F2 Sowing Time, MRZ Wimmera (Pimpinio), Victoria

Aim

To investigate the adaptability of a range of field pea varieties to varying sowing dates.

Treatments

Varieties:	White Peas: PBA Pearl, Sturt. Dun peas: Kaspa, PBA Gunyah, PBA Oura, PBA Percy, OZP1208, OZP1101. Blue peas: OZB1308.
Sowing dates:	13 May (Early), 18 June (Mid).

Other Details

Row Spacing:	30cm
Stubble:	Standing, approximately 30 cm (sown inter-row)
Fertiliser:	MAP + Zn @ 80 kg/ha at sowing.
Plant Density:	40 plants/m^2
Soil Type:	Alkaline Black cracking clay (Table 1 in Trial L2 above)

Results and Interpretation

- Key Message: PBA Pearl continued to show its broad adaption, producing profitable yields at both sowing dates. Earlier sowing was not beneficial for field peas at Pimpinio in 2014, with all varieties showing a yield decline

- Plant establishment – Similar to lentils, due to the early rainfall, emergence for both sowing dates occurred within 2 weeks of the respective sowing date. Establishment ranged between 28 and 54 plants/m^2 (Table 1). The May 13 sowing date had significantly higher establishment than June 18, probably due to early mouse activity and the white (PBA Pearl and Sturt) and blue (OZB1308) peas where generally lower than other varieties.
- Plant Growth and Disease – Early plant growth was good due to the early rainfall and mild temperatures in late autumn and early winter. These conditions were also conducive to early Ascochyta blight development, particularly in treatments sown May 13. Ascochtya scores recorded Aug 26 showed significant differences between varieties, with Kaspa and PBA Gunyah showing the worst symptoms and OZ1308 and PBA Percy least (Table 1). In addition, hail in July followed by severe frosts in August lead to the early development of bacterial blight. Despite the early incursion of Bacterial Blight, symptoms did not rapidly progress throughout spring due to the extremely dry conditions. A disease score recorded Oct 9 again showed PBA Gunyah and Kaspa to be significantly worse than other varieties, which only showed slight differences. PBA Gunyah and Kaspa generally displayed poorer growth throughout the whole season. Growth of all varieties slowed during through August to October as a result of the dry and frosty conditions. The frosts also caused significant flower and pod abortion during the reproductive phase.
- Grain Yield, Profitability and Grain Weight – The extremely dry spring with frosty conditions resulted in low grain yields ranging from 0.3 and 0.9 t/ha (Table 2). Generally the yields of treatments sown June 18 were higher than May 13. PBA Pearl and PBA Oura had the highest yields and Kaspa and PBA Gunyah lowest. These results are indicative of the dry finish to the season and the presence of disease. Grain weights were generally low and quality poor (Table 2). There was a significant increase in seed weight at the later sowing date. Economically, while yields were low, based on 2014 harvest prices a yield of 0.55 t/ha could have broken even. Only four varieties (Sturt, OZB1308, PBA Oura, PBA Pearl), would have proved profitable at both sowing dates.

Table 1. Establishment (pl/m^2) of field pea varieties sown 13 May and 18 June and Ascochyta blight and disease score (0 – no disease; 100 – complete death; recorded Aug 26 and Oct 9, respectively) sown 13 May at Pimpinio in 2014. Disease score was primarily ascochyta blight, with slight bacterial blight.

	Establishment (pl/m^2)			Ascochyta Score	Disease Score
Sowing Time	**13 May**	**18 June**	**Ave**	**Aug 26**	**Oct 9**
PBA Pearl	28	38	*33*	30	20
PBA Oura	34	49	*42*	27	18
OZB1308	31	39	*35*	10	23
Sturt	29	40	*34*	27	12
PBA Percy	33	48	*41*	20	23
OZP1208	28	54	*41*	25	28
OZP1101	35	42	*38*	30	33
PBA Gunyah	29	46	*38*	38	57
Kaspa	28	45	*37*	38	47
Average	*31*	*45*	*38*	*41*	*39*

Lsd's
Establishment - $(P<0.05)_{\text{sow date x variety}}$ = ns; $_{\text{sow date}}$ = 4; $_{\text{variety}}$ = 7.
AB Score(Aug 26) - $(P<0.05)_{\text{variety}}$ = 8.
AB Score(Oct 9) - $(P<0.05)_{\text{variety}}$ = 6.

Table 2. Grain yield (t/ha) and grain weight (g/100seed) of field pea varieties sown 13 May and 18 June at Pimpinio in 2014.

	Grain Yield (t/ha)			***Grain Weight (g/100seed)***		
Sowing Time	**13 May**	**18 June**	*Ave*	**13 May**	**18 June**	*Ave*
PBA Pearl	0.76	0.93	*0.84*	14.4	17.5	*16.0*
PBA Oura	0.76	0.91	*0.84*	15.7	19.0	*17.3*
OZB1308	0.68	0.88	*0.78*	14.3	15.9	*15.1*
Sturt	0.65	0.80	*0.73*	12.7	14.9	*13.8*
PBA Percy	0.42	0.66	*0.54*	15.9	21.4	*18.6*
OZP1208	0.36	0.72	*0.54*	15.9	15.6	*15.7*
OZP1101	0.36	0.62	*0.49*	14.8	16.1	*15.5*
PBA Gunyah	0.38	0.58	*0.48*	15.5	16.5	*16.0*
Kaspa	0.28	0.62	*0.45*	16.0	16.7	*16.3*
Ave	*0.52*	*0.75*	*0.63*	*15.0*	*17.1*	*16.0*

Lsd's
Grain Yield - $(P<0.05)_{\text{sow date x variety}}$ = ns; $_{\text{sow date}}$ = 0.13; $_{\text{variety}}$ = 0.11.
Grain Weight - $(P<0.05)_{\text{sow date x variety}}$ = 1.8; $_{\text{sow date}}$ = 1.3; $_{\text{variety}}$ = 1.2.

Key Findings and Comments

- PBA Pearl continued to show its broad adaption, producing profitable yields at both sowing dates. Kaspa and PBA Gunyah performed poorly in 2014 indicating susceptibility to frosty and disease conducive conditions.
- Earlier sowing was not beneficial for field peas at Pimpinio in 2014, with all varieties showing a yield decline. It is likely that disease and frost damage the first sowing date significantly restricted grain yields.