

PARAFIELD

A new high yielding widely adapted
dun type field pea for all major pea
growing areas

Summary

- Parafield is a mid-season maturing, dun type field pea (tested as P503-3-4).
- Parafield has consistently out yielded Alma, Dundale and Early Dun by 5 to 15% over a range of seasons and across a range of districts and rainfall zones in southern Australia.
- Parafield is 10-12 days earlier flowering than Alma and Early Dun, and is a conventional leafed variety.
- Parafield is agronomically similar to Alma, Dundale and Early Dun for shattering resistance, plant standing ability and tolerance to commonly used herbicides.
- Parafield is similar to Alma, Dundale and Early Dun in susceptibility to black spot and downy and powdery mildew.
- Parafield has similar grain size to Dundale and is slightly larger than Alma and Early Dun.
- Parafield is a replacement for Alma, Dundale and Early Dun in all major pea producing regions of southern Australia.



Breeding

Parafield was developed by Dr Musharaf Ali and the SARDI pea breeding team from a cross between SA343 and SA1405. Parafield was tested as P503-3-4 and selected in the F5 stage for its earlier maturity, increased pod set and vigour. Parafield is protected by PBR.

Grain yield

Parafield has consistently outyielded Alma, Dundale and Early Dun in all major pea growing regions of southern Australia (*table 1*).

Table 1: Comparative yield performance of Parafield, Alma, Dundale and Early Dun from trials conducted in New South Wales, Victoria, Western Australia and South Australia.

Variety	Agricultural area			
	NSW (South Eastern region)		NSW (Central and Western Regions)	
	1996	1997	1996	1997
Parafield	122 (1)	127 (7)	87 (1)	118 (7)
Alma	100	100	100	100
Dundale	104	99	78	103
Early Dun	N/A	N/A	N/A	N/A
	Victoria (Wimmera)		Victoria (Mallee)	
	1996	1997	1996	1997
Parafield	110 (1)	103 (6)	112 (1)	103 (6)
Alma	100	100	100	N/A
Dundale	99	98	95	100
Early Dun	90	102	94	N/A
	Western Australia		South Australia	
	1996		1996	1997
Parafield	118 (3)		109 (12)	107 (10)
Alma	100		100	100
Dundale	84		103	99
Early Dun	97		103	98

(Figures in brackets indicate number of trials).

Long term statistical analyses (based on weighted averages) on SAFCEP trial results from 1992 to 1997 (*table 2*) show Parafield has consistently out yielded Alma, Dundale and Early Dun in all pea growing agricultural districts of SA by 6-16%.

Table 2: Yields of Parafield, Alma, Dundale and Early Dun as a % of Alma according to agricultural district in SA, in the period, 1992 -1997 (SAFCEP data, weighted average).

Variety	Agricultural district		
	Yorke Peninsula	Upper and Central Eyre Peninsula	Lower Eyre Peninsula
Parafield	110	116	110
Alma	100	100	100
Dundale	98	101	101
Early Dun	101	102	101
	South East	Murray Mallee	Mid North
Parafield	106	116	109
Alma	100	100	100
Dundale	98	101	100
Early Dun	100	104	100

Parafield has wide adaptation and therefore is seen as a direct replacement for all existing commercial dun varieties in low, medium and high rainfall environments in South Australia as shown in *table 3*.

Table 3: Yields of Parafield, Alma, Dundale and Early Dun as a % of Alma according to annual rainfall in SA (SAFCEP data 1992 to 1997).

Variety	Annual rainfall (mm)			
	<400	400-450	450-500	>500
Parafield	112 (8)	110 (9)	110 (8)	104 (9)
Alma	100 (13)	100 (17)	100 (15)	100 (17)
Dundale	100 (13)	100 (17)	100 (15)	97 (17)
Early Dun	101 (13)	101 (17)	99 (15)	100 (17)

(Figures in brackets indicate number of trials).

Plant characteristics

Parafield has a conventional plant morphology. It is a tall variety with similar standing ability to Alma, Early Dun and Dundale, and may lodge as the plant approaches maturity. Parafield has mid season maturity (similar to Dundale) and generally flowers 10-12 days earlier than Alma and Early Dun. Parafield has similar ability to withstand pod shatter at maturity as Alma, Dundale and Early Dun.

Disease resistance

Parafield is rated as susceptible to black spot and powdery mildew and downy mildew. It therefore has a similar disease reaction to these diseases as Dundale and Early Dun. Alma is equally as susceptible to both mildews in southern Australia but exhibits slightly improved black spot tolerance over the other varieties.

Use of fungicidal seed protectants such as P-Pickel-T® for black spot and Apron ® for downy mildew will provide some early season protection.

Management practices such as delaying sowing until mid-June, widening the interval between successive pea crops within rotations, and minimising 'in crop' herbicide usage are also recommended for reducing yield loss from these diseases within Parafield.

Grain quality

Parafield is a dun type pea with dimple seeds, beige to brown in colour. Generally seed size is similar to Dundale and slightly larger than Alma and Early Dun (*table 4*). Seed quality characteristics such as dhal yield and dehulling percentage of Parafield are similar to Alma, Early Dun and Dundale (*table 5*).

Table 4: 1 000 grain weight comparisons of Parafield, Alma, Dundale and Early Dun from 10 sites in South Australia in 1997 (SAFCEP data 1997).

Variety	1 000 grain weight (g)
Parafield	207.3
Alma	186.1
Dundale	194.4
Early Dun	192.8

Table 5: Grain quality comparisons of Parafield, Alma, Dundale and Early Dun from 4 sites (SA, Vic, NSW and WA) in 1996 (Grain Quality Laboratory, SARDI).

Variety	Seed size index (mm)	Dhal Yield (%)	Dehulling (% DE).
Parafield	6.9	82.0	83.4
Alma	6.7	79.2	84.7
Dundale	6.7	81.8	84.3
Early Dun	6.7	81.4	85.4

Herbicide reaction

Field trials on alkaline soils conducted in South Australia between 1994 and 1997 have provided no evidence of greater sensitivity to commonly used herbicides like Sencor ® (metribuzin), Bladex ®, Spinnaker ®, Fusilade ®, Verdict ® or Broadstrike ® at label recommended rates. In 1997, Parafield appeared more sensitive to very high application rates (double label recommended) of Broadstrike ®, Brodal ® and Sencor ® relative to Alma. Further evaluation is needed to confirm these findings.

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Seed availability

Paramount Seeds have the sole marketing rights
to Parafield and are currently undertaking seed
multiplication. Some seed may be available for 1999
sowing's prior to a general release in 2000.
Contact Paramount Seeds (08) 9071 1053 or
fax (08) 9071 5007.



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