3.1.3 FOLIAR FUNGICIDES ON BARLEY AND WHEAT (TASMANIA)

Barley

Location: Riccarton (Campbell Town)

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Growing season rainfall (April-Nov): 265 mm

Background:
Over the last few seasons barley leaf rust has caused reductions in both grain yield and seed size. Resistance to leaf scald in Gairdner and Franklin has also broken down and the spot form of net blotch was reported in the State for the first time last season. Until new sources of resistance are found, fungicide applications will be necessary in most years. This trial was conducted to evaluate the performance of foliar fungicides in combating these leaf diseases. In particular, a new class of fungicides (strobilurins) used extensively in the UK and NZ, was trialled as well as the less expensive "traditional" fungicides.

Aims:
To evaluate the effectiveness of foliar fungicides applied to barley and compare strobilurin fungicides with the "older" triazole and conazole fungicides.

Methodology:
Fungicide treatments: A range of fungicides at different rates, time of application and some mixtures. (Table 11).

Applied to Gairdner barley crop at two times of application -the start of elongation (GS31) and end of ear emergence (G59).

Four replicates. Plots were scored for disease during the season.

Sowing date: 18 June 2002
Sowing rate: 110 kg/ha
Fertiliser: 150kg/ha 9:13:17
Weed control: Hoegrass 1.5//ha,
MCPA 1.5//ha,
Brominil 1.4//ha

Harvest Date: 13 January 2003

Results and Discussion:
There was no sign of disease until after flowering when low levels of scald were detected in some plots. Infections levels tended to be greater in the nil treatments.

There were no significant yield differences between treatments (see Table 11). The lack of response to fungicide treatments was evidently a result of very low disease pressure. In two previous SFS fungicide trials conducted on barley in Tasmania, large effects from the strobilurin, Allegro were only evident when the trial received good spring rainfall. It is likely that good finishing conditions are conducive to the documented effect of strobilurins prolonging green leaf in plants.

Table 11: Effect of Different Fungicide Treatments on Grain Yield of Gairdner Barley

Fungicide	Fungicide group	Yield t/ha
1 Nil/Nil	-	5.82
2 Nil / Folicur 145ml	conazole	5.97
3 Folicur 145ml / Nil	conazole	5.82
4 Folicur 145ml (x 2)	conazole	5.73
5 Folicur 290ml (x 2)	conazole	5.57
6 Folicur 145ml + Flint 500g / Nil	conazole / strobilurin	6.08
7 Nil / Folicur 145ml + Flint 500g	conazole / strobilurin	6.03
8 Folicur 145ml + Flint 500g (x 2)	conazole / strobilurin	6.10
9 Folicur 145ml +Amistar 250g (x 2)	conazole / strobilurin	5.98
10 Opus + Pyraclostrobin 500ml (x 2)	conazole / strobilurin	5.88
11 Allegro 500ml (x2)	conazole / strobilurin	6.00
12 Opus 250 ml (x 2)	conazole	6.08
13 Bumper 250ml (x2)	conazole	5.98
14 Triad 500ml (x2)	triazole	5.99

Conclusions:
The absence of leaf rust was presumably a function of the dry finish to the season and dry autumn and lack of a "green bridge" (alternative hosts). Scald infection levels were low. Based on the pessimistic seasonal forecast, nitrogen was not applied to the crop and it is likely this retarded the development of scald.

Further trials are required to evaluate these fungicides in seasons with higher disease pressure.

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