

Field Pea Variety Evaluation in Victoria, 2001

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The aim of field pea evaluation trials is to identify the best varieties available and potential commercial releases from the breeding program for growers in Victoria.

Summary

The best field pea varieties suggested for growers in the Wimmera and Mallee are:

Blue peas: 1) Excell, 2) Soupa,

Dun type peas: 1) Kaspas (widely available 2003), 2) Parafield and 3) Paravic

White peas: 1) Snowpeak, 2) Mukta and 3) Bohatyr

Background

The Australian Coordinated Field Pea Improvement Program (ACPIP) breeds fieldpeas for a wide range of agro-ecological zones across southern Australia. New varieties are now available to growers with superior grain yield than traditional varieties such as Dundale and Alma. These new varieties also provide better options in different grain markets (dun, blue, white grain types), better agronomic adaptation (lodging and pod shatter resistance, vigour, phenology) and improved levels of disease resistance and or tolerance (downy mildew, powdery mildew, ascochyta blight).

Experimental testing for grain yield across a range of environments and years provides growers with accurate and non biased variety recommendations and allows breeders to identify superior germplasm for commercial release.

Methods

Field pea variety trials were sown across the Wimmera (Horsham, Kaniva, Gooroc, Tarranyurk, Laen) and Mallee (Warne, Rosebery, Rainbow, Walpeup, Ultima, Qumbatook, Rosebery, Birchip). Seed was inoculated with pea rhizobia and sown 5 to 8 cm deep. The sowing rate was based on seed size, germination percentage and plant type (short types 75 plants/m², tall types 40 plants/m²). Recommended pesticides were applied for weed and insect control. Grain Legume Super + zinc® (70kg/ha) was applied at sowing. All pea trials were sown on cereal stubble in 2001.

All trials were sown in a randomised design with 3 replications. Trial sites from Rosebery, Birchip, Laen and Gooroc were severely affected by frost damage and data were not included in the prediction of regional mean yields. The Horsham, Rainbow and Kaniva sites were also affected by frost and results should be read with caution.

Results

Table 1. Mallee and Wimmera trial data for 2001, expressed as a % of variety Dundale. Long term data is for 1994 to 2000.

White peas												
Snowpeak	94	97	133	106	87	97	107	110	128	88	103	105
Mukta	114	116	145	116	95	110	106	86	115	68	100	107
Bohatyr	95	102	140	117	45	95	101	96	102	79	101	99
PSL10	100	95	137	107	68	97	108	106	133	85	102	106
90-131*27-7	114	111	145	113	102	110	109	110	101	101	103	107
90-166*30-5	101	94	135	89	73	93	-	72	148	129	96	-
CV %	5.9	5.2	7.8	6.9	9.9			7.8	11.0	16.0		
LSD (5%)	10	9	13	12	12			12	23	23		

Interpretation

In general, the average yield from trials in the Mallee and Wimmera were well above average. This reflected favourable growing conditions particularly at the flowering and pod filling stages. Late frosts affected field pea yields sporadically across the southern Mallee and Wimmera. Badly affected trials were not included in analysis of means.

In general new varieties continued to significantly outperform the traditional variety Dundale across all sites. Breeding lines 90-131*27-7, PSL10, 90-166*30-5 and 90-158*8-1 are being considered for commercialisation over 2002-2003 and show excellent yield and agronomic potential.

Downy mildew was present to moderate levels in the southern Mallee and Wimmera regions over winter and early spring. Ascochyta blight and powdery mildew were present at very low levels and did not appear to cause yield losses in 2001.

Commercial Practice

Variety recommendations for field pea growers in the Wimmera and Mallee regions.

Blue peas

Recommended varieties: Excell, Soupa

Excell is the best blue pea option available to growers in the Wimmera and Mallee regions. Excell has excellent yield potential, excellent harvestability and is resistant to downy mildew. Commercial licensee for Excell is Harvest Grain Australia Pty Ltd.

Soupa is best suited to higher rainfall regions such as the Wimmera. Commercial licensee for Soupa is The Lentil Company Pty Ltd. Closed loop marketing applies.

Dun type peas

Recommended varieties: Kaspa (available 2003), Parafield, Paravic

Kaspa will be the highest yielding pea available to growers when it becomes widely available in 2003. Kaspa has pod shatter resistance, is resistant to downy mildew and has good harvestability. Commercial licensee for Kaspa is AWB Seeds Pty Ltd. Very limited seed may be available in 2002.

Parafield is a high yielding broadly adapted pea which performs well in the Wimmera and Mallee regions. It is a vigorous tall trailing type. Commercial licensee for Parafield is Paramount Seeds Pty Ltd.

Paravic is a high yielding shorter dun type with better harvestability and downy mildew resistance compared to Parafield. Commercial licensee for Paravic is Paramount Seeds Pty Ltd.

White peas

Recommended varieties: Snowpeak, Mukta, Bohatyr

Snowpeak is a high yielding pea with excellent adaptation to the Wimmera and Mallee regions. It has excellent harvestability and resistance to downy mildew. Commercial licensee for Snowpeak is Harvest Grain Australia Pty Ltd.

Mukta is a high yielding pea and performs well in medium to high rainfall regions such as the Wimmera. It has fair harvestability, but good resistance to both downy and powdery mildew. Commercial licensee for Mukta is the Australian Barley Board Pty Ltd. Closed loop marketing applies.

Bohatyr is a high yielding pea suited to medium to high rainfall regions such as the Wimmera. Bohatyr has good harvestability, but is prone to shattering prior to harvest.

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