

2. Chickpeas

C1 Sowing Date x Disease Management, Yorke Peninsula (Arthurton), South Australia

Co-authored by Jenny Davidson, South Australian Research & Development Institute – Waite

Aim

To maximise yield of new chickpea varieties through the identification of optimum sowing dates and disease management strategies.

Treatments

Varieties: Genesis 079, Genesis 090, Genesis 114, PBA Slasher, CICA0603 and CICA0857
Sowing dates: 17 May (Early), 14 June (Mid)
Treatments: Nil – no fungicide applied
Podding – 2L/ha Chlorothalonil at Podding
Strategic – 2L/ha Chlorothalonil at 8-10 weeks, Early Flower and Podding.
Complete - 2L/ha Chlorothalonil fortnightly.
Fertiliser: MAP + Zn @ 90kg/ha

Results and Interpretation

- Foliar disease – There was no foliar disease observed in this trial in 2011, and fungicide treatments had no effect on grain yield.
- Grain Yield – Grain yield averaged 3.8t/ha across all varieties and sowing dates. A sowing date by variety response for grain yield was observed for Genesis079, Genesis114 and PBA Slasher, all of which yielded higher at the early sowing date (Figure C1.1). Of these varieties PBA Slasher showed the highest yield improvement from early sowing (13%). The potential desi release CICA0603 was the highest or equal highest yielding chickpea variety at both sowing dates. Genesis079 was the highest yielding kabuli variety sown early, and equal with CICA0857 at the late sowing date.
- Lodging – Lodging of chickpeas was high in 2011, particularly at the earlier sowing date (Table C1.3). CICA0857 and CICA0603 showed the highest amount of lodging, followed by Genesis079. These are the earliest maturing varieties, indicating a link between lodging and plant maturity. The late maturing erect kabuli type Genesis114 showed the lowest amount of lodging at harvest.

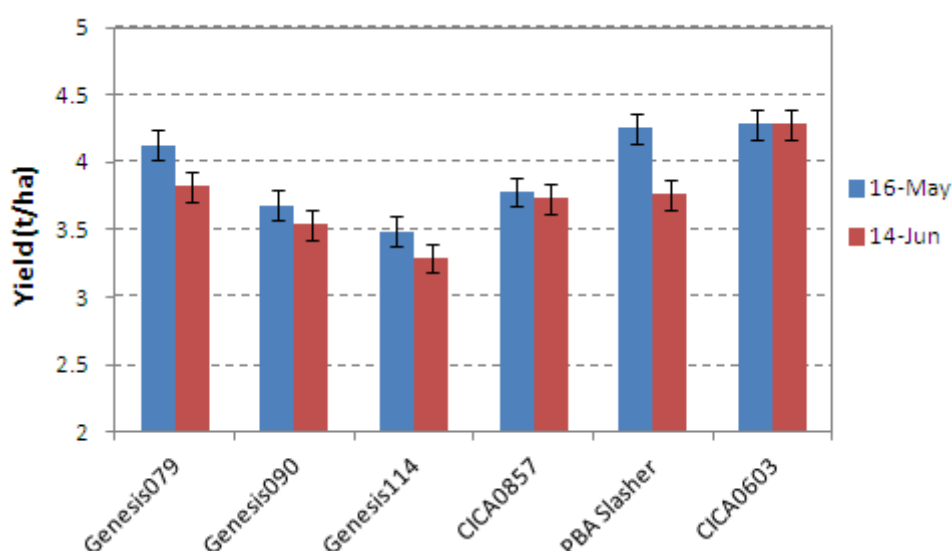


Figure C1.1. effect of sowing date on grain yield (t/ha) of chickpea varieties, Arthurton 2011.

Table C1.1. effect of sowing date on lodging (1-9) of chickpea varieties, Arthurton 2011
1 = prostrate, 9 = erect

Variety	Genesis079	Genesis090	Genesis114	CICA0857	PBASlasher	CICA0603
16-May	4.8	5.9	7.8	2.9	6.7	3.3
14-June	7.8	8.6	9.0	7.6	8.1	6.7

lsd (P<0.05) SD x Variety = 0.65 (0.48 same SD)

Key Findings and Comments

- Chickpea yields were again high in 2011, averaging 3.8t/ha.
- Favourable growing conditions and minimal disease resulted in equal or higher yields from early sown treatments.
- Lodging of chickpeas was high in 2011, particularly where sown early. CICA0603, CICA0857 and Genesis079 were the most susceptible varieties to lodging.
- PBA Slasher and the potential chickpea release CICA0603 was the equal highest yielding desi varieties sown early, and CICA0603 yielded highest late. Genesis079 was the highest yielding of the kabulis. CICA0857 also shows a lot of promise as a high yielding medium seeded kabuli, and may attract price premiums over smaller types based on its larger seed size.