B2 Sowing Date x Plant Density, HRZ South East (Moyhall), South Australia

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Aim

To determine optimum sowing dates and sowing densities for maximising yield of new faba bean varieties in high rainfall areas of SA .

Treatments

Varieties:	Nura, Farah, Fiord and PBA Rana
Sowing dates:	10 May (Early), 7 June (Late)
Densities:	16, 24 and 32 plants/m^2
Fertiliser:	Map + Zn @ 100kg/ha at sowing

Results and Interpretation

- Plant lodging at maturity – Farah showed the highest levels of lodging in 2011, followed by Fiord (Table B2.1). PBA Rana was least affected by lodging, but not significantly different to Nura. Later sown plants (7th June) were more erect than early sown plants. There was no difference in lodging across plant densities at the late sowing date, but at the early sowing date lodging increased as plant density increased from 16 to 32 plants/m^2 (Table B2.2).

Table B2.1. Plant lodging (1-9) at maturity of four faba bean varieties, Bool Lagoon 2011.
1= prostrate, 9 = erect

Variety	PBA Rana	Farah	Fiord	Nura
Lodging	8.17	6.67	7.39	7.72

lsd (P<0.05) = 0.621

Table B2.2. effect of plant density on lodging (1-9) at maturity of faba bean, Bool Lagoon 2011.
1= prostrate, 9 = erect

Sowing Date	Plant Density (#/m2)		
	16	24	32
May 10	7.5	6.42	5.33
Jun 07	8.67	8.5	8.5

lsd (P<0.05) SD x PD = 1.129

- Grain Yield – Faba bean yields at Bool Lagoon were high in 2011 as in 2010, averaging 4.3t/ha across all varieties and treatments in 2011compared to 4.9t/ha in 2010. Yield of early sown faba beans was either equal or higher than the late sowing date (Figure B2.1). PBA Rana, and Nura showed higher yield from earlier sowing at the low plant density (16 plants/m^2), while Farah and Fiord showed yield improvement from sowing early at the medium plant density (24 plants/m^2). Fiord also showed a yield improvement from sowing early at the high plants density (32 plants/m^2).
  Plant density was more important than variety choice in 2011, since all varieties generally performed similarly at the same sowing dates and plant density (except that Nura outyielded Fiord sown early at 16 plants/m^2). Early sown Fiord showed a yield penalty from sowing at 16plants/m^2 compared to 24 and 32plants/m^2. At the later sowing date Fiord was the only variety not to show a response from increasing plant density.

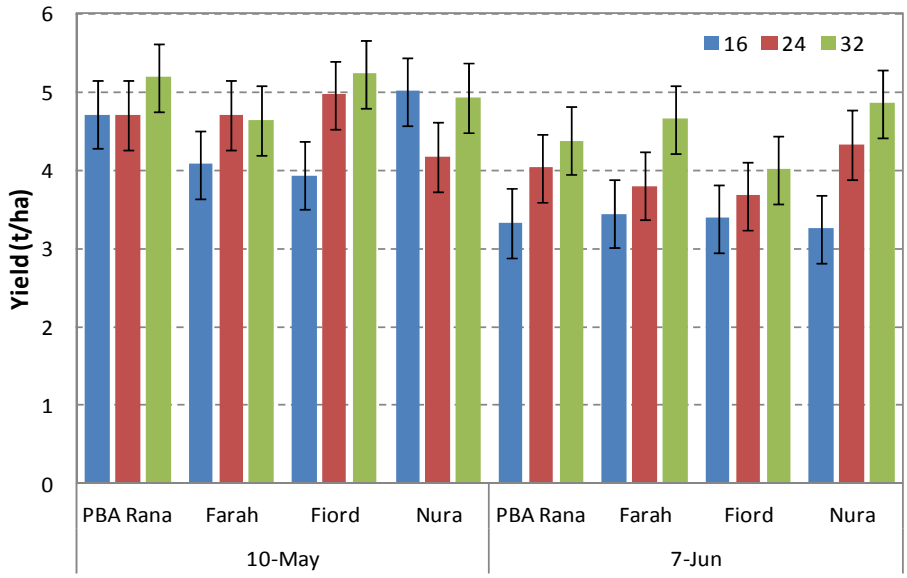

Figure B2.1. Grain yield (t/ha) of four faba bean varieties at two sowing dates and three plant densities (plants/m^2), Bool Lagoon 2011.

Key Findings and Comments

- Faba bean yields at Bool Lagoon were again high in 2011 despite below average growing season rainfall, being buoyed by high summer rainfall and minimal disease.
- Varieties performed similarly at Bool Lagoon in 2011, and plant density generally had a greater influence on yield than variety choice.
- There was a general yield response to increasing sowing density from 16 to 32 plants/m^2 in 2011, particularly at the later sowing date, however previous research has shown a link to increased disease pressure which may negate any potential yield advantage from this higher seeding rate. The recommended seeding rate for beans (24 plants/m^2) performed similarly to the high seeding density for all varieties