significant presence of Stripe Rust in the trial, particularly from GS39 onwards. A fungicide was used to control this disease which gave good levels of control to the mid season and later lines, although some of the earlier maturing lines were affected.

In terms of yield, the commercial varieties Chara and Mitre performed very well, relative to the check variety Brennan. A couple of the newer varieties, namely Braewood and Marombi sold by Sunprime Seeds performed very well.

### Aims:

- To assess a number of commercial and near commercial wheat lines for yield and grain quality.
- To assess the value of an insecticidal spray programme for controlling BYDV.

### Design:

3 x 1.7 metre wide beds of each variety were sown with a plot length of 57.5 metres. The inside bed was harvested using a plot harvester. A nearest neighbour design was used to compare varieties to a standard check.

**Sowing Date:** 10<sup>th</sup> June (sown dry)

**Sowing Rate:** 85 kg/ha

### Fertiliser:

100 kg/ha MAP at sowing and  
100 kg/ha Urea at GS32

**Fungicide:** 145 ml/ha Folicur® at GS39

Both varieties are resistant to the current strains of stem, leaf, flag and stripe rust. Braewood is approved as an APW variety in Victoria. Marombi is a grazing and grain dual purpose feed wheat providing it meets the receival standards for the grade. Both varieties are protected by Plant Breeders Rights (PBR) and subject to an end point royalty.

The varieties 211 and 2119 are being trialed for Wrightsons Seeds Limited.

### BYDV Demonstration

It would appear that the use of an insecticide has increased the yield of the varieties. A two spray programme appears to be better than a one spray programme. The problem is that MacKellar is resistant to BYDV and there should not be any increase in yield due to the insecticide sprays, assuming that the spray was only controlling the aphid population causing BYDV. It is either a trial anomaly or there is some other beneficial effect from the use of the insecticide spray.



**Results:**

Variety	Yield kg/ha	Yield % Brennan	Yield % site Mean	BYDV cf Unsprayed	Protein %	Test Wt	Screenings
AGHW-001	4,620	89%	82%		10.0	76.2	6.29
Brennan	5,182	100%	92%		10.3	77.8	7.71
AGHW-003	3,381	65%	60%		8.9	78.6	6.61
AGSW-001	5,316	108%	94%		8.7	78.6	3.56
Brennan	4,901	100%	87%		10.0	77.6	6.18
Braewood	5,993	122%	106%		9.5	81.8	1.95
Sunstate	3,998	75%	71%		12.5	81.2	0.98
Brennan	5,334	100%	95%		10.3	79.6	6.28
Marombi	6,311	118%	112%		9.3	77.6	2.31
211	5,810	104%	103%		9.4	75.2	5.58
Brennan	5,572	100%	99%		9.5	80.2	6.48
2119	5,908	106%	105%		9.3	77.0	3.89
MacKellar Unsprayed	5,731	103%	102%		8.7	76.8	7.29
MacKellar timing 1	6,469		115%	113%	8.6	75.0	6.66
MacKellar Timing 1 & 2	6,781		120%	118%	9.1	76.0	7.36
Brennan Unsprayed	5,572		99%		10.9	76.2	4.19
Brennan Timing 1	5,505		98%	99%	10.2	78.8	5.32
Brennan Timing 1 & 2	5,908		105%	107%	10.4	76.8	5.98
Kellalac Unsprayed	5,810	104%	103%		9.2	79.8	2.50
Kellalac Timing 1	5,944		105%	102%	10.6	78.8	1.77
Kellalac Timing 1 & 2	6,103		108%	105%	8.9	80.6	2.72
Chara	6,701	126%	119%		10.1	81.2	2.70
Brennan	5,322	100%	94%		9.6	80.4	5.22
Mitre	7,061	133%	125%		9.8	80.0	2.50
Site Mean	5,635		100%		9.7	78.4	4.67

**BYDV Key**

Timing 1 : 250 ml/ha Dominex + 0.5% Hasten oil 3rd July

Timing 2 : 250 ml/ha Dominex + 0.5% Hasten oil 1st August

### 5.3 EVALUATION OF DUAL PURPOSE WHEAT CULTIVARS - CAMPBELL TOWN TASMANIA

**Location:**

"Riccarton", Campbell Town Tasmania

**Researchers:** Geoff Dean (SFS Ltd)  
Simon Munford (DIWE)
**Acknowledgements:**

Thanks to Crosby Lyne for preparing ground and fencing, Brett Davey

**Growing season rainfall (Feb-Nov):** 377 mm**Background:**

Dual purpose oats, and to a lesser extent wheat, have been traditionally grown in many areas of Tasmania. In the mid 1980's dual purpose wheat cultivars such as Isis and Macquarie proved to be very susceptible to stripe rust and area declined significantly to almost zero. With the release of rust resistant dual purpose wheat cultivars from CSIRO there is again the opportunity to grow wheat for both grazing and grain.