

Chickpea inoculant and nutrient management

Ganmain 2021

Key findings

- Application of inoculant (standard peat rhizobia) increased nodulation on CBA Captain[Ⓛ], but there was minimal effect of crop nutrition (N and P) on nodulation.
- Inoculation increased crop biomass, even where 40 kg/ha N was applied. N application only increased biomass where inoculant was not applied.
- Increasing P rate from 5 to 15 kg P/ha did not affect crop biomass.
- The trial was not harvested for grain due a hailstorm.
- Biomass samples are being processed to determine the amount of N-fixation in the nil N treatments.

Trial details

Table 17: Trial management and treatments applied at Ganmain in 2021.

Management	
Sowing Date	19 May
Soil phosphorus 0-10 cm (Colwell)	73 mg/kg
Soil pH (CaCl ₂)	5.3
Gypsum	0.5 t/ha pre-sowing to ensure adequate sulphur
Cultivar	CBA Captain [Ⓛ]
Treatment	Description
Phosphorus (at sowing)	5 kg/ha (57 kg/ha SSP*) 15 kg/ha (171 kg/ha SSP*)
Nitrogen	Nil 40 kg/ha (broadcast pre-sow)
Inoculant	Nil Standard peat rhizobia

* SSP = single superphosphate (0% N, 8.8% P, 11% S).

Results

Nodulation

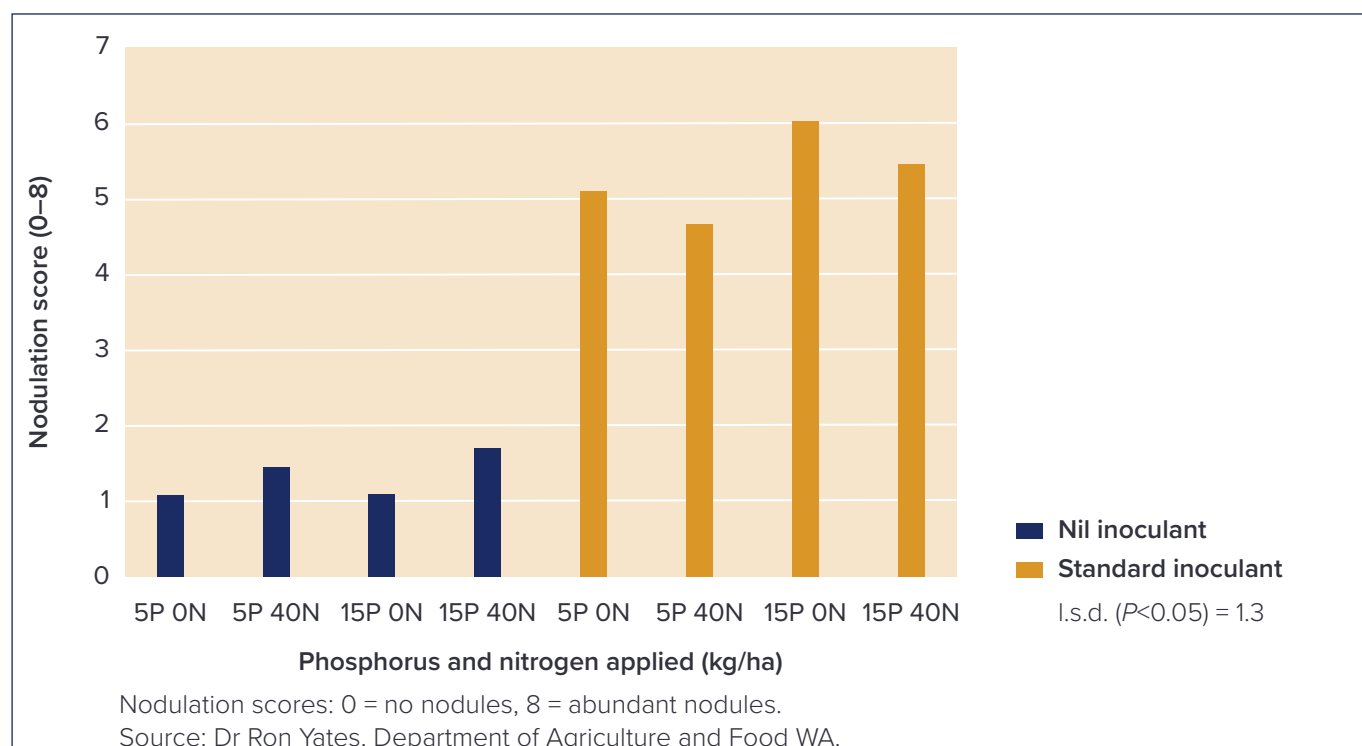


Figure 14: Effect of nutrition and inoculation on nodulation score of CBA Captain[®] chickpeas at Ganmain in 2021.

Biomass

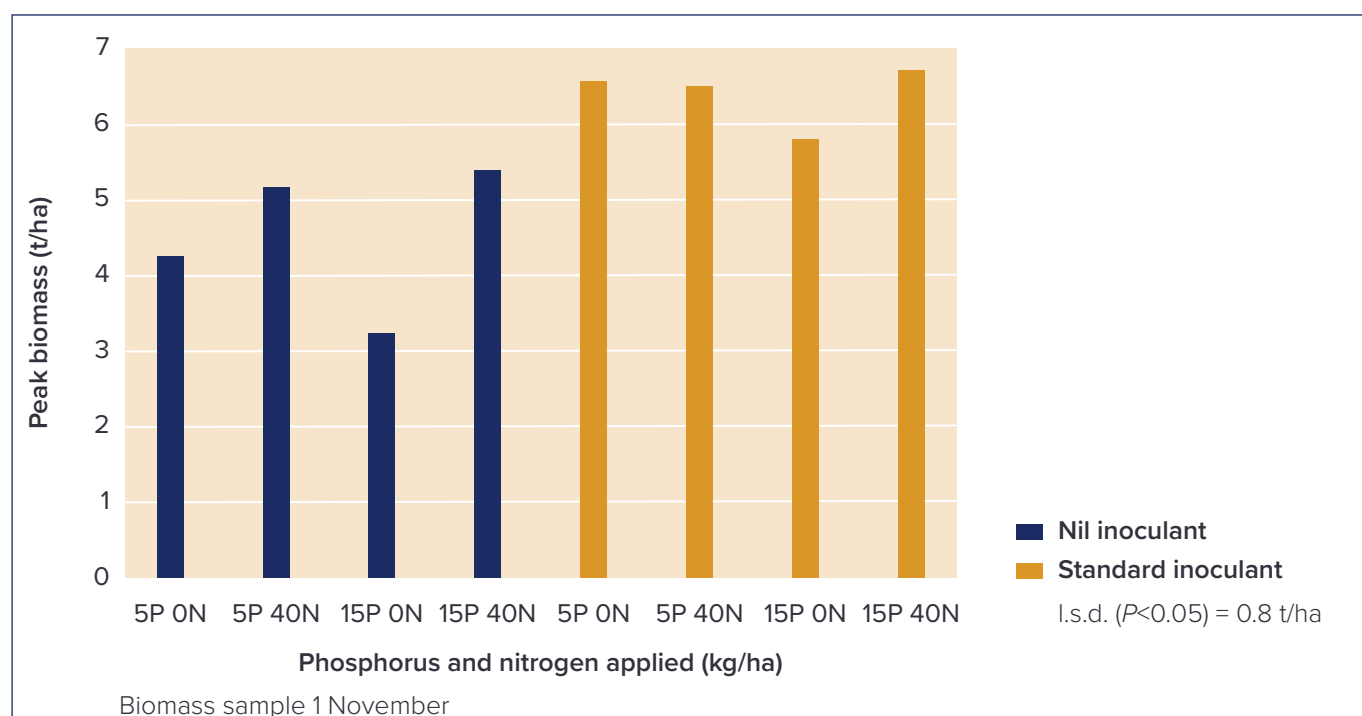


Figure 15: Effect of nutrition and inoculation on peak biomass of CBA Captain[®] chickpeas at Ganmain in 2021.



Figure 16: *The importance of inoculation for biomass production. Chickpeas on the left were not inoculated and had 15 kg P/ha applied and no nitrogen, while on the right they were inoculated with standard peat rhizobia and had 5 kg P/ha and no nitrogen.*