C2. Sowing Time x Row Space, MRZ Wimmera (Vectis), Victoria

Aim

To investigate the adaptability of a range of chickpea varieties and breeding lines to wider row spacing's sown inter-row in to standing stubble compared with conventional cropping systems (narrow row spacing with slashed stubble). The interaction sowing times is also compared.

Note: Trial is a comparison of systems, not just row space. In the wider row spacing's plots were sown with narrow lucerne points, press wheels and chemicals applied pre-sowing. In the narrow row spacing's plots were sown with narrow lucerne points, harrows and chemicals applied post-sowing, pre-emergent.

Experimental Treatments

Varieties:	Genesis 090, Genesis 509, PBA Slasher, Almaz, 01040-1057, 03-024C*04HS003, 99-447G*02H015, CICA0613, CICA0721, Genesis 079, Sonali.
Sowing dates:	16 May (Early), 21 June (Late).
Row Spacings/Stubble:	17.2 cm row spacing, slashed stubble (sl17), 30 cm row spacing, inter-row, standing stubble (ST30), 30 cm row spacing, inter-row, slashed stubble (sl, 30), 60 cm row spacing, inter-row, standing stubble (ST60).

Other Details

Fertiliser:	MAP + Zn @ 60 kg/ha at sowing.
Plant Density:	35 plants/m^2.

Results and Interpretation

- Key Message: No major agronomic interactions were observed in this trial.

- Plant establishment – Similar to the lentil trials at Vectis, there were significant issues with stubble dragging and mouse damage (Figure L2.1). Plot damage was generally least in the wider roe ST60 treatment. Overall establishment for all chickpea genotypes in all treatments was between 15 and 32 plants/m^2. There were no major effects of genotype or sowing date on plant establishment, however at narrow row spacings (sl17) there was generally higher plant establishment than observed in the wider row spacings (Table C2.1).

Table C2.1. The main effect row space treatment on plant establishment in chickpeas at Vectis in 2010.

Row Space	Plants/m^2
sl17	28
sl30	22
ST30	21
ST60	17

lsd(P<0.05)RS = 1.5

- Grain Yield – In 2010, sowing date had no major effect on the grain yield of different genotypes of chickpeas at Vectis. The responses across the different row space treatments were similar for all genotypes, in that, the sl, 30 treatment produced grain yields significantly less than other treatments (Table C1.3). When comparing across genotypes, Genesis079 was the highest yielding and 99-447G lowest yielding.

Table C1.2. The main effect of chickpea genotype on grain yield (t/ha) at Curyo in 2010.

Genotype	01040-1057	03-024C*04HS003	99-447G*02H015	99226*02HS001	Almaz	PBA Slasher
t/ha	2.15	2.39	1.95	2.37	2.41	2.53
Genotype	**CICA0613**	**CICA0721**	**Genesis 079**	**Genesis 090**	**Genesis 509**	**Sonali**
t/ha	2.49	2.22	2.64	2.38	2.46	2.22

lsd(P<0.05)Var = 0.23

Table C1.3. The main effect of row space treatment on grain yield (t/ha) of chickpeas at Curyo in 2010.

Row Space	t/ha
sl17	2.49
sl30	2.06
ST30	2.33
ST60	2.52

lsd(P<0.05)RS = 0.19

Key Findings and Comments

In terms of grain yield, there were no major agronomic interactions with genotypes in this trial, however overall variety response was interesting. It has often been perceived that Genesis 079 is better adapted to dryer conditions and shorter seasons than other varieties, primarily due to its earlier flowering and maturity, however in 2010 at Vectis, it was the highest yielding variety and at Curyo was similar yield to other genotypes, slightly less than Genesis 090. This is despite seasonal conditions being excellent for growth and yield, with sufficient rainfall. It was possible that Genesis 079 flowered and set pods during an optimal temperature period, ensuring maximal pod set.