C7. Chickpea Plant Population x Variety, LRZ Yenda, New South Wales

Aim

To test the yield response of new varieties and advanced lines of chickpeas to changes in plant populations in south western NSW. The information from this trial plus others is used to validate and improve grower recommendations.

Treatments

Varieties:	Desi - PBA Slasher, PBA Hattrick, CICA0511, Genesis509, CICA0603. Kabuli – Genesis 090.
Plant populations:	Targeted 10, 25, 40, 55 & 70 plants/m^2.
Sowing dates:	16th May
Row Spacing/Stubble:	30 cm into standing light stubble.
Fertiliser:	Legume Starter @ 115 kg/ha at sowing.

Results and Interpretation

Grain Yield - Variety, plant population and their interaction were found to be significant in this trial (*P<0.05*). Yield showed a general decline as seeding rate was increased for all varieties except CICA0511 and Genesis 090 (Figure C7.1).Given the optimum growing conditions of 2010, lower plant populations were able to compensate with regard to yield while higher populations suffered more from lodging and shading issues. Genesis 509 was the highest yielding variety and Hattrick the lowest. Genesis 090 and CICA0511 were exceptions to above trend. With respect to Genesis 090, establishment across all treatments was poor and targeted plant densities were not achieved, if fact did not exceed 30 established plants/m^2 in the field. Therefore, comparison of its responses to other varieties is not valid. With respect to CICA0511, excellent lodging resistance allowed it to maintain a positive response to yield with increasing plant density. All other varieties, particularly Genesis 509, PBA Hattrick and PBA Slasher showed optimum yield response at 20-30 plants/m^2.

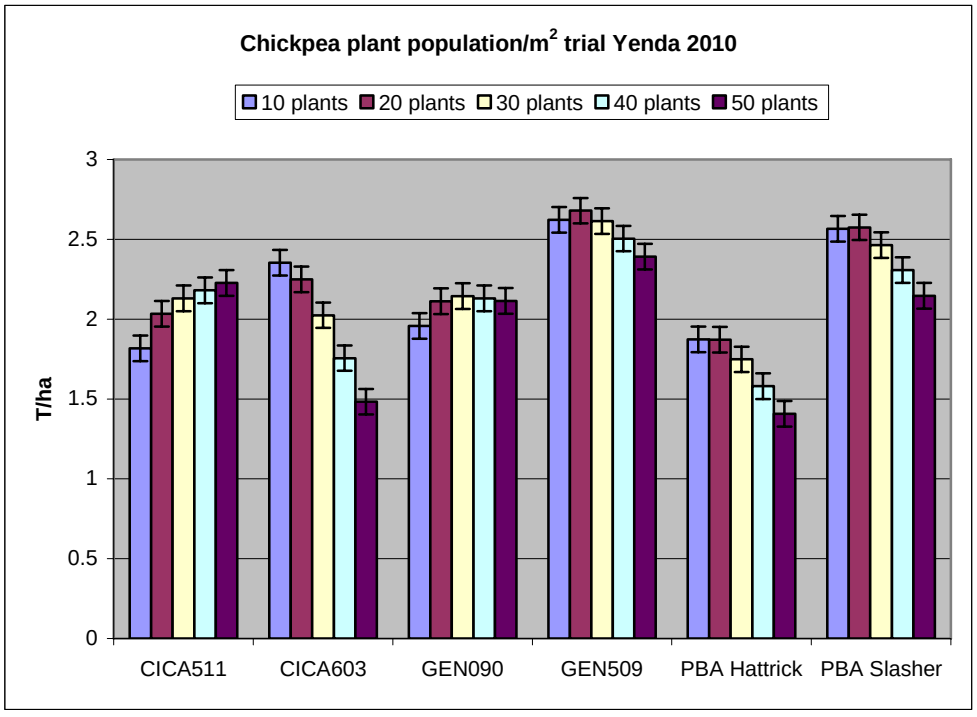

Figure C7.1. The main effect of genotype on grain yield (t/ha) of chickpeas at Yenda in 2010.

Key Findings and Comments

- Given the optimum growing conditions of 2010, lower plant populations more than compensated while higher populations suffered from lodging and shading issues
- Optimum plant densities were at the lower range - 20-30 plants/m^2.
- Yield declined sequentially as seeding rate and lodging increased
- CICA0511 showed excellent lodging resistance, allowing it to maintain a positive response to yield as plant density increased.
- Genesis 509 was the highest yielding variety