



# Central West Farming Systems

FARMERS ADVANCING RESEARCH

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## YOUR QUESTIONS ANSWERED - September 2006

**Management Decision: Stripe Rust Control gives yield & quality benefits in low yielding conditions- previous trials overviews.**

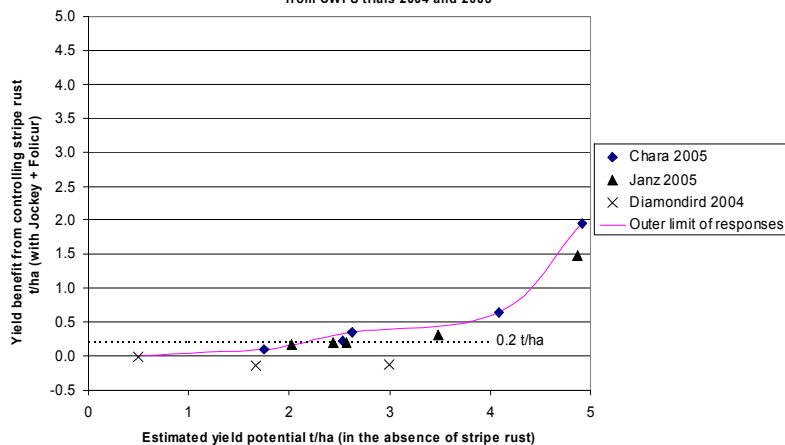
Whilst the year is shaping up to produce lower yields than originally forecast in most regions, growers still need to be focused on important management decisions. In the Northern part of the state's cereal belt, this year stripe rust has again been seen in large amounts. The weather conditions experienced in the south however has not as yet allowed the stripe rust to become a cause for concern- however as we discuss below there is no room to be slack on growers control strategies.

From the past two years of CWFS trial data, we have seen that the resistant varieties have proven to be more reliable to in managing stripe rust (SR) through APR (what is APR) and seedling resistance. However the transition for growers to these varieties will take time, and management of the more susceptible varieties will need to be a focus for growers.

### What yield can be saved from controlling stripe rust in susceptible varieties?

It has been shown from the trials that 200 kg/ha of grain yield (i.e. grain @ \$150/t = \$30/ha) needs to be saved for SR control to make a reasonable profit. **Graph 2:** CWFS trial for two years presents the yield benefits (i.e saving) from controlling SR in relation to crop yield potential for the varieties H45, Chara, Diamondbird and Janz.

Graph 2. The relationship between yield potential and yield benefit from controlling stripe rust (with Jockey + Follicur) for Chara, Janz and Diamondbird from CWFS trials 2004 and 2005



The stripe rust strategy matrix (**Table 1**) shows the levels of control strategies that are recommended based on the trial results for estimated crop yields with varied amounts of resistance.

Table 1  
Stripe rust strategy matrix

Stripe rust Resistance rating	Example varieties	Estimated yield potential		
		<2 t/ha	2 – 3 t/ha	>3 t/ha
1	H45	Threshold	Preventative	Preventative
3,4	Diamondbird, Chara	Monitor	Threshold	Preventative
5	Janz, Lang, Giles	Monitor	Threshold	Preventative
7,8	Ventura Ellison	Monitor	Monitor	Monitor

### Strategy summary

**Preventative** = Ensure leaves are protected from stripe rust infection from late tillering (Z32) onwards. Protection of flag leaf from Z39 onwards is critical.

**Threshold** = Apply foliar fungicides from Z39 if stripe rust infection exceeds 1% of flag leaf area.

**Monitor** = Unlikely to benefit from stripe rust control. However, close monitoring is needed.

SR control in susceptible varieties in water limited and low yield potential (i.e. < 2 t/ha) seasons has shown to be low or marginal, therefore lower cost control strategies are more appropriate to give a positive economic outcome. If your expected yield potential is between 2-3 t/ha, some yield benefits & economic benefits may be gained from implementing stripe rust control treatments, but this is not guaranteed.

Whilst if your expected yield is >3 t/ha profitability from treating for stripe rust is more assured and the trials have shown that the yield potential thresholds for warranting control increases as a varieties stripe rust rating increases. In previous years we must also consider that here have been several factors that have resulted in large yield benefits being received from SR control such as late sowing, early infection & late spring breaks. However when infection occurs late in the year the level of the control's benefits will decline as will treatment after flowering even when the yield potential is high.

### Cost of Not Controlling SR:

Particularly in susceptible and moderately susceptible varieties, even in low yielding potential years, the result of not controlling for this fungal disease could be very costly, if the seasonal conditions improve suddenly. There is no easy answer, management of risk will help to make this decision and Table 1 should act as a guide to help in this decision making process on your SR strategy actions to be implemented this year, based on your estimated yield potential and variety based on this regions trial data.

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