



AUSTRALIAN PULSE VARIETIES

2020



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 investment in PBA, GRDC along with the lead agency involved in each PBA crop remain committed to delivering improved, high value pulse varieties to Australian growers.

Plant breeders in the National Mungbean Improvement Program (NMIP) fulfil this role for mungbean varieties. The NMIP is a collaborative initiative between Grains Research and Development Corporation (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's industry development managers 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.

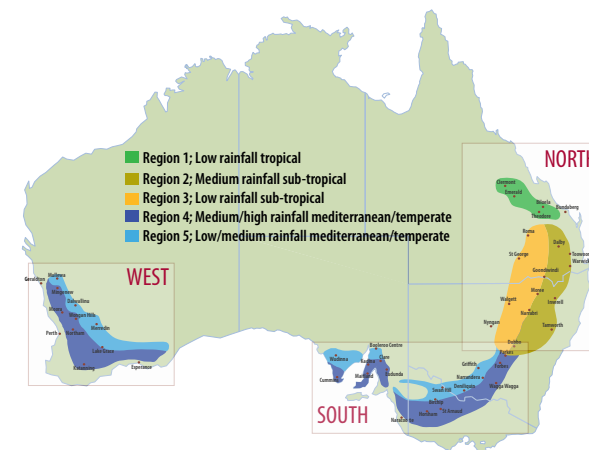
Regions of pulse variety production

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 4



AUSTRALIAN CHICKPEA



Very large kabuli chickpea (9–11 mm)



0 5 10 15 20 25mm

Kimberley Large[Ⓛ]

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



0 5 10 15 20 25mm

Macarena

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

Large kabuli chickpea (8–10 mm)



0 5 10 15 20 25mm

PBA Magnus[Ⓛ]

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



0 5 10 15 20 25mm

Kalkee

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



0 5 10 15 20 25mm

Nafice[Ⓛ]

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



0 5 10 15 20 25mm

Bumper[Ⓛ]

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

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



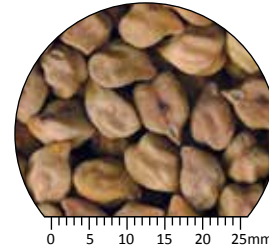
CBA Captain⁽¹⁾

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)



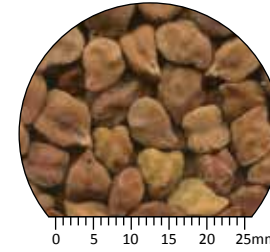
PBA Seamer⁽¹⁾

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



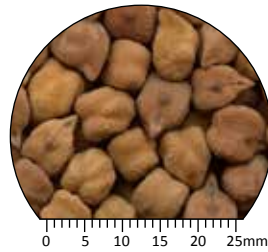
Ambar⁽¹⁾

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)



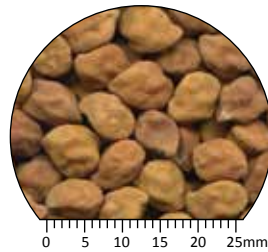
PBA HatTrick⁽¹⁾

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

AUSTRALIAN CHICKPEA

Small desi 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



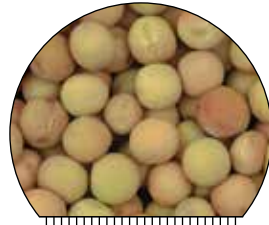
Genesis™ 508

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

AUSTRALIAN FIELD PEA

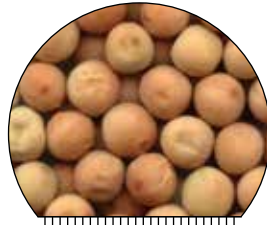


Rounded (Kaspa type) dun field pea



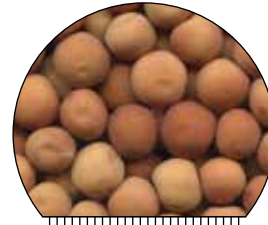
PBA Butler⁽¹⁾

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



PBA Wharton⁽¹⁾

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



PBA Gunyah⁽¹⁾

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



PBA Twilight⁽¹⁾

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



Kaspa⁽¹⁾

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

Dimpled dun field pea



PBA Coogee⁽¹⁾

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



PBA Percy⁽¹⁾

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



PBA Oura⁽¹⁾

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⁽¹⁾

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

AUSTRALIAN FIELD PEA



White field pea



PBA Pearl^(b)

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



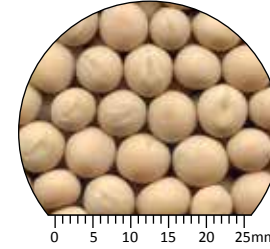
SW Celine^(b)

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

Blue-seeded field pea



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



PBA Hallmark XT^(b)

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



PBA Bolt^(b)

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



PBA Ace^(b)

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



PBA Blitz^(b)

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



PBA Flash^(b)

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^(b)

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



PBA HurricaneXT^(b)

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



PBA Herald XT^(b)

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



PBA Bounty^(b)

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



Nipper^(b)

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

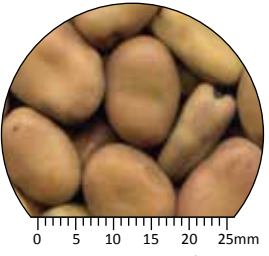


Northfield

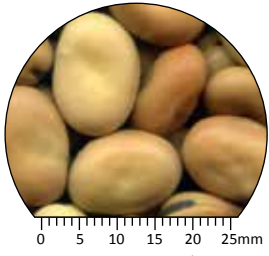
Released: 1994
Seed weight: 2.5–3.5 g/100
Coat colour: tan
Shape: round
Production region: South

AUSTRALIAN FABA BEAN

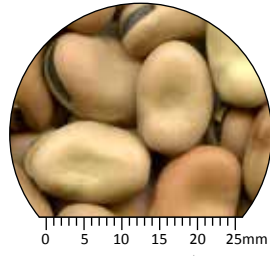
Large faba bean



PBA Nasma^(b)
Released: 2015
Seed weight: 61–79 g/100
Production region: North

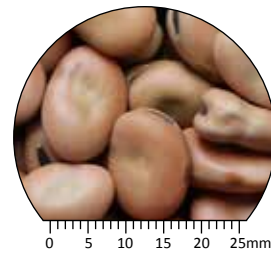


PBA Zahra^(b)
Released: 2015
Seed weight: 62–86 g/100
Production region: South



PBA Rana^(b)
Released: 2011
Seed weight: 65–85 g/100
Production region: South

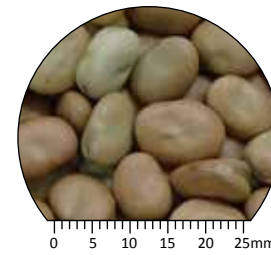
Medium faba bean



PBA Amberley^(b)
Released: 2019
Seed weight: 60–84 g/100
Production region: South and West



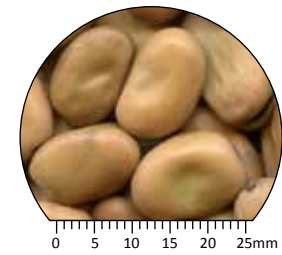
PBA Bendoc^(b)
Released: 2018
Seed weight: 50–72 g/100
Production region: South and West



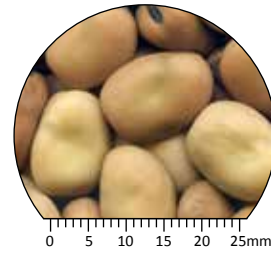
PBA Marne^(b)
Released: 2018
Seed weight: 61–87 g/100
Production region: South and West



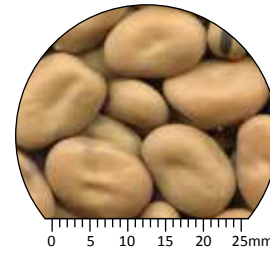
PBA Nanu^(b)
Released: 2018
Seed weight: 41–61 g/100
Production region: North



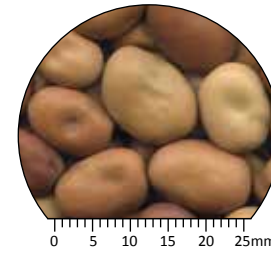
PBA Samira^(b)
Released: 2014
Seed weight: 55–75 g/100
Production region: South and West



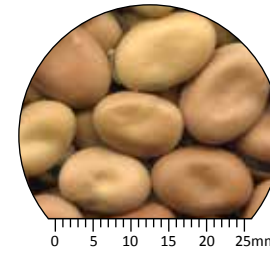
PBA Warda^(b)
Released: 2012
Seed weight: 50–70 g/100
Production region: North



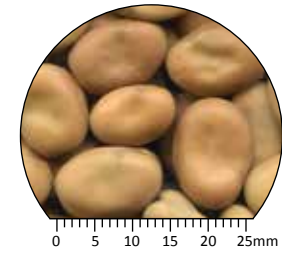
Nura^(b)
Released: 2006
Seed weight: 50–70 g/100
Production region: South and West



Cairo^(b)
Released: 2004
Seed weight: 50–70 g/100
Production region: North



Farah^(b)
Released: 2004
Seed weight: 55–75 g/100
Production region: South and West

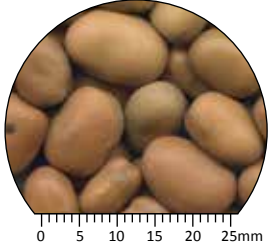


Fiesta VF
Released: 1998
Seed weight: 55–75 g/100
Production region: South

**AUSTRALIAN
FABA BEAN**



Small faba bean



Doza[®]
Released: 2008
Seed weight: 40–60 g/100
Production region: North

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⁽¹⁾

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



PBA Bateman⁽¹⁾

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



PBA Leeman⁽¹⁾

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



PBA Jurien⁽¹⁾

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



PBA Barlock⁽¹⁾

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



PBA Gunyidi⁽¹⁾

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



Jenabillup⁽¹⁾

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



Coromup⁽¹⁾

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



Mandelup⁽¹⁾

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⁽¹⁾

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



Tanjil⁽¹⁾

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



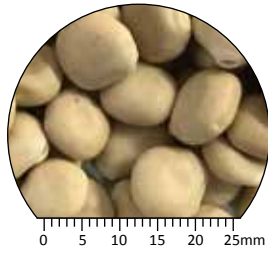
Wonga⁽¹⁾

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

AUSTRALIAN LUPIN

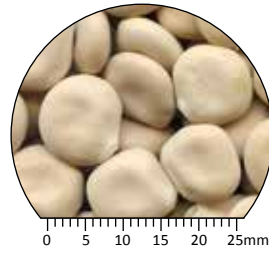


Australian albus lupin



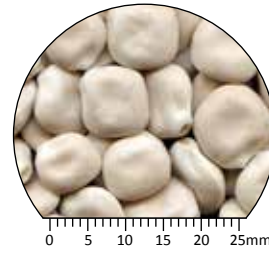
PBA Murringo⁽¹⁾

Released: 2017
Seed weight: 23–42 g/100
Production region: South



Amira⁽¹⁾

Released: 2012
Seed weight: 22–42 g/100
Production region: West



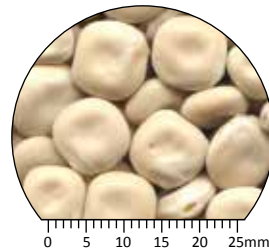
Andromeda⁽¹⁾

Released: 2005
Seed weight: 21–40 g/100
Production region: West



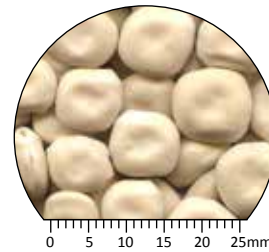
Luxor⁽¹⁾

Released: 2005
Seed weight: 23–42 g/100
Production region: South



Rosetta

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



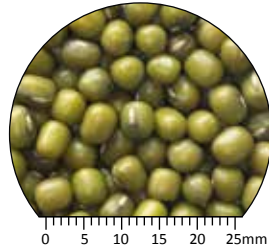
Kiev Mutant

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



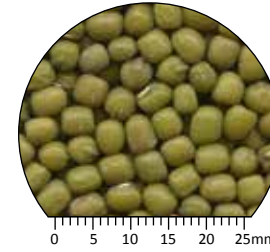
Jade-AU⁽¹⁾

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

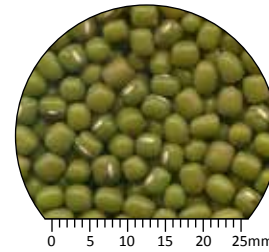
Released: 1975
Seed weight: 5.4–9.2 g/100
Coat colour: shiny green
Production region: North

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⁾

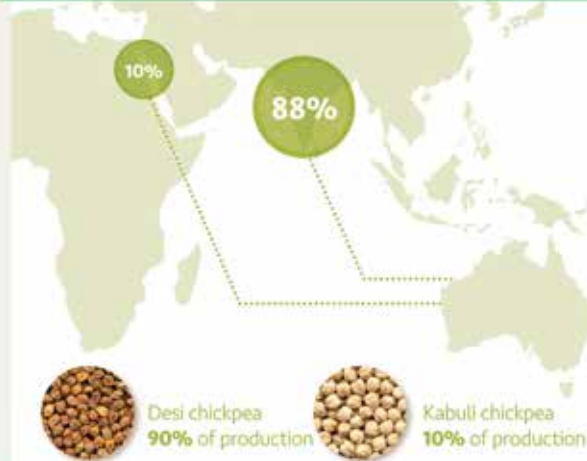
Released 2008
Seed weight: 5.8–9.0 g/100
Coat colour: dull green
Production region: North

THE AUSTRALIAN INDUSTRY

Chickpea



Australian Export Market



5 year average exported
991,000 tonnes

Export value
\$914 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:



Pulse Breeding Australia (PBA) aims to increase high quality chickpea production through:

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



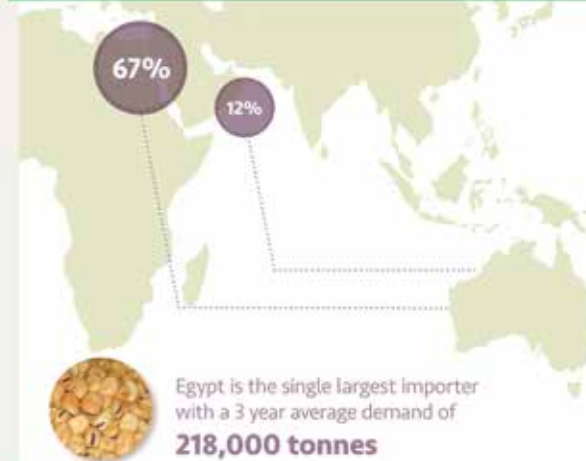
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Faba Bean



Australian Export Market



5 year average exported
318,000 tonnes

Export value
\$199 million

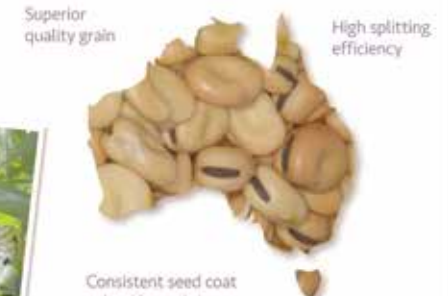
92% exported
Major destinations are the
Middle East & North Africa

Australia is the world's
leading exporter of faba bean

Breeding Objectives



Superior marketing qualities include:



Pulse Breeding Australia (PBA) aims to increase high quality faba bean production through:

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

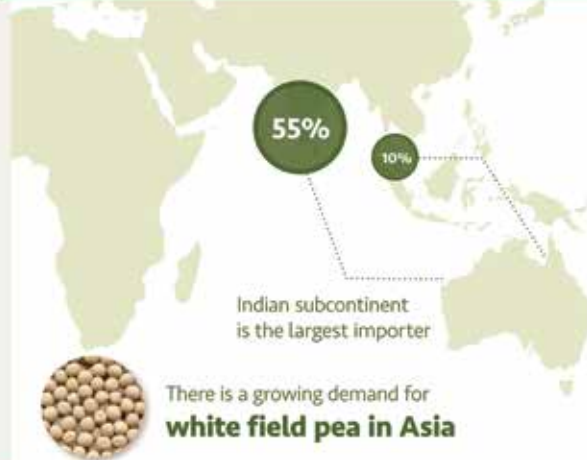


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Field Pea



Australian Export Market



5 year average exported
133,000 tonnes

Export value
\$70 million

50% exported
Other destinations include
Africa, Pacific & Europe

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

Breeding Objectives



Pulse Breeding Australia (PBA) aims to increase high quality field pea production through:

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



Superior marketing qualities include:

Long grain storage

Sweet tasting



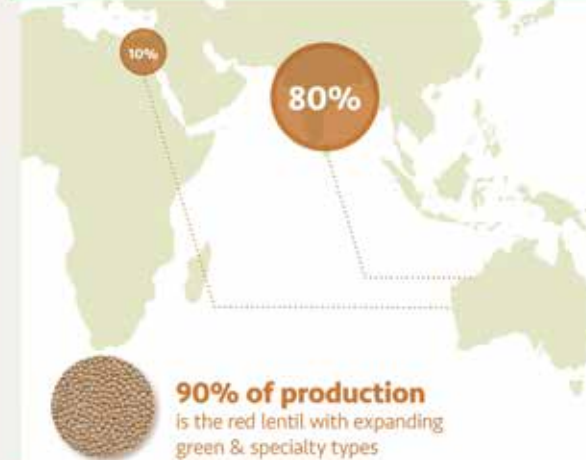
Low moisture content seed



Lentil



Australian Export Market



5 year average exported
507,000 tonnes

Export value
\$375 million

95% exported
Other destinations include
Africa, Asia & Europe

Indian subcontinent is the largest importer of
Australian red lentil

Breeding Objectives



Pulse Breeding Australia (PBA) aims 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



Superior marketing qualities include:

Bright seed colour & high quality

Fast & consistent cooking time



Uniform seed size & splitting



THE AUSTRALIAN INDUSTRY

Lupin



Australian Export Market



5 year average exported **284,000 tonnes**

Export value **\$112 million**

50% exported
Other destinations include North Africa & North America



Main species grown is **Australian sweet lupin** (*L. albus*)



Albus lupins are marketed to North Africa as a snack food

80% of production is in Western Australia

Breeding Objectives



Superior marketing qualities include:

High protein content

Low toxins (glucosinoid)



Low alkaloid (bitterness)

Pulse Breeding Australia (PBA) aims to increase high quality sweet lupin varieties production through:

- Improved yield potential & herbicide tolerance
- Improved dehulling efficiency



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Mungbean



Australian Export Market



5 year average exported **90,000 tonnes**

Export value **\$118 million**

90% exported
Other destinations include North America, Europe & the Middle East



Australia primarily exports **large seeded shiny green mungbean**

Australia exports the **highest quality grain**

Breeding Objectives



Superior marketing qualities include:

Shiny green coat

Uniform seed size



Highest level of food safety

Australian Mungbean Association (AMA) aims to maximise productivity & quality in Australian dryland & irrigation farming systems:

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



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