

C5 Crop Topping, LRZ Central Mallee (Ouyen), Victoria

Aim

To investigate the opportunity for crop topping in varieties of chickpeas differing in maturity in the central mallee.

Treatments

Varieties: See result tables below

Crop Topping Treatment Trial C4:

Treatment	Detail
Nil	No desiccant applied (Harvested at correct time)
Early Crop-top	Paraquat 250 @800ml /ha applied 7-14 days pre ryegrass milky dough stage.
Mid Crop-top	Paraquat 250 @800ml /ha applied at ryegrass milky dough stage ("Recommended").
Late Crop-top	Paraquat 250 @800ml /ha applied 7-14 days post ryegrass milky dough stage.

Other Details

Sowing Date	5 May
Stubble (height cm)	Standing (10)
Row Spacing (cm)	30
Plant Density (plant/m²)	35
Fertiliser (kg/ha)¹	60

1. MAP (9.2, 20.2, 0, 2.7) + Zn (2.5)

Results and Interpretation

- Key Messages: Yields (up to 2.5 t/ha) and profitability (up to \$2400/ha) were extremely high in 2016 due to excellent environmental conditions. Trials highlighted the importance of cold tolerance with Sonali being one of the highest yielding lines in the trials.
- Establishment was slightly delayed due to a slightly later start than other regions, however growth throughout the season was excellent, due to good rainfall, and warm conditions following sowing. This vigorous early growth led to rapid canopy development, but fortunately disease was not present in these trials. Continued high rainfall, in the absence of major frost and heat events resulted in very high biomass production and good grain yields. Waterlogging affected small patches in the trials.

Grain yield ranged from 1.98 t/ha for Howzat to 2.48 t/ha for Neelam. Sonali showed higher relative yields compared to other varieties than normally expected, probably due to its partial cold tolerance (eg it is able to flower and set pods under lower temperatures than other varieties). In addition, it flowered significantly earlier than other varieties in this environment.

Despite being slightly lower yielding the kabuli varieties, CICA1156, PBA Monarch and Genesis090 had the highest net returns, due to the record high grain prices received at harvest. Grain weights were generally consistent with long term observations, following the lower grain weights that have been observed in the previous dryer seasons.

Table 1. Grain Yield (t/ha), Net Return (\$/ha) and Grain Weight of chickpeas in a crop topping at Ouyen in 2016. Desi varieties are underlined. Note: Crop Topping treatments had no effect applied due to dry conditions. Based on Costs of \$320/ha and grain price of \$900/t for desi and \$1300/t for kabuli.

Variety	Days to Anthesis	Grain Yield (t/ha)	Net Return (\$/ha)	Grain Weight (g/100 seed)
<u>Neelam</u>	110	2.48	1908	17.5
<u>Sonali</u>	96	2.44	1876	17.4
<u>CICA1551</u>	101	2.40	1840	27.1
<u>PBA Striker</u>	110	2.32	1764	20.5
<u>PBA Maiden</u>	110	2.24	1692	24.2
<u>PBA Slasher</u>	110	2.23	1683	18.2
CICA1156	105	2.09	2391	32.4
PBA Monarch	108	2.07	2365	36.5
Genesis090	115	1.99	2267	29.5
<u>Howzat</u>	115	1.98	1462	19.5
LSD ($P<0.05$)		0.26		1.1
CV%		11.9		4.6

Underlined varieties at Desi types; no underline are kabuli's