



# Northern Stripe Rust Management: An Evaluation of Timing and Efficacy of Foliar Fungicides

## Background

In recent years stripe rust has re-emerged as a disease of significance across all Australian grain growing areas. Plant breeding incorporating resistant germplasm represents the most effective method of long term disease management. However fungicides are an additional tool that will enable disease management in varieties without effective genetic resistance.

Currently there are no varieties with effective stripe rust resistance combined with useful tolerance to crown rot. Until such varieties are released, northern growers and advisers need to select varieties firstly on the basis of crown rot risk and then manage for stripe rust accordingly.

## Why look at foliar timing?

Limited research has been conducted under northern conditions to quantify the benefits from foliar stripe rust management and to provide regional guidance regarding optimal spray timing. Research conducted in 2005 by Steven Simpfendorfer, NSW DPI Tamworth, highlighted that significant yield benefits could be obtained by the use of foliar, seed or fertiliser treatments for stripe rust management on susceptible varieties (ratings 1-4). Steven also examined the impact on yield of a delay in foliar application timing. A single application of Folicur<sup>®</sup> 290 mL/ha, at first indication of disease, recorded a 33% yield benefit compared to the untreated in the variety Baxter (rating 4). Delaying the spray by only 4 days resulted in losing 38% of that benefit. A delay of 8 days resulted in a loss of 84% of that benefit.



## ***In a nutshell***

***Timing of application:*** Application shortly PRIOR to pustule evidence provided the best stripe rust management.

***Product efficacy:*** No differences between fungicides were apparent under low disease pressure. Foliar fungicide timing is much more important than product choice.

***Grain yield:*** Early applied treatments recorded the highest yields in both trials.

***Economic benefit:*** Early treatment application recorded good levels of net gain in both trials whilst delayed application resulted in net losses.

***Overall:*** The timing of foliar application for stripe rust management has previously been based on disease incidence and severity thresholds. Research by NSW DPI in 2005 showed highest grain yields were obtained by application prior to pustule appearance with a rapid reduction in yield benefit when application was delayed. These trials strongly support those findings and demonstrated the benefit of preventative treatment.

*Efficacy differences between fungicides were negligible under a short duration disease epidemic. Differences in length of protection may have been evident if growing conditions were more favourable for disease development.*

***If you are going to spray, don't delay***