PBA Gunyidi®

Australian sweet lupin

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® and Coromup®)
- Resistant to anthracnose (equal to Tanjil®)
- Moderately resistant to phomopsis stem blight, (equal to Tanjil®)
- Early flowering and early maturity
- Quality parameters on average meet market requirements
- Susceptible to Grey Spot.

MAIN ADVANTAGES

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

SEED PROTECTION & ROYALTIES

PBA Gunyidi® is protected under Plant Breeder’s Rights (PBR) legislation. Growers can only retain seed from production of PBA Gunyidi® 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.
YIELD & ADAPTATION

Western Australia;

PBA Gunyidi\textsuperscript{a} 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).

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<td>100</td>
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<td>97</td>
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<td>95</td>
<td>87</td>
<td>91</td>
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New South Wales;

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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Northeast (4)</th>
<th>Northwest (6)</th>
<th>Southeast (15)</th>
<th>Southwest (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBA Gunyidi\textsuperscript{a}</td>
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<td>90</td>
<td>103</td>
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<tr>
<td>Coromup\textsuperscript{a}</td>
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<td>94</td>
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<td>108</td>
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<tr>
<td>Jindalee\textsuperscript{a}</td>
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<td>88</td>
<td>81</td>
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<td>Wonga\textsuperscript{a}</td>
<td>103</td>
<td>94</td>
<td>84</td>
<td>87</td>
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</tbody>
</table>

Victoria and South Australia;

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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Upper Eyre Pen (3)</th>
<th>Lower eyre Pen (7)</th>
<th>Mid North (2)</th>
<th>Southeast (12)</th>
<th>Murray mallee (2)</th>
<th>Vic. mallee (10)</th>
</tr>
</thead>
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<tr>
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<td>90</td>
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<tr>
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<td>98</td>
<td>98</td>
<td>81</td>
<td>89</td>
<td>75</td>
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</table>

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 to phomopsis stem blight is equivalent to Tanjil<sup>a</sup> and Mandelup<sup>a</sup>.
- Resistant to anthracnose, better than Mandelup<sup>a</sup>.
- 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<sup>a</sup> but not as good as Tanjil<sup>a</sup>.
- Intermediate resistance to late infection of BYMV is not as good as Jenabillup<sup>a</sup> and Quilinock<sup>a</sup> but better than all other varieties.
- Jenabillup<sup>a</sup> 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

<table>
<thead>
<tr>
<th>Variety</th>
<th>Lodging</th>
<th>Brown spot</th>
<th>Phomopsis (stem)</th>
<th>Anthracnose</th>
<th>Grey spot</th>
<th>CMV (seed)</th>
<th>BYMV</th>
<th>Aphid</th>
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<tbody>
<tr>
<td>PBA Gunyidi&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR</td>
<td>MS</td>
<td>R</td>
<td>MR/R</td>
<td>S</td>
<td>MR</td>
<td>MR/MS</td>
<td>R</td>
</tr>
<tr>
<td>Coromup&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR/MS</td>
<td>MS</td>
<td>R</td>
<td>MR</td>
<td>R</td>
<td>MR/R</td>
<td>MS</td>
<td>R</td>
</tr>
<tr>
<td>Jenabillup&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR/MS</td>
<td>MS</td>
<td>MR/MS</td>
<td>MS</td>
<td>R</td>
<td>-</td>
<td>MR</td>
<td>R</td>
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<tr>
<td>Jindalee&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>-</td>
<td>R</td>
<td>MS</td>
<td>R</td>
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<tr>
<td>Mandelup&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MS</td>
<td>MS</td>
<td>R</td>
<td>MR</td>
<td>R</td>
<td>MR</td>
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<tr>
<td>Quilinock&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR/MS</td>
<td>MS</td>
<td>MR</td>
<td>VS/S</td>
<td>R</td>
<td>MR</td>
<td>MR</td>
<td>MS</td>
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<td>Tanjil&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR</td>
<td>MS</td>
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<td>R</td>
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<tr>
<td>Wonga&lt;sup&gt;a&lt;/sup&gt;</td>
<td>MR</td>
<td>MS</td>
<td>MR</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>MS</td>
<td>R</td>
</tr>
</tbody>
</table>

Source: Pulse Breeding Australia South Perth, WA 2011

VS = very susceptible, S = susceptible, MS = moderately susceptible, MR = moderately resistant, R = resistant

## AGRONOMY
### Agronomic characteristics
- PBA Gunyidi<sup>a</sup> has many of the agronomic characteristics of Mandelup<sup>a</sup> and Tanjil<sup>a</sup>.
- PBA Gunyidi<sup>a</sup> is slightly later flowering and maturing than Mandelup<sup>a</sup>.
- Harvest height is equivalent to Quilinock<sup>a</sup> and is shorter than Mandelup<sup>a</sup>.
- Moderately resistant to lodging in high rainfall regions, equivalent of Belara.

### Harvestability
- Harvest grain loss risk is reduced with PBA Gunyidi<sup>a</sup> being more resistant to pod shattering than Mandelup<sup>a</sup>.

### Herbicide tolerance
- PBA Gunyidi<sup>a</sup> shows equivalent tolerance to all commonly used herbicides on lupins as Mandelup<sup>a</sup>.
- It is less tolerant to Eclipse and this herbicide should be used with care on PBA Gunyidi<sup>a</sup>.

## REFERENCE
Refer to detailed information at www.pulseaus.com.au

Ute guides, crop and disease management bulletins

Source: Department of Agriculture and Food WA 2010
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

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PBA Gunyidi
Australian sweet lupin

SEED QUALITY

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

Seed quality of PBA Gunyidi in comparison to other narrow-leafed lupin varieties as a percentage of Mandelup

<table>
<thead>
<tr>
<th>Variety</th>
<th>Seed weight</th>
<th>Seed protein</th>
<th>Seed alkaloid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandelup</td>
<td>142 mg</td>
<td>31.2 %</td>
<td>0.012 %</td>
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<tr>
<td>PBA Gunydi</td>
<td>90</td>
<td>104</td>
<td>100</td>
</tr>
<tr>
<td>Belara</td>
<td>99</td>
<td>99</td>
<td>75</td>
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<tr>
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<tr>
<td>Danja</td>
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<td>Jenabillup</td>
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<td>75</td>
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<tr>
<td>Mandelup</td>
<td>100</td>
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<td>Quillinock</td>
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<tr>
<td>Tanjil</td>
<td>89</td>
<td>105</td>
<td>117</td>
</tr>
</tbody>
</table>

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

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.