

PBA Bateman[®]

Australian sweet lupin



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

High yielding lupin for NSW, SA & Victoria



KEY FEATURES

- Significant yield improvement over current varieties in eastern states
- Rated MR to BYMV and MR/MS to CMV
- Rated MR to Phomopsis and Anthracnose
- Recommended for lupin production regions in NSW, SA and Victoria

MAIN ADVANTAGES

PBA Bateman[®] tested as WALAN2533 is a high yielding Australian sweet lupin variety suitable for lupin growing areas of NSW, SA and Victoria. It provides increased yield and good virus resistance.

SEED PROTECTION & ROYALTIES

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

An End Point Royalty 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.

AREA OF ADAPTATION



Seednet
Planting Productivity

YIELD & ADAPTATION

PBA Bateman[®] demonstrated adaptation and high yield performance similar to or better than PBA Jurien[®], PBA Barlock[®] and Mandelup[®] in NSW, SA and Victorian regions.

Long term yield expressed as % Mandelup [®] in New South Wales, South Australia and Victoria (2012–2016)											
Variety	NSW				South Australia					Victoria	
	N/E (3)	N/W (3)	S/E (10)	S/W (1)	Lower EP (4)	Mid North (2)	Murray Mallee (2)	South East (6)	Upper EP (1)	Mallee	North Central
PBA Bateman [®]	114	99	104	92	111	109	104	106	93	105	105
PBA Jurien [®]	102	101	100	97	105	103	93	101	95	107	106
PBA Barlock [®]	96	99	99	97	103	103	93	100	108	106	105
PBA Gunyidi [®]	109	95	100	91	105	103	97	101	105	101	102
Jenabillup [®]	103	95	96	90	101	101	93	100	102	101	101
Jindalee [®]	82	82	84	75	87	84	78	88	97	81	85
Wonga [®]	86	93	90	87	94	91	82	82	94	94	95
Mandelup [®] (t/ha)	1.67	1.82	2.44	1.39	2.26	1.84	1.78	2.10	1.43	0.94	2.21

Source: Trial results from Pulse Breeding Australia (PBA), Agriculture and Food, Department of Primary Industries and Regional Development, WA (DPIRD) and National Variety Trials (NVT) programs, 2012–16.

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

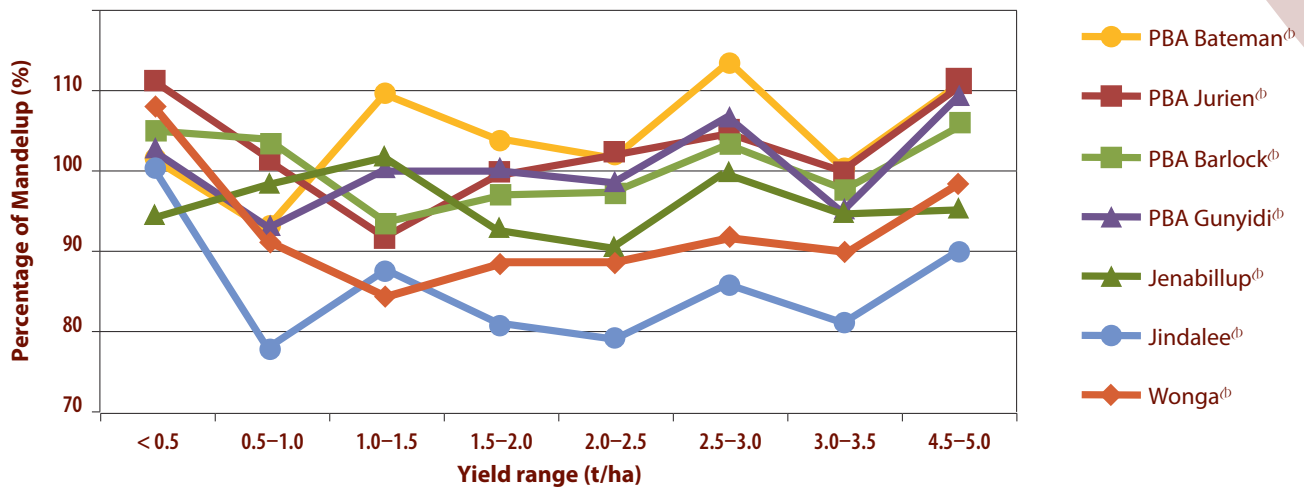
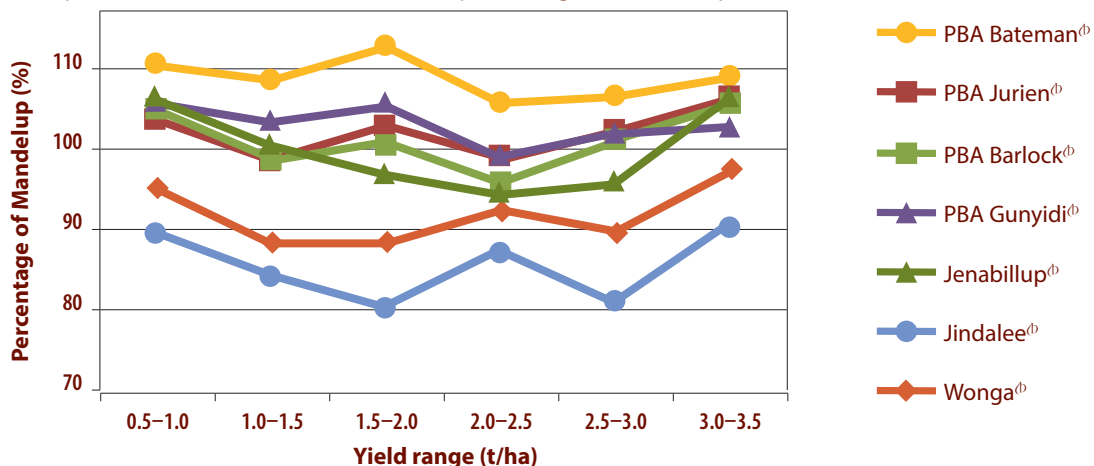


Figure 2: Relative performance of PBA Bateman[®] as a percentage of Mandelup[®] across SA sites of similar mean site yields



DISEASE MANAGEMENT

- Moderately resistant (MR) to anthracnose, similar to PBA Gunyidi[Ⓛ] and Mandelup[Ⓛ]. Seed dressings are still recommended to reduce the risk of seed borne infections in regions where the disease may be prevalent.
- Moderately resistant (MR) to phomopsis stem blight, similar to PBA Barlock[Ⓛ].
- Moderately susceptible (MS) to brown spot, similar to most other varieties. Lupin agronomic practices should be followed for this disease.
- Resistant (R) to grey spot.

Virus

- Moderately resistant (MR) to BYMV and Black Pod Syndrome (late infection BYMV), similar to or better than Jenabillup[Ⓛ].
- Moderately resistant/moderately susceptible (MRMS) to CMV seed transmission, better than PBA Jurien[Ⓛ], PBA Gunyidi[Ⓛ], Jenabillup[Ⓛ] and Mandelup[Ⓛ].

AGRONOMY

Agronomic characteristics

- PBA Bateman[Ⓛ] has similar agronomic characteristics when compared to PBA Jurien[Ⓛ], with flowering time similar to PBA Jurien[Ⓛ] and Mandelup[Ⓛ] and earlier than PBA Barlock[Ⓛ].
- PBA Bateman[Ⓛ] has a similar plant height to Mandelup[Ⓛ], being taller than PBA Barlock[Ⓛ].

Harvestability

- Harvest height is similar to Mandelup[Ⓛ], and is slightly taller than PBA Barlock[Ⓛ] and PBA Gunyidi[Ⓛ].
- Harvest grain loss risk is similar to that of PBA Barlock[Ⓛ], being similar to or slightly less resistant to pod shattering than Coromup[Ⓛ], but not as susceptible as Mandelup[Ⓛ].
- PBA Bateman[Ⓛ] is similar to Jenabillup[Ⓛ] with relatively good levels of resistance to lodging.

Herbicide tolerance

- PBA Bateman[Ⓛ] shows similar tolerance to metribuzin as PBA Jurien[Ⓛ], PBA Barlock[Ⓛ] and PBA Gunyidi[Ⓛ].

Plant disease resistance and plant traits of PBA Bateman[Ⓛ] in comparison to other Australian sweet lupin varieties

Variety	Brown spot	Phomopsis stem	Phomopsis pod	Anthracnose	GLS	CMV (seed)	BYMV	Aphid	Metribuzin	Pod shatter	Lodging
PBA Bateman [Ⓛ]	MS	MR	MR	MR	R	MRMS	MR	R	T	MRMS	MSMR
PBA Jurien [Ⓛ]	MS	R	MRMS	R	R	MS	MR	R	T	MRMS	MS
PBA Barlock [Ⓛ]	MS	MR	R	R	R	MR	MS	R	T	MRMS	MR
PBA Gunyidi [Ⓛ]	MS	R	MR	MR	S	MS	MS	R	T	MR	MR
Jenabillup [Ⓛ]	MRMS	MS	MR	S	R	MS	MR	R	IT	MS	MSMR
Mandelup [Ⓛ]	MS	R	MRMS	MR	R	MS	S	R	T	MS	MS
Wonga [Ⓛ]	MS	R	RMR	R	R	R	MS	R	IT	R	MR

Source: Agriculture and Food, DPIRD Western Australia and PBA Lupin Breeding Program, South Perth, WA, 2013–16.

M=moderately, S=susceptible, R=resistant, VT=very tolerant, T=tolerant, IT=intolerant; CMV = cucumber mosaic virus; BYMV = bean yellow mosaic virus; GLS = grey leaf spot.

PBA Bateman[Ⓛ]

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SEED QUALITY

PBA Bateman[Ⓛ] has medium to large seed, similar to Mandelup[Ⓛ] and the alkaloid content, on average, is similar to PBA Gunyidi[Ⓛ]. Alkaloid contents fluctuate across years, sites and seasonal conditions.

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

Variety	Seed weight	Seed protein	Seed alkaloid
PBA Bateman [Ⓛ]	103	100	59
PBA Jurien [Ⓛ]	101	101	99
PBA Barlock [Ⓛ]	93	96	99
PBA Gunyidi [Ⓛ]	89	101	89
Jenabillup [Ⓛ]	103	103	79
Wonga [Ⓛ]	92	98	104
Mandelup [Ⓛ]	142 mg	32.5%	0.017%

Source: Seed weight data is average of multiple sites and years in WA, SA and NSW 2013-15; Protein and alkaloid is percent As Received on whole seed basis from multiple sites in 2013-2015 (chemical analyses by ChemCentre, Bentley, WA).



PBA Bateman[Ⓛ]



PBA Jurien[Ⓛ]



PBA Barlock[Ⓛ]

BREEDING

PBA Bateman[Ⓛ] (tested as WALAN2533) was bred and progressed by Dr Bevan Buirchell, Dr Jon Clements, Dr Hua'an Yang, the Lupin Breeding technical team at Agriculture and Food, DPIRD, Western Australia and Mark Richards (NSW DPI). Valuable collaboration from pathologist Geoff Thomas (DPIRD), Amanda Pearce (PIRSA-SARDI) and Alan Meldrum (Pulse Australia) is acknowledged. PBA Bateman[Ⓛ] is from a 2007 cross (07A002-[F4]-3) between seed parent, WALAN2294, and pollen composite parent, (06A031, 06A032,



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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, DPIRD WA and Pulse Australia.

06A033). PBA Bateman[Ⓛ] is named after Batemans Bay, which is a town and bay in the South Coast region of the state of New South Wales, Australia. The town is adjacent to large lupin growing inland areas in NSW.

FOR MORE INFORMATION

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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

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