

C10. Sowing Date, MRZ Yorke Peninsula (Paskeville), South Australia

Aim

To maximise yield of new chickpea varieties through the identification of optimum sowing dates.

Treatments

Varieties: Kabuli: Genesis 079, Genesis 090 and Genesis 114,
Desi: PBA Slasher, CICA0603 and CICA0604
Sowing dates: 21 May (Early), 11 June (Mid), 2 July (Late)
Fertiliser: Map + Zn @ 90kg/ha

Results and Interpretation

The wet season finish in 2010 favoured chickpea production, and yields were significantly higher than in previous years, averaging 2.8t/ha in this trial. The favourable season also meant that conditions were conducive for disease, and moderate to high ascochyta blight levels were observed at this site. This created a complex sowing date response, where yield of susceptible varieties was penalised at the early sowing date.

The variety response to sowing dates was variable (Figure C10.1). All varieties except CICA0603 and CICA0604 performed better at the early sowing date than the late sowing date. CICA0603 showed no sowing date response, while CICA0604 yielded highest at the mid sowing date. Yield of Genesis 079 and Genesis 114 was maximised at the early and mid sowing dates. Genesis 090 performed best at the early sowing date, while the mid and late sowing dates performed the same. PBA Slasher performed similarly at early and mid dates, and mid and late dates, but yielded higher at the early sowing date than the late sowing date.

Genesis 079 showed a significant yield loss from delayed sowing. Genesis 114 was generally the lowest yielding variety, while Genesis 090 and Genesis 114 performed lower than the desi varieties at the respective mid and late sowing dates.

Moderate to high ascochyta blight levels were observed at this site in 2010 (Table C10.1). Infection of all varieties was greater at the early sowing date, and lowest at the late sowing date in all varieties except Genesis 079, Genesis 090 and PBA Slasher. CICA0603 had the highest level of infection at the early sowing date, followed by CICA0604 and then Genesis 079. CICA0603 and CICA0604 had the highest infection at the mid sowing date, and CICA0604 had the highest level of infection at the late sowing date.

Lodging was the highest at the early sowing date for all varieties (Table C10.2). CICA0603 showed the worst lodging at the early sowing date, followed by CICA0604 and then Genesis 079. These same varieties also had the worst ascochyta blight infection at this sowing date. CICA0603, Genesis 079 and Genesis 114 had the lowest lodging at the later sowing dates, while the other varieties showed no difference between lodging at mid and late sowing dates.

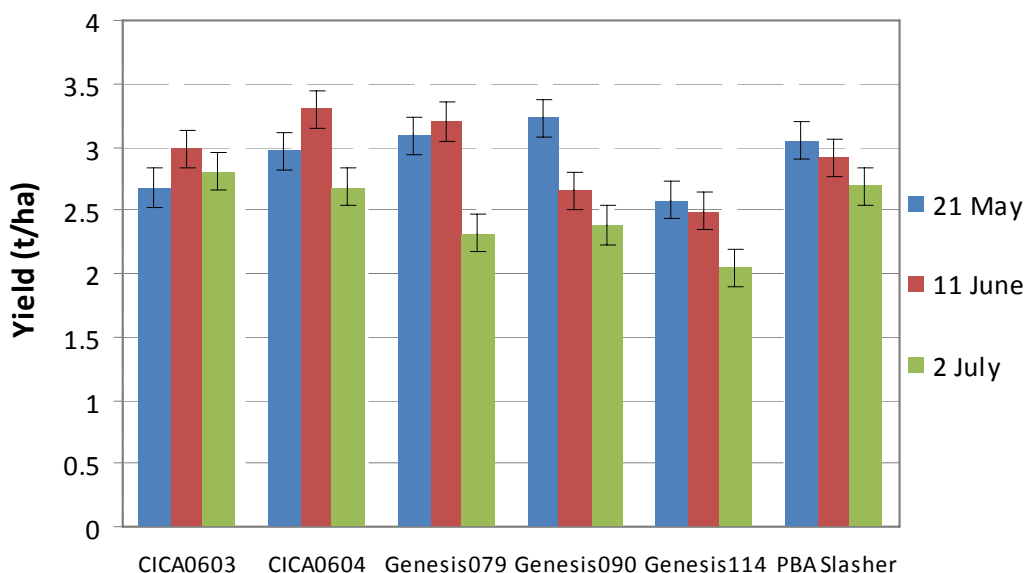


Figure C10.1. Effect of sowing date on grain yield (t/ha) of 6 chickpeas varieties, Paskeville 2010.

Table C10.1. Effect of sowing date on ascochyta blight infection (% plot infected) of 6 chickpeas varieties, Paskeville 2010.

Variety	CICA0603	CICA0604	Genesis 079	Genesis 090	Genesis 114	PBA Slasher
May 21	77	67	57	43	37	47
June 11	40	43	20	23	23	20
July 2	13	27	17	17	13	13
LSD (P<0.05)	8.6 (9.2 same TOS)					

Table C10.2. Effect of sowing date on lodging (1-9 score) of 6 chickpeas varieties, Paskeville 2010

Variety	CICA0603	CICA0604	Genesis 079	Genesis 090	Genesis 114	PBA Slasher
May 21	1.7	2.7	4.3	7.3	8.0	6.3
June 11	5.7	6.0	6.3	8.3	9.0	8.0
July 2	6.7	6.7	7.3	9.0	8.0	8.3
LSD (P<0.05)	0.88 (0.87 same TOS)					

Lodging score: 1 = prostrate, 9 = upright

Key Findings and Comments

- The favourable season meant that yields were high, but conditions were also conducive for ascochyta blight development.
- Early sown plots were highest or equal highest yielding for all varieties except CICA0604.
- Yields at the early sowing date were compromised by the moderate to high ascochyta blight infection. CICA603, CICA604 and Genesis079 were the most severely penalised by this disease.
- Genesis079 showed the largest yield penalty from delayed sowing. This may be because its early maturity would not allow it to capitalise on the rains at the end of the season.
- Genesis114 was the lowest or equal lowest yielding variety, however price premiums are paid for its superior grain size.
- CICA603 and CICA604 had the most severe ascochyta blight infection, followed by Genesis079.
- The varieties with the most severe ascochyta blight infection also showed the most lodging.
- Lodging was most severe at the early sowing date in all varieties.
- CICA603 and CICA604 show high yield potential, but are also more prone to ascochyta blight and lodging, especially when sown early.