



AUSTRALIAN PULSE VARIETIES

2021



Welcome to this definitive guide to Australian pulse varieties.

This guide provides details of the grain traits of all chickpea, faba bean, field pea, lentil, lupin and mungbean varieties grown in Australia, both current and past. This guide demonstrates the tremendous improvement in grain quality achieved by Australian pulse plant breeders over the past three decades.

Pulse Breeding Australia (PBA) was a world class Australian breeding program that delivered highly adapted chickpea, field pea, lentil, faba bean and lupin varieties to growers across Australia from 2006 to 2019. The breeding teams for each crop achieved higher yielding varieties with improved adaptation and disease resistance, while improving grain quality to match the requirements of our export markets. Following the closure of PBA, Grains Research and Development Corporation (GRDC) along with the lead agency involved in each PBA crop, remains committed to delivering improved, high value pulse varieties to Australian growers.

Chickpea Breeding Australia (CBA) is a joint venture with NSW Department of Primary Industries (NSW DPI) and GRDC, based at Tamworth, NSW. Lentil and field pea breeding is through Victorian Department of Jobs, Training and Regions at Horsham, with GRDC investment. Faba bean breeding is through Adelaide University (Southern Regions) and Sydney University (Northern Regions, Narrabri), with GRDC investment.

Grains Innovation Australia (GIA) a private company breeding lentils and field peas.

Plant breeders in the National Mungbean Improvement Program (NMIP) fulfil this role for mungbean varieties. The NMIP is a collaborative initiative between GRDC and Department of Agriculture and Fisheries (DAF), Queensland focusing on the delivery of superior mungbean varieties for Australian growers and superior quality for the marketplace.

Australian Grain Technologies (AGT) conducts commercial lupin breeding in Western Australia through germplasm licensing arrangements established with Department of Primary Industries and Regional Development (DPIRD) and GRDC in 2015.

The details provided in this publication for each pulse variety are:

- year of release
- seed weight, expressed as grams per 100 seeds
- seed coat colour (for lentils)
- seed shape (for lentils)
- primary production region (see map).

[Ⓛ] indicates that a variety is protected by Plant Breeder's Rights (PBR).

Pulse Australia welcomes feedback about the value and detail of the information provided in this guide. Contact details for Pulse Australia can be found on the website: www.pulseaus.com.au

Pulse Australia is the industry's peak body, operating across the entire supply chain. Pulse Australia's industry development managers provide advice and support regarding variety development, on-farm pulse production and the export of quality Australian pulse grain.

Pulse Australia receives financial support from the GRDC and many participants in the Australian pulse value chain. Their support underpins Pulse Australia's ability to drive continuous improvement in the profitability of the pulse grain industry in Australia.

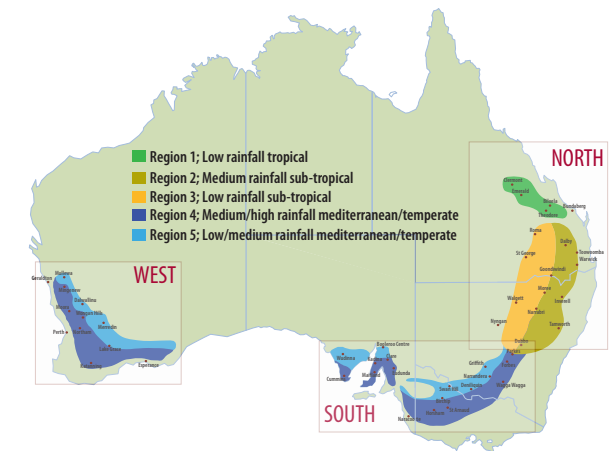
Regions of pulse variety production

Pulse variety production regions used in this publication are:

North – regions 1, 2 and 3 in Queensland and NSW

South – regions 4 and 5 in NSW, Victoria and South Australia

West – regions 4 and 5 in Western Australia



Acknowledgments

Pulse Australia would like to acknowledge the assistance of pulse breeders and their partner seed companies in the compilation of this publication.

Disclaimer

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Document prepared by Cindy Benjamin on behalf of Pulse Australia.

Version 1.1

AUSTRALIAN CHICKPEA



Very large kabuli chickpea (9–11 mm)



Kimberley Large[Ⓛ]

Released: 2008
Seed weight: 55–65 g/100
Production region: West (Ord)



Macarena

Released: 1984
Seed weight: 50–65 g/100
Production region: North (Central Queensland) and West (Ord)

Large kabuli chickpea (8–10 mm)



PBA Magnus[Ⓛ]

Released: 2020
Seed weight: 42–52 g/100
Production region: South and North



Kalkee

Released: 2012
Seed weight: 40–50 g/100
Production region: North and South



Nafice[Ⓛ]

Released: 2005
Seed weight: 40–50 g/100
Production region: South



Bumper[Ⓛ]

Released: 1998
Seed weight: 40–50 g/100
Production region: North

AUSTRALIAN CHICKPEA



Medium kabuli chickpea (7–9 mm)



PBA Royal⁽¹⁾
Released: 2019
Seed weight: 35–45 g/100
Production region: South and North



PBA Monarch⁽¹⁾
Released: 2013
Seed weight: 35–45 g/100
Production region: South and North



Genesis™ 114
Released: 2010
Seed weight: 35–45 g/100
Production region: North and South



Almaz⁽¹⁾
Released: 2005
Seed weight: 35–45 g/100
Production region: South



Kaniva
Released: 1980s
Seed weight: 35–45 g/100
Production region: South

Small kabuli chickpea (6–8 mm)



Genesis™ 079
Released: 2010
Seed weight: 20–30 g/100
Production region: South



Genesis™ 425
Released: 2006
Seed weight: 25–35 g/100
Production region: South



Genesis™ 090
Released: 2005
Seed weight: 25–35 g/100
Production region: South

AUSTRALIAN CHICKPEA

Medium desi chickpea



CBA Captain⁽¹⁾

Released: 2020
Seed weight: 20–22 g/100
Production region:
North, South and West



PBA Drummond⁽¹⁾

Released: 2018
Seed weight: 21–22 g/100
Production region: North
(Central Queensland)



PBA Seamer⁽¹⁾

Released: 2016
Seed weight: 22–23 g/100
Production region: North



PBA Maiden⁽¹⁾

Released: 2013
Seed weight: 21–25 g/100
Production region: South
and West



Ambar⁽¹⁾

Released: 2013
Seed weight: 16–20 g/100
Production region: West
and South



Neelam⁽¹⁾

Released: 2013
Seed weight: 16–20 g/100
Production region: West
and South



PBA Striker⁽¹⁾

Released: 2012
Seed weight: 21–23 g/100
Production region: South
and West



PBA Boundary⁽¹⁾

Released: 2011
Seed weight: 19–22 g/100
Production region: North



PBA Pistol⁽¹⁾

Released: 2011
Seed weight: 22–26 g/100
Production region: North
(Central Queensland)



PBA HatTrick⁽¹⁾

Released: 2009
Seed weight: 19–22 g/100
Production region: North



PBA Slasher⁽¹⁾

Released: 2009
Seed weight: 18–22 g/100
Production region: South and West



Genesis™ 836

Released: 2006
Seed weight: 16–20 g/100
Production region: West and
South



Kyabra⁽¹⁾

Released: 2005
Seed weight: 23–27 g/100
Production region: North



Moti⁽¹⁾

Released: 2003
Seed weight: 19–21 g/100
Production region: North
(Central Queensland)



Jimbour

Released: 2001
Seed weight: 19–21 g/100
Production region: North



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AUSTRALIAN CHICKPEA



Genesis™ 510

Released: 2008
Seed weight: 14–18 g/100
Production region: West



Genesis™ 509

Released: 2008
Seed weight: 14–18 g/100
Production region: South



Genesis™ 508

Released: 2005
Seed weight: 14–18 g/100
Production region: South

Small desi chickpea



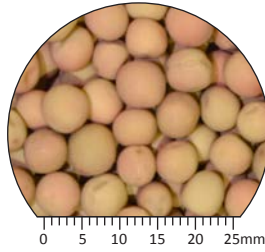
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AUSTRALIAN FIELD PEA



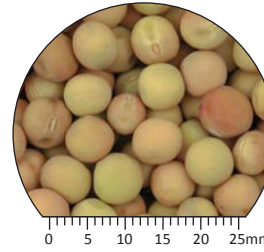
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Rounded (Kaspa type) dun field pea



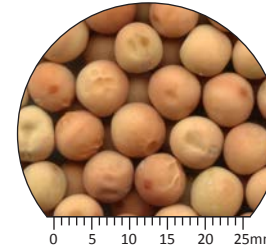
PBA Taylor^(d)

Released: 2021
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: West and South



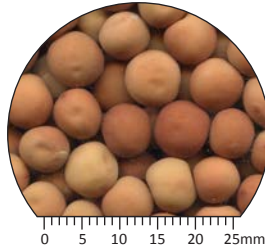
PBA Butler^(d)

Released: 2017
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: West, North and South



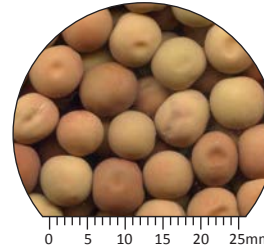
PBA Wharton^(d)

Released: 2013
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: South, West and North



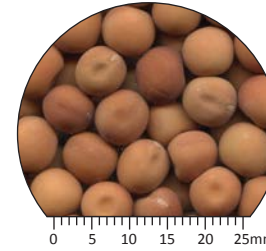
PBA Gunyah^(d)

Released: 2010
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: South and West



PBA Twilight^(d)

Released: 2010
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: South and West



Kaspa^(d)

Released: 2002
Seed weight: 20–26 g/100
Coat colour: pale brown
Production region: South and West

White field pea



PBA Pearl^(d)

Released: 2012
Seed weight: 20–26 g/100
Coat colour: white
Production region: South, West and North



SW Celine^(d)

Released: 2008
Seed weight: 20–27 g/100
Coat colour: white
Production region: South and North



Bundi

Released: 2007
Seed weight: 20–28 g/100
Coat colour: white
Production region: South



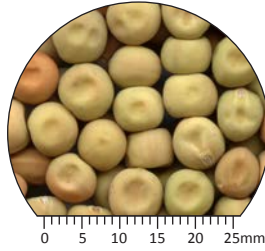
Sturt

Released: 2006
Seed weight: 17–24 g/100
Coat colour: white
Production region: South and North

AUSTRALIAN FIELD PEA

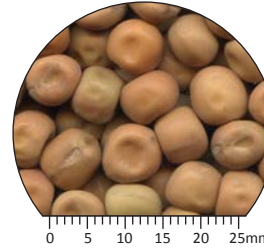


Dimpled dun field pea



PBA Coogee^(d)

Released: 2013
Seed weight: 22–27 g/100
Coat colour: brown-green
Production region: North



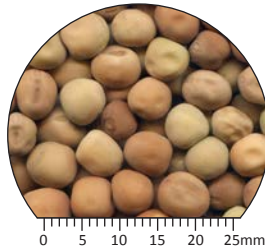
PBA Percy^(d)

Released: 2011
Seed weight: 20–26 g/100
Coat colour: brown-green
Production region: South and North



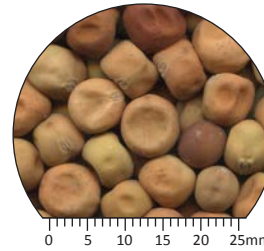
PBA Oura^(d)

Released: 2011
Seed weight: 18–25 g/100
Coat colour: brown-green
Production region: South and North



Yarrum

Released: 2004
Seed weight: 20–26 g/100
Coat colour: brown-green
Production region: North



Parafield

Released: 1999
Seed weight: 21–27 g/100
Coat colour: brown-green
Production region: South



Morgan^(d)

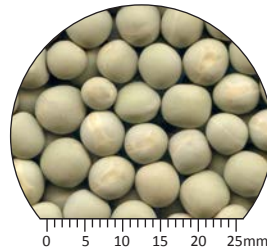
Released: 1998
Seed weight: 16–22 g/100
Coat colour: brown-green
Production region: South

Blue-seeded field pea



PBA Noosa^(d)

Released: 2021
Seed weight: 20–26 g/100
Coat colour: blue-green
Production region: South



Maki

Released: 2008
Seed weight: 20–26 g/100
Coat colour: blue-green
Production region: North



Excell

Released: 2000
Seed weight: 20–26 g/100
Coat colour: blue-green
Production region: South



Jupiter

Released: 1990s
Seed weight: 28–34 g/100
Coat colour: white
Production region: South

AUSTRALIAN LENTIL

Large green lentil



0 5 10 15 20 25mm

PBA Giant⁽¹⁾

Released: 2014
Seed weight: 6.5–7.5 g/100
Coat colour: green
Shape: lens
Production region: South



0 5 10 15 20 25mm

Boomer⁽¹⁾

Released: 2008
Seed weight: 6.0–7.0 g/100
Coat colour: green
Shape: lens
Production region: South

Medium green lentil



0 5 10 15 20 25mm

PBA Greenfield⁽¹⁾

Released: 2014
Seed weight: 5.0–6.0 g/100
Coat colour: green
Shape: lens
Production region: South

Large red lentil



0 5 10 15 20 25mm

PBA KelpieXT⁽¹⁾

Released: 2020
Seed weight: 4.2–5.1 g/100
Coat colour: grey
Shape: lens
Production region: South



0 5 10 15 20 25mm

PBA Jumbo2⁽¹⁾

Released: 2014
Seed weight: 4.5–5.5 g/100
Coat colour: grey
Shape: lens
Production region: South



0 5 10 15 20 25mm

PBA Jumbo⁽¹⁾

Released: 2010
Seed weight: 4.5–5.5 g/100
Coat colour: grey
Shape: lens
Production region: South



0 5 10 15 20 25mm

Aldinga

Released: 1993
Seed weight: 4.5–5.5 g/100
Coat colour: green
Shape: lens
Production region: South



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AUSTRALIAN LENTIL

Medium red lentil



GIA Leader^(d)

Released: 2021
Seed weight: 4.0–5.0 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Hallmark XT^(d)

Released: 2018
Seed weight: 3.6–4.6 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Bolt^(d)

Released: 2012
Seed weight: 4.0–5.0 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Ace^(d)

Released: 2012
Seed weight: 4.0–5.0 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Blitz^(d)

Released: 2010
Seed weight: 4.5–5.5 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Flash^(d)

Released: 2009
Seed weight: 4.0–5.0 g/100
Coat colour: green
Shape: lens
Production region: South



Nugget

Released: 1999
Seed weight: 3.8–4.8 g/100
Coat colour: grey
Shape: lens
Production region: South



Digger

Released: 1993
Seed weight: 3.5–4.5 g/100
Coat colour: grey
Shape: lens
Production region: South

Small red lentil



PBA HighlandXT^(d)

Released: 2019
Seed weight: 3.4–4.5 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA HurricaneXT^(d)

Released: 2013
Seed weight: 3.0–4.0 g/100
Coat colour: round
Shape: round
Production region: South



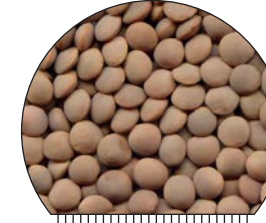
PBA Herald XT^(d)

Released: 2011
Seed weight: 2.5–3.5 g/100
Coat colour: grey
Shape: lens
Production region: South



PBA Bounty^(d)

Released: 2009
Seed weight: 3.0–4.0 g/100
Coat colour: grey
Shape: round
Production region: South



Nipper^(d)

Released: 2008
Seed weight: 2.5–3.5 g/100
Coat colour: grey
Shape: round
Production region: South



Northfield

Released: 1994
Seed weight: 2.5–3.5 g/100
Coat colour: tan
Shape: round
Production region: South

AUSTRALIAN FABA BEAN

Small faba bean



0 5 10 15 20 25mm

Doza^(b)

Released: 2008
Seed weight: 40–60 g/100
Production region: North

Medium faba bean



0 5 10 15 20 25mm

FBA Ayla^(b)

Released: 2021
Seed weight: 51–68 g/100
Production region: North



0 5 10 15 20 25mm

PBA Amberley^(b)

Released: 2019
Seed weight: 60–84 g/100
Production region: South and West



0 5 10 15 20 25mm

PBA Bendoc^(b)

Released: 2018
Seed weight: 50–72 g/100
Production region: South and West



0 5 10 15 20 25mm

PBA Marne^(b)

Released: 2018
Seed weight: 61–87 g/100
Production region: South and West



0 5 10 15 20 25mm

PBA Nanu^(b)

Released: 2018
Seed weight: 41–61 g/100
Production region: North



0 5 10 15 20 25mm

PBA Samira^(b)

Released: 2014
Seed weight: 55–75 g/100
Production region: South and West



0 5 10 15 20 25mm

PBA Warda^(b)

Released: 2012
Seed weight: 50–70 g/100
Production region: North



0 5 10 15 20 25mm

Nura^(b)

Released: 2006
Seed weight: 50–70 g/100
Production region: South and West



0 5 10 15 20 25mm

Cairo^(b)

Released: 2004
Seed weight: 50–70 g/100
Production region: North



0 5 10 15 20 25mm

Farah^(b)

Released: 2004
Seed weight: 55–75 g/100
Production region: South and West



0 5 10 15 20 25mm

Fiesta VF

Released: 1998
Seed weight: 55–75 g/100
Production region: South



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AUSTRALIAN FABA BEAN

Large faba bean



PBA Nasma[®]

Released: 2015
Seed weight: 61–79 g/100
Production region: North



PBA Zahra[®]

Released: 2015
Seed weight: 62–86 g/100
Production region: South



PBA Rana[®]

Released: 2011
Seed weight: 65–85 g/100
Production region: South

Broad bean



PBA Kareema[®]

Released: 2009
Seed weight: 130–170 g/100
Production region: South



Aquadulce

Released: 1980s
Seed weight: 110–150 g/100
Production region: South

AUSTRALIAN LUPIN



Australian sweet lupin



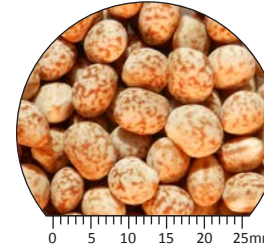
Coyote^(d)

Released: 2019
Seed weight: 11–18 g/100
Production region:
West and South



PBA Bateman^(d)

Released: 2017
Seed weight: 14 g/100
Production region: North and
South



PBA Leeman^(d)

Released: 2017
Seed weight: 14–15 g/100
Production region: West



PBA Jurien^(d)

Released: 2015
Seed weight: 10–17 g/100
Production region: West
and South



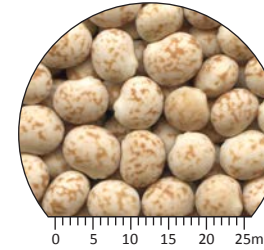
PBA Barlock^(d)

Released: 2013
Seed weight: 10–16 g/100
Production region: West
and South



PBA Gunyidi^(d)

Released: 2011
Seed weight: 10–16 g/100
Production region: West
and South



Jenabillup^(d)

Released: 2007
Seed weight: 9–17 g/100
Production region: West
and South



Coromup^(d)

Released: 2006
Seed weight: 10–18 g/100
Production region: West
and South



Mandelup^(d)

Released: 2005
Seed weight: 9–17 g/100
Production region: West
and South



Jindalee

Released: 2001
Seed weight: 8–14 g/100
Production region: South



Quilnock^(d)

Released: 2001
Seed weight: 9–17 g/100
Production region: West



Tanjil^(d)

Released: 1999
Seed weight: 8–14 g/100
Production region: West



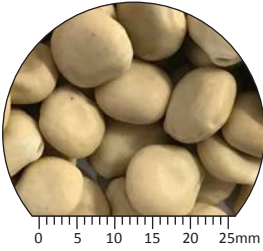
Wonga^(d)

Released: 1998
Seed weight: 8–14 g/100
Production region: West
and South

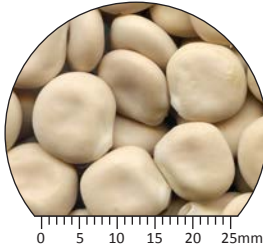
AUSTRALIAN LUPIN



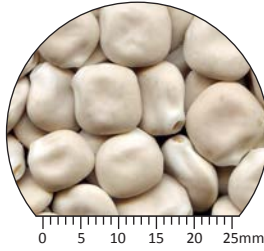
Australian albus lupin



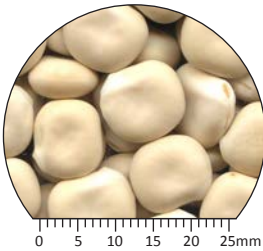
Murringo^(d)
Released: 2017
Seed weight: 23–42 g/100
Production region: South



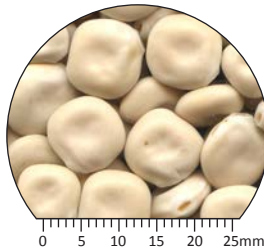
Amira^(d)
Released: 2012
Seed weight: 22–42 g/100
Production region: West



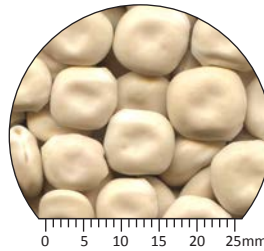
Andromeda^(d)
Released: 2005
Seed weight: 21–40 g/100
Production region: West



Luxor^(d)
Released: 2005
Seed weight: 23–42 g/100
Production region: South



Rosetta
Released: 2005
Seed weight: 23–43 g/100
Production region: South

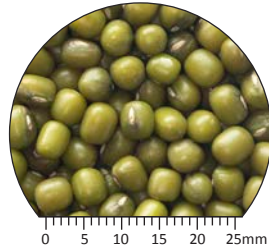


Kiev Mutant
Released: 1970s
Seed weight: 23–44 g/100
Production region: South

AUSTRALIAN MUNGBEAN



Large-seeded shiny green mungbean



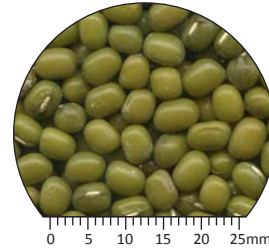
Opal-AU⁽¹⁾

Released: 2020
Seed weight: 6.2–8.2 g/100
Coat colour: shiny green
Production region: North



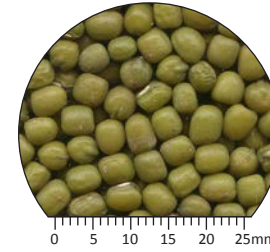
Jade-AU⁽¹⁾

Released: 2013
Seed weight: 6.4–9.3 g/100
Coat colour: shiny green
Production region: North



Crystal⁽¹⁾

Released: 2008
Seed weight: 6.0–9.2 g/100
Coat colour: shiny green
Production region: North



Berken

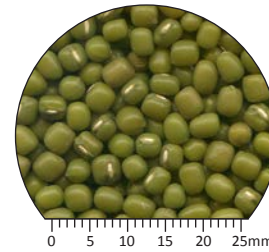
Released: 1975
Seed weight: 5.4–9.2 g/100
Coat colour: shiny green
Production region: North

Small-seeded shiny green mungbean



Celera II-AU⁽¹⁾

Released: 2014
Seed weight: 3.2–5.2 g/100
Coat colour: shiny green
Production region: North



Green Diamond⁽¹⁾

Released: 1997
Seed weight: 3.2–4.6 g/100
Coat colour: shiny green
Production region: North

Black gram (Mungo)



Onyx-AU⁽¹⁾

Released: 2017
Seed weight: ≈ 6.0 g/100
Coat colour: black
Production region: North



Regur

Released: 1975
Seed weight: 5.4–5.6 g/100
Coat colour: black
Production region: North

Large-seeded dull green mungbean



Satin II⁽¹⁾

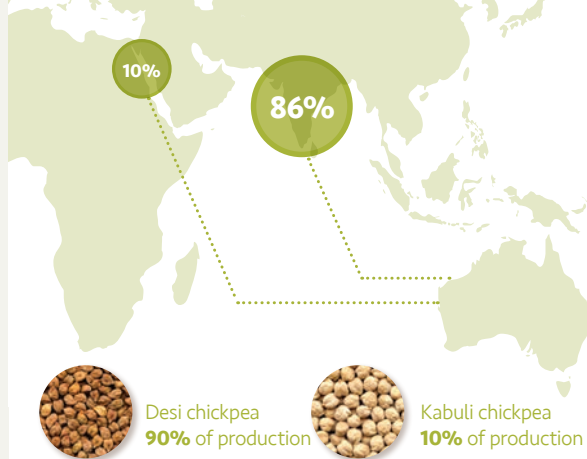
Released 2008
Seed weight: 5.8–9.0 g/100
Coat colour: dull green
Production region: North

THE AUSTRALIAN INDUSTRY

Chickpea



Australian Export Market



5 year average exported
915,100 tonnes

Export value
\$820 million

95% exported
Other destinations include
Asia, North America & Europe

Australia is the world's
largest exporter of desi chickpea

Breeding Objectives



Superior marketing qualities include:

Superior seed coat colour

High splitting efficiency



Chickpea breeders aim to increase high quality chickpea production through:

- Specific adaptation to agro-climatic regions
- Improved agronomics & yield potential
- Improved disease resistance



Large & uniform seed size

© 2021 Pulse Australia Limited. 5-year average based on 2016/17-2020/21 export data

THE AUSTRALIAN INDUSTRY

Faba Bean



Australian Export Market



5 year average exported
364,300 tonnes

Export value
\$215 million

92% exported
Major destinations are the
Middle East & North Africa

Australia is the world's
leading exporter of faba bean

Breeding Objectives



Superior marketing qualities include:

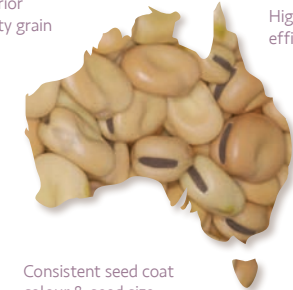
Superior quality grain

High splitting efficiency



Faba bean breeders aim to increase high quality faba bean production through:

- Regional adaptation
- High yielding
- Improved disease resistance
- Enhanced agronomic traits



Consistent seed coat colour & seed size

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Field Pea



Australian Export Market



5 year average exported
122,200 tonnes

Export value
\$61 million

50% exported

Other destinations include Africa, Pacific & Europe

Australia is the world's **leading exporter of dun type field pea**



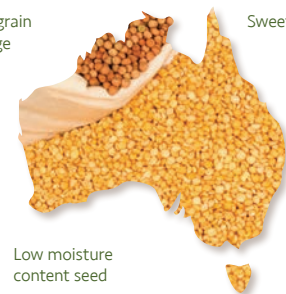
Breeding Objectives



Superior marketing qualities include:

Long grain storage

Sweet tasting



Low moisture content seed

Field pea breeders aim to increase high quality field pea production through:

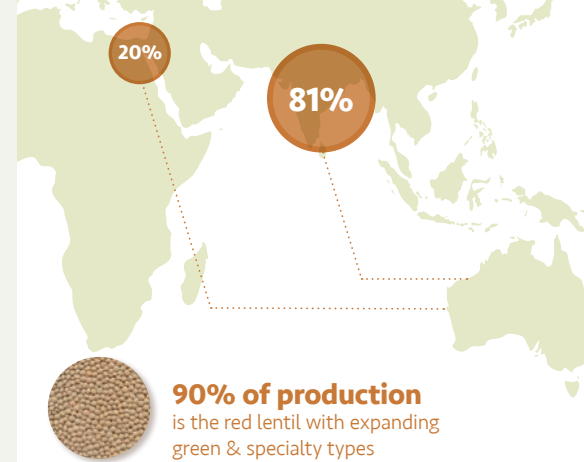
- Regional adaptation
- High yielding
- Improved disease resistance
- Enhanced agronomic traits

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Lentil



Australian Export Market



5 year average exported
619,800 tonnes

Export value
\$437 million

95% exported

Other destinations include Africa, Asia & Europe

Indian subcontinent is the largest importer of **Australian red lentil**



Breeding Objectives



Superior marketing qualities include:

Bright seed colour & high quality

Fast & consistent cooking time



Uniform seed size & splitting

Lentil breeders aim to increase high quality red & green lentil varieties production through:

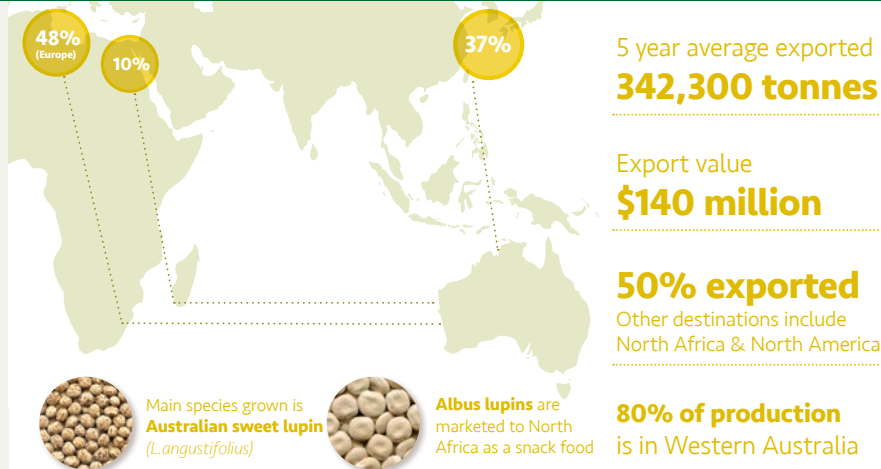
- Improved yield potential & regional adaptation
- Improved disease resistance & tolerance to toxic levels of salt & boron
- Red lentils are bred for consistent grey seed coat colour

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Lupin



Australian Export Market



Breeding Objectives



Lupin breeders aim to increase high quality sweet lupin varieties production through:

- Improved yield potential & herbicide tolerance
- Improved dehulling efficiency



Superior marketing qualities include:

High protein content

Low toxins (*phomopsis*)



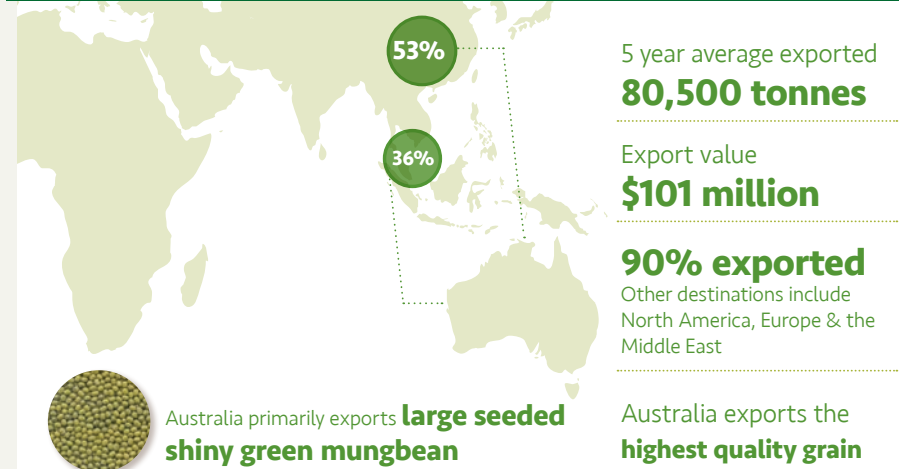
Low alkaloid (bitterness)

© 2021 Pulse Australia Limited. 5-year average based on 2016/17-2020/21 export data

Mungbean



Australian Export Market



Breeding Objectives



Superior marketing qualities include:

Shiny green coat

Uniform seed size

Mungbean breeders aim to maximise productivity & quality in Australian dryland & irrigation farming systems:

- High yielding
- Uniformity of flowering & maturity
- Disease resistance & plant architecture



Highest level of food safety

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