Hart lentil disease management 2025

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Key findings

- Early season crop establishment was uneven, likely influenced by soil variability and dry conditions rather than disease.
- Lentil disease pressure was low in 2025, with only Ascochyta blight detected mid-season. No Botrytis grey mould (BGM) was observed.
- Due to the low disease pressure experienced during 2025, grain yield in plots receiving pre-canopy closure fungicide applications was not statistically greater than that of untreated plots.
- Results highlight that fungicide decisions should be guided by seasonal forecasts and disease risk during the season, as prophylactic sprays are unlikely to be cost-effective in low-pressure years.

Aim

Use different fungicide strategies to quantify yield loss resulting from disease infection in lentil crops.

Methodology

As part of the GRDC-funded South Australian Grain Legume Project (UOA2105-013RTX), a disease management field trial was conducted at the Hart field site in 2025 to assess grain yield loss from foliar diseases in lentil crops. The trial compared three fungicide management strategies (Table 1 and 2) across three lentil varieties – GIA Thunder, PBA Bolt and PBA Highland XT. Fungicide programs targeted ascochyta blight (AB) and botrytis grey mould (BGM). The trial was set up as a randomised block design with three replicates and was sown with a small plot seeder on May 16 at planting density of 120 plants/m^2 with 80 kg/ha of MAP + Zn. Weeds were controlled with herbicides or hand weeded as needed. Plots were harvested at crop maturity and grain yield was converted from kg/plot to t/ha. Data was analysed using a standard analysis of variance (ANOVA) and fisher's least significant difference tests was used to compare the treatment means in base R.

Table 1. Fungicide treatments applied to lentil for control of ascochyta blight and botrytis grey mould, compared to an untreated control, at Hart, SA 2025.

Proposed fungicide (timing of application)	Actual fungicide treatments applied
Untreated control	Untreated control (No fungicide)
Veritas Opti® (pre-canopy closure & podding stage)	Veritas Opti® (pre-canopy closure)
Miravis® Star (pre-canopy closure & podding stage)	Miravis® Star (pre-canopy closure)
Procymidone (canopy closure), Chlorothalonil (podding stage)	Procymidone (pre-canopy closure)

Table 2. Fungicide product details including product, rate, active ingredient, and concentration applied at Hart lentil disease management field trial in 2025.

Product	Active ingredient (concentration)	Rate (mL or g/ha)
Miravis® Star	Fludioxonil (150 g/L) + Pydiflumetofen (100 g/L)	540
Veritas Opti®	Tebuconazole (370 g/L) + Azoxystrobin (222 g/L)	1000
Fortress®500	Procymidone (500 g/L)	500

Results and discussion

The crop was sown on May 16 into very dry soil and received only minimal rainfall until mid-June, resulting in a slow and challenging start to the season. This led to uneven establishment, with patchiness and growth variability observed across the trial area (Figure 1a.) These differences were likely influenced by soil type variation and/or residual soil chemical effects. Overall, seasonal conditions were not conducive to disease development, mostly due to the dry early spring. The only visible disease noted was ascochyta blight, detected at minimal levels in late August (less than 10%; Figure 1b). Due to drier than average early spring, ascochyta blight did not progress further. Conditions conducive for the development of botrytis grey mould include a dense canopy combined with prolonged high humidity and temperatures above 15°C. These conditions were not experienced during early spring 2025; therefore, BGM was not observed at the field trial site.

Pre-canopy closure fungicide treatments were applied on September 8, however, due to low level of disease during the later stage of crop development, the planned fungicide sprays for podding stage were not applied. While podding sprays can be important for managing ascochyta blight pod infection, they were not considered economically viable under the conditions experienced in this trial. As a low level of disease was observed in the field trial, disease ratings were not undertaken. Grain yield did not vary significantly between fungicide treatments on average across all varieties in the absence of significant disease infection ($P = 0.799$ at $\alpha = 0.05$; Figure 2) and the interactive effect of fungicide and varieties did not change grain yield ($P = 0.915$ at $\alpha = 0.05$; Figure 3). These findings indicate that fungicide use should be driven by in-season disease risk and seasonal outlooks, as routine preventative applications are unlikely to be cost-effective in years with low disease pressure, like 2025.

Figure 1. a) Variation in crop performance/growth due to a dry spring and soil variability, b) Ascochyta blight symptoms on lentil plants. Photo credit: Sarah Day.

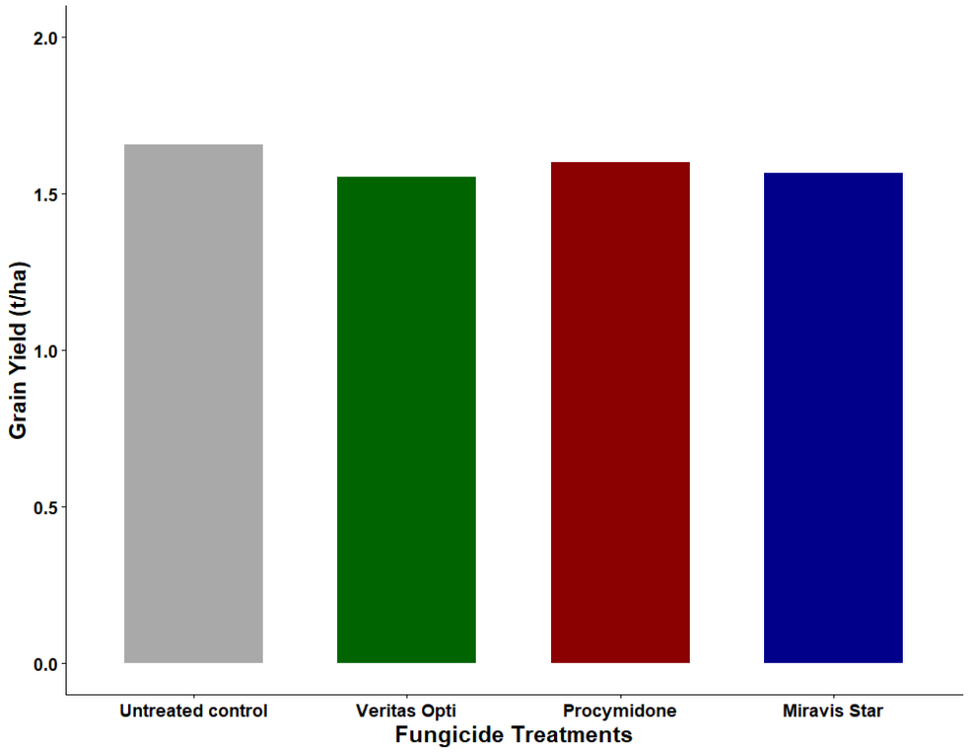

Figure 2. Impact of fungicide treatments on grain yield (t/ha) of lentil, averaged across all varieties, at Hart 2025 lentil disease management field trial in the absence of significant disease infection in 2025 (P = 0.788 at α = 0.05).

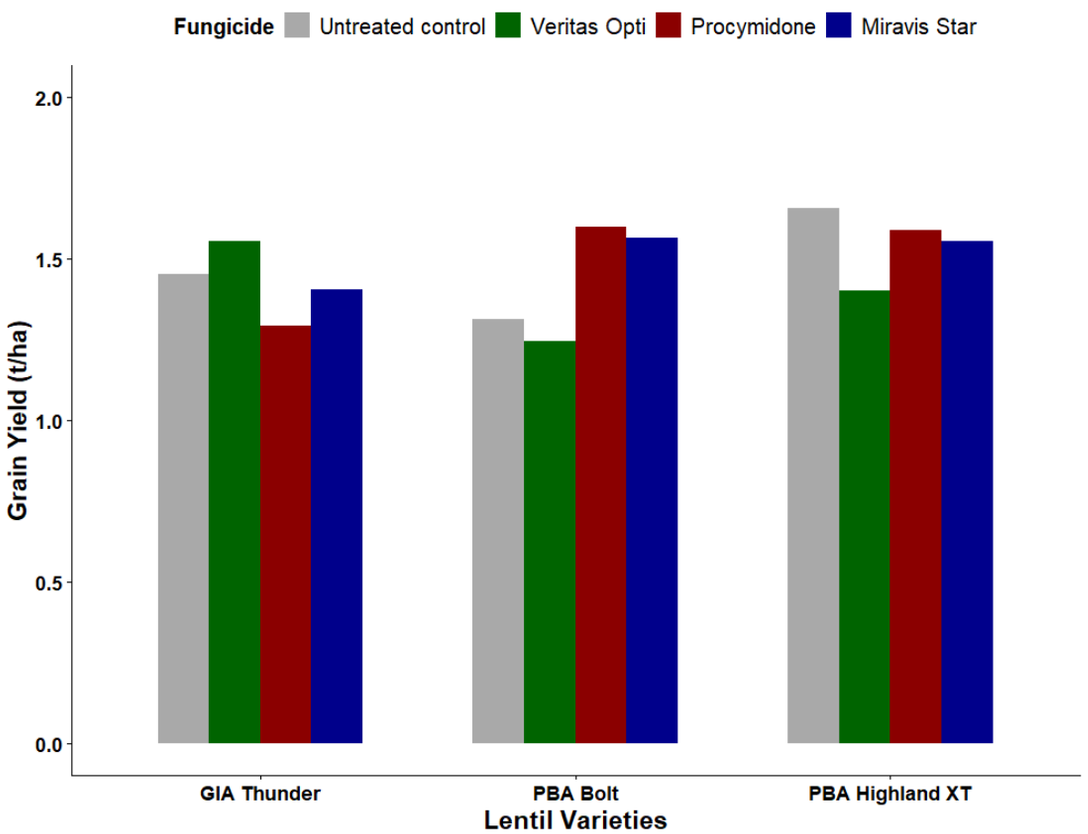

Figure 3: Interactive effect of fungicide treatments and lentil varieties on grain yield in the absence of significant disease infection in 2025 (P=0.915 at α = 0.05).

Resources:

SA Grain Legume project: https://msfp.org.au/projects/grain-legume-production-in-south-australia/

South Australian Crop Sowing Guide https://grdc.com.au/resources-and-publications/all-publications/nvt-crop-sowing-guides/sa-crop-sowing-guide

Pulse diseases - latest developments and trends https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2026/02/pulse-diseases-latest-developments-and-trends

Acknowledgments

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Photo. SARDI senior researcher, Blake Gontar, presenting at the 2025 Hart Field Day.