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

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

Treatments
Varieties: PBA Striker and Genesis 090
Fungicide Treatments: Refer to Table 1 for treatments and application rates.
Inoculant: Nil, peat and granular inoculant (for PBA Striker 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 between treatments for establishment and early growth. Genesis 090 had better emergence of 5 – 10 more plants per metre in the plot than PBA Striker.

- Nodulation: There were significantly more nodules in the complete treatment compare to the other five treatments (Figure 1).

- Root Diseases: There was very little difference in root disease symptoms between treatments (Figure 2). Over 50% of the roots were infected in all plants

- Grain Yield: Grain yield was not different between treatments. PBA Striker inoculated with peat produced the greatest yield followed by those that were not inoculated (Nil). Lowest yield was produced in PBA Striker sown with granular inoculant (Figure 3).

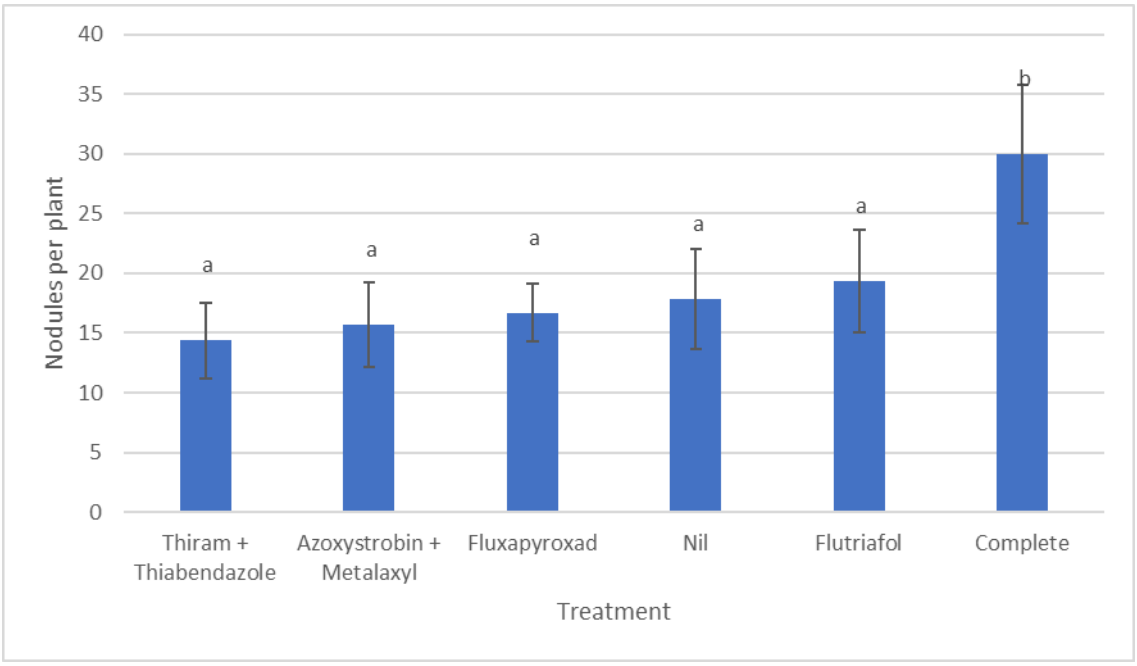

Figure 1 Effects of fungicide strategies on the root nodulation in chickpea plants in Gymbowen, 2019. All the other treatment products were combined for the complete treatment.

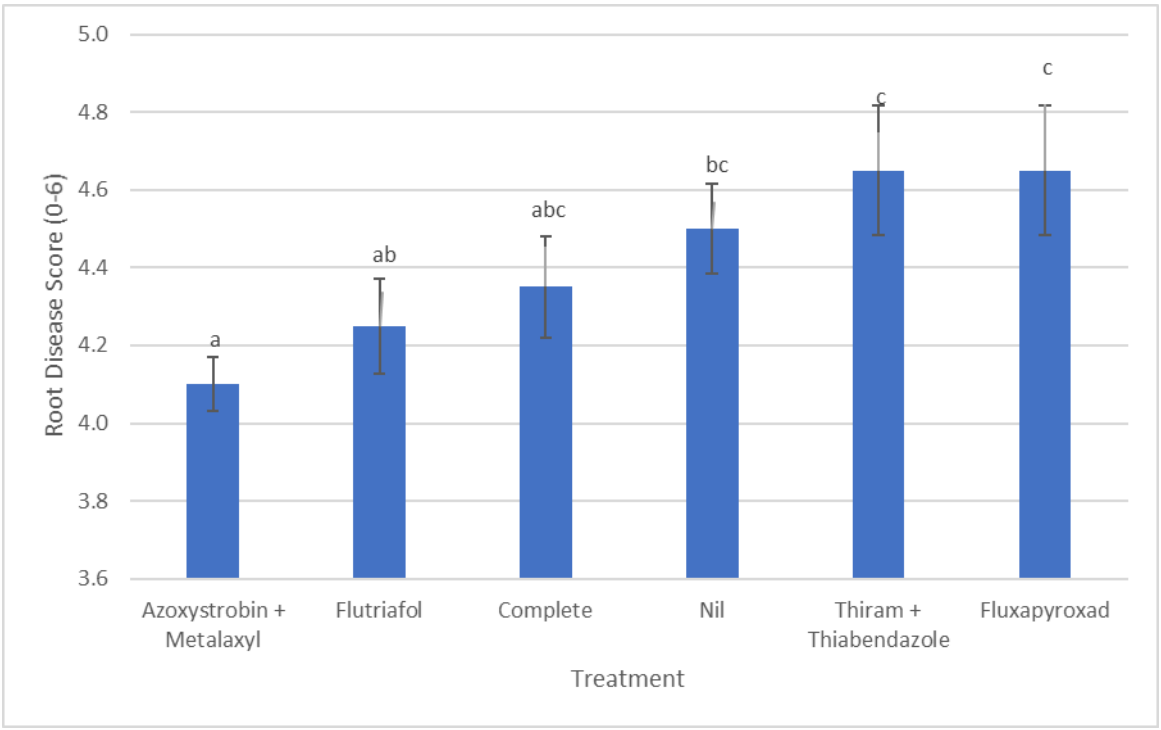

Figure 2 Effects of fungicide strategies on the root disease score of chickpea plants in Gymbowen, 2019. All the other treatment products were combined for the complete treatment. Root diseases were assessed on a scale of 0 to 6, where 0= 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26%-50%, 4 = 51-75%, 5 = 76-99%,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

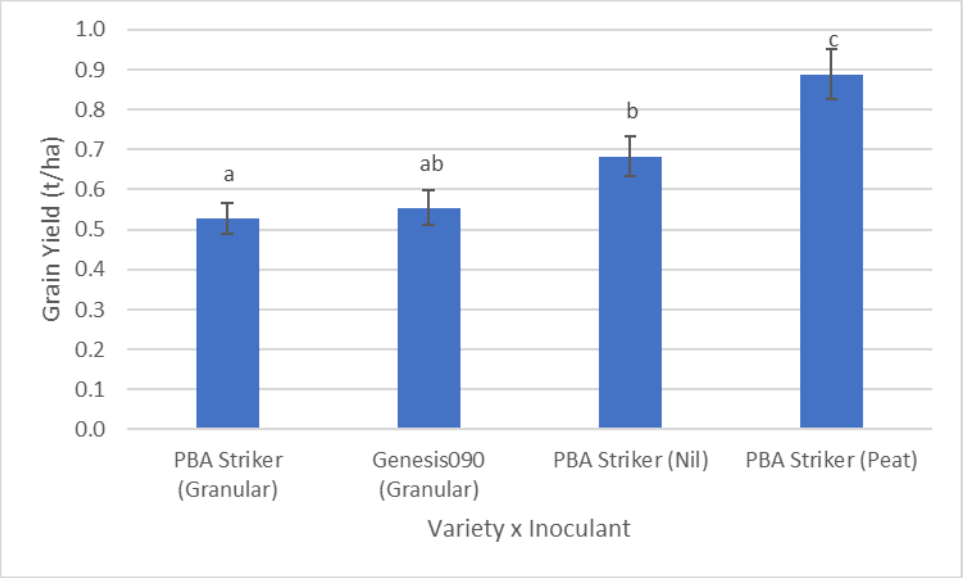

Figure 3 Effects of inoculants on grain yield of chickpea varieties in Gymbowen, 2019.

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