6.4 EVALUATING DIFFERENT FOLIAR LEAF RUST AND POWDERY MILDEW CONTROL STRATEGIES IN BARLEY – LANDMARK (YALLA-Y-POORA VIC)

Researchers: Steve Fischer Ph. 0417 868 223
Cam Conboy Ph. 0438 054 886

Location: SFS site at Yalla-Y-Poora

Acknowledgements:
Landmark product Development and Landmark Ararat

Rainfall (2005): 543 mm
GSR: (Apr – Nov) 359 mm

Summary:
Leaf rust assessments on this trial have shown that Epoxiconazole at 375 ml/ha had the best response in this trial. The Powdery Mildew infection level were very low but there still was some response. A late application of Propiconazole at Z45 was the best performer with 0.47% infection of Powdery Mildew. Tilt Xtra (Propiconazole + Cyproconazole) was the second best result with 0.73% infection.

Background:
Continual interest in options for the control of Leaf Rust and Powdery Mildew therefore requires us to have a sound understanding of all of the products available and find the best fit for each environment.

Objectives*:*
Evaluate fungicide efficacy on Leaf Rust and Powdery Mildew in Baudin Barley.

Methodology:
This trial was conducted using small plot replicated trial design. Each plot was 12m long by 1.75m wide. Three replicates for each treatment randomised in replicates 2 and 3. Assessments made on Leaf Rust infection, Powdery Mildew infection and Yield using the methods listed below.

Spray treatments were applied using a hand held pressurised boom with a spray width of 2m.

Sowing was conducted using a Deep Blade System (DBS) seeder with 9mm knife points to sow six row plots with 24cm row spacing. All plots were incorporated using an Incorporation By Sowing (IBS) method.

Disease score were collected by taking 10 main tillers from each plot then assessing the percentage of leaf area infected on the Flag and Flag-1.

Harvest conducted using a Kingaroy Engineering Plot Harvester.

Plot Size: 12m x 1.75m
Trial Size: 28m x 36m
Spraying Date: Z32 – 30/09/05
Z45 – 26/10/05
Sowing Date: 30/06/05
Harvest Date: 20/12/05
Soil Moisture: Good moisture
General Comments: Seed 80 kg/ha
MAP 80 kg/ha
Urea 80 kg/ha
UAN 40 l/ha

Treatments:

Treatment	Rate	Timing
Amistar Xtra	400	Z30-32
Triadimefon	750	Z30-32
Triadimefon	750	Z45
Propiconazole	250	Z30-32
Propiconazole	250	Z45
Epoxiconazole	375	Z45
Prop + Prop	150 + 250	Z30-32 + Z45
Tilt Xtra	250	Z45
Untreated		
Jockey	4.5 L/t	Seed dressing
Baytan	1.5 L/t	Seed dressing
Impact in furrow	400 ml/ha	Fertiliser
Triad WP	200 g/ha	Fertiliser

Results and Discussion:

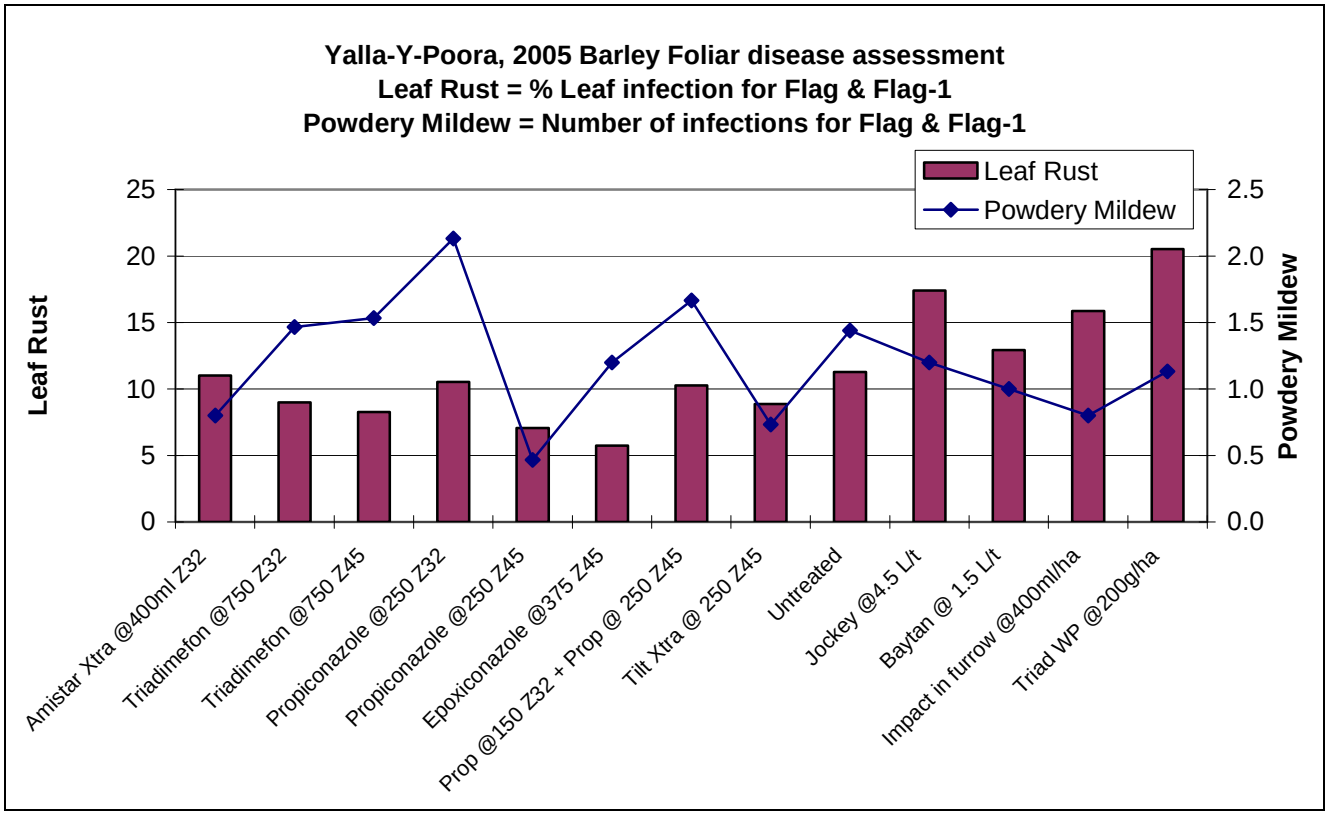
Located at Yalla-Y-Poora in the Western District of Victoria this trial was established to evaluate fungicide application for the control of Leaf Rust and Powdery Mildew in Baudin Barley. Two timing of application for the foliar fungicides was Zadox 32 and Zadox 45. The late application was intended to be applied at Zadox 39 but the application was made approximately 10 days late.

Also included are a number of seed and fertiliser fungicide treatments primarily to investigate the efficacy of Triad WP on Leaf Rust and Powdery Mildew.

Rainfall this season was very low compared to the average for the Western District. Rainfall in the Yalla-Y-Poora area was approximately 292.1mm for the growing season (457.2mm Total for the year), normally 450mm would be expected in the growing season.

Leaf rust assessments on this trial have shown that Epoxiconazole at 375 ml/ha had the best response in this trial. The assessment was made on both the flag leaf and flag leaf-1 looking at the percentage leaf area infected. The application of Epoxiconazole resulted in 5.73% infection compared to the untreated 11.27%. Interestingly the untreated was not the treatment with the highest infection, all of the seed dressing treatment in the trial registered high levels of Leaf Rust.

Figure 6-5: Leaf Rust And Powerdery Mildew Assessments



A late application of Propiconazole at Z45 was the best performer with 0.47% infection of Powdery Mildew. Tilt Xtra (Propiconazole + Cyproconazole) was the second best result with 0.73% infection.

Overall there was no significant difference in yield between the treatments. With this in mind, the best three performing treatments were Baytan, Triad WP and Impact in furrow. These seed dressing and fertiliser treatments are most likely the highest yielding treatments due to other disorders that are controlled by these products, such as root diseases.

Table 6-6: Summary Of All Data

Treatment	Rate	Timing	Leaf Rust F&F-1	P. Mildew F& F-1	Yield t/ha	Prot-ein	Moist	TW	Ret.	SCR'S
Amistar Xtra	400	Z30-32	11.00	0.80	3.18	12.3	10.2	68.33	92.72	2.69
Triadimefon	750	Z30-32	9.00	1.47	3.23	12	10.1	68.89	93.93	2.31
Triadimefon	750	Z45	8.27	1.53	2.90	12	10.1	68.63	94.57	2.33
Propiconazole	250	Z30-32	10.53	2.13	3.10	11.2	10.2	68.88	94.84	2.30
Propiconazole	250	Z45	7.07	0.47	3.12	11.2	10.2	68.39	92.81	3.09
Epoxiconazole	375	Z45	5.73	1.20	2.82	11.5	10.3	68.50	92.80	3.27
Prop + Prop	150+250	Z30-32+Z45	10.27	1.67	2.92	11.0	10.3	68.78	92.35	3.25
Tilt Xtra	250	Z45	8.87	0.73	3.29	12.0	10.2	65.23	91.12	3.47
Untreated			11.27	1.44	3.08	11.7	10.2	68.62	92.86	2.65
Jockey	4.5 l/t	Seed dressing	17.40	1.20	2.98	12.5	9.9	64.54	92.19	4.18
Baytan	1.5 l/t	Seed dressing	12.93	1.00	3.36	12.2	10.1	67.36	91.85	3.08
Impact in furrow	400 ml/ha	Fertiliser	15.87	0.80	3.26	11.6	10.0	69.38	94.15	2.49
Triad WP	200 g/ha	Fertiliser	20.53	1.13	3.31	12.4	10.2	69.87	93.85	2.34
LSD (P=.05)					**0.631**					
Standard Deviation					**0.378**					
CV					**12.13**					