1.1.2 Wheat variety by fungicide interaction trial – Yalla-Y-Poora

Location or Trial: Yalla-Y-Poora

Funding Organisation: Thanks to the members and sponsors for supporting this trial.

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Growing Season Rainfall (Apr – Nov): 269mm and total 392mm

Summary of findings: There was no significant advantage to applying fungicide to this trail due to low disease pressure this year. Grain quality was affected by dry conditions more than anything else, with high protein levels and screenings and relatively low thousand grain weights and test weights. Ruby wheat was the highest yielding variety with 3.017t/ha (plus fungicide) and the lowest was Amarok at 0.749t/ha (plus fungicide). The dry season favoured the early maturing lines.

Background: This trial evaluates a number of wheat varieties that are or may become suitable for south west Victorian growing conditions. This trial also evaluates the varieties in a nil fungicide and plus fungicide scenario to determine the yield response of the varieties to controlling foliar leaf disease, principally leaf and stripe rust.

Trial Design: A replicated randomised block design consisting of two replicates unsprayed with foliar fungicide and two reps sprayed with foliar fungicide. Each varietal treatment was 3 beds wide, 12 m long and each bed was 1.45 m wide.

Trial Inputs: The trial was sown at a target plant population of 200 plants/m^2 on the 9th June 2006. 100kg/ha of MAP was used at planting and 50l/ha + 150 L Easy N was applied on the 20th September 2006 on all trials. The plus fungicide treatments received 250mls/ha Opus at growth stage 32/33 on the 12th September 2006 and then again at growth stage 55/59 on the 3rd of October 2006. The trial was harvested on the 25th of January 2007.

Trial Results:

Figure 1 shows the yield performance of each variety, with and without a fungicide application.

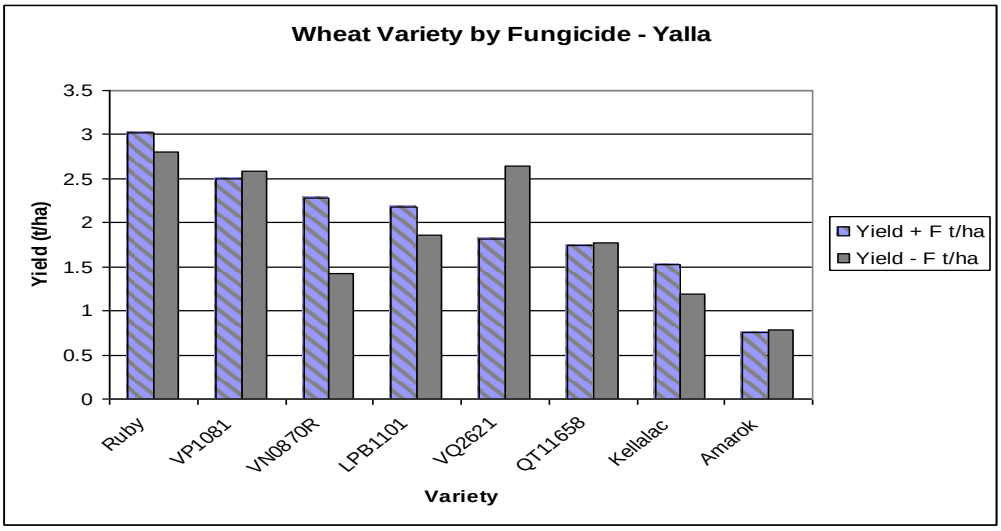

Table 1 shows the grain yields of the varieties ranked in decreasing yield order for the plus fungicide treatment.

Table 1. Yield

Entry	Variety	Yield + F t/ha	Rank	Yield - F t/ha	Rank	Yield Advantage t/ha	Yield Advantage %
5	Ruby	3.017	1	2.805	1	0.21	7.03
4	VP1081	2.497	2	2.582	3	-0.09	-3.40
7	VN0870R	2.28	3	1.425	6	0.86	37.50
2	LPB1101	2.179	4	1.853	4	0.33	14.96
3	VQ2621	1.809	5	2.638	2	-0.83	-45.83
8	QT11658	1.737	6	1.774	5	-0.04	-2.13
6	Kellalac	1.53	7	1.184	7	0.35	22.61
1	Amarok	0.749	8	0.783	8	-0.03	-4.54
	Average	1.975		1.881			
	LSD 5%	1.558		1.297			
	CV	40.63		42.94			

The highest yielding variety in both treated and untreated applications was Ruby. Four varieties had a yield advantage with a fungicide application and four did not. This may be due to the low incidence of disease infection in the 2006-07 season.

Table 2 shows the grain protein percentage and screening percentage for the wheat varieties.

Table 2 Grain protein % and screenings %

Entry	Variety	Protein % + F	Protein % - F	Screenings % + F	Screenings % - F
1	Amarok	14.6	14.58	7.065	7.47
2	LPB1101	14.68	15.55	3.665	2.71
3	VQ2621	15.73	14.98	2.02	1.98
4	VP1081	14.68	14.68	2	1.945
5	Ruby	13.85	14.59	3.48	3.095
6	Kellalac	14.88	15.35	3.805	4.28
7	VN0870R	13.7	14.6	3.635	3.91
8	QT11658	15.38	15.14	2.975	2.655
	Average	14.69	14.93	3.581	3.506
	LSD 5%	1.429	1.811	1.7285	0.892
	CV	6.15	4.46	46.45	50.24

The average grain protein 14.69 (+F) and 14.93 (-F) are extremely high and reflects the dry finish to the grain fill period. The plants could not convert the nitrogen into yield effectively, so much of the nitrogen was transferred into grain protein.

Table 3 shows the test weight kg/hl (TW) and thousand grain weights (TGW) for the varieties.

Table 3 Test weight and Thousand Grain Weights

Entry	Variety	TW +F	TW - F	TGW +F	TGW - F
1	Amarok	73.55	75.5	32.07	31.59
2	LPB1101	77.18	76.84	32.66	32.91
3	VQ2621	78	78.97	31.14	31.72
4	VP1081	78.81	79.23	33.34	33.88
5	Ruby	79.88	79.57	33.17	33.28
6	Kellalac	77.48	77.91	32.59	32.92
7	VN0870R	76.65	76.42	34.06	33.72
8	QT11658	77.06	77.1	35.01	35.45
	Average	77.32	77.69	33.01	33.18
	LSD 5%	2.92	1.525	1.909	1.636
	CV	2.66	1.94	4.57	3.88

Table 4 summaries that there was little to no benefit of fungicide application on the trial.

Table 4 Trial Summary

	Yield (t/ha)	Protein %	Screenings %	Test Weight kg/hal	TGW g/hl
Plus Fungicide	1.975	14.69	3.581	77.32	33.01
No Fungicide	1.881	14.93	3.506	77.69	33.18
LSD 5%	1.558	1.429	1.7285	2.92	1.909
Sig Diff 5%	No	No	No	No	No

Trial Observations:

The very dry conditions had a significant impact on the yield, as did the late frosting. The crop was unable to convert the available nitrogen into yield as shown by the high grain protein levels.