Chickpea, Disease Management (seed treatment), LRZ Mallee (Ouyen), Victoria

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Aim
To evaluate the effects of fungicide strategies 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.

Table 1. Fungicide treatments, methods and rates of application at Ouyen 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

	Ouyen
Sowing Date	14 May
Stubble height (cm)	Standing (10)
Row Spacing (cm)	28
Fertiliser (kg/ha)[1]	50
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. Plant growth and establishment were staggered due to sporadic rainfall events. Plants which received the complete treatment showed effects of phytotoxicity on both varieties. However, both varieties recovered later in the season.

- Nodulation: Overall nodulation was low with an average of only 1-5 nodules per plant (Figure 1). However, plants that received flutriafol had the poorest nodulation, which was less than a single nodule per plant (Figure 1).

- Root Diseases: There was very little difference in the presence of root disease symptoms between treatments, where all treatments had plants with over 50% of the roots with disease symptoms (Figure 2).

- Grain Yield: Fungicide treatments did not influence grain yield significantly. However, varieties differed where PBA striker yielded (0.15 ±0.02 t/ha) better than Genesis 090, which produced 0.08 ± 0.02 t/ha.

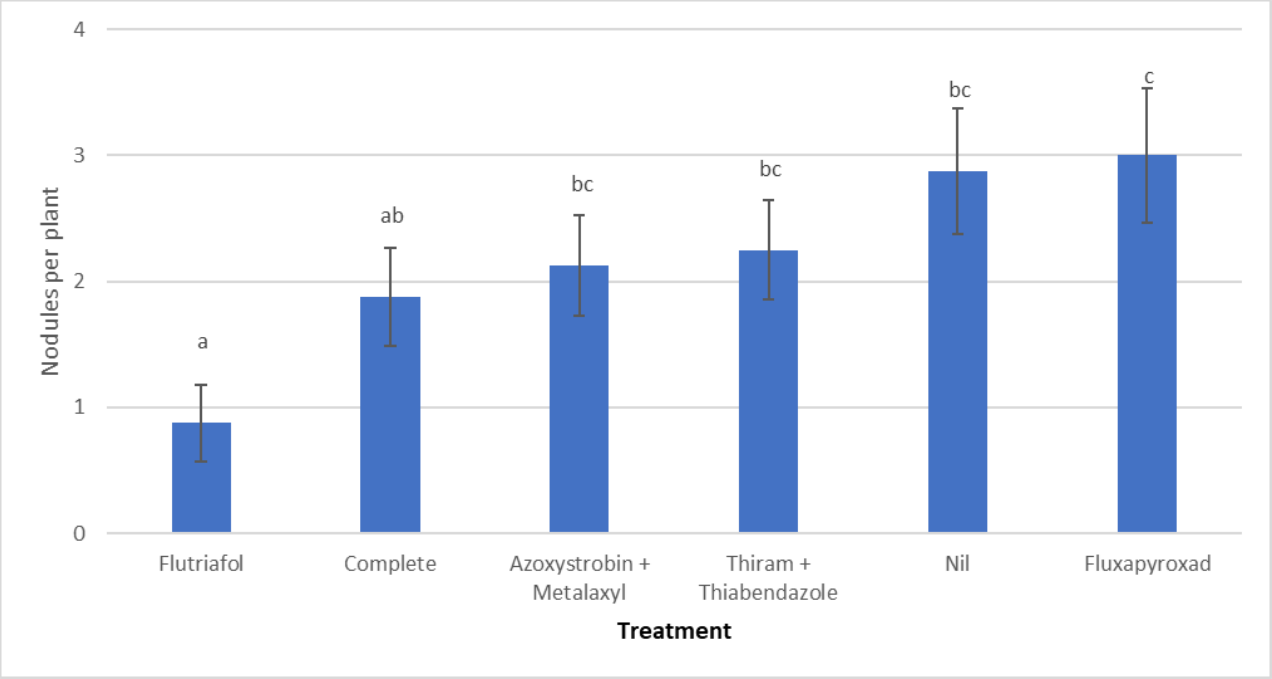

Figure 1 Effects of fungicide strategies on the root nodulation in chickpea plants in Ouyen, 2019. All the other treatment products were combined for the complete treatment.

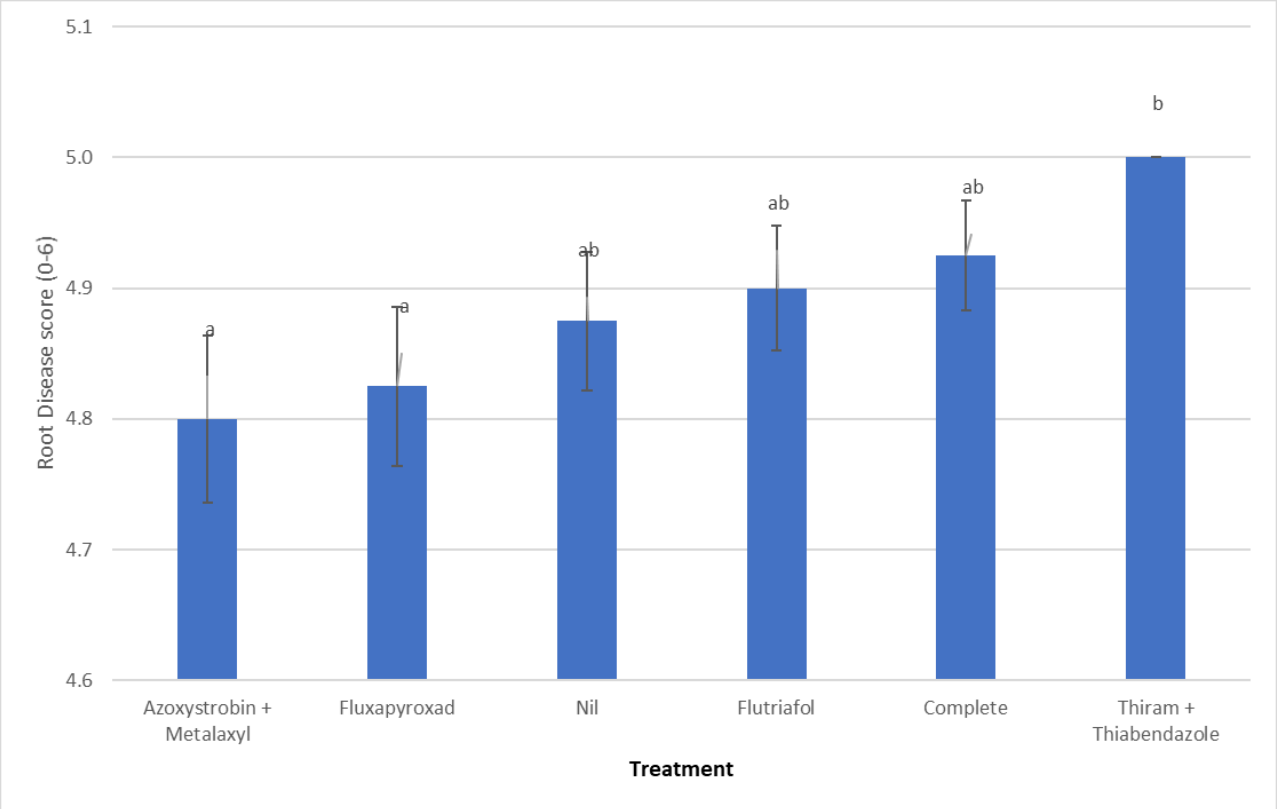

Figure 2 Effects of fungicide strategies on the root disease score of chickpea plants in Ouyen, 2019. All the other treatment products were combined for the complete treatment. Root diseases were assessed on a scale of 0 to 6, where 0= 0%, 1 = 1-10%, 2 = 11-25%, 3 = 26%-50%, 4 = 51-75%, 5 = 76-99%, 6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