

PBA Warda[®]

Faba bean



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Improved quality & disease resistance



MAIN ADVANTAGES

PBA Warda[®] has a larger seed than Doza[®], almost similar in size to Cairo[®]. Its uniform seed size and colour is superior to that of Cairo[®], making it acceptable in the human consumption market.

PBA Warda[®] is well adapted to northern NSW where it has out-yielded Doza[®] by at least 5% in both rainfed and irrigated trials.

It has an equivalent level of rust resistance to Doza[®] with a higher level of tolerance to bean leafroll virus (BLRV).

SEED PROTECTION & ROYALTIES

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

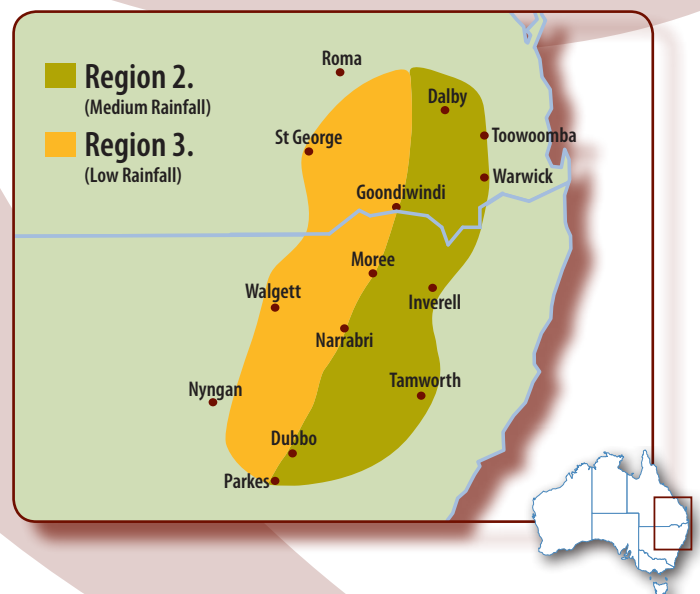
An End Point Royalty (EPR) of \$3.85 per tonne (GST inclusive), which includes breeder royalties, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.

KEY FEATURES

- Yield is superior to all currently grown faba bean varieties in northern NSW and southern Qld
- Suggested replacement of Doza[®] and Cairo[®]
- Moderately resistant/resistant to rust (equivalent to Doza[®])
- Higher level of tolerance to bean leafroll virus (BLRV) than Doza[®]
- Similar flowering and maturity time to Doza[®]
- Bigger and more uniform seed size than Doza[®]

AREA OF ADAPTATION



YIELD & ADAPTATION

- PBA Warda[®] is an early flowering and maturing variety, similar to Doza[®]. It is well adapted to the growing season in northern NSW and southern Queensland.
- Extensive yield evaluation of PBA Warda[®] in northern NSW, both within PBA trial sites and the National Variety Testing (NVT) sites, shows that its yield is at least 5% greater than Doza[®]. This yield advantage has been obtained in both rainfed and irrigated trials.
- PBA Warda[®] is suggested as a replacement for Doza[®] and Cairo[®] in northern NSW and southern Queensland.
- It is moderately resistant/resistant to rust, the major fungal disease in the target production zone.
- It is moderately susceptible to chocolate spot and its higher level of tolerance to bean leafroll virus (BLRV) than Doza[®] will benefit growers where BLRV is a problem.
- PBA Warda[®] is susceptible to Ascochyta blight, but so far this is not considered to be a major disease in northern NSW.
- PBA Warda[®] is not recommended for southern NSW where Ascochyta blight and chocolate spot are significant diseases.

Long term (2004-2011) yield of faba bean varieties in northern New South Wales

(yields expressed as % Doza[®])

Variety	North/East New South Wales	Number of trials	North/West New South Wales	Number of trials	Overall yields	Total number of trials
PBA Warda [®]	105	18	106	26	105	44
Cairo	97	23	96	40	97	63
Fiesta VF	101	22	100	39	100	61
Fiord	94	23	92	39	93	62
Doza [®] (t/ha)	2.97	(22)	2.26	(38)	2.62	(60)

Source: Trial results from Pulse Breeding Australia (PBA)

Agronomic features and disease rating of faba bean varieties in northern New South Wales

Variety	Plant height	Flower time	Maturity	Lodging resistance	Rust	Chocolate spot	BLRV
PBA Warda [®]	Medium	Early	Early	MR	MR-R	MS	MT
Cairo	Tall	Mid/Late	Mid/Late	MS	MS	VS	S
Doza [®]	Medium	Early	Early	MR	MR-R	MS	MT
Fiesta VF	Medium	Mid/Late	Mid/Late	MS	S	S	S
Fiord	Medium	Mid	Mid	MR/MS	S	VS	S

Source: Pulse Breeding Australia (PBA) trials program 2004-2011

R = Resistant, MR = Moderately Resistant, MT = Moderately Tolerant, MS = Moderately Susceptible, S = Susceptible, VS = Very Susceptible

DISEASE MANAGEMENT

Rust

- PBA Warda[®] is moderately resistant / resistant to faba bean rust, equivalent to Doza[®].
- Similar to all faba bean varieties there is a certain level of heterogeneity in PBA Warda[®]. A small proportion of moderately susceptible plants for faba bean rust will be found under high disease pressure in PBA Warda[®].
- For the targeted region of northern NSW and southern Qld, this level of resistance will provide adequate protection against rust and there will be no or minimal yield loss in most seasons.
- However, foliar fungicide application may be required if the rust appears early in the season followed by warm and frequent rain events.

Chocolate spot

- PBA Warda[®] is moderately susceptible to chocolate spot, but this disease is generally not a problem in northern NSW.
- However, it can be a problem in wet and humid years.
- Effective crop monitoring is required to determine if chocolate spot is present. If the disease is detected apply Mancozeb at the recommended rate. This will minimise the pressure of chocolate spot as well as rust. Carbendazim is more active against chocolate spot and preferable with high chocolate spot pressure, but will not control rust.



Chocolate spot on susceptible variety.

Ascochyta blight

- Currently Ascochyta blight is not a problem in northern NSW on faba beans and PBA Warda[®] is susceptible to the disease, similar to Cairo[®] and Doza[®].

Bean leafroll virus (BLRV)

- PBA Warda[®] is tolerant to bean leafroll virus (BLRV): Good yield has been obtained in the presence of severe BLRV pressure.
- It has a higher level of tolerance to BLRV than Doza[®].



Faba bean rust on susceptible variety.

AGRONOMY

Plant characteristics

Growing PBA Warda[®] requires no adjustment to agronomic practices currently being used for other faba bean varieties. Paddock selection and basic cultural practices are similar to other faba bean varieties.

- Flowering and maturity time is similar to Doza[®] and 5-6 days earlier than Cairo[®].
- Medium plant height and shorter than Cairo[®].
- Lodging resistance is better than Cairo[®].
- PBA Warda[®] can withstand mild frost at vegetative stage similar to Doza[®], but not at reproductive stage.
- Combination of rust resistance and BLRV tolerance will make PBA Warda[®] a reliable faba bean variety for northern NSW and southern Queensland.

Sowing

- Early sowing is recommended to achieve maximum yield potential.
- Sowing later than mid May in northern NSW is likely to cause reduction in yield.
- Seeding rate similar to other faba bean varieties should be maintained. Aim to achieve 15-20 plants/m².
- Inoculation with the commercial faba bean Rhizobium Group F is essential for proper nodulation.

Herbicide tolerance

- PBA Warda[®] has been extensively tested in plant breeding trials and NVT with the application of recommended herbicides and no specific adverse reactions have been observed in these trials.
- Limited herbicide testing has shown that PBA Warda[®] has no increased sensitivity to any of the recommended herbicides over commonly grown faba bean varieties.

REFER TO DETAILED INFORMATION AT www.pulseaus.com.au
Ute guides, crop and disease management bulletins

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SEED QUALITY

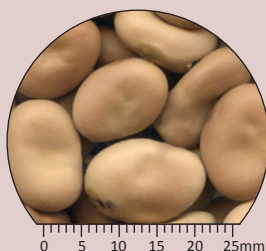
PBA Warda[®] has superior seed size and quality compared to Doza[®]. PBA Warda[®] produces medium sized, beige to brown seeds, in the range of 58-69 g/100 seeds.

The seed size is similar to Cairo[®] under irrigated conditions and only slightly smaller in dryland conditions. Under both dryland and irrigation the seed size of PBA Warda[®] is greater than Doza[®].

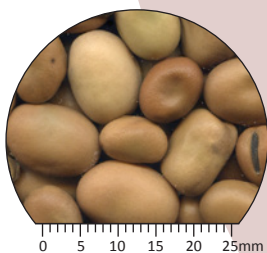
Darkening of seed colour under storage is similar to Doza[®].

Seed weight (g/100 seeds) of faba bean varieties		
Variety	Dryland (2011 NVT)	Irrigated (2011 Narrabri)
PBA Warda [®]	58 - 62	64 - 69
Cairo [®]	60 - 62	64 - 66
Fiesta VF	65 - 69	64 - 66
Doza	53 - 56	56 - 58
Fiord [®]	49 - 52	50 - 52

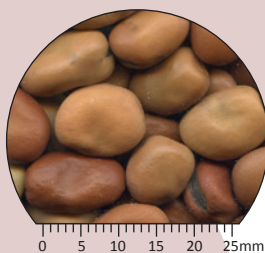
Source: Pulse Breeding Australia



PBA Warda[®]



Doza[®]



Cairo[®]

MARKETING

PBA Warda[®] has comparatively large seed, similar to Cairo[®], and it is more uniform in size and colour than Cairo[®] making it more attractive to the Middle Eastern markets.

BREEDING

PBA Warda[®] (evaluated as IX114/1-16) was developed by the PBA faba bean breeding program, led by the University of Adelaide. 'Warda' means 'rose' in Arabic, the name was chosen as an attraction to customers in the Middle Eastern market. This variety was developed and identified by the northern node of the faba bean breeding program at Narrabri, NSW.



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 Faba bean

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SEED ENQUIRIES

Seednet

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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 faba bean varieties.

AGRONOMIC ENQUIRIES

Northern New South Wales

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