

Faba Bean, Disease Management (seed treatment), HRZ Southern Wimmera (Gymbowen), Victoria

Aim

To evaluate the effects of fungicide strategies and inoculants on the nodulation, root disease score and grain yield.

Treatments

Varieties: PBA Bendoc and PBA Amberley

Fungicide Treatments: Refer to Table 1 for treatments and application rates.

Inoculant: Nil, peat and granular inoculant (for PBA Bendoc only).

Table 1. Fungicide treatments, methods and rates of application at Gymbowen during 2019.

Treatments' active ingredient	Trade name	Method of application	Rate
Nil ¹	NA	NA	NA
Azoxystrobin + Metalaxyl	Uniform	In Furrow	400 mL/ ha
Flutriafol	Impact Endure	In Furrow	200 mL/ ha
Fluxapyroxad	Systiva	Seed Treatment	150 mL/ 100kg seed
Thiram + Thiabendazole	P-Pickle T	Seed Treatment	200 mL/ 100kg seed
Complete ²	All above	As recommended	As recommended

¹ Fungicides are not applied

² Combination of all other fungicides used in the trial applied as in furrow or seed treatment

Table 2. Other Site Details

Gymbowen	
Sowing Date	30 April
Stubble height (cm)	Standing (30)
Row Spacing (cm)	25.4
Fertiliser (kg/ha) ¹	100
Plant density (plants/m ²)	35

¹ MAP (9.2, 20.2, 0, 2.7) + Zn (2.5)

Results and Interpretation

- Key Messages: These results are only preliminary and should not be used on their own. The effects of the different fungicides will require greater investigation before significant interpretation can be made.
- Establishment and Plant Growth: There were no significant differences in plant establishment between treatments.
- Nodulation: There were no significant differences in the number of nodules between fungicide treatments where there were 25 nodules per plant. Nodulation for inoculant treatments were not recorded.
- Root Disease: In lentils 50-99% of the root system was diseased for all the treatments. Although there were significant differences between treatments, biologically there was very little difference (Figure 1).
- Grain Yield: Flutriafol produced higher grain yield compared to the nil treatment in both varieties (Table 3). In PBA Bendoc, plants that received granular inoculant (with complete, fluxapyroxad and azoxystrobin + metalxyl fungicides) had lower yields than those which were not inoculated for the given fungicide treatments. Further, PBA Bendoc inoculated with peat produced better yields even in the absence of fungicides compared to those inoculated with granular formulation and given complete/ fluxapyroxad/ azoxystrobin+ metalxyl or thiram+thiabendazole treatments.

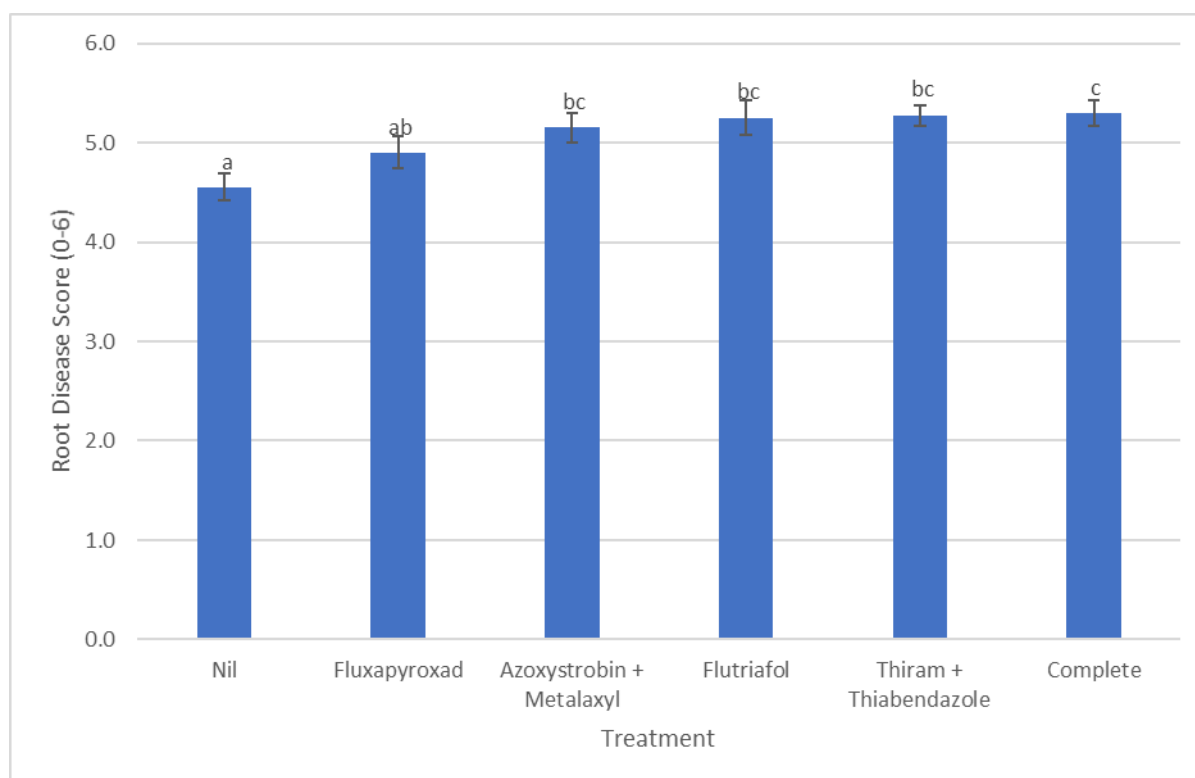


Figure 1 Effects of fungicide strategies on the root disease score of bean plants in Gymbowen, 2019. All the other treatment products were combined for the complete treatment. Root diseases were assessed on a scale of 0 to 6, where 0= 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26%-50%, 4 = 51-75%, 5 = 76-99%, 6 = 100% damaged roots with browning, blackening and/ or rotting symptoms.

Table 3. Effects of fungicides, variety and inoculation on grain yield in beans in Gymbowen, 2019

Treatment	PBA Amberly (Granular)	PBA Bendoc (Granular)	PBA Bendoc (Nil)	PBA Bendoc (Peat)	Mean
Flutriafol	4.41	4.75	4.67	4.73	4.64
Nil	4.25	4.68	4.54	4.78	4.56
Thiram + Thiabendazole	4.26	4.62	4.54	4.52	4.48
Complete	3.98	4.47	4.92	4.98	4.58
Fluxapyroxad	4.18	4.50	4.90	4.34	4.48
Azoxystrobin + Metalaxyl	4.34	4.35	4.53	4.62	4.46
Mean	4.24	4.56	4.68	4.66	
	P	LSD			
Inoculation method/Variety	<.001	0.16			
Treatment	0.37	0.19			
Interaction	0.04	0.39			