

7.5 WHEAT ROW SPACING TRIAL (INVERLEIGH VIC)

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Location: SFS Inverleigh Research site

Acknowledgements:

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Rainfall (2005): 500.8 mm

GSR: (Apr – Nov) 350.3 mm

Summary:

Although only a demonstration, the various treatments within the later sown trial showed that small yield differences between the various row spacing treatments. With the earlier sown trial, narrow row spacing gave higher yields, however there were some deficiencies with the trial design which means that a confident conclusion can't be reached.

Seeding summer crops in-between the rows, to determine if relay cropping could be achieved, showed that competition for heat and light meant that the crop could not achieve satisfactory establishment.

Background:

With GPS offering growers the option of using precision agriculture, interest has grown as to how wide we can plant our crop rows, to allow for inter-row seeding and improved stubble handling, but not diminish overall yields. There also appears to be strong interest in double cropping the inter-rows with summer crop, to achieve greater returns on the ever increasing value of farming land.

Objectives:

The aims of the trial were to assess different inter-row spacing widths using five different sowing treatments. Inter-row sowing of summer crops to determine yield potential was also assessed.

Methodology:

Each treatment was sown on a 60m raised bed with 4 twelve metre replicates established along each row. The trial was not randomized due to machinery limitations. Two timings of sowing took place.

Sowing Date:

The earlier sown trial occurred on the 17th May 2005, with the second time of sowing being the 10th June.

The variety sown was Chara with Raxil seed treatment at recommended label rates.

Sowing Rate:

1st time of sowing was 108kg/ha with a full seeding width, 81kg/ha with six of the eight tines sowing and 54kg/ha with only 4 tines sowing across the bed. Each treatment was sown at 108kg/ha for the second time of sowing.

Fertiliser:

100 kg/ha, 75kg/ha and 50kg/ha Granulock CuZn applied at the first time of sowing (100kg/ha for second time of sowing), with 100 kg Urea (46 kg/ha N) applied on 18th August to all treatments.

Trifluralin was applied at 1.2L/ha IBS, with Hussar applied at 200g/ha post emergence on the 2nd August 2005, followed by Tigrex at 1L/ha on the 23rd August.

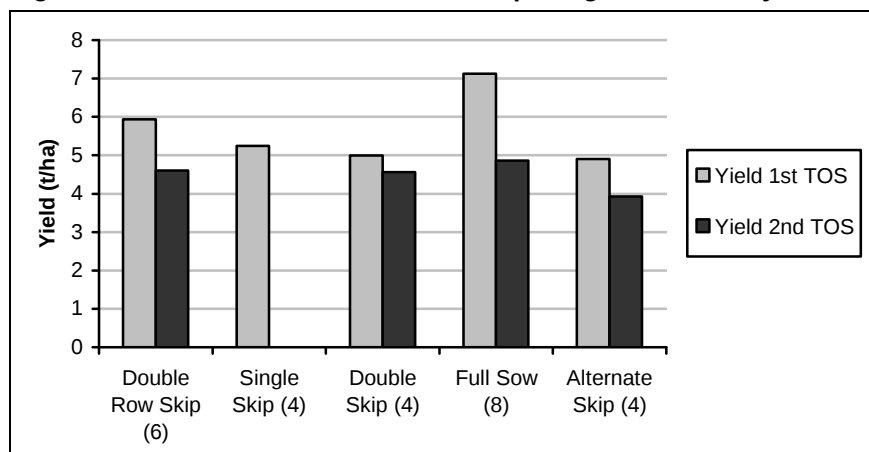
Foliar Fungicide:

Opus ® was applied at 250 ml/ha on 2 separate occasions, namely 18th August and 4th October on both trials.

Harvested: 15th December 2005.

Results and Discussion:

As can be seen in Figure 7-6, the first time of sowing showed significant differences between treatments. The full sowing width of the seeder yielded the highest of all treatments and as seeding rates decreased, so did the yield. In the second time of sowing, each treatment received identical seed and fertiliser regimes and in this instance showed only minor differences within yields, although it did appear that the yields followed a similar trend to the earlier time of sowing.

Figure 7-6: Performance Of Each Row Spacing Treatment By Time Of Sowing

* The second time of sowing 'single skip' was sown too did and had very poor establishment

Table 7-12 shows actual yield of each treatment for both times of sowing. An important point to also consider is that the earlier sown trial appeared to out yield the later sown by a significant amount.

Table 7-12: Impact Of Time Of Sowing (TOS) And Row Spacing On Wheat Grain Yield

Treatment	Yield T/ha 1 st TOS	Yield T/ha 2 nd TOS
Double Row Skip	5.93	4.61
Single Skip	5.25	-
Double Skip	5.00	4.56
Full Sow	7.13	4.87
Alternate Skip	4.91	3.93
Mean Yield	5.64	4.25
LSD 5%	1.42	0.79
Sig.Dif.	Yes	Yes

The seeding of summer crops (sunflowers, forage sorghum and Mackellar wheat) into the row spacings showed that competition from the existing crop for heat and light appeared to be too great and thus showed very poor vigour, thus was not run through to harvest.

Photo 7-1: Single skip treatment just sprayed with glyphosate, then sown down to summer crop in the inter-row.