

Field Peas

F1. Field Pea Sowing Date x Stubble Management, Upper Eyre Peninsula (Minnipa), South Australia

Co-authored by Tony Leonforte, formerly VicDEPI, and Leigh Davis, SARDI

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Aim

To compare and identify optimum sowing times of 6 field pea varieties to maximise grain yield and agronomic performance.

To investigate whether field pea production in low rainfall areas is improved through stubble management in terms of grain yield, disease infection or harvestability.

Treatments

Varieties: Kaspa, Parafield, PBA Gunyah, PBA Twilight, PBA Oura, and PBA Pearl

Sowing dates: 27 May (April), 1 June (Late)

Stubble type: 1.7 t/ha Wheat stubble (25cm high)

Stubble management treatments: Burnt pre-sowing
Slashed (cut at ground height to leave ~20cm length straw)
Standing (25cm high)

Fertiliser: DAP + Zn @ 62kg/ha

Results and Interpretation

- Plant Height – stubble management showed a significant effect on pre-flowering vegetative height of field pea where peas sown into standing stubble showed a 14% increase in plant height compared to those sown into burnt and standing stubble (Table 1). However there were no differences between standing plant height at physiological maturity.
- Lodging – unlike in 2011, stubble management had no influence on lodging of pea varieties in 2012, however a sowing date x variety response was evident. All varieties except Kaspa and Parafield showed reduced plant lodging by delayed sowing. Parafield showed increased plant lodging from delayed sowing (possibly due to increased biomass), while Kaspa showed no significant difference.
- Grain Yield – there was no significant grain yield response for either sowing date or stubble management in this trial in 2012. The absence of a sowing date response is surprising given the extent of the delay in sowing (35 days) and the rapid season finish. It is possible that the early sown peas may have hayed off due to the favourable early conditions, high early biomass production and a rapid season finish, negating a sowing date response. A significant variety response was noted in this trial. Kaspa significantly outyielded all other varieties by 8-19%, with Parafield and PBA Oura lowest yielding (Table 1). Recent releases PBA Gunyah, PBA Twilight and PBA Pearl (white) all performed similarly, but behind Kaspa.

Table 1: Grain yield of field pea varieties at Minnipa, 2012.

Variety	Kaspa	Parafield	PBA Gunyah	PBA Oura	PBA Pearl	PBA Twilight	LSD (P<0.05)
Yield (t/ha)	1.51 ^e	1.23 ^a	1.39 ^{cd}	1.24 ^{ab}	1.33 ^{bc}	1.35 ^{cd}	0.099

Key Findings and Comments

- Field peas performed exceptionally well at Minnipa in 2012, despite a decile 3 growing season and a rapid season finish. This is likely due to good stored soil moisture levels, good early winter rainfall amounts and generally mild winter temperatures.
- The lack of sowing date response is particularly surprising given the seasonal conditions and magnitude of sowing delay. It is likely that the early sown peas may have hayed-off due to the combination of favourable early conditions, high biomass and a rapid season finish.

- Stubble management produced differences in early vegetative plant height, where standing was higher than slashed and burnt, however these differences were not evident in at plant maturity.
- Stubble management produced no difference in plant lodging in 2012.
- Previous work conducted by this project in South Australia's Mid North has shown that sowing pulses into standing cereal stubble can benefit yield. However, no yield response has yet been generated from stubble management in trials at Minnipa to date.
- Substantial differences in growth (measured through plant height) were achieved from stubble management in the 2011 trial and plant height in 2012 at Minnipa. It is thought that the increased growth and height may aid harvestability of field pea, particularly in shorter seasons with low plant vine length.
- Regardless of the perceived yield or harvestability benefits, retaining standing cereal stubble is still seen as having benefits in reducing damage from wind erosion in regions characterised by light textured soils and where sheep are still a common part of the farming system. However, growers looking to implement this practice should also be aware of the potential negative issues associated with stubble retention in their particular farming system e.g. seed placement, herbicide and pest management issues.