

Wheat Row Space, Cowra

Row space did not affect wheat grain yield or grain quality in this trial. Grain yield, protein and screenings did vary between variety.

The trial

Adoption of stubble retention/no-till farming systems has resulted in a trend to wider row spacing and the possibility of inter-row sowing using GPS guidance. This trial investigated the impact of sowing eight wheat varieties at two row spacings (15 cm and 30 cm) on yield and grain quality.

Site details

Location: Cowra

Soil type: red chromosol

Soil test: 0–10 cm, late February:

pH _{CaCl₂}	4.9
Aluminium	<0.1%
Colwell phosphorus	29 mg/kg
Organic carbon	0.75%
Cation Exchange Capacity (CEC)	5.2 Meq/100 g

Rainfall: 497 mm annual total 2007, 184 mm in-crop

Previous crop: triticale

Management

Sowing rate: 75 kg/ha

Sowing date: 6 June

Emergence: 25 June (18 days after sowing)

Fertiliser: 100 kg/ha DAP and 25 kg/ha urea

Herbicide: 5 June–1 L/ha Roundup PowerMAX™ and 75 ml/ha Goal®
13 July–300 ml/ha Axial®

Fungicide: 8 September–500 ml/ha Opus®125

Harvest date: 21 November

Treatments

Row spacing: 15 cm and 30 cm

Varieties: Carinya[Ⓛ], Ellison[Ⓛ], Gladius[Ⓛ], EGA_Gregory[Ⓛ], Sentinel[Ⓛ], Sunzell[Ⓛ], Ventura[Ⓛ] and Young[Ⓛ]

Seasonal review

The season began with two good rainfall events. The first at the end of April with 28 mm over 4 days, followed by 35 mm two weeks later. Good rain fell during June and July (85 mm) although temperatures were cold and frosty delaying emergence of later sown treatments. August, September, October and November were very dry. The late sowing in a season with so little spring rain dramatically reduced wheat crop growth and yield.

Results

Grain yield, grain protein, 1000-grain weight, screenings and test weight varied significantly between varieties, but row spacing had no effect (Table 1). The mean grain yield was 2122 kg/ha and grain protein ranged from 13.9% to 16.1%. Screenings were generally low (< 8%), except for Young (14.1%).

Plant population

The target plant population for all treatments was 120 plants/m². All plots in the 15 cm row spacing were above the target. Sentinel was nearly double the target (221 plants/m²). In the 30 cm row spacing plots there was wide variation in established plant population with a range of 74 to 205 plants/m². The reasons for this are not known. Establishment was also very variable between plots within treatments. This suggests that the effect was not due to treatment. Similar effects were observed in the lupin and canola row spacing trials.

2007



Table 1 Established plant population, grain yield, grain protein, 1000-grain weight, screenings and test weight of wheat varieties sown at 15 cm and 30 cm row space.

Variety	Plant population (plants/m ²)		Grain yield (kg/ha)		Grain protein (%)	1000-grain weight (g)	Screenings (%)	Test weight (kg/HL)
	15 cm	30 cm	15 cm	30 cm				
Carinya	104	181	2189	2208	15.0	27.5	6.1	81.4
EGA_Gregory	181	136	1987	1705	13.9	29.4	5.6	82.4
Ellison	124	74	2107	1978	16.0	32.2	7.0	81.8
Gladius	103	94	2399	2409	16.1	27.2	7.8	77.3
Sentinel	221	182	1718	1711	14.9	31.0	5.8	80.6
Sunzell	168	121	1843	1974	14.6	32.1	4.1	82.6
Ventura	162	205	2431	2150	15.3	32.4	4.7	81.6
Young	140	88	2602	2543	14.9	23.3	14.2	80.9
Mean	150	135	2160	2085	15.1	29.4	6.9	81.1
Trial mean		143		2122				
Lsd (p=0.05)	29.13** variety, rowspace ns			397***	0.8**	1.6*	3.1*	1.4**

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Acknowledgements: The contributions of Matt Newell, Rod Fisher, Vince van der Rijt, Graeme Heath and the staff at Cowra Agricultural Research Station in conducting this trial is gratefully acknowledged.

Further information: available from the project team agronomists at NSW DPI Wagga Wagga, Condobolin, Parkes, Hillston, Temora, Cowra and Moulamein.



NSW DEPARTMENT OF
PRIMARY INDUSTRIES



This publication is produced as part of GRDC project DAN00098 'Development of agronomy packages for new varieties for southern NSW (VSAP)'.

Variety Specific
AGRONOMY
Packages

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2008). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.