

Stripe Rust Management Options

Background

Stripe rust management has become a more important component of wheat production in recent years due to the arrival of new pathotypes that cause disease in the majority of currently grown varieties. Plant breeding and variety choice will remain our key long term management tools, however it is likely to be a number of years before we can replace many of the currently susceptible varieties. Until that time the industry is reliant on effective and economic fungicide and cultural practices to assist disease management.

Research by both NSW DPI and NGA in 2005 and 2006 indicated foliar fungicide application during the early stages of stripe rust establishment was the key to improved disease management whilst also generating more consistent economic benefit. Additional NGA project activity in 2007 and 2008 was focused on generating more regional data and confidence comparing a range of stripe rust management strategies.

Project aims

In 2007:

1. Evaluate a stripe rust 'management matrix' of suitable seed treatment and foliar fungicide combinations
2. Generate more data on the most appropriate and economic stripe rust fungicide management practices

In 2008:

1. Assess the efficacy and economics of single versus multiple fungicide sprays for stripe rust management under high disease pressure

Results in a nutshell

Seasonal differences:

2007

- *Stripe rust widespread but generally low incidence with very low severity*
- *Main regional disease detections from mid August onwards*

2008

- *Stripe rust widespread at high incidence with high severity*
- *Disease well established in crops ~4 weeks earlier than in 2007*

Stripe rust control:

- *Most effective stripe rust control in both years was from a foliar fungicide applied at or just prior to early signs of disease*
- *Jockey (300 mL/100 kg seed) alone did not provide sufficient disease control when stripe rust was not evident until mid September*
- *Two spray approach was necessary in a moderately susceptible (MS) variety when under high and prolonged disease pressure in 2008*

Yield impact:

- *Disease levels too low for sound conclusions in 2007 although overall means for all treatments still exceeded the Untreated yield*
- *Under high disease pressure in 2008, mean treatment benefit of ~400 kg/ha in a 2600 kg/ha crop. Early application still provided good yield protection*

Overall:

- ***Jockey of limited value if disease onset is not until September***
- ***Reinforced benefits of early foliar fungicide application timing***
- ***Little indication of rate response to foliar application in any trial***
- ***Multiple spray provided best result in Baxter (MS) in a high disease year but a single, well timed, low rate application still provided 90% of that benefit***