

Chickpea, Nutrition, LRZ Central Mallee (Ouyen), Victoria

Authors

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Aim

To investigate the response of chickpea to microbial inoculation and application of macro and micro-nutrients

Treatments

Variety: Genesis090

Treatments: See Table 1 below

: The **All_Nut** treatment had 4.4 kg/ha N, 14 kg/ha P, 22 kg/ha K, 5 kg/ha S, 2.5 kg/ha Zn, 2 kg/ha

Cu, 3 kg/ha Mn and 0.06 kg/ha Mo

: **Arbuscular mycorrhiza fungi (AMF)**-seed treated @ 1kg of product per tonne of seed.

: **Polymicrobial inoculant** (1×10^8 cfu/ml *Bacillus licheniformis*, 2×10^8 cfu/ml *Bacillus Methylophilus*, 2×10^8 cfu/ml *Bacillus subtilis*) @ 1.2 L/ha)

Other Site Details

Ouyen	
Stubble height (cm)	Standing (10)
Row Spacing (cm)	28
Plant density (plants/m ²)	35

Results and Interpretation

- Key Messages: Treatments were not significant on grain yield. Grain yields were very low in 2019 due to extremely dry seasonal conditions. The dry conditions may have restricted microbial growth, movement and uptake of the nutrients by the crop. Hence, results should be treated with caution.
- Establishment and Plant Growth: Establishment was generally uniform across all treatments (Table 1). Plant growth was very slow and variable due to extremely dry seasonal conditions. Hot and dry conditions during the critical flowering and reproductive phase led to early senescence of leaves, flower and pod abortion.
- Grain Yield: Treatments did not influence grain yields (Table 1). Grain yields were very low (<0.25 t/ha) due to the extremely dry conditions. Most of the initiated pods were empty at maturity indicating the adverse effect of frost and drought stress on pod filling.

Table 1. Effect of microbial inoculation and application of soil nutrients on establishment (plants/m²) and grain yield (t/ha) of Chickpea at Ouyen in 2019.

Treatment	Establishment (Pl/m ²)	Grain Yield (t/ha)
No fertilizer	35	0.13
Mycorrhizal fungi (Seed treatment)	28	0.20
Nut_All	37	0.15
Nut_All + Polymicrobial inoculant (Liquid)	27	0.22
Nut_All - N	30	0.13
Nut_All - P	27	0.15
Nut_All -K	31	0.10
Nut_All - S	32	0.16
Nut_All - Zn	31	0.18
Nut_All - Cu	29	0.16
Nut_All - Mn	29	0.14
Nut_All - Mo	26	0.17
LSD (P<0.05)	ns	ns

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