3.1.6 PYTHIUM AND STRIPE RUST CONTROL IN WHEAT - LANDMARK (LAKE BOLAC, VIC)

Abstract:
This trial was originally established to evaluate Pythium root rot. As the season progressed this trial was used to also assess the performance of Impact and Jockey for the control of Stripe Rust, therefore this trial provided results for both root disease and foliar disease. Dividend did provided control of Pythium root rot (Table 1). Impact in Furrow and Jockey provided good early suppression of Stripe Rust for 12 to 14 weeks. Impact in Furrow and Jockey treatments were the two highest yielding treatments in the trial (Fig 1).

Researchers:
Steve Fischer – Landmark R&D and
Cameron Conboy – Landmark Ararat.

Funding Organization: Landmark

Background/Objectives:
To evaluate the performance of Dividend seed treatment and to determine its efficacy in controlling the soil borne root rotting disease *Pythium* in wheat as well as other potential seed borne and seedling diseases.

Growing Season Rainfall (April-Nov):410 mm

Methodology:

Sowing Date: 22/06/04
Sowing Rate: 70kg/ha
Variety: Mitre

Fertilizer: MAP and Urea
Rate: 80kg/ha and 100kg/ha

Harvest date: 17/01/2005

Treatment List:

Trt	Product
1	Raxil 100ml/100kg
2	Impact in Furrow 400ml/ha
3	Jockey 450ml/100kg
4	Dividend 100ml/100kg
5	Dividend 130ml/100kg
6	Dividend 260ml/100kg

Results and Discussion:
This trial was established to assess the performance of Dividend® against the root disease Pythium. As the season progressed it became apparent it would also be valuable in evaluating the performance of Impact in Furrow and Jockey for their efficacy in the control or suppression of Wheat Stripe Rust (*Puccinia striiformis*) in Mitre wheat. As a result of the focus changing, foliar fungicides were not applied to control the Stripe Rust. This in turn made the yield result a direct response of the Stripe Rust suppression by Impact in Furrow and Jockey. Both Impact and Jockey significantly out yielded all other treatments. Impac and Jockey yielded 3.13 t/ha and 3.12 t/ha respectively, making it impossible to pick any difference. Visual observation through the season showed Impact to be slightly better than Jockey keeping the Stripe Rust at bay for an extra 2-3 weeks.

The root assessments made mid season indicated that Dividend at the highest rate of 260ml/100kg provided the best control on Pythium with no infection found. Rhizoctonia levels were low at this site with the worst score of 0.1 out of a possible 4 making the levels too low to have any real comparison between treatments.

Grain quality results showed very little variation between all treatments with test weights between 60.8 and 63.6, protein between 13 and 13.9, moisture between 11 and 11.2 and screenings between 7.6% for Jockey and 9% for Dividend @ 130 ml/100kg.

The data reported in these trials is only from one season and previous experience would indicate that the responses of various products will changedramatically from season to season. Seek qualified advice on when the optimum response from various products can be expected.

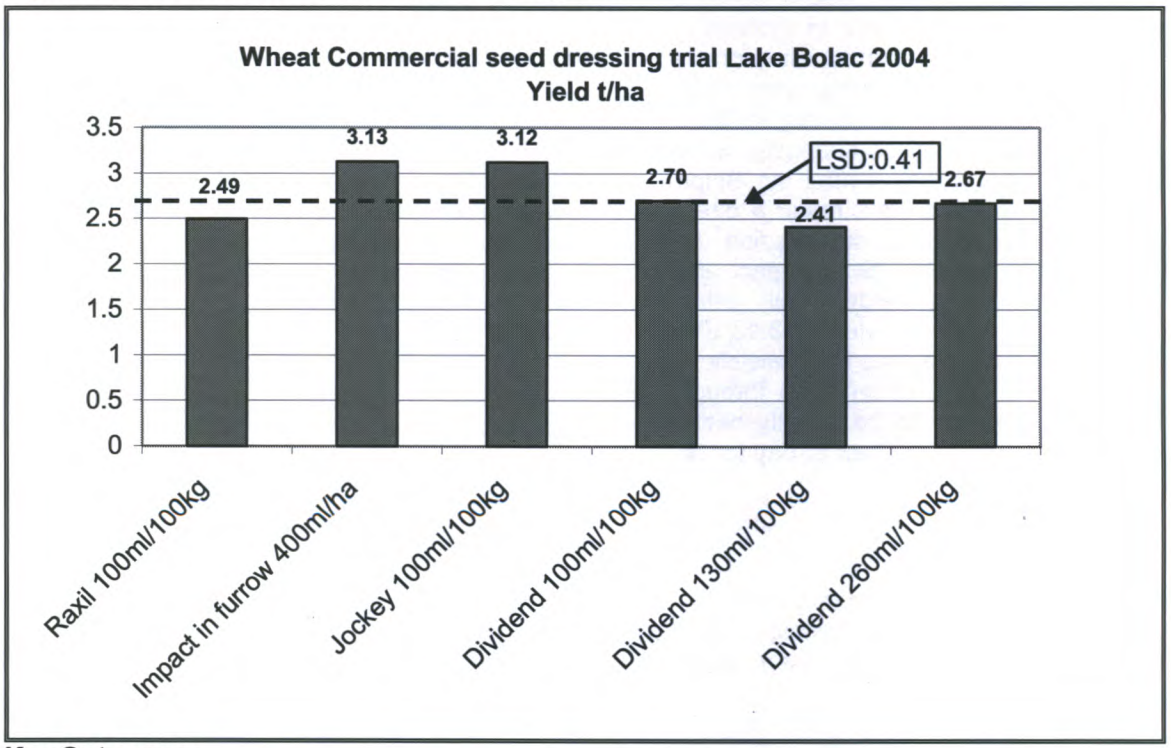
Table of Results:

Table 1: Summary of All Assessments

Treatment	Stripe Rust Z31 % leaf infection	Stripe Rust Z39 % leaf infection	Rhizoctonia % root infection	Pythium % Root infection	Early vigor %
Raxil 100ml/100kg	10.0	100	2	4	90
Impact in furrow 400ml/ha	0.5	50	0	3	90
Jockey 100ml/100kg	3.0	60	2	10	70
Dividend 100ml/100kg	21.5	100	1	2	80
Dividend 130ml/100kg	14.0	100	0	3	70
Dividend 260ml/100kg	23.5	100	0	0	80

Treatment	Yield t/ha	Yield % untreated	Test weight	Protein	Moisture	Screening
Raxil 100ml/100kg	2.49	100.0	65.0	13.4	11.1	8.1
Impact in furrow 400ml/ha	3.13	125.4	61.0	13.2	11.2	8.9
Jockey 100ml/100kg	3.12	125.2	63.6	13.6	11.0	7.6
Dividend 100ml/100kg	2.70	108.2	63.4	13.0	11.0	8.5
Dividend 130ml/100kg	2.41	96.7	60.8	13.9	11.0	9.0
Dividend 260ml/100kg	2.67	107.1	62.6	13.7	11.1	7.7
LSD	**0.41**					
CV	**5.5**					

Figure 1: Yield Results Wheat Seed Dressing Trial



Key Outcomes:

Landmark R&D has been working on Pythium control for the past three years with consistent positive responses from Dividend. This work will continue in the coming years to further develop our understanding of Pythium. Fungicide work with Jockey and Impact in Furrow has proven to be impressive with the suppression of Stripe Rust infection for up to 12 to 14 weeks.