

# SEED TREATMENTS IN WHEAT

Dave Meharry, Agronomist, Landmark



## AIM

The main purpose of this research was to determine the most effective seed treatment in wheat and evaluate any benefits from using imidacloprid on wheat.

## BACKGROUND

There have been a few new seed treatments come to market over the past few years so we wanted to test them against each other in our environment. There also has been speculation that the active ingredient imidacloprid can provide resistance to abiotic stresses, like transient drought for example. The imidacloprid is said to increase energy recycling and reduce the amount of free radicals being produced in the plant giving it the capacity to slow down the plants response to stresses e.g wilting in transient drought conditions. After two years of drought in our area a new technology which could assist crops in persevering through dry spells and increase early vigour was thought to be well worth further research.

## TRIAL DETAILS

Property	Clint, Ian & Helen Hunt, Marchagee
Plot size & replication	10m x 2m x 3 replicates
Soil type	Sandy loam
Sowing date	20/5/08
Seeding rate	80 kg/ha
Fertiliser	20/5/07: 100 kg/ha Agstar Xtra + 80kg Urea
Soil Moisture at sowing	Wet soil from 2-3cm down to 1.2m depth
Herbicides, Insecticides & Fungicides	20/5/08: 2 L/ha PowerMax, 2.5 L/ha Boxer Gold, 200 ml/ha Alpha-cypermethrin Post: 2 L/ha Precept
Growing Season Rainfall	324mm

## RESULTS

**Table 1:** Yield of Westonia wheat treated with different seed treatments.

No.	Treatment	Rate	% of Untreated	Yield kg/ha
1	Untreated	-	100%	3121
2	Raxil	1 L/tonne	109%	3416
3	Hombre	4 L/tonne	101%	3158
4	Baytan	1.5 L/tonne	98%	3055
5	Zorro	4 L/tonne	100%	3110
6	Dividend	1.3 L/tonne	102%	3190
7	Dividend	2.6 L/tonne	101%	3153
8	Gaucha	1.2 L/tonne	99%	3079
9	Gaucha	0.6 L/tonne	96%	3004
10	Intake IF	400 mL/ha	108%	3360
		<b>LSD (p=0.05)</b>	<b>14</b>	<b>450</b>
		<b>CV %</b>		<b>8.30</b>

**COMMENTS**

- The trial had to be seeded a little deeper than we anticipated in order to chase moisture. This may have had an influence on the results with different seed treatments possibly having a damaging effect on shortening coleoptile lengths and reducing vigour somewhat. Nevertheless there was no significant difference in emergence however the Dividend treatments did appear to have greater vigour at five weeks after sowing. At sowing there was a full profile of moisture from 5cm to about 1.2m and a very wet July meant that there were no extended periods whereby the plants were moisture stressed and so the imidacloprid treatments (Hombre, Zorro and Gaucho) went largely untested.
- There were no significant differences to come out of this trial as shown by the LSD (least significant difference) in table 1. The late summer rains, wet July and soft finish meant that any differences in early vigour would have been evened out by harvest time. If we had rainfall like in 2007 the results may have been a lot different. There was some yellow spot and septoria in the trial however there was no noticeable difference between treatments. The small differences in yield between the treatments can only be attributed to variation within the replicates and is shown by the high LSD. Soil pathogens were not tested in this trial and may have had some influence in differences between replicates and treatments, however this is purely speculative.
- In conclusion this trial, like many other seed treatment trials, has provided no real differences between the treatments. The benefits from using imidacloprid in wheat I believe have gone untested in this trial due to there being no dry spells during the first 10-13 weeks of the crops life.

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**PAPER REVIEWED BY: DARREN CHITTY.**

**CONTACT:**

Dave Meharry

Email: dave.meharry@landmark.com.au

Ph: (08) 9661 1170