

PBA Jurien[®]

Australian sweet lupin



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

High yielding, disease resistant, metribuzin tolerant



MAIN ADVANTAGES

PBA Jurien[®] is an Australian sweet lupin variety suitable for all lupin growing areas of Australia. It provides a significant yield improvement over current varieties in most regions.

PBA Jurien[®] is resistant to anthracnose, phomopsis and grey spot. Seed dressings are still recommended to reduce the risk of seed borne anthracnose infections.

PBA Jurien[®] is moderately susceptible to brown spot. Follow current best management practices to reduce the potential impact of this disease.

SEED PROTECTION & ROYALTIES

PBA Jurien[®] is protected under Plant Breeder's Rights (PBR) legislation. Growers may only retain seed from production of PBA Jurien[®] for their own seed use.

An End Point Royalty (EPR) 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.

KEY FEATURES

- High yielding across most lupin growing areas of WA, NSW, SA and Victoria
- Resistant (R) to anthracnose, (equivalent to PBA Barlock[®])
- Resistant (R) to phomopsis (equivalent to PBA Gunyidi[®])
- Resistant (R) to grey spot (equivalent to PBA Barlock[®])
- Tolerant to metribuzin (superior to PBA Barlock[®], similar to Coromup[®])
- Early flowering and early maturity
- Pale seed coat with seed size similar to Mandelup[®]

AREA OF ADAPTATION



YIELD & ADAPTATION

PBA Jurien[®] has performed well across all regions of Australia with higher grain yields than PBA Barlock[®] and PBA Gunyidi[®] in all Western Australia regions as well as many of the eastern states' regions.

PBA Jurien[®] is a potential replacement for PBA Barlock[®] in Agzone 1, due to its higher yields and resistance to anthracnose.

PBA Jurien[®] is the best choice for Agzone 8, due to its superior yield and equivalent, moderately resistance (MR), rating for Bean Yellow Mosaic Virus (BYMV) to Jenabillup[®].

Long-term yield expressed as a % of Mandelup [®] in Western Australia (2008–2014)								
Variety	Agzone 1 (11)	Agzone 2 (14)	Agzone 3 (4)	Agzone 4 (10)	Agzone 5 (8)	Agzone 6 (4)	Agzone 7 (7)	Agzone 8 (3)
PBA Jurien [®]	112	110	112	115	109	109	106	116
Coromup [®]	99	97	97	91	94	93	91	90
Jenabillup [®]	106	103	99	111	100	97	97	109
PBA Barlock [®]	110	104	102	107	104	106	102	109
PBA Gunyidi [®]	106	102	103	112	105	105	102	107
Tanjil [®]	99	94	87	95	92	90	91	94
Mandelup [®] (t/ha)	2.95	2.51	2.07	2.16	2.28	1.93	1.45	2.42

Long-term yield expressed as a % of Mandelup [®] in New South Wales (2008–2014)						
Variety	Long Season (6)	North East (3)	North West (8)	South East (25)	South West (5)	Short Season (5)
PBA Jurien [®]	101	99	96	104	106	100
Jenabillup [®]	101	99	97	97	101	100
Jindalee [®]	88	89	82	84	82	89
PBA Barlock [®]	98	99	97	100	100	99
PBA Gunyidi [®]	100	96	92	102	102	99
Wonga [®]	89	95	92	88	87	92
Mandelup [®] (t/ha)	2.25	1.98	2.04	2.33	1.69	2.02

Long-term yield expressed as a % of Mandelup [®] in Victoria and South Australia (2008–2014)							
Variety	Upper Eyre Pen (4)	Lower Eyre Pen (7)	Mid North (4)	South East (11)	Murray Mallee (3)	Vic. Mallee (7)	Vic. Nth Central (4)
PBA Jurien [®]	107	108	103	102	95	100	102
Coromup [®]	90	92	95	96	89	90	92
Jenabillup [®]	101	101	102	100	92	94	96
PBA Barlock [®]	107	106	97	99	93	96	95
PBA Gunyidi [®]	104	105	98	96	93	96	99
Wonga [®]	93	92	84	88	86	84	83
Mandelup [®] (t/ha)	1.87	2.08	2.02	2.01	1.65	1.14	1.97

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

The number in brackets () shows the number of trials.

DISEASE MANAGEMENT

- Resistant (R) to anthracnose, equivalent to PBA Barlock[®] and Tanjil[®]. Seed dressings are still recommended to reduce the risk of seed borne infection.
- Resistant (R) to phomopsis stem blight, equivalent to PBA Gunyidi[®], Coromup[®] and Mandelup[®].
- Resistant (R) to grey spot, equivalent to PBA Barlock[®].
- Moderately susceptible (MS) to brown spot. Follow current best practice for disease management.

Virus

- Moderately resistant (MR) to Cucumber Mosaic Virus (CMV) seed transmission, equivalent to PBA Gunyidi[®] and Mandelup[®].
- Moderately resistant (MR) to Bean Yellow Mosaic Virus (BYMV) and Black Pod Syndrome (late infection BYMV), similar to Jenabillup[®], and better than PBA Barlock[®].

Plant disease resistance of PBA Jurien[®] in comparison to other Australian sweet lupin varieties

Variety	Lodging (high rainfall)	Brown spot	Phomopsis (stem)	Anthracnose	Grey spot	CMV (seed)	BYMV	Aphid
PBA Jurien [®]	MS	MS	R	R	R	MS/MR	MR	R
Coromup [®]	MS/MR	MS	R	MR	R	MR	MS	R
Jenabillup [®]	MS/MR	MS/MR	MS	S	R	MS/MR	MR	R
Mandelup [®]	MS	MS	R	MR	R	MS	S	R
PBA Barlock [®]	MR	MS	MR	R	R	MR	MS	R
PBA Gunyidi [®]	MR	MS	R	MR	S	MS/MR	MS	R
Quilinoock [®]	MS	MS	MS/MR	VS/S	R	MS	MR	MS
Tanjil [®]	MR	MS	R	R	R	R	MS	R
Wonga [®]	MR	MS	R	R	R	R	MS	R

Source: Pulse Breeding Australia (PBA) trials program 2008–2014

R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, VS = Very Susceptible

AGRONOMY

Agronomic characteristics

- PBA Jurien[®] has similar agronomic characteristics to PBA Gunyidi[®], with flowering time slightly earlier than PBA Barlock[®] and similar to PBA Gunyidi[®].
- PBA Jurien[®] is taller than PBA Barlock[®] and PBA Gunyidi[®], similar to Mandelup[®] and Coromup[®].
- PBA Jurien[®] is moderately susceptible (MS) to lodging in high rainfall regions, equivalent to Mandelup[®].

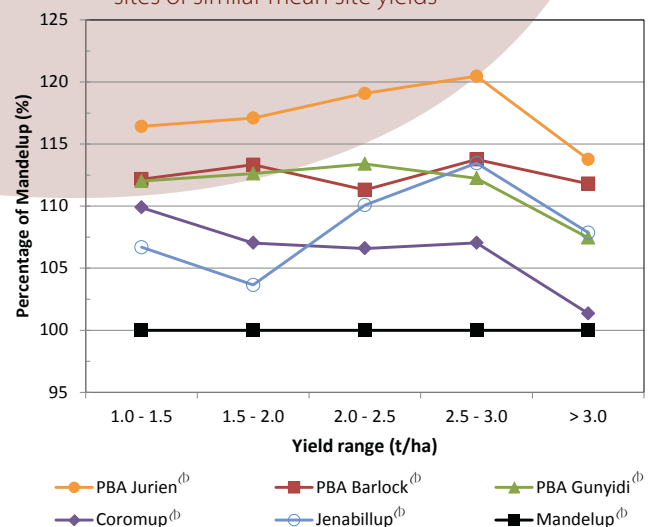
Herbicide tolerance

- PBA Jurien[®] shows equivalent tolerance to registered herbicides for lupin including metribuzin as Coromup[®], with greater tolerance than Mandelup[®].

Harvestability

- Harvest height is similar to Mandelup[®], and is higher than PBA Barlock[®] and PBA Gunyidi[®].
- Harvest grain loss risk is similar to that of PBA Gunyidi[®]. PBA Jurien[®] is less resistant to pod shattering than PBA Barlock[®], but not as susceptible as Mandelup[®].
- PBA Jurien[®] has a slightly higher risk of lodging in high yielding situations than PBA Barlock[®].

Figure 1: Relative performance of PBA Jurien[®] as a percentage of Mandelup[®] across Western Australian sites of similar mean site yields



Source: Western Australian National Variety Trials (NVT) 2008–2014

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

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GRAIN QUALITY

PBA Jurien[®] has medium to large seed, similar to Mandelup[®] and the alkaloid content is similar to PBA Gunyidi[®]. Alkaloid contents fluctuate between years, sites and varying seasonal conditions.

Grain quality of PBA Jurien[®] in comparison to other Australian sweet lupin varieties as a percentage of Mandelup[®]

Variety	Seed weight	Seed protein	Seed alkaloid
PBA Jurien [®]	98	102	105
Danja [®]	84	105	123
Jenabillup [®]	103	103	67
PBA Barlock [®]	91	97	115
PBA Gunyidi [®]	89	102	100
Tanjil [®]	88	100	113
Mandelup [®]	168 mg	32.1 %	0.017 %

Source: Pulse Breeding Australia (PBA)

Seed weight: data is average of 3 sites in WA 2014

Protein and alkaloid: % as received, whole seed, 6 sites, 2010–2014



PBA Jurien[®]



PBA Barlock[®]



PBA Gunyidi[®]

BREEDING

PBA Jurien[®] (tested as WALAN2385) was developed by the PBA Lupin breeding program, led by the Department of Agriculture and Food Western Australia.

PBA Jurien[®] is from a 2003 cross, 03A013R-ARR1-54, between 03L F1 female bulk 1 and 95L335-17-15 (=WALAN2231).

PBA Jurien[®] is named after the coastal town of Jurien Bay, which is adjacent to major lupin growing regions in WA. The word 'Jurien' is an old Swedish male name adapted from the Low German name 'Jurian' or 'Jurien' which is a variant of 'Georg'. The original meaning is 'farmer'.

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PBA is an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, DEDJTR Victoria, NSW DPI, DAF QLD, DAFWA and Pulse Australia.

FOR MORE INFORMATION

PBA

Tom Giles
GRDC
PO Box 5367
Kingston ACT 2604
Ph: 02 6166 4500
tom.giles@grdc.com.au
www.grdc.com.au/pba

PBA Lupin

Dr Jon Clements
DAFWA
3 Baron-Hay Crt
South Perth WA 6151
Ph: 08 9368 3653
jonathan.clements@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



South Eastern Australia

Rob Christie
Ph: 0427 340 608
rob.christie@seednet.com.au

North Eastern Australia

Jon Thelander
Ph: 0429 314 909
jon.thelander@seednet.com.au

Western Australia

David Clegg
Ph: 0408 630 641
david.clegg@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

Western Australia

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

South Australia

Larn McMurray, SARDI, Ph: 0417 898 803
Mary Raynes, Pulse Australia, Ph: 0408 591 193

Victoria

Jason Brand, DEDJTR Victoria, Ph: 0409 357 076
Mary Raynes, Pulse Australia, Ph: 0408 591 193

New South Wales

Sarah Ellis, NSW-DPI, Ph: 0418 149 593
Tim Weaver, Pulse Australia, Ph: 0427 255 086