

Fungicide for stripe rust – farm demonstrations

The aim of these on farm demonstrations was to determine the benefit of fungicide applications for stripe rust control in 2003.

Summary

When spraying for stripe rust in susceptible crops spraying should take place during the early stages of disease development and generally not before the flag leaf stage of the crop. Spraying when the disease has fully developed and/or waiting until the crop is past the flowering stage is unlikely to be beneficial. See also “Fungicide strategies in wheat and barley” articles in this manual.

Background

In 2003 stripe rust in wheat was quite a problem in the southern Mallee and Wimmera. It was probably the most extensive outbreak of the disease since 1987. Two new strains of stripe rust were found and many varieties which were previously resistant or moderately resistant were affected by the disease. Many crops were sprayed with a fungicide and in some cases the results were positive and in other cases there was no benefit. These two on-farm demonstrations were undertaken in an attempt to shed some light on when it is likely that a positive yield response will result from a fungicide application.

Methods

On-farm Demonstration 1 – Charlton

A paddock of Krichauff (previously rated MR, now rated S) wheat was sprayed on October 21 when the crop had finished flowering and was at the grain filling stage (GS69). The rust was well-established to the extent that the Flag and Leaf 2 were covered with rust. The paddock was sprayed with Folicur® @ 150ml/ha, unsprayed strips were left in the paddock as controls.

On-farm Demonstration 2 – Minyip

A paddock of H45 (previously rated MS, now rated VS) wheat was sprayed on September 29 when the crop was at the full flag leaf emergence (GS39) stage. Hotspots of about 0.5 to 1.0m in diameter were found in the crop (approximately three to four hotspots per hectare) and outside the hotspots the occasional plant had rust pustules on the Flag and Leaf 2. The paddock was sprayed with Bumper® @ 250ml/ha, unsprayed strips were left in the paddock as controls.

Results

On-farm Demonstration 1 – Charlton

Spraying at the grain filling stage with extensive development of the disease (the spray truck came out of the paddock orange in colour) did not result in a positive yield or quality response (Table 1).

Table 1. Yield and quality response for controlling stripe rust late in the season

	Yield t/ha	Protein %	Screenings %
No fungicide	3.1	12	3.6
Folicur at 150ml/ha	3.1	13	4.2

On-farm Demonstration 2 – Minyip

Spraying with a fungicide early in the development of the disease (flag leaf) resulted in a positive yield response (Table 2).

Table 2. Yield and quality response for controlling stripe rust early in the season

	Yield t/ha	Protein %	Screenings %
No fungicide	2.6	11.8	6.1
Bumper at 250 ml/ha	3.3	13.0	5.9

Interpretation and Commercial Practice

Spraying for stripe rust in susceptible crops must be done during the early stages of rust development and when the crop is at the flag leaf stage. Spraying late (when the disease has fully developed and is covering all the plants OR when the crop has finished flowering) is unlikely to be beneficial.

An application of fungicide for stripe rust before the flag leaf stage is only warranted in a season with a severe outbreak early in the season. When this occurs two fungicide applications will need to be applied: an early application to protect the plant during early growth and the second at the flag leaf stage to protect the important grain filling leaves on the plant (Flag, L2 and L3).