PBA Hayman$^{\phi}$

'Forage type' field pea

PBA
PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Hay, silage, green manuring

KEY FEATURES

- High biomass production
- Tall erect-growing plants
- Moderately Resistant (MR) to bacterial blight
- Resistant (R) to powdery mildew
- Late flowering and maturing
- Small seeded, reducing the cost of sowing
- Grain is suitable for stockfeed

MAIN ADVANTAGES

PBA Hayman$^{\phi}$ (tested as OZP0902) is a forage field pea that can be used for hay, silage or for green manuring as an alternative to vetch or Morgan$^{\phi}$ field pea. PBA Hayman$^{\phi}$ is a tall vigorous conventional field pea, producing smaller tare-style leaflets and a high number of basal branches. It is late flowering and grows vigorously over spring given favourable conditions producing large amounts of dry matter. It has long vines (over 2 m under good conditions) which can remain semi-erect.

PBA Hayman$^{\phi}$ is resistant to powdery mildew and produces small pods and small white seeds, reducing the cost of sowing. The grain is soft seeded, ensuring that there are no hard seeds carried over to germinate in following crops. Grain yield can vary but is generally between 30 - 80% of a normal field pea crop and is suitable for stockfeed.

SEED PROTECTION & ROYALTIES

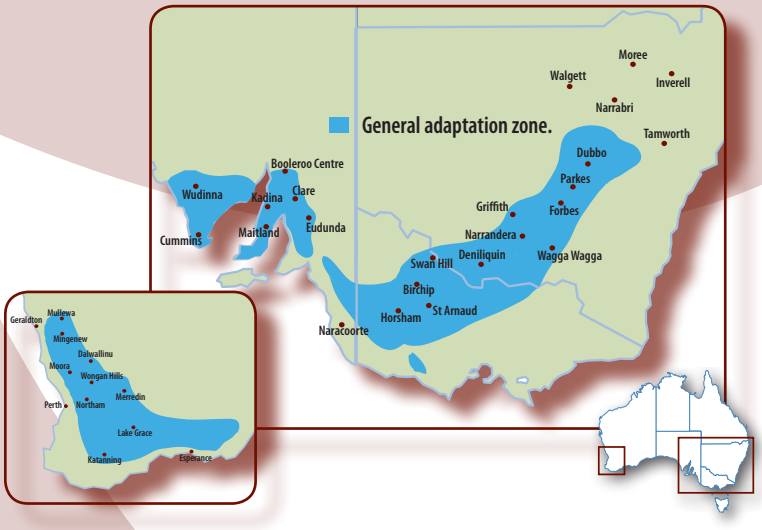
PBA Hayman$^{\phi}$ is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from their production of PBA Hayman$^{\phi}$ for their own seed use.

A Seed Royalty, which includes breeder royalties, applies at the point of sale. This royalty is re-invested in the breeding program to develop future varieties.

Seed is available from the commercial partner Seednet.

Seednet
Planting Productivity

AREA OF ADAPTATION



PBA Hayman$^{\phi}$ can be grown across all cropping zones for the purposes of forage.
PBA Hayman$^{\phi}$ is not recommended for grain production.

PBA
PULSE BREEDING AUSTRALIA

PBA Hayman(Φ)
'Forage type' field pea

YIELD & ADAPTATION

- PBA Hayman(Φ) produces high dry matter (> 20 % when compared to Morgan(Φ)) over spring, under favourable conditions.
- PBA Hayman(Φ) is late flowering and remains vegetative for most of the growing season.
- Maximum dry matter is produced mid to late spring from between mid flowering to early pod set.
- Grain yields are estimated to be between 30 - 80 % of grain varieties, depending on the growing season.

Figure 1: Comparison of final dry matter production for four locations in 2011 and 2012.

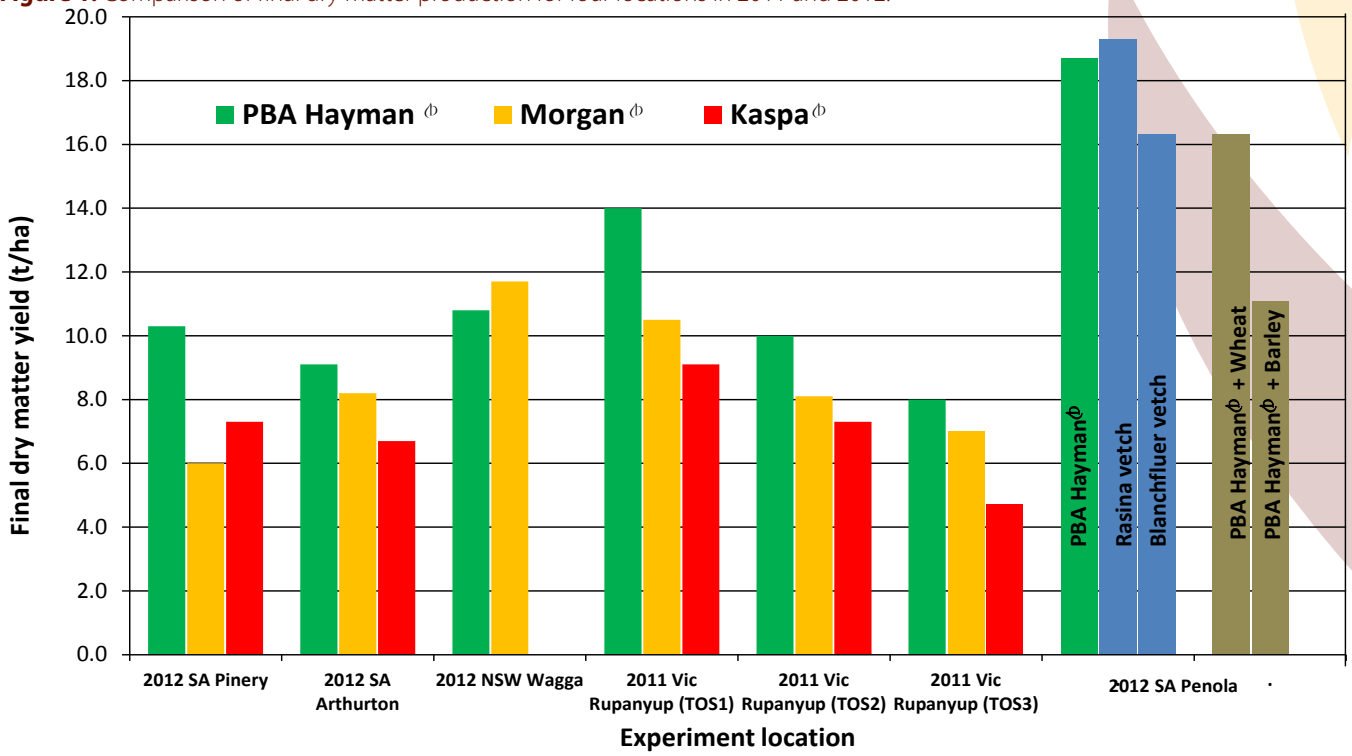


Table 1: Comparative feed test results taken from biomass cuts at Temora (NSW) and Penola (SA) 2012.

Feed test results	Temora - NSW			Penola - SA			
	PBA Hayman(Φ)	Vetch	High density legume pasture	PBA Hayman(Φ)	Vetch (Blanchfleur)	Vetch (Rasina)	PBA Hayman(Φ) + wheat
Dry matter (%)	16.9	22.2	18	10.1	11.7	12.6	15.7
Crude protein (% DM)	21.6	20.6	26.4	34	33.8	31.9	22.9
Neutral detergent fibre (% DM)	38.1	37.4	23.6	24.6	32.2	29.5	45.3
Digestibility DMD (% DM)	65	72.8	82.1	85.2	77.5	85.8	71.1
Metabolisable energy (MJ/kg DM)	9.6	10.9	12.5	13	12.7	13.1	10.6

Table 2: Comparative feed test results taken from biomass cuts at Curyo (VIC) 2012.

Feed test results	Curyo - Vic			
	PBA Hayman(Φ)	Kaspa	Morgan(Φ)	PBA Coogee(Φ)
Crude protein (% DM)	17.4	15.3	15.3	16.8
Neutral detergent fibre (% DM)	43.3	36.7	39.8	31.1
Digestibility DMD (% DM)	66.0	72.8	66.0	73.5
Metabolisable energy (MJ/kg DM)	9.0	10.9	9.7	11.0

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

Table 3: Mean grain yield of PBA Hayman, Parafield and Kaspa across 9 experiments in 2009.

Variety	Mean yield (t/ha)
PBA Hayman(Φ)	1.01
Parafield	1.88
Kaspa(Φ)	2.86

Seednet
Planting Productivity

PBA PULSE BREEDING AUSTRALIA

PBA Hayman[Φ]

'Forage type' field pea

AGRONOMY

PBA Hayman[Φ] will grow rapidly over a long growing season and will benefit from sowing slightly earlier than optimal times for grain varieties. Seeding rate should aim to establish at least 40 - 50 plants/m^2 to maximise biomass. Weed management and grain harvest can follow the same general practices for conventional field peas that are recommended regionally.

- Plant yellowing has been observed in a limited number of trials in early growth stages but diminishes as plants mature.
- Grain matures very late in the growing season.

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	
Niche grain type									
PBA Hayman[Φ]	Multi-branch	**Moderate**	**Fair -Good**	**Very late**	**Very late**	**MR: *(NSP)***	**MS**	**MS**	**13.4**
Excell	SD-SL	High	Good	Early-Mid	Late	S: *(NSP)*	S	S	23.0
PBA Pearl[Φ]	SD-SL	High	Good	Early-Mid	Early	MR: *(NSP)*	MS	MS	22.3
Sturt[Φ]	C	High	Poor	Early-Mid	Mid	MR: *(NSP)*	S	MS	20.3
SW Celine[Φ]	SD-SL	High	Fair-Good	Early	Early	S: *(NSP)*	S	S	26.2
Kaspa type									
Kaspa[Φ]	SD-SL	High	Fair-Good	Late	Mid	R: *(SP)*	S	S	23.6
PBA Gunyah[Φ]	SD-SL	High	Fair-Good	Early-Mid	Early	R: *(SP)*	S	S/MS	23.7
PBA Twilight[Φ]	SD-SL	High	Fair-Good	Early	Early	R: *(SP)*	S	S	23.1
PBA Wharton[Φ]	SD-SL	High	Fair-Good	Early-Mid	Early	R: *(SP)*	MT	MS	22.8
Australian dun type									
Morgan[Φ]	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 Coogee[Φ]	C	High	Poor	Mid-Late	Mid	MR: *(NSP)*	T	MT	24.7
PBA Oura[Φ]	SD-SL	High	Fair-Good	Early-Mid	Early	MR: *(NSP)*	MS	S	23.6
PBA Percy[Φ]	C	High	Poor	Early	Early	MR: *(NSP)*	S	MR	25.6
Yarrum[Φ]	SD-SL	Fair	Poor-Fair	Late	Mid	MR: *(NSP)*	S	MS	21.8

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 Hayman[Φ] is resistant to powdery mildew and is a lower risk option for bacterial blight compared to Kaspa[Φ].

This variety will remain green late into the growing season.

- Follow recommended crop rotation practices.
- Avoid sowing disease infected seed.
- Use predictive models to manage blackspot (e.g. blackspot manager, www.agric.wa.gov.au/cropdisease).
- Follow regional seed and foliar fungicide recommendations to control downy mildew and blackspot to optimise biomass.
- Follow regional pesticide recommendation for control of pea weevil and budworm for grain production.

Variety	Blackspot (ascochyta)	Bacterial blight (field rating)	Downy mildew (Parafield strain)	Powdery mildew
Niche grain type				
PBA Hayman[Φ]	MS	MR	MR/R	R
Excell	MS	S	MR	S
PBA Pearl[Φ]	MS	MS	R	S
Sturt[Φ]	MS	MS	MS	S
SW Celine[Φ]	MS	S	S	S
Kaspa type				
Kaspa[Φ]	MS	S	MR	S
PBA Gunyah[Φ]	MS	S	R	S
PBA Twilight[Φ]	MS	S	R	S
PBA Wharton[Φ]	MS	S	R	R
Australian dun type				
Morgan[Φ]	MS	MS	MR	S
Parafield	MS	MR	S	S
PBA Coogee[Φ]	MS	MS/MR	*	R
PBA Oura[Φ]	MS	MS/MR	MR	S
PBA Percy[Φ]	MS	MR	S	S
Yarrum[Φ]	MS	S	S	R

*Key: S = Susceptible, M = Moderately, R = Resistance. * Requires validation*

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

Ute guides, crop and disease management bulletins

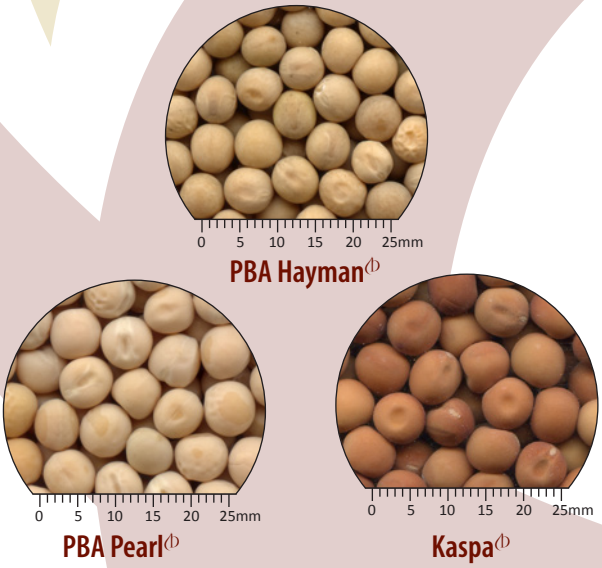
PULSE VMP Pulse Variety Management Package

PBA Hayman[Ф]
'Forage type' field pea

GRAIN QUALITY & MARKETING

PBA Hayman[Ф] produces small white soft-seeds with a yellow split (13-15 g/100 seeds). The seed is smooth, spherical and can be distinguished by a barely visible striped pattern on the seed coat.

Its smaller grain size will restrict its use as stockfeed. However, opportunities exist for niche markets such as vegetable sprouting or pigeon feed.



BREEDING

PBA Hayman[Ф] was bred, evaluated and selected by the PBA field pea team for adaptation and performance across a range of climates across southern Australia.

Initial crosses and early generation selections were made at DEPI Victoria - Horsham. The objectives were to develop a long season forage field pea with powdery mildew resistance.

The variety is named after Hayman Island beaches in North Queensland.

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

PBA
PULSE BREEDING AUSTRALIA

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

Pulse Breeding Australia
Brondwen MacLean
GRDC
PO Box 5367
Kingston ACT 2604
Ph: 02 6166 4500
brondwen.maclean@grdc.com.au
www.grdc.com.au/pba

PBA Field pea
Peter Kennedy
DEPI Victoria
Private Bag 260
Horsham Victoria 3400
Ph: 03 5362 2332
peter.kennedy@depi.vic.gov.au

SEED ENQUIRIES

Seednet
National Production and Logistics Office
18 - 22 Hamilton Rd
PO Box 1409, Horsham Vic 3402
Ph: 1300 799 246
Fax: 03 5381 0490
admin@seednet.com.au
www.seednet.com.au

Seednet

Central & Southern NSW
Robert Gill
Ph: 0428 122 465
robert.gill@seednet.com.au

Victoria & Tasmania
Chris Walsh
Ph: 0417 891 546
chris.walsh@seednet.com.au

South Australia & Western Australia
Sam Densley
Ph: 0417 891 436
sam.densley@seednet.com.au

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.

AGRONOMIC ENQUIRIES

Victoria
Jason Brand, DEPI Victoria, Ph: (03) 5362 2341
Mary Raynes, Pulse Australia, Ph: 0408 591 193

South Australia
Mick Lines, SARDI, Ph: (08) 8842 6264
Mary Raynes, Pulse Australia, Ph: 0408 591 193

New South Wales
Eric Armstrong, NSW-DPI, Ph: (02) 6938 1814
Luke Gaynor, NSW-DPI, Ph: (02) 6938 1657
Mary Raynes, Pulse Australia, Ph: 0408 591 193

Western Australia
Ian Pritchard, DAFWA, Ph: (08) 9368 3515
Alan Meldrum, Pulse Australia, Ph: 0427 384 760

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