

C8. Sowing Time, LRZ Southern Mallee (Curyo), Victoria

Aim

To investigate the adaptability of a range of chickpea varieties and variety mixes to varying sowing dates.

Treatments

Varieties: Genesis090, Genesis079, GenesisKalkee, PBASlasher, PBA Striker, Almaz, CICA0717, CICA0857, CICA1016, CICA1122.

Variety Mixes: Genesis090:PBA Striker, Genesis090:PBA Slasher. All sown with a 50:50 ratio based on targeted plants/m².

Sowing dates: 4 May (Early), 5 June (Mid), 26 June (Late).

Other Details

Row Spacings/Stubble: 30 cm row spacing, inter-row, standing stubble.

Fertiliser: MAP + Zn @ 60 kg/ha at sowing.

Plant Density: 30 plants/m².

Results and Interpretation

- Key Message: Grain yield and profitability was maximised in the Mallee by earlier sowing. In particular, in 2012, the larger seeded Kabuli types had very high profits as yields were similar to other varieties and grain size excellent.
- Plant establishment – Establishment for all chickpea varieties was acceptable in 2012, ranging between 20 and 30 plants/m² (data not shown).
- Grain Yield – Grain yields were average, ranging between 0.8 and 1.9 t/ha (Fig .1). There was no interaction between sowing date and variety, however the main effects were significant. The June 26 sowing date had yields 20-45% less than the May 4 sowing date, while the June 5 date was 0-15% less. All varieties generally had similar yields, except Almaz which was about 20% lower overall. The lack of yield difference between varieties is reflective of the mild conditions experienced during the reproductive phase of crop development.

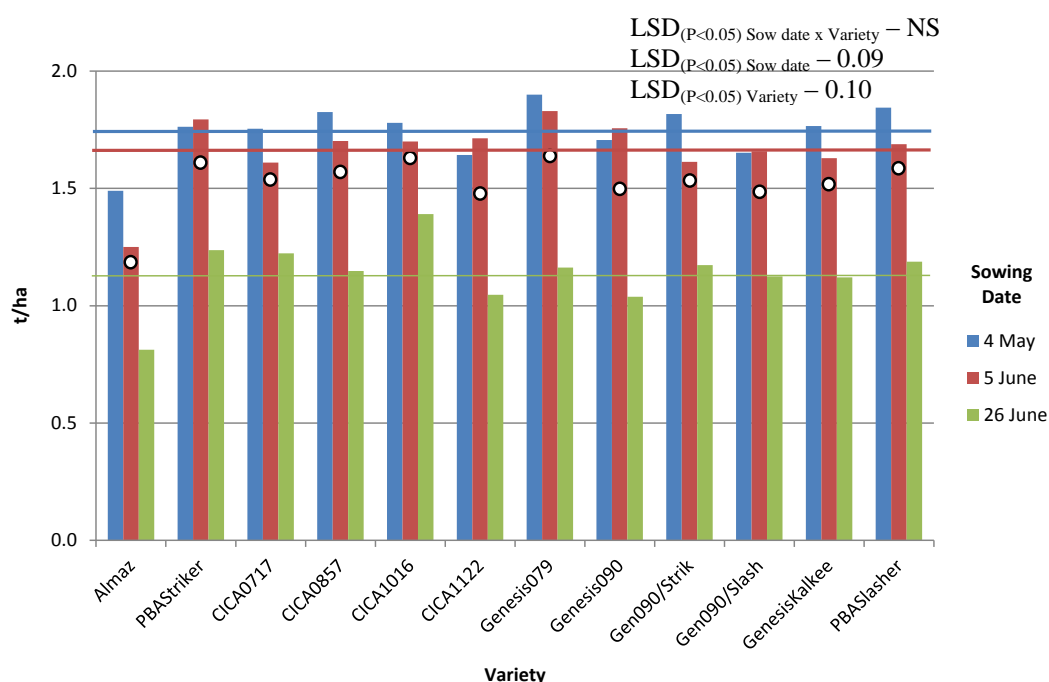


Figure 1. The effect of the interaction between sowing date and chickpea variety on grain yield at Curyo in 2012. Mean sowing date grain yield indicated by horizontal lines; mean variety grain yield indicated by circles.

- Profitability – Net profit estimates range from about \$240/ha for CICA1122 sown June 26, up to \$1100/ha for CICA0857 sown May 4 (Fig. 2). All Kabuli varieties were more profitable than the desi's because of the estimated price differentials. In this season the larger seeded Kabulis were particularly profitable as yields were similar to other varieties and grain size was excellent (discussed below).

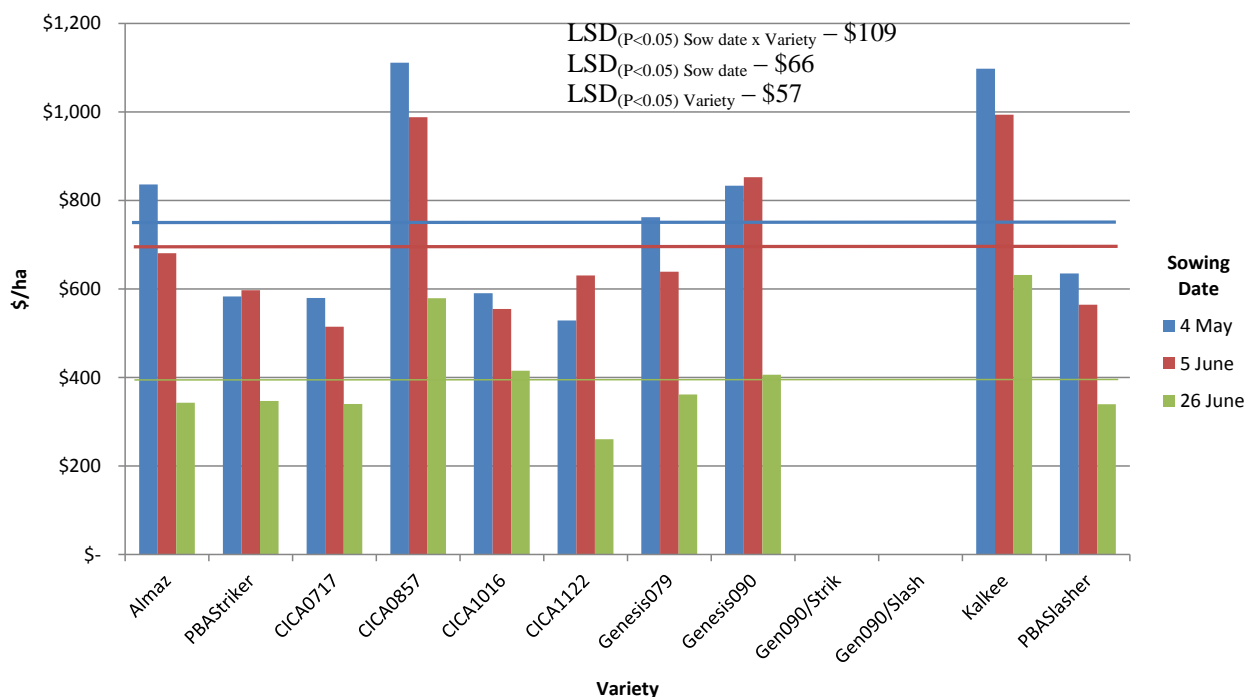


Figure 2. The effect of the interaction between sowing date and chickpea variety on net return (\$/ha) at Curyo in 2012. Mean sowing date return indicated by horizontal lines. Based on the following grain prices: Desi = \$450/t; Kabuli = <7mm-\$330, 7-8mm-\$550, 8-9mm-750, 9-10mm-\$850, 10-11mm-\$1000 with fixed management costs of \$180/ha and fungicides at \$15/ha per application (No. of sprays based on varietal resistance: resistant = 1, moderately resistant = 2, moderately susceptible = 3).

- Kabuli Seed Size Distribution – There were significant sowing date and variety interactions within each of the grain size groupings. For the smaller Kabuli's, Genesis079 and Genesis090 delaying sowing generally resulted in a greater proportion of seed in the smaller categories (Fig. 3). However in the larger Kabuli's trends across sowing dates were not obvious. Kalkee had the largest seed, with about 85% of seed greater than 8mm and for the later sowing date 48% of seed greater than 9mm. Interestingly CICA0857 had a very high proportion of seed in the 8-9mm category, indicating, relative stability in seed size.

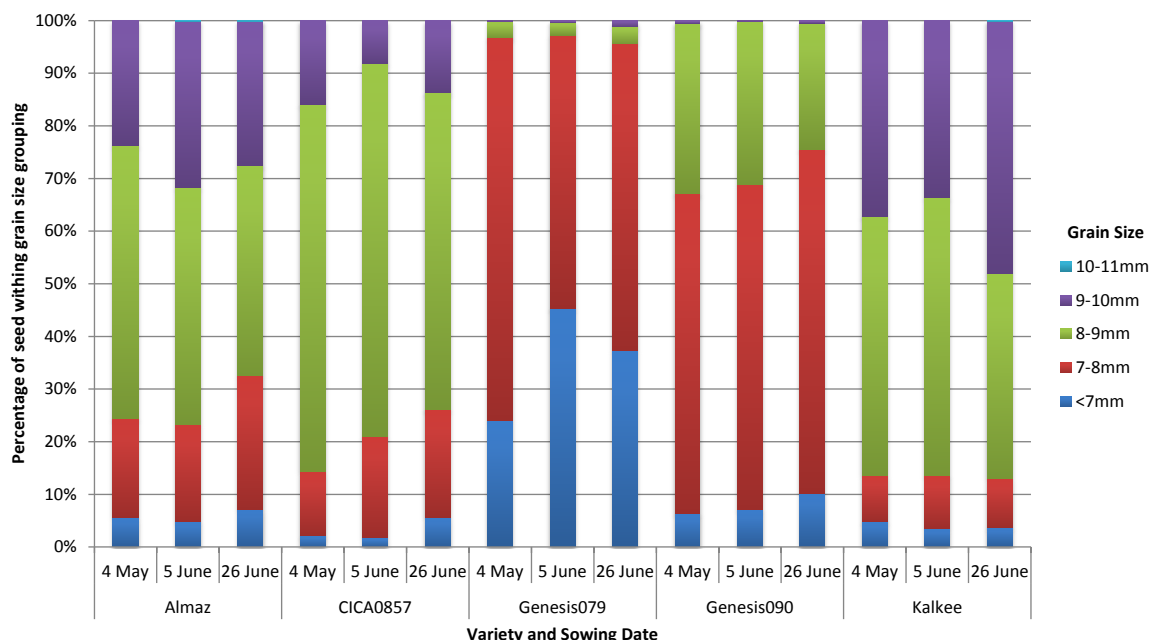


Figure 3. The effect of the interaction between sowing date and kabuli chickpea variety on the proportion of grain within each grain size category at Curyo in 2012.

Key Findings and Comments

Despite the season being significantly drier than average, a mild spring was experienced, meaning that relative grain yield differences among varieties were small. The data again highlighted that earlier sowing in the southern mallee is beneficial for chickpeas, particular in terms of profitability. If consistent seed size and grain yields can be replicated across seasons, the larger Kabulis could prove to be very profitable in the southern mallee, particularly given the lower disease risk due to the dryer conditions generally experienced, compared with traditional production zones like the Wimmera.