PBA Coogee^{Đ}

'Dun type' field pea

PBA
PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Powdery mildew resistant, improved tolerance to soil boron and salinity

KEY FEATURES

- Early season vigour and crop biomass
- Forage or grain yield options
- Resistant (R) to powdery mildew
- Tolerant to soil boron
- Improved salinity tolerance
- Mid to late flowering and maturing
- Marketable as "Australian dun type grain"

MAIN ADVANTAGES

PBA Coogee^{Đ} (tested as OZP1103) is a conventional (trailing) type dun pea that provides the flexibility of a forage option if frost or drought limit grain yield.

PBA Coogee^{Đ} has a conventional plant type similar to the variety Parafield but with increased early season growth, more basal branching and longer vines.

PBA Coogee^{Đ} is a long season variety that flowers mid to late season but pods rapidly and combines resistance to powdery mildew with high tolerance to soil boron and salinity. This variety has moderate resistance to bacterial blight.

PBA Coogee^{Đ} produces grain that can be marketed as "Australian dun type" suitable for stockfeed or human consumption.

SEED PROTECTION & ROYALTIES

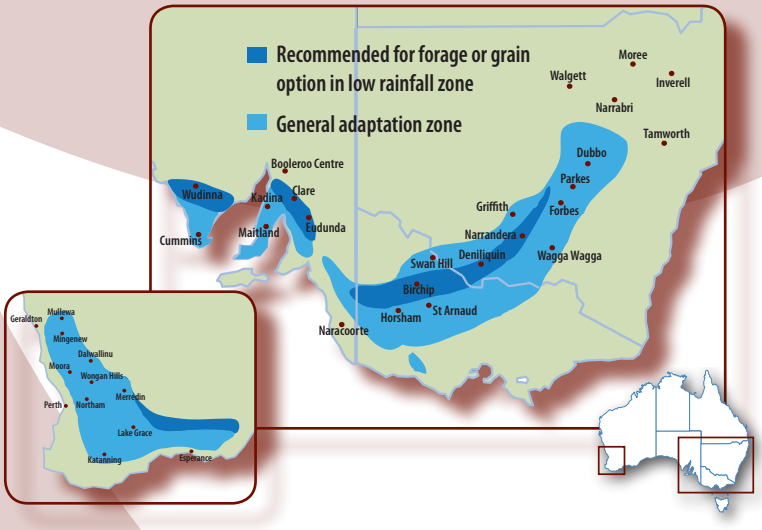
PBA Coogee^{Đ} is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from their production of PBA Coogee^{Đ} for their own seed use.

An End Point Royalty (EPR) of $2.86 per tonne (GST inclusive), which includes breeder royalties, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.

Seednet
Planting Productivity

AREA OF ADAPTATION



PBA Coogee^{Đ} is well suited to either grain production or forage harvested as hay, silage, or "green or brown manure".

PBA Coogee^{Đ} is targeted at areas prone to mid to late season stress events such as frost, where the flexibility of a variety with grain or forage potential may be beneficial. It also provides an alternative to vetch and other pasture break crops, with improved post-emergent weed control options and the flexibility to respond opportunistically to high grain prices.

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PBA Coogee$^{\phi}$
'Dun type' field pea

YIELD & ADAPTATION

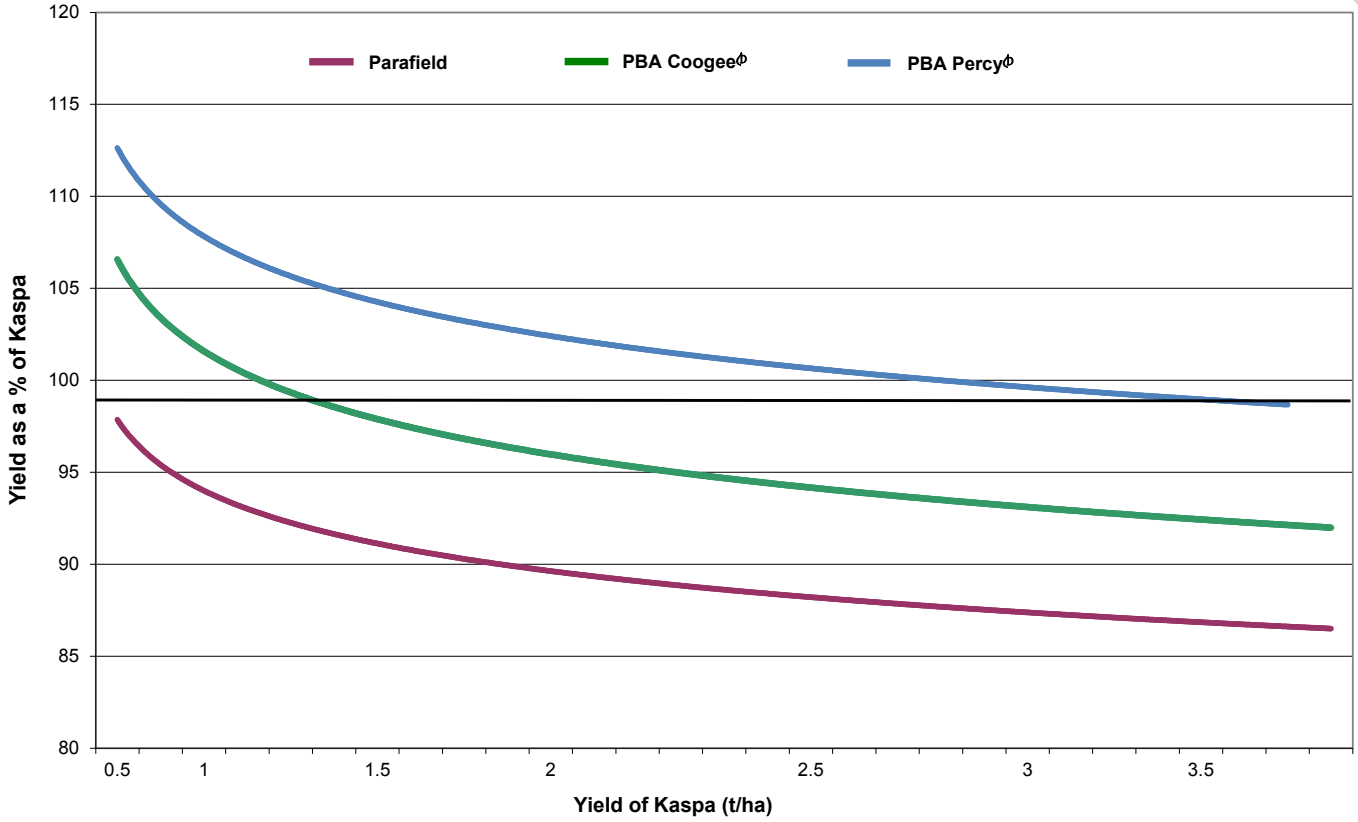
PBA Coogee$^{\phi}$ grows rapidly early in the season and produces high early season biomass. Flowering commences mid to late season though pod set is rapid and maturity time is generally slightly later than the variety Parafield.

PBA Coogee$^{\phi}$ is resistant to powdery mildew and has higher tolerance to soil boron and salinity compared to Kaspa$^{\phi}$ and Parafield.

PBA Coogee$^{\phi}$ is generally higher yielding than Parafield, but lower yielding than PBA Percy$^{\phi}$. It may also offer a yield advantage over Kaspa$^{\phi}$ in very low yielding situations. (Figure 1). Yield advantages are most significant where powdery mildew and/or soil boron toxicity are yield limiting factors.

PBA Coogee$^{\phi}$ provides growers with the flexibility to respond to season stress events such as frost, drought and disease (e.g. bacterial blight) by offering a green or brown manuring or hay production option.

Figure 1: Grain yield comparison across Australia's wheat belt from 2008 to 2011 (29 experiments).



Source: Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs.

Seednet
Planting Productivity

PBA PULSE BREEDING AUSTRALIA

PBA Coogee$^{\Phi}$

'Dun type' field pea

AGRONOMY

To maximise biomass production it is suggested to sow PBA Coogee$^{\Phi}$ at the early end of the sowing window for your growing region. However, growers should be mindful of disease risks, and plan accordingly. Recommended sowing density is similar to other conventional varieties (45 plants/m^2) for grain production, but may be higher if targeting biomass production

- Vigorous early plant growth.
- Mid to late season flowering and grain maturity.
- Tall and spreading growth like other conventional (trailing) varieties.
- Improved soil boron and salinity tolerance.

Variety	Plant habit	Plant vigour (early season)	Erect growth habit	Flowering time	Maturity time	Pod shattering (at maturity)	Soil tolerance		Seed weight (g/100)
							Boron	Salinity	
Australian dun type									
PBA Coogee$^{\Phi}$	**C**	**High**	**Poor**	**Mid-Late**	**Mid**	**MR: *(NSP)***	**T**	**MT**	**24.7**
Morgan$^{\Phi}$	Tall-SL	High	Poor-Fair	Late	Late	MR: *(NSP)*	S	S	18.7
Parafield	C	High	Poor	Mid	Mid	MR: *(NSP)*	S	MS	20.0
PBA Oura$^{\Phi}$	SD-SL	High	Fair-Good	Early-Mid	Early	MR: *(NSP)*	MS	S	23.6
PBA Percy$^{\Phi}$	C	High	Poor	Early	Early	MR: *(NSP)*	S	MR	25.6
Yarrum$^{\Phi}$	SD-SL	Fair	Poor-Fair	Late	Mid	MR: *(NSP)*	S	MS	21.8
Kaspa type									
Kaspa$^{\Phi}$	SD-SL	High	Fair-Good	Late	Mid	R: *(SP)*	S	S	23.6
PBA Gunyah$^{\Phi}$	SD-SL	High	Fair-Good	Early-Mid	Early	R: *(SP)*	S	S/MS	23.7
PBA Twilight$^{\Phi}$	SD-SL	High	Fair-Good	Early	Early	R: *(SP)*	S	S	23.1
PBA Wharton$^{\Phi}$	SD-SL	High	Fair-Good	Early-Mid	Early	R: *(SP)*	MT	MS	22.8
Niche grain type									
Excell	SD-SL	High	Good	Early-Mid	Late	S: *(NSP)*	S	S	23.0
PBA Hayman$^{\Phi}$	Multi-branch	Moderate	Fair -Good	Very late	Very late	MR: *(NSP)*	MS	MS	13.4
PBA Pearl$^{\Phi}$	SD-SL	High	Good	Early-Mid	Early	MR: *(NSP)*	MS	MS	22.3
Sturt$^{\Phi}$	C	High	Poor	Early-Mid	Mid	MR: *(NSP)*	S	MS	20.3
SW Celine$^{\Phi}$	SD-SL	High	Fair-Good	Early	Early	S: *(NSP)*	S	S	26.2

Key: SD = Semi-dwarf, C = Conventional, SL = Semi-leafless, S = Susceptible, M = Moderately, R = Resistant, T = Tolerant. SP = Sugar pod type, NSP = Non sugar pod type.

DISEASE MANAGEMENT

PBA Coogee$^{\Phi}$ is moderately resistant to bacterial blight and resistant to powdery mildew infection.

- Follow recommended crop rotation practices.
- Use predictive models to manage blackspot (e.g. blackspot manager, www.agric.wa.gov.au/cropdisease.
- Avoid sowing disease infected seed.
- Seed and foliar fungicides to control downy mildew and blackspot may be useful to optimise biomass in some regions.

Variety	Blackspot (ascochyta)	Bacterial blight (field rating)	Downy mildew (Parafield strain)	Downy mildew (Kaspa strain)	Powdery mildew	PSbMV	BLRV (field rating)
Australian dun type							
PBA Coogee$^{\Phi}$	**MS**	**MS/MR**	*	*	**R**	*	**MS/MR***
Morgan$^{\Phi}$	MS	MS	MR	S	S	S	S*
Parafield	MS	MS	S	S	S	S	S
PBA Oura$^{\Phi}$	MS	MS/MR	MR	MS/MR	S	S	MS/MR*
PBA Percy$^{\Phi}$	MS	R	S	S	S	S	S
Yarrum$^{\Phi}$	MS	MS	S	S	R	R	R
Kaspa type							
Kaspa$^{\Phi}$	MS	S	MR	S	S	S	S
PBA Gunyah$^{\Phi}$	MS	S	R	S	S	S	S
PBA Twilight$^{\Phi}$	MS	S	R	S	S	S	S
PBA Wharton$^{\Phi}$	MS	S	R	S	R	R	R
Niche grain type							
Excell	MS	S	MR	S	S	S	S
PBA Hayman$^{\Phi}$	MS	MR	MR-R	*	R	*	*
PBA Pearl$^{\Phi}$	MS	MS	R	*	S	S	R
Sturt$^{\Phi}$	MS	MS	MS	S	S	S	MS/MR*
SW Celine$^{\Phi}$	MS	S	S	S	S	S	S

*Key: S = Susceptible, M = Moderately, R = Resistance. PSbMV = Pea seed borne mosaic virus. BLRV = Bean leaf roll virus * Requires validation*

REFER TO DETAILED INFORMATION AT www.pulseaus.com.au

Ute guides, crop and disease management bulletins

PULSE VMP Pulse Variety Management Package

PBA Coogee(D)
'Dun type' field pea

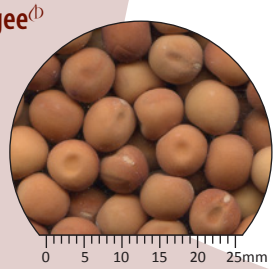
GRAIN QUALITY & MARKETING

PBA Coogee(D) produces a medium sized "Australian dun type grain" with a yellow split (~20 g/100 seeds). The grain has a greenish brown seed coat and is dimpled.

Australian dun type grain can be marketed for stockfeed or for human consumption (e.g. dhal, snack food, etc). PBA Coogee(D) can also be marketed for pea sprouting as tendrils have leaflets present.

PBA Coogee(D)

PBA Oura(D)



Kaspa(D)

BREEDING

PBA Coogee(D) was bred by the PBA field pea team at DEPI Victoria - Horsham following a selection program to develop a longer season forage field pea with powdery mildew resistance and boron and salinity tolerance.

It has been extensively evaluated across Australia and identified with forage and grain yield potential in medium to low rainfall climates.

The variety is named after Coogee beach in New South Wales.

PULSE AGRONOMY

Agronomy and disease management information has been developed with the assistance of the 'Southern region pulse agronomy project' co-funded by GRDC, SARDI, DEPI Victoria and NSW-DPI.

Version September/2013

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Better pulse varieties faster

PBA is an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, DEPI Victoria, NSW-DPI, DAFF QLD, DAFWA and Pulse Australia. It aims to deliver better pulse varieties faster.

FOR MORE INFORMATION

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Seednet

Seednet's mission is:

"To deliver high performance seed based genetics to Australian grain growers and end user customers via superior product and service delivery channels".

Seednet is proud to partner with Pulse Breeding Australia and invest in the improvement of Australian field pea varieties.

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Field pea Blackspot Sowing Guides;
www.agric.wa.gov.au/cropdisease