

Field Peas

F1 Historic Varieties, LRZ Southern Mallee (Curyo), Victoria

Aim

To compare the growth, grain yield and gross margins of recently released field pea varieties with historical varieties.

Treatments

Varieties: See Table 1 below

Other Details

Sowing date: 2 May
Row Spacing: 36 cm
Stubble: Standing (approximately 15 cm), sown inter-row
Fertiliser: MAP + Zn @ 60 kg/ha at sowing
Plant Density: 120 plants/m²
Soil type: Soil Type: Alkaline Sandy Loam over a heavy clay at about 40-60cm (Table 1 in Trial L1 above)

Results and Interpretation

- Key Message: The trial highlights the advancements made through breeding, with most modern varieties at least 25% higher yielding than Dundale, despite the extreme weather conditions (dry spring and frosts). In most cases this resulted in gross margins improved by more than 100% in 2014.
- Plant establishment – Similar to lentil trials at Curyo, emergence occurred within 2 weeks of sowing, due to the early rainfall. Establishment ranged between 30 and 40 plants/m² (data not shown).
- Plant growth, Flowering and Maturity – Growth until August was good, however the dry and cold conditions throughout August and September slowed growth and reduced grain yields. Generally there was little or no disease present. Flowering dates ranged from August 2 for PBA Percy to August 21 for Kaspera, with frost event in early August causing some loss of flowers in the earlier flowering lines. Maturity groupings showed a very different trend to flowering, with some of the earlier flowering types like Sturt and PBA Percy having a mid-maturity rating similar too or only slightly earlier than the later flowering Kaspera and Morgan.
- Grain Yield and Profitability – Grain yields ranged from 0.60 to 1.20 t/ha, with varieties that are known to perform well in dry seasons (eg Sturt and PBA Oura) having the highest yields in this trial (Table 1). Generally, the more recently released varieties were highest yielding, significantly more than the traditional older varieties such as Dundale and Parafield. For example PBA Pearl and PBA Wharton were 27% and 32% higher yielding than Dundale, respectively. This results in a much greater gain in gross margins, where PBA Pearl and PBA Wharton were 108% and 90% greater than Dundale. Gross margins for all varieties were above break even level ranging from \$22/ha to \$212.

Key Findings and Comments

- Significant advancements have been made through breeding as highlighted in this trial. Despite the extreme weather conditions (dry spring and frosts), most modern varieties were at least 25% higher yielding than Dundale. In most cases this resulted in gross margins improved by more than 100% in 2014.
- Sturt has been one of the most stable yielding varieties and is always one of the highest yielding in dry seasons or those with extreme weather events. In higher yielding season it tends to drop behind many other varieties.

Grain yields were not well correlated with flowering time, flowering duration maturity. There was a slight trend towards the higher yielding varieties having earlier flowering and maturity.

Table 1. Flowering, Maturity, Grain Yield, Grain Weight and Gross Margins of field pea varieties at Curyo in 2014. Percentage increase in Grain yield and Gross Margins relative to Dundale indicated. *Gross Margin based on grain prices at \$330/t with fixed management costs of \$180/ha.*

Variety	Anthesis (date)	Maturity (grouping)	Grain Yield (t/ha)	% inc	Grain Weight (g/100seed)	Gross Margin (\$/ha) ¹	% inc
Sturt	6/8	3	1.19	53	18.3	212	177
PBA Oura	14/8	1	1.18	51	20.6	209	172
OZP1208	19/8	5	1.11	43	21.5	187	143
Mukta	19/8	6	1.08	38	20.5	175	128
PBA Percy	2/8	3	1.06	36	22.9	168	120
PBA Coogee	15/8	5	1.03	33	21.2	161	110
PBA Pearl	11/8	1	1.03	32	20.5	160	108
Alma	13/8	5	0.99	27	20.9	146	90
PBA Wharton	17/8	3	0.99	27	20.6	146	90
OZB1308	14/8	4	0.93	19	18.7	126	64
Bluey	5/8	2	0.91	17	20.2	121	57
Parafield	14/8	5	0.88	13	21.1	109	43
Snowpeak	4/8	4	0.85	9	18.1	99	29
PBA Gunyah	17/8	3	0.84	8	21.8	98	28
King	19/8	6	0.81	4	20.1	86	12
Kaspa	21/8	4	0.80	3	21.1	85	11
Dundale	13/8	6	0.78	0	17.5	77	0
Bohatyr	6/8	5	0.78	0	21.3	76	-1
Morgan	18/8	3	0.75	-3	17.9	69	-10
Excell	5/8	6	0.61	-21	22.0	22	-71
lsd ($P<0.05$)			0.36		1.17		
cv			7.8		1.2		