VARIETY MANAGEMENT PACKAGE

KOOKABURRA

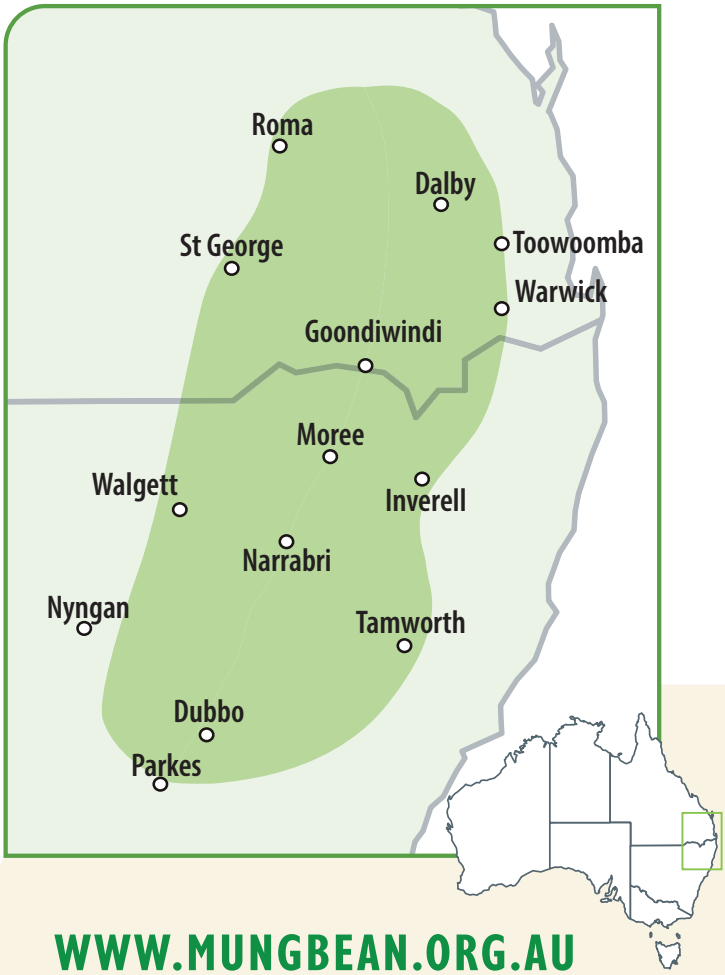
KEY FEATURES

- **Region-specific adaptation:** Well suited and consistently outyielding Jade-AU across NSW and Southern Queensland
- **Yield limitation:** Not suited for Central Queensland
- **Disease resistance:** Improved resistance to Halo Blight, Tan Spot and Powdery Mildew compared to Jade-AU
- **Plant structure:** Leafy, erect plant type with medium height
- **Durability:** Lodging and shattering resistant
- **Seed size:** Equal to Jade-AU

MAIN ADVANTAGES

- Best available resistance to Halo Blight and Powdery Mildew, equal to Opal-AU
- Outyields Opal-AU under natural Halo Blight disease pressure
- Improved Tan Spot resistance over Opal-AU
- Grain quality superior to Jade-AU
- Strong lower branching enhances lodging resistance under high yielding conditions

REGIONS OF ADAPTATION



Queensland Government

GRDC GRAINS RESEARCH & DEVELOPMENT CORPORATION

AUSTRALIAN MUNGBEAN ASSOCIATION

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APRIL 2025

DISEASE MANAGEMENT

Kookaburra offers the best combined disease resistance for Halo Blight, Tan Spot and Powdery Mildew across all available varieties. It is the world's first Halo Blight resistant variety with a large seed size. This strong disease profile contributes to yield stability.

DISEASE RESISTANCE RATINGS

Variety	*Halo Blight*	*Tan Spot*	*Powdery Mildew*
Kookaburra	**3.4**	**3.3**	**4.4**
Jade-AU	5.2	3.6	5.7
Brolga	4.6	3.6	5.5
Opal-AU	3.0	6.9	4.4
Crystal	5.7	3.1	6.0
Satin II (dull seeded)	6.4	3.7	5.4

Source: DPI National Mungbean Improvement Program (Analysed data 2020-2024) | Rating scale for all three diseases: 1=Resistant, 9=Susceptible | Halo Blight and Powdery Mildew data from field inoculated nurseries (2020-2024) | Tan Spot data from glasshouse inoculated trials (2023-2024) | For yield loss data under two cases of natural Halo Blight infection in breeding trials, refer to the yield tables | Kookaburra has no improved resistance to Fusarium Wilt and only Onyx-AU and Celera II-AU should be considered for infected paddock.

AGRONOMIC MANAGEMENT

Kookaburra has a leafy plant type with flowers and pods hidden until maturity, requiring careful insect mangement. It has a shorter plant height and a lowest pod height 3-7 cm lower than current varieties. At the 2024 Warra breeding trial, 320 mm of in-crop rainfall caused severe lodging, with Kookaburra's thick lower branching pattern significantly improving standability compared to other varieties.

SEED SIZE & AGRONOMIC TRAITS

Variety	*Seed Weight* per 100 seeds	*Days to Flowering*	*Days to Maturity*	*Plant Height*	*Lodging* [1] *Resistance* (Lodging score)	*Shattering* [2] *Resistance* (Shattering score)
Kookaburra	**7.4 g**	**41 days**	**74 days**	**54 cm**	**1.6**	**1.6**
Jade-AU	7.4 g	41 days	75 days	60 cm	2.0	1.8
Brolga	8.0 g	43 days	75 days	62 cm	1.7	1.7
Opal-AU	7.0 g	42 days	72 days	62 cm	2.2	1.2
Crystal	7.4 g	43 days	76 days	62 cm	1.5	1.5
Satin II (dull seeded)	7.2 g	43 days	73 days	59 cm	1.5	1.3

Source : DPI National Mungbean Improvement Program (raw data averages 2020-2024) | [1] Lodging Score: 1 = Fully erect, 9 = flat on ground, [2] Shattering Score: 1 = no seed expelled from mature pods, 9 = all seed expelled from mature pods. | Seed Weight (23 trials) DTF, DTM and Plant Height (18 trials), Lodging and Shattering (32 trials)

GRAIN YIELD

Kookaburra's yield has been evaluated in 31 trials conducted between 2020 and 2024. In Central and Southern Queensland, these trials span five seasons, with 13 and 11 trials, respectively. In NSW, seven trials cover three distinct seasonal conditions - 2021, 2022 and 2024.

Central NSW: Kookaburra is strongly recommended, outyielding Jade-AU by 12–18% and Opal-AU by 12–22% in non-diseased trials across 2022 and 2024. Kookaburra also provides added protection against Halo Blight in this region, outyielding Opal-AU (with the best available resistance) by 47% under disease pressure.

Northern NSW: Kookaburra did not outyield Jade-AU.

Southern Queensland: Kookaburra performed equal to or better than Jade-AU. It is a strong option in wetter seasons when the risk of Halo Blight is higher.

Central Queensland: Kookaburra is not recommended, as it has not outperformed Jade-AU in any of the 13 trials conducted across both low and high-yielding conditions.

YIELD TRIAL DATA

THREE SOUTHERN QUEENSLAND LOCATIONS 2020-2024 (YIELD AS A % OF JADE-AU)

Yield grouping	*Warra* *< 1 t/ha*	*Warra* *1-1.5 t/ha*	*Pampas* *1-1.5 t/ha*	*Warwick* *< 1 t/ha (Halo Blight)*[1]	*Warwick* *1-1.5 t/ha*	*Warwick* *> 1.5 t/ha*	*Warwick Irr* [2] *> 2 t/ha*
Mean yield of Jade-AU (t/ha)	**0.97**	**1.26**	**1.44**	**0.84**	**1.29**	**1.67**	**2.02**
*Number of trials**	2 *(S3, S2)*	1 *(S3)*	1 *(S1)*	1 *(S2)*	1 *(S2)*	4 *(S3s, S2, S1)*	*1 (S3)*
Years	2023	2022	2020	2021	2023	2023, 2024	2024
Kookaburra	**113**	**97**	**98**	**148**	**125**	**97**	**110**
Jade-AU	100	100	100	100	100	100	100
Brolga	98	123	100	128	125	97	95
Opal-AU	101	96	88	153	113	97	105
Crystal	103	92	84	93	106	97	99
Satin II (dull seeded)	107	103	86	110	113	97	99

*Source: DPI National Mungbean Improvement Program (Analysed MET (multi-environment trial) data from 11 trials and averaged within a yield grouping for each site) | * Breeding trial type in brackets: S3 = Stage 3 advanced yield trial, S2 = Stage 2 preliminary yield trial, S1 = Stage 1 initial yield trial | [1] = Natural disease infection at yield trial site | [2] = Irrigation trial*

TWO NEW SOUTH WALES LOCATIONS 2021, 2022 & 2024 (YIELD AS A % OF JADE-AU)

Yield grouping	*Northern NSW* *1-1.5 t/ha*	*Northern NSW* *> 1.5 t/ha*	*Liverpool Plains* *< 1 t/ha (Halo Blight)*[1]	*Liverpool Plains* *1-1.5 t/ha*	*Liverpool Plains* *> 1.5 t/ha*
Mean yield of Jade-AU (t/ha)	**1.19**	**1.56**	**0.81**	**1.27**	**1.56**
*Number of trials**	2 *(S3, S2)*	1 *(S3)*	1 *(S2)*	2 *(S3, S2)*	1 *(S3)*
Years	2024	2022	2021	2024	2022
Kookaburra	**97**	**96**	**172**	**112**	**118**
Jade-AU	100	100	100	100	100
Brolga	90	102	130	111	106
Opal-AU	100	93	125	100	96
Crystal	99	86	96	90	81
Satin II (dull seeded)	99	94	81	94	85

*Source: DPI National Mungbean Improvement Program (Analysed MET (multi-environment trial) data from 7 trials and averaged within a yield grouping for each site). Trials conducted by Kalyx | * Breeding trial type in brackets: S3 = Stage 3 advanced yield trial, S2 = Stage 2 preliminary yield trial, S1 = Stage 1 initial yield trial | [1] = Natural disease infection at yield trial site*

TWO CENTRAL QUEENSLAND LOCATIONS 2020-2024 (YIELD AS A % OF JADE-AU)

Yield grouping	*Emerald* *< 1 t/ha*	*Emerald* *1-1.5 t/ha*	*Emerald* *> 1.5 t/ha*	*Emerald Irr* [1] *1-1.5 t/ha*	*Dawson/Callide* *< 1 t/ha*	*Dawson/Callide* *1-1.5 t/ha*
Mean yield of Jade-AU (t/ha)	**0.95**	**1.28**	**1.87**	**1.46**	**0.88**	**1.36**
*Number of trials**	2 *(S3s)*	4 *(S2, S1)*	2 *(S2s)*	1 *(S3)*	2 *(S3,S2)*	2 *(S3, S2)*
Years	2022, 2023	2020, 2023, 2024	2021, 2024	2022	2023	2021, 2022
Kookaburra	**94**	**98**	**90**	**92**	**99**	**91**
Jade-AU	100	100	100	100	100	100
Brolga	103	105	97	101	98	104
Opal-AU	90	90	93	97	114	88
Crystal	87	88	86	91	89	88
Satin II (dull seeded)	99	97	90	88	103	100

*Source: DPI National Mungbean Improvement Program (Analysed MET (multi-environment trial) data from 13 trials and averaged within a yield grouping for each site) | * Breeding trial type in brackets: S3 = Stage 3 advanced yield trial, S2 = Stage 2 preliminary yield trial, S1 = Stage 1 initial yield trial | [1] = Irrigation trial*

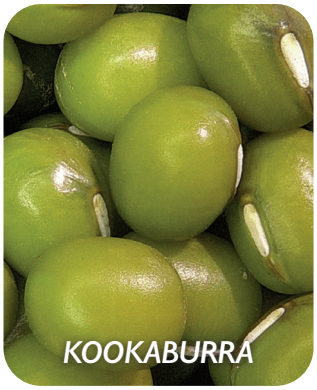
VARIETY MANAGEMENT PACKAGE

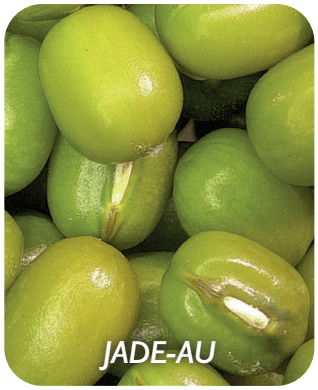
KOOKABURRA

MARKETING

Kookaburra seed size is similar to Jade-AU across 23 trials over five seasons.

Kookaburra has received positive feedback on seed quality from both domestic and international traders. Over three years of buyer evaluations, samples met a higher export grade than current check varieties in two of those years.





SEED QUALITY

To maintain genetic purity, high vigour, and minimise the risk of seed-borne diseases such as Tan Spot and Halo Blight, industry best practice recommends replacing planting seed every three seasons. These bacterial diseases can significantly impact yields.

AMA APPROVED SEED

Always purchase AMA Approved Seed, which is harvested from dedicated seed crops inspected to minimise the risk of seed-borne diseases. AMA Approved Seed is available from AMA Members or authorised seed resellers.

END POINT ROYALTIES

An $8/tonne end-point royalty (excluding retained seed) is payable to the Australian Mungbean Association, which distributes proceeds to QDPI and GRDC. These funds support the National Mungbean Improvement Program and AMA initiatives, including research, agronomy training, market access, quality standards, and industry promotion - driving ongoing industry growth.

BREEDING

Kookaburra (evaluated as M19259) was developed from a cross between two fixed breeding lines. One of Kookaburra's grandparents is also a parent of Opal-AU.

The National Mungbean Improvement Program is led by the Queensland Department of Primary Industries (DPI) in partnership with the Grains Research and Development Corporation (GRDC). The Australian Mungbean Association (AMA is the commercial partner).

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