

Appendix 3. Grain quality characteristics determined by laboratory analysis

Sample	Variety	Hecto litre weight	Test Grain Weight	hard vitreous kernels %	GM	Grain Protein CP @11.0%	Hardness SKHI	Milling Yield Semolina Yield	Semolina Colour Minolta b*	Mixograph MPT RBD	Glutomatic % Wet Gluten	GI	Falling Number > 300
Spec for DR1				>80.0									
1	Bellaroi	83.4	49.6	89.7	10.4	11.9	86.2	70.7	31.07	2.81	65.1	28	525
2	Bellaroi	80.3	48.0	88.7	11.5	13.0	85.7	70.9	30.47	2.57	82.6	27	477
3	Bellaroi	80.0	50.8	85.4	11.1	14.6	86.3	70.2	29.57	1.80	87.3	39	502
4	Bellaroi	81.5	44.4	95.7	11.1	13.7	85.5	70.8	31.27	2.32	72.3	42	643
5	Bellaroi	78.4	48.4	66.6	10.9	13.8	83.0	70.0	30.31	3.46	38.6	42	566
6	Bellaroi	78.7	44.8	86.0	10.8	14.7	86.1	69.4	30.04	3.30	52.2	35	554
7	Bellaroi	82.4	49.2	92.6	10	12.9	89.0	70.8	31.21	3.13	62.6	14	524
8	Bellaroi	80.2	49.2	84.1	10.6	13.5	83.2	70.2	30.22	2.60	73.8	28	539
9	Bellaroi	81.0	50.0	87.3	10.6	12.6	83.7	70.6	30.33	2.58	70.0	41	543
10	Bellaroi	82.1	51.2	70.9	10.6	11.7	79.5	71.0	30.28	4.00	43.5	46	508
11	Bellaroi	81.1	48.8	99.0	10.7	14.0	89.5	70.5	30.88	1.91	67.0	38	553
12	Bellaroi	81.4	40.0	96.3	11.1	15.4	92.7	70.2	26.55	3.11	62.0	39	372
13	Bellaroi	82.5	46.8	99.7	9.8	15.2	80.1	70.7	27.92	3.25	52.8	41	551
14	Bellaroi	80.7	50.4	72.7	10.6	12.1	83.0	70.0	31.06	2.68	71.9	46	556
15	Bellaroi	81.6	48.4	95.3	11.4	14.1	90.3	70.5	30.60	2.39	61.8	58	604
16	Caparoi	84.1	50.0	92.3	11.7	13.4	96.1	70.5	31.20	3.98	51.6	52	584
17	Bellaroi	80.4	51.6	73.1	12.0	14.0	90.6	68.7	30.19	2.63	59.8	58	531
18	Caparoi	82.2	55.2	72.7	12.9	13.5	96.3	70.0	29.63	5.53	31.9	68	619

CWFS TRITICALE VARIETY TRIALS

Key Messages

- Sow varieties inside their recommended window.
- Triticale may have a niche in the eastern areas of Central West NSW.
- Triticale is less tolerant of moistures at flowering than wheats.
- Delivery points and markets are a major influence on triticale production.

Why was it done?

To determine the performance of triticale varieties, a crop species uncommon in these low rainfall regions of Central West NSW.

How was it done?

Two replicated and randomised small plot trials were sown at Euabalong, Weethalle and Wirrinya.

The trials contained five varieties best suited to the conditions in the Central West, including both grain and grazing types.

Due to the lack of late season rain across the Central West the trial at Wirrinya was not harvested and has not been reported in this article.

Background

Euabalong Site

Hosts Ian & John Kemp
Location “Derrida”
Paddock history Barley Stubble
Soil Type Red Clay Loam
Soil fertility pH (1:5 water) 5.9
Colwell P 35 mg/kg
Nitrate Nitrogen 25 mg/kg
Sulphate Sulphur 3.7 mg/kg
Zinc (DTPA) 0.35 mg/kg
Sowing Date 11th June 2009
Harvest Date 13th November 2009
Plot Size 13m x 1.8m
Seeding rate 100 kg/ha
Fertiliser rate MAP at 66kg/ha
Herbicide Site treated with 2L/ha Roundup 450 2 weeks prior to sowing, 1.5L/ha Roundup 450 and 1.5L/ha Triflur Xcel at sowing. During the season, the trial was given a single spray with MCPA Lve, Verdict and Axial to control weeds at both sites.

Design Block design with three replications and fully randomised
Measurements Establishment, vigour, yield, protein, screenings, test weight and moisture

Weethalle Rainfall 2009												
J	F	M	A	M	J	J	A	S	O	N	D	Total
15	15	35.5	41.5	6	98	16	4	16	10	29	70	356

Weethalle Site

Hosts Paul & Brenda McKinnon
Location “Labertouche”
Paddock history Long Fallow
Soil Type Red Clay Loam
Soil fertility pH (1:5 water) 6.1
Colwell P 25 mg/kg
Nitrate Nitrogen 7.3 mg/kg
Sulphate Sulphur 1.6 mg/kg
Zinc (DTPA) 0.36 mg/kg
Sowing Date 12th June 2009
Harvest Date 16th November 2009
Plot Size 13m x 1.8m
Seeding rate 100 kg/ha
Fertiliser rate MAP at 66kg/ha
Herbicide Site treated 2L/ha Roundup 450 and 1.5L/ha Triflur Xcel at sowing.
Design Block design with three replications and fully randomised
Measurements Establishment, vigour, yield, protein, screenings, test weight and moisture

What Happened?

Both triticale variety trials were sown on the late break in June. The varieties varied in maturity and purpose. Hawkeye and Jawick are grain only varieties while Tobruk and Endeavour are dual purpose. Establishment was good across all plots and early vigour did not vary between varieties.

The Spring Field Day at Euabalong was held on18 September. At this stage the slower maturing Tobruk and Endeavour varieties were far less developed than the others. The Weethalle field day wasn’t until November and at this site, Endeavour was showing severe water stress with very few heads.

Results

Table 1. Grain yield and quality of triticale varieties at Euabalong and Weethalle

Variety	Euabalong		Weethalle	
	Yield (t/ha)	Protein %	Yield (t/ha)	Protein %
Hawkeye	0.46	15.1	0.71	14.0
Jawick	0.36	15.7	0.66	14.2
TSAOZ19	0.37	14.3	0	0
Tobruk	0	0	0.46	16.2
Endeavour	0	0	0.17	17.6

What does this mean?

Endeavour was sown far too late, well outside its optimal sowing window. It did not yield at Euabalong and yielded very little at Weethalle. Tobruk was also sown just outside its optimal sowing window and did not yield at Euabalong. Hawkeye, Jawick and the numbered line from AGT Seeds, were all sown inside their optimal windows. Hawkeye matured slightly quicker than Jawick.

At Euabalong, Hawkeye yielded higher than Jawick and the numbered line, while at Weethalle there was no difference between Hawkeye, Jawick and Tobruk.

Triticale is renowned for its tolerance of sandy acid soils with high exchangeable aluminium. Its tolerance to these soil constraints makes it favourable in areas where wheat and barley yield poorly as a result of these factors. In lower rainfall regions of Central West NSW triticale is not commonly grown, primarily due to its longer grain filling period and the dry springs experienced in recent years. The low value of triticale has also made it less favourable, with lower prices per tonne at the farm gate. However, in areas which have a strong local demand for feed grain, the case for triticale becomes more attractive.

Acknowledgements

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Brad Davis

Central West Farming Systems

PERFORMANCE OF WHEAT LINES AT LAKE CARGELLIGO, 2010

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Objectives

To compare the WUE of some of the best and poorest performing lines, and compare yields and grain quality.

Methods

Location: Lake Cargelligo

Rainfall (2010):

Monthly Rainfall (mm)												Total (mm)
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1.5	121.6	35.9	36.4	35.4	11.5	86.9	30.5	52.8	133.4	98.8	93.7	738.4
Fallow Rainfall (Dec 09 – Mar 10)												218.0
Growing Season Rainfall (Apr – Oct)												386.9

Trial Details:

Sowing Date:	7 May 2010
Sowing Rate:	30 kg/ha
Wheat Lines	<div> Axe Caparoi Catalina EGA_Gregory Ellison Gladius Lang Longreach Crusader LPB 0965 LPB 2271 Merinda Strzelecki Sunstate Sunvex Ventura </div> <div> Bolac Carinya Cunningham EGA_Wedgetail Espada Jandaroi Livingston Longreach Lincoln LPB 2148 LPB 2461 Sentinal 3R Sun 440 OH Sunvale Sunzell Waggan </div>
Fertiliser - applied at sowing	60 kg/ha MAP
Chemical Treatments - post sowing	Axial - 300 mL/ha Velocity – 500 mL/ha Adigor – 500 mL/100 L water
Harvesting - date	22 November 2010
- methods	Direct headed – open front plot harvester

Trial Design: All lines were replicated three times. Plots were sown at 10m and adjusted to 9m was harvested. Plot width was measured at 1.75m.

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