

ble to consider stripe rust management in susceptible varieties with yield potential of 2000 kg per hectare or more even when separate application costs are incurred.

NB: Although in Table 3 it appears that management in crops as low as 1000 kg per hectare would be warranted, these crops would be less conducive to rust development due to open and sparse canopies and still not considered candidates for fungicide management.

For those more interested in the 'breakeven' yields, with current grain prices and product costs, we need to harvest an extra 40–70 kg per hectare of grain to cover the total product and application costs.

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Stripe rust management trials have shown best results come from prompt spray decisions.

TABLE 2: Per cent yield benefit required (current fungicide costs, separate application)

Grain price \$/t	Crop yield kg/ha				
	1000	2000	3000	4000	5000
100	46	23	15	12	9
200	23	12	8	6	5
350	13	7	4	3	3

Shaded green cells are where a % yield benefit less than 7% is required.
Assumptions: Fungicide cost \$8/ha, application cost \$15/ha.

TABLE 3: Per cent yield benefit required (current fungicide costs but no extra application cost)

Grain price \$/t	Crop yield kg/ha				
	1000	2000	3000	4000	5000
100	16	8	5	4	3
200	8	4	3	2	2
350	5	2	2	1	1

Shaded green cells are where a % yield benefit less than 7% is required.
Assumptions: Fungicide cost \$8/ha, application cost \$0/ha.

Stripe rust in the north COMMERCIAL VIEW

By Drew Penberthy, Penagcon

In the past stripe rust was a disease that was poorly understood in terms of the damage it was doing to our yields and what economic impact it was having on our profitability. Previously we would usually wait for outbreaks to establish and start to spread before we would discuss and try to justify control measures with our clients. We would then watch the horizon for rain events before we would start spraying for the disease. This previous standard management process would sometimes result in clients not spraying until the disease was rampant throughout the crop, especially if the infection had started well prior to flag leaf.

We believed that these delayed decisions may have been putting a 'cap' on any higher yields from our crops, but it was difficult to put a figure on how much it was costing us. What we needed was information on management and impact under northern conditions which we all believed would be different from that experienced in the soft growing conditions of the south.

Penagcon has been involved with NGA's stripe rust trials over the past few seasons and continued to work closely with Steven Sempendorfer at the DPI in Tamworth.

Although the past few years have been far from productive due to very dry seasons, outbreaks of stripe rust have continued to occur and fortunately the trials were conducted. We would not have normally sprayed these crops in the past but the trial work showed



that even under these conditions it was still a very viable and profitable option.

Comprehensive management changes

The trial work undertaken by NGA and DPI has comprehensively changed our stripe rust management practices. The process of managing the disease has now started prior to planting with variety selection and seed treatment options discussed before a seed is put into the ground.

The crops are monitored very closely, well and truly prior to flag leaf (GS39), and through a network of consultants (NGA, DPI and other industry leaders) outbreaks of the disease are closely monitored district and state wide. We now have the reassurance to spray crops that are at high risk even before the disease establishes itself in the canopy. This is because we have peace of mind that our yields will no longer be compromised from this disease and profitability will be protected if controlled.

Of course there are still questions to be answered such as in what situations is a two spray approach beneficial. However with more science and economics now behind our decision, we are much more comfortable with making our management calls. If we do get a reasonable season with a high disease outbreak in the future, I'd love to see the economic benefits from these trials and what the impact it is on our profitability.