

# RIBBON SOWING HELPS WIDE ROWS OF WHEAT

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## AIM

Test benefits of ribbon sowing to improve yield of very wide rows in a dry season when sowing onto deep moisture.

## BACKGROUND

Wide rows of wheat have been developed to reduce drought risk on shallow soils in the region. Amjad and Anderson (2006) showed a clear trend for cereal yields to increase on wider rows as band width within the row increased from 25 to 75mm on a soil with shallow rooting depth in the dry season of 2002. Benefits of ribbon sowing have also been seen in South Australia and the Victorian Mallee. This encouraged us to test this idea when sowing onto deep moisture at Tardun in 2006. The main role of ribbon sowing could be to improve yield when wide rows are used to allow shield spraying and provide a more profitable alternative to chemical fallow for grass control.

*Amjad, M. and Anderson W. K. (2006) Managing yield reductions from wide row spacing in wheat. Australian Journal of Experimental Agriculture 46(10) 1313–1321.*

## TRIAL DETAILS

Property	Richard and Ian McKenna, Dean Road, Tardun	
Plot size & replication	4m wide and 75m long sown with a research airseeder; four replications	
Soil type	Sand over loamy sand with gravel at 500- 700mm	
Sowing date	9/6/06 onto moisture at 100-120mm. Variety; Westonia	
Seeding rate	40 kg/ha (low ) or 50 kg/ha (high)	The trial was sown with tines at 300mm for all crop row spacings. This provides a guide furrow for self steering spray shields between the rows of the wide spaced crop; see photos in figure 2.
Fertiliser (kg/ha)	50 kg/ha DAP deep banded	
Paddock rotation	2005 Canola	
Herbicides	Early knockdown and esters for summer weed control, no further weed control needed.	
Growing Season Rainfall	77mm (May 2, June 4, September 30); 217 January-April.	

Ribbon sowing was with a Primary Sales winged knife point, splitter boot and a 100mm wide flat presswheel. Normal sowing was with a knife point, 50mm wide presswheel and no splitter. A snake chain effect was made with a spring loaded stiff rubber flap behind the 100mm wide press wheel.

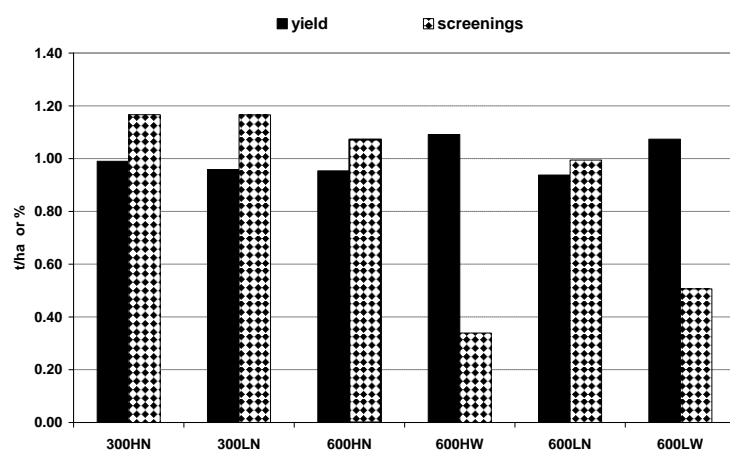
## RESULTS

The variation in the analysis of the trial site was reduced by using a covariate analysis with the farm sown crop between the blocks of the trial. The average yield of the farm crop sown in 375mm row spacing with DBS openers using Westonia at 40 kg/ha and 50 kg/ha of deep banded DAP was 0.92 t/ha with 12.4% protein and 1.45% screenings.

**Table 1:** Yield, quality and gross income of Westonia wheat (APW) after normalizing the data with the farm crop.

<b>Treatment</b> Row spacing; seed rate; presswheel width <b>BOLD= ribbon sown</b>	<b>Yield</b> (t/ha)	<b>Heads</b> (/m <sup>2</sup> )	<b>Protein</b> (%)	<b>Screenings</b> (%)	<b>Small grain</b> (<2.5mm) %	<b>Gross Income</b> \$/ha
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300mm rows high (H)	0.99	99	13.1#	1.17	11.5 #	262
300mm rows low (L)	0.96	95	12.7	1.17	11.7 #	253
600mm rows H narrow	0.95	91	11.8	1.07	8.0	250
<b>600mm rows H wide</b>	<b>1.09</b>	<b>105</b>	12.0	<b>0.47</b>	7.5	285
600mm rows L narrow	0.94	73	12.3	0.99	9.8	247
<b>600mm rows L wide</b>	<b>1.07</b>	<b>89</b>	12.5	<b>0.51</b>	7.9	282
<i><b>Bold Italics</b></i> = significantly more/less than narrow presswheels. # = sig. more than wide rows						
LSD <sub>0.05</sub>	0.09	13	0.47	0.47	1.2	



**Figure 1:** Results summarised.



**Figure 2:** 600mm rows in plots with ribbon sowing (left) and normal sowing (right); both with the higher seed rate.

#### COMMENTS

1. The ribbon sowing provided about 137 kg/ha more yield (14%), 0.6% less screenings and an average improvement to income of \$35/ha (\$248/ha without and \$283/ha with ribbon sowing on 600mm rows); this will be a useful benefit when the system is used for shield spraying for grass.