

growers to evaluate their suitability within each AgZone. LongReach Plant Breeders aim to have high quality milling wheats, with specific suitability to WA environments, available for commercial release within the next 2 years.

ACKNOWLEDGEMENTS

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DISEASE CONTROL FOR BARELY VARIETIES DEMONSTRATION

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AIM

To investigate the effectiveness of fungicides regimes for controlling net blotch and powdery mildew of barley.

BACKGROUND

Yield reductions in barley have been commonly noted by farmers in the Miling area in the past. These reductions have typically been due to leaf diseases such as net blotch and powdery mildew. This experiment targeted net blotch and powdery mildew before flag leaf emergence. Assimilates derived from photosynthesis in the flag leaf, flag leaf – 1 and the leaf sheath are known to greatly contribute toward final grain yield (Motley *et al*, 2004). Diseases that reduce photosynthetic area such as net blotch and powdery mildew reduce assimilate production and therefore reduce grain yield (Motley *et al*, 2004).

A seed dressing fungicide (Dividend) and foliar spray (Tilt) were applied to susceptible barley cultivars Gairdner and Baudin to determine the effect that applying these fungicides in different regimes has on yield, given that fungicides don't create yields, only protect yield potential. Powdery mildew should be treated early and when symptoms are not visibly severe whilst net blotch will usually spread from infected stubble onto the lower leaves then work its way up the plant, this can be treated as symptoms become apparent (Motley *et al*, 2004).

Dividend seed treatment provides systemic protection against seed-borne net blotch early in the season, however is ineffective for the control of powdery mildew. Tilt foliar fungicide provides protection against both powdery mildew

Cereal Research Results

and net blotch and is sprayed later in the season (1st -2nd node) to manage net blotch infections when the systemic protection wears off. This experiment aims to test how effective different regimes of fungicides are for protecting yield potential of barley.

TRIAL DETAILS

Property	Tony White, Miling
Plot size & replication	96m x 10m x 3 Replications
Soil type	Loamy Sand
Sowing date	30/5/06
Seeding rate	65 kg/ha: Baudin – Dividend 65 kg/ha: Gairdner + Dividend 65 kg/ha: Gairdner – Dividend 40 kg/ha: Baudin + Dividend
Fertiliser (kg/ha)	Macropro Extra 80 kg/ha, 100 L/ha Flexi-N
Paddock rotation	2005: Oat & Biserrula Silage, 2004: Wheat
Fungicides/Herbicides	Fungicides: Seed Dressing, Dividend – 100 ml/100kg, Foliar Spray, Tilt – 250 mL/ha applied at 2 nd node Herbicides: Treflan 1.5 L/ha; Metrabuzin 50 g/ha; LVE 500 mL/ha; Logran 7 g/ha;
Growing Season Rainfall	185mm

RESULTS

Table 1: Yield and quality of Gairdner and Baudin barley treated with and without fungicide treatments.

Treatment	Yield (t/ha)	Protein (%)	Screenings (%)	Weight (g)	Payment Grade
Baudin (control)	1.84 a	13.53	56.76	318.5	Feed
Baudin + Dividend + Tilt	1.82 a	13.77	57.27	318.0	Feed
Baudin + Dividend	1.79 ab	13.89	63.76	311.3	Feed
Baudin + Tilt	1.76 ab	13.31	55.63	315.6	Feed
Gairdner + Tilt	1.71 bc	13.88	65.44	316.9	Feed
Gairdner + Dividend + Tilt	1.64 cd	14.02	52.26	321.5	Feed
Gairdner (control)	1.64 cd	14.44	66.07	318.0	Feed
Gairdner + Dividend	1.62 d	14.52	63.00	320.5	Feed
LSD	0.08				

Yields with common letters are not statistically significantly different (P=0.05).

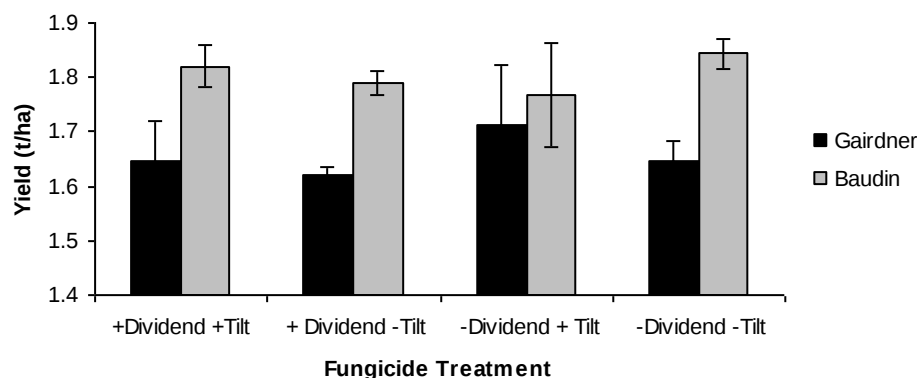


Figure 1: Mean yield and standard errors of Baudin and Gairdner cultivars under differing fungicide treatments.

ECONOMIC ANALYSIS

Table 2: Economic Analysis (\$/ha)

Treatment	Yield (t/ha)	Gross Return	Variable Costs	Gross Margin
Baudin	1.84	456.32	178.83	277.49
Baudin + Dividend + Tilt	1.82	451.36	186.30	265.06
Baudin + Dividend	1.79	443.92	179.80	264.12
Baudin + Tilt	1.76	436.48	185.33	251.15

Gairdner + Tilt	1.71	424.08	185.33	238.75
Gairdner + Dividend + Tilt	1.64	406.72	186.91	219.81
Gairdner	1.64	406.72	178.83	227.89
Gaidner + Dividend	1.62	401.76	180.41	221.35

Based on farm gate return of \$248/t for feed barley as of 28th December, 2006.

COMMENTS

- Baudin produced a statistically higher yield than Gairdner under all treatment regimes.
- The dry growing season lead to a very low disease presence in the plots. This therefore eliminated any yield reductions that may be caused by disease infection, rendering fungicide treatments ineffective.
- Under non-experimental cropping situations, foliar fungicide sprays would not have been applied in the absence of disease, however in this trial the cost of foliar applications were not returned through improved yield.

ACKNOWLEDGEMENTS

Thank you to Tony White for conducting the demonstration.

REFERENCE

Motley, K., Rice, A. & Murray, G. (2004) *Protecting this years cereal crop with foliar fungicides*. Grains research and development co-operation, Forbes, NSW.

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ROTATION STILL A BENEFIT IN DRY YEARS

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AIM

To explore constraints to wheat yield potential in the northern sandplain region.

BACKGROUND

In our environment, wheat yield is ultimately limited by rainfall amount and distribution. However, the rainfall-limited yield potentials are rarely met. Previous results from this experiment suggest that potential yields can be approached using management tools available to growers. This is the second cycle of an experiment which has included rotation crops, ripping and nitrogen rates.

TRIAL DETAILS

Property	Liebe Long Term Trial Site, West Buntine		
Plot size & replication	Main plots (Rotation)	=	10m 40m
	Subplots (N rates x Ripping)	=	2.5m 20m
	Treatment Design	=	Factorial
	Experimental Design	=	randomized complete block
	Replicates	=	4
Soil type	Deep yellow sand		
Sowing date	24 May 2006		
Seeding rate	Wheat (cv. Wyalkatchem) 90 kg/ha		