PBA Gunyidi$^{\Phi}$
Australian sweet lupin

PBA
PULSE BREEDING AUSTRALIA

Better pulse varieties faster

High yielding, low shattering lupin

KEY FEATURES

- **High yielding across most lupin growing areas of WA, NSW, Vic. and SA**
- **Improved resistance to pod shattering (equal to Tanjil$^{\Phi}$ and Coromup$^{\Phi}$)**
- **Resistant to anthracnose (equal to Tanjil$^{\Phi}$)**
- **Moderately resistant to phomopsis stem blight, (equal to Tanjil$^{\Phi}$)**
- **Early flowering and early maturity**
- **Quality parameters on average meet market requirements**
- **Susceptible to Grey Spot.**

MAIN ADVANTAGES

PBA Gunyidi$^{\Phi}$ is a narrow-leafed lupin variety suitable as a replacement for current varieties in most lupin growing areas of Western Australia. It combines reduced pod shattering risk with broad regional adaptation including the lupin growing areas of New South Wales, Victoria and South Australia.

PBA Gunyidi$^{\Phi}$ has considerably improved pod shattering resistance compared to the varieties Mandelup$^{\Phi}$ and Jenabillup$^{\Phi}$, allowing growers to reduce the risk of yield losses associated with delayed harvesting after crop maturity.

SEED PROTECTION & ROYALTIES

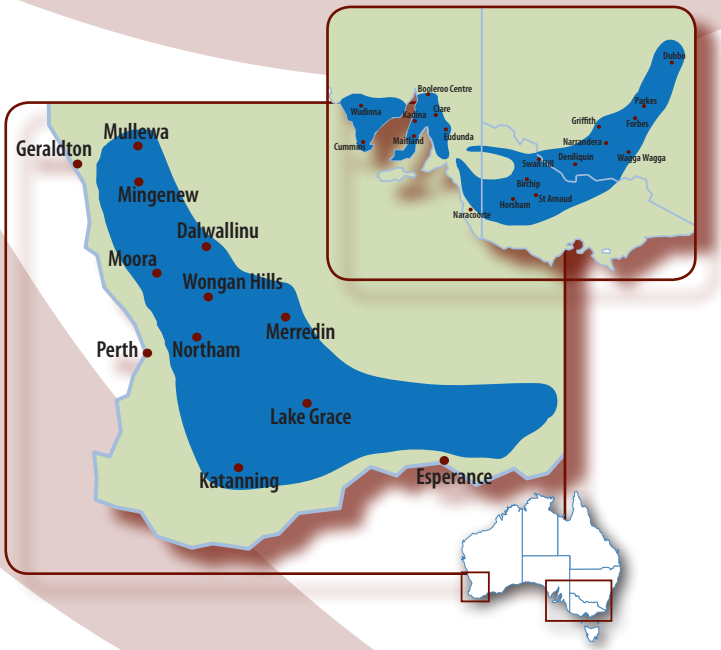
PBA Gunyidi$^{\Phi}$ is protected under Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from production of PBA Gunyidi$^{\Phi}$ for their own seed use.

An End Point Royalty of $2.75 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
PULSE BREEDING AUSTRALIA

PBA Gunyidi$^{\Phi}$
Australian sweet lupin

YIELD & ADAPTATION

Western Australia;

PBA Gunyidi$^{\Phi}$ has performed well across most regions and is suggested as a replacement for all varieties in most Lupin growing zones. Care is needed in Agzone 1 to select a variety with a suitable level of anthracnose resistance. Jenabillup remains the best choice for Agzone 8 due to its BYMV resistance (MR).

Long-term yields expressed as a % of Mandelup$^{\Phi}$ in Western Australia (2005-2011)									
Variety	**Agzone 1 (8)**	**Agzone 2 (12)**	**Agzone 3 (9)**	**Agzone 4 (9)**	**Agzone 5 (9)**	**Agzone 6 (5)**	**Agzone 7 (8)**	**Agzone 8 (4)**	**Average (66)**
PBA Gunyidi$^{\Phi}$	**107**	**100**	**103**	**107**	**97**	**101**	**102**	**105**	**103**
Belara$^{\Phi}$	95	88	88	94	88	93	87	95	91
Coromup$^{\Phi}$	103	100	97	93	94	90	90	92	96
Jenabillup$^{\Phi}$	107	97	102	115	100	103	103	100	104
Quilinock$^{\Phi}$	98	96	99	98	98	102	101	98	98
Tanjil$^{\Phi}$	95	88	84	94	86	97	95	87	91

New South Wales;

PBA Gunyidi$^{\Phi}$ has performed better than other varieties in the southern regions and is suggested as a replacement for Mandelup.$^{\Phi}$

Long-term yield of expressed as a % of Mandelup$^{\Phi}$ in New South Wales (2005-2011)				
Variety	**Northeast (4)**	**Northwest (6)**	**Southeast (15)**	**Southwest (9)**
PBA Gunyidi$^{\Phi}$	**95**	**90**	**103**	**104**
Coromup$^{\Phi}$	115	99	95	95
Jenabillup$^{\Phi}$	109	94	103	108
Jindalee$^{\Phi}$	99	88	81	85
Quilinock$^{\Phi}$	103	98	99	108
Wonga$^{\Phi}$	103	94	84	87

Victoria and South Australia;

PBA Gunyidi$^{\Phi}$ has performed well on the Eyre Peninsula, the Mid north and the Murray mallee and is recommended as a replacement for Mandelup$^{\Phi}$ in these regions.

Long-term yield of expressed as a % of Mandelup$^{\Phi}$ in Victoria and South Australia (2005-2011)						
Variety	**Upper Eyre Pen (3)**	**Lower eyre Pen (7)**	**Mid North (2)**	**Southeast (12)**	**Murray mallee (2)**	**Vic. mallee (10)**
PBA Gunyidi$^{\Phi}$	**100**	**101**	**106**	**89**	**102**	**95**
Coromup$^{\Phi}$	95	90	107	92	90	93
Jenabillup$^{\Phi}$	103	105	110	97	97	90
Moonah$^{\Phi}$	93	93	95	93	71	90
Wonga$^{\Phi}$	93	98	98	81	89	75

Source: Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs
The number in brackets ( ) shows the number of trials

Seednet
Planting Productivity

PBA PULSE BREEDING AUSTRALIA

PBA Gunyidi$^{\Phi}$
Australian sweet lupin

DISEASE MANAGEMENT

- Resistant to phompsis stem blight is equivalent to Tanjil$^{\Phi}$ and Mandelup$^{\Phi}$
- Resistant to anthracnose, better than Mandelup$^{\Phi}$. Seed dressings are still recommended to reduce the risk of seed borne infections.
- Moderately susceptible to Brown spot and the full agronomic package for this disease should be implemented.
- Susceptible to Grey Spot. However, this disease has not been seen in lupin crops in WA since the early 1980's when very close crop rotations were common. Grey spot is not considered a threat to growing this variety.

Virus

- Moderately resistant to resistant to CMV seed transmission and is better than Mandelup but not as good as Tanjil$^{\Phi}$.
- Intermediate resistance to late infection of BYMV is not as good as Jenabillup$^{\Phi}$ and Quilinock$^{\Phi}$ but better than all other varieties.
- Jenabillup$^{\Phi}$ is a preferred variety in WA Agzone 8 to manage the risk from BYMV.

Plant disease resistance of PBA Gunyidi in comparison to other Australian sweet lupin varieties

Variety	Lodging	Brown spot	Phomopsis (stem)	Anthracnose	Grey spot	CMV (seed)	BYMV	Aphid
PBA Gunyidi$^{\Phi}$	**MR**	**MS**	**R**	**MR/R**	**S**	**MR**	MR/MS	**R**
Coromup$^{\Phi}$	MR/MS	MS	R	MR	R	MR/R	MS	R
Jenabillup$^{\Phi}$	MR/MS	MS	MR/MS	MS	R	-	MR	R
Jindalee$^{\Phi}$	-	-	R	MS	R	-	-	-
Mandelup$^{\Phi}$	MS	MS	R	MR	R	MR	MS	R
Quilinock$^{\Phi}$	MR/MS	MS	MR	VS/S	R	MR	MR	MS
Tanjil$^{\Phi}$	MR	MS	MR	R	R	R	MS	R
Wonga$^{\Phi}$	MR	MS	MR	R	R	R	MS	R

Source: Pulse Breeding Australia South Perth, WA 2011
VS = very susceptible, S = susceptible, MS = moderately susceptible, MR = moderatley resistant, R = resistant

AGRONOMY

Agronomic characteristics

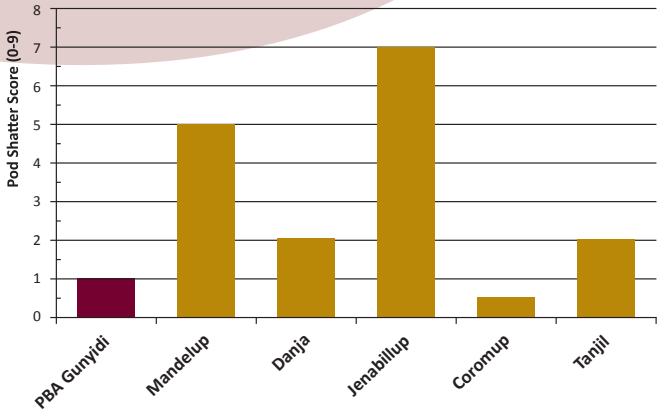
- PBA Gunyidi$^{\Phi}$ has many of the agronomic characteristics of Mandelup$^{\Phi}$ and Tanjil$^{\Phi}$.
- PBA Gunyidi$^{\Phi}$ is slightly later flowering and maturing than Mandelup$^{\Phi}$.
- Harvest height is equivalent to Quilinock$^{\Phi}$ and is shorter than Mandelup$^{\Phi}$
- Moderately resistant to lodging in high rainfall regions, equivalent of Belara.

Herbicide tolerance

- PBA Gunyidi$^{\Phi}$ shows equivalent tolerance to all commonly used herbicides on lupins as Mandelup$^{\Phi}$.
- It is less tolerant to Eclipse and this herbicide should be used with care on PBA Gunyidi$^{\Phi}$.

Harvestability

- Harvest grain loss risk is reduced with PBA Gunyidi$^{\Phi}$ being more resistant to pod shattering than Mandelup$^{\Phi}$.



Source: Department of Agriculture and Food WA 2010

REFER TO DETAILED INFORMATION AT www.pulseaus.com.au
Ute guides, crop and disease management bulletins

PULSE VMP Pulse Variety Management Package

PBA Gunyidi$^{\Phi}$
Australian sweet lupin

SEED QUALITY

PBA Gunyidi$^{\Phi}$ has smaller seed similar to Tanjil$^{\Phi}$. The protein content is slightly higher than Mandelup$^{\Phi}$ and the alkaloid content, on average, is similar to Mandelup$^{\Phi}$. The alkaloid content may fluctuate from season to season, but the relative value to Mandelup $^{\Phi}$will be similar.

Seed quality of PBA Gunyidi$^{\Phi}$ in comparison to other narrow-leafed lupin varieties as a percentage of Mandelup

Variety	Seed weight	Seed protein	Seed alkaloid
Mandelup$^{\Phi}$	142. mg	31.2 %	0.012 %
PBA Gunyidi$^{\Phi}$	90	104	100
Belara$^{\Phi}$	99	99	75
Coromup$^{\Phi}$	104	110	92
Danja$^{\Phi}$	86	103	125
Jenabillup$^{\Phi}$	103	102	75
Mandelup$^{\Phi}$	100	100	100
Quilinock$^{\Phi}$	97	104	92
Tanjil$^{\Phi}$	89	105	117

Source: Pulse Breeding Australia
Data is an average of 9 sites across 3 years (2009 - 11)

PBA Gunyidi$^{\Phi}$

Mandelup$^{\Phi}$

BREEDING

PBA Gunyidi (tested as WALAN2289) was bred by Dr Bevan Buirchell, in cooperation with the Department of Agriculture and Food's lupin breeding team under the umbrella of Pulse Breeding Australia.
It is from a 2001 complex cross (01A012R-65) and the female parent was tested in CVT as WALAN2127 (90S085-107-39) = Tanjil/90A050.

Version September/2012

PBA
PULSE BREEDING AUSTRALIA

Better pulse varieties faster

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

FOR MORE INFORMATION

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

PBA Lupin
Dr Bevan Buirchell
DAFWA
3 Baron-Hay Crt
South Perth WA 6151
Ph: 08 9368 3653
bevan.buirchell@agric.wa.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

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

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

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 lupin varieties.

AGRONOMIC ENQUIRIES

Southern New South Wales
Mark Richards, NSW-DPI, Ph: 0428 630 429
Wayne Hawthorne, Pulse Australia, Ph: 0429 647 455

Victoria
Jason Brand, DPI Victoria, Ph: 03 5362 2341
Wayne Hawthorne, Pulse Australia, Ph: 0429 647 455

South Australia
Larn McMurray, SARDI, Ph: 08 8842 6265
Andrew Ware, SARDI, Ph: 0427 884 272
Wayne Hawthorne, Pulse Australia, Ph: 0429 647 455

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