C5 Sowing Date, MRZ Yorke Peninsula (Melton), South Australia

Aim

To maximise chickpea production through the identification of optimum variety and sowing dates.

Treatments

Varieties:	Desi – Neelam, PBA Slasher, PBA Striker, PBA Maiden, CICA1016, 07079-1101 Kabuli – Genesis™ 079, Genesis™ 090, Genesis™ Kalkee, PBA Monarch, CICA1156, CICA1352
Sowing dates:	May 16 and June 18

Other Details

Fertiliser:	MAP + 2% Zn @ 90 kg/ha at sowing
Plant Density:	Desi = 50 plants/m^2, Kabuli = 35 plants/m^2
Inoculant:	Group N
Fungicides:	Chlorothalonil at 8 weeks, early flower and early podding
Seed treatment:	P-Pickel T (200 ml/ 100 kg seed)

Results and interpretation

Lodging

- There was a significant (P<0.001) sowing date by variety response for lodging. All varieties except for Genesis™ Kalkee showed increased lodging by sowing early (Table 1). Neelam, PBA Striker, PBA Maiden, Genesis™ 079 were most susceptible to lodging, however Neelam and PBA Maiden showed the largest improvement in lodging from delayed sowing. Genesis™ Kalkee showed the lowest level of lodging, along with CICA1016, Genesis™ 090, PBA Monarch, CICA1156 and CICA1352.
- No significant level of lodging occurred in any variety at the late sowing date.

Yield

- Grain yield averaged 1.17 t/ha at Melton across all varieties and sowing dates. All varieties showed a yield penalty from delayed sowing, ranging from 46% (Genesis™ 079) to 16% (PBA Maiden).
- PBA Striker was the highest yielding variety across both sowing dates (Figure 8).
- Genesis™ 079, 07079-1101 and PBA Slasher yielded similarly to PBA Striker when sown early. PBA Slasher also yielded well at the late sowing date, along with PBA Maiden.
- Genesis™ 079 was the highest yielding of the kabuli varieties at the early sowing date, however PBA Monarch was the highest yielding kabuli at the late sowing date.

Key findings and comments

- Early sowing showed increased lodging across all varieties except for Genesis™ Kalkee, which remained consistent across the sowing dates, although only Genesis 079, Striker, Neelam and PBA Maiden were found to have levels which might be deemed to be commercially unacceptable.
- All varieties showed a sowing date response in 2014, with a severe yield penalty for a delayed sowing date of mid June.
- Relative variety rankings across sowing dates were generally similar although PBA Maiden and PBA Monarch were relatively better sown later and surprisingly Genesis 079 relatively poorer. The reason for the latter is unclear but it may be linked to its short height characteristic which is likely to have been exacerbated in the late sowing treatment under the dry spring conditions of 2014.
- Despite the yield penalty from delayed sowing in 2014 it is generally recommended that chickpeas are sown later than other pulses, particularly in favourable areas, due to poor pod set in cold weather conditions, and excessive lodging in favourable regions and seasons where vegetative growth is high. However a mid June sowing time under these recent run of dry spring conditions is likely to be too late in most districts and a target of late May to early June is recommended.

Table 1: Effect of sowing date on lodging of desi and kabuli chickpea varieties at Melton, 2014. Lodging score: 1 = prostrate, 9 = erect

Sowing Date		May-16	Jun-18
Desi	Neelam	6	9
	PBA_Slasher	7	9
	PBA_Striker	6	8
	PBA_Maiden	6	9
	CICA1016	8	9
	07079-1101	7	9
Kabuli	Genesis079	6	8
	Genesis090	8	9
	Kalkee	9	9
	PBA_Monarch	8	9
	CICA1156	8	9
	CICA1352	8	9
LSD (P<0.05)		**0.9**	

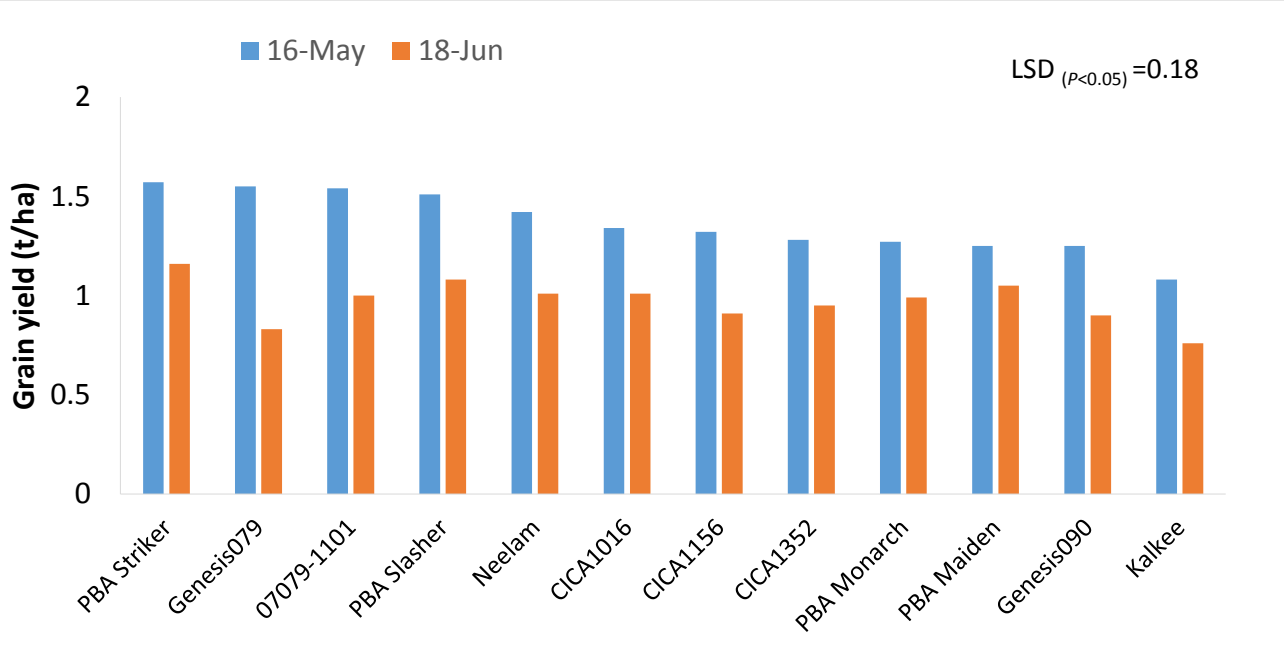

Figure 8: Effect of sowing date on grain yield of desi and kabuli chickpea varieties at Melton South Australia, 2014