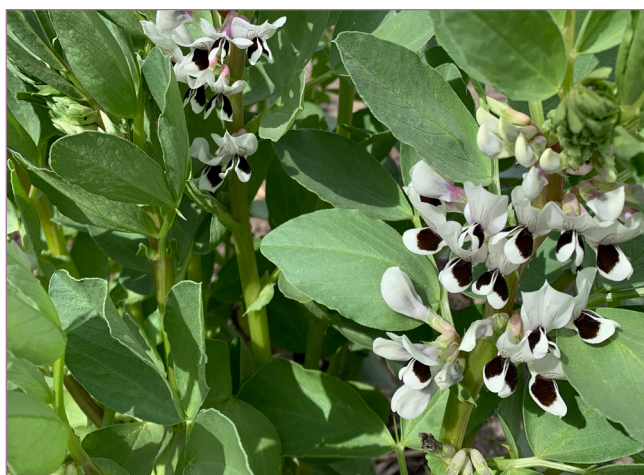


September 2021

High yielding northern variety



MAIN ADVANTAGES

FBA Ayla[Ⓟ] is well adapted to northern NSW where it has out-yielded all current PBA varieties by at least 4–5% in both low and high yielding trial sites, including the National Variety Trials (NVT).

The level of resistance to rust and *Bean leaf roll virus* (BLRV) resistance is the same as that of PBA Nanu[Ⓟ] and PBA Nasma[Ⓟ]. FBA Ayla[Ⓟ] has uniform and beige colour seed. Its uniform and superior seed size over PBA Warda[Ⓟ] will make it readily acceptable for marketing, while smaller seed than PBA Nasma[Ⓟ] will improve handling at seeding.

SEED PROTECTION & ROYALTIES

FBA Ayla[Ⓟ] is protected under Plant Breeder's Rights (PBR) legislation. Growers can retain seed from production of FBA Ayla[Ⓟ] for their own seed use but must not sell seed to others.

An End Point Royalty (EPR) of \$3.85 (GST inclusive) per tonne which includes breeder's royalty will be applicable to this variety upon grain being sold or used on farm for feed.

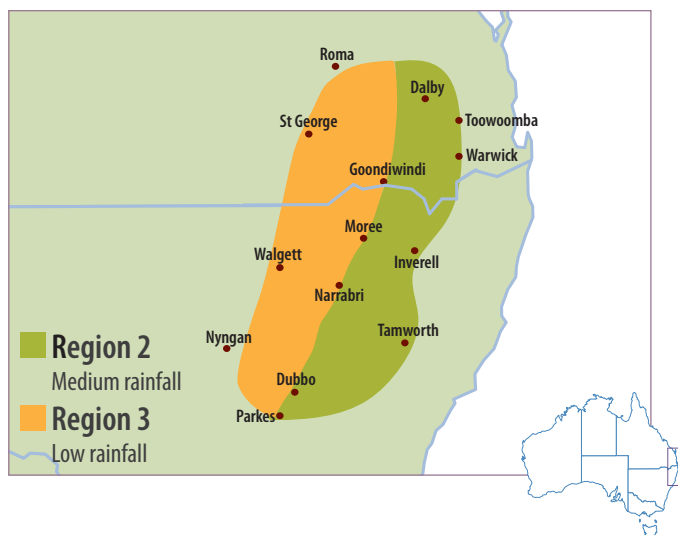
Seed is available from the commercial partner, Seednet.

Seednet
Planting Productivity

KEY FEATURES

- High yielding across all faba bean growing areas of the northern region.
- Yield is superior to all faba bean varieties currently grown in the northern region.
- Rust resistance is similar to PBA Nanu[Ⓟ] which has slightly better rust resistance than the earlier released varieties.
- Similar level of tolerance to BLRV as that of PBA Nanu[Ⓟ] and PBA Nasma[Ⓟ].
- Similar flowering and maturity time to PBA Nanu[Ⓟ] and PBA Nasma[Ⓟ].
- Larger and more uniform seed than PBA Warda[Ⓟ], but slightly smaller than PBA Nasma[Ⓟ].
- Suggested as an alternative to PBA Warda[Ⓟ] and PBA Nasma[Ⓟ].

AREA OF ADAPTATION



YIELD & ADAPTATION

FBA Ayla[Ⓛ] is an early maturing variety, similar to PBA Nanu[Ⓛ] and PBA Nasma[Ⓛ], well adapted to the growing season in northern NSW and southern Queensland.

Multi year and multi location trials conducted in northern NSW, both within PBA trial sites and the National Variety Trials (NVT) sites, showed FBA Ayla[Ⓛ] yielded about 4-5% more than PBA Nanu[Ⓛ] in high as well as low yielding environments.

It is suggested as an alternative to PBA Nasma[Ⓛ] and PBA Warda[Ⓛ] where growers are facing difficulties in sowing PBA Nasma[Ⓛ] because of its bigger seed and not meeting the export quality seed size from PBA Warda[Ⓛ].

FBA Ayla[Ⓛ] seed is bigger than PBA Warda[Ⓛ] and smaller than

PBA Nasma[Ⓛ], but still maintains the premium seed quality grade required for the human consumption market.

It has similar level of *Bean leaf roll virus* resistance to PBA Nanu[Ⓛ] which will benefit growers in areas prone to virus infection.

However, FBA Ayla[Ⓛ] is susceptible to bean yellow mosaic virus and moderately susceptible to chocolate spot similar to other northern varieties.

FBA Ayla[Ⓛ] is susceptible to *Ascochyta* blight, but this is not considered to be a major disease in northern NSW and Qld.

FBA Ayla[Ⓛ] is not recommended for southern NSW where *Ascochyta* blight and chocolate spot can cause significant yield loss.

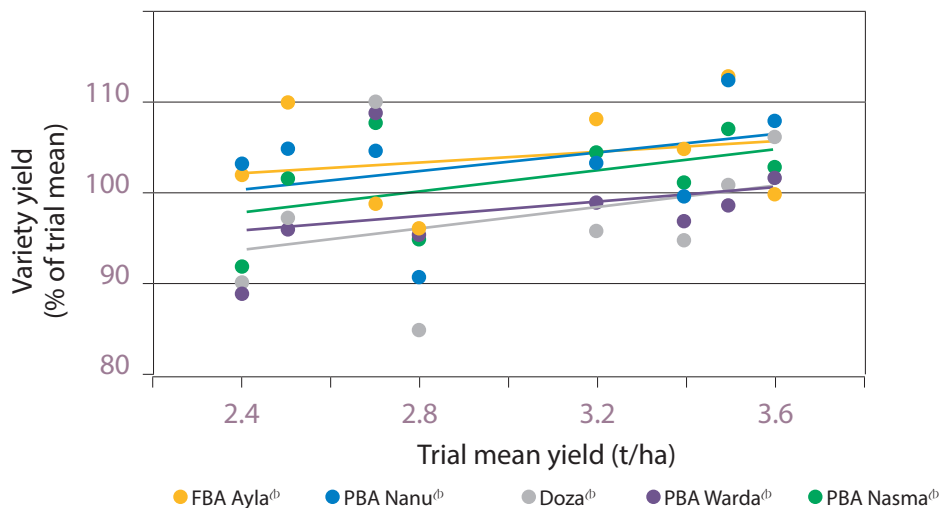


Figure 1: Long term (2016–2020) yield of faba bean varieties in northern NSW in comparison to trial mean.

Source: Trial results from NVT and Pulse Breeding Australia (PBA), 2016–2020.

Agronomic and disease resistance ratings of faba bean varieties in northern Australia							
Variety	Plant height	Flower time	Maturity	Lodging resistance	Rust	Chocolate spot	<i>Bean leaf roll virus</i>
PBA Ayla [Ⓛ]	Medium	Early	Early	MR	MR–MS	S	MR
PBA Nanu [Ⓛ]	Medium	Early	Early	MR	MR–MS	S	MR
PBA Nasma [Ⓛ]	Medium	Early	Early	MR	MR–MS	S	MR
PBA Warda [Ⓛ]	Medium	Early	Early	MR	MR–MS	S	MR–MS
Doza [Ⓛ]	Medium	Early	Early	MR	MR–MS	S	MS
Fiesta VF	Medium	Mid/Late	Mid/Late	MS	S	S	S
Cairo [Ⓛ]	Tall	Mid/Late	Mid/Late	MS	MS	VS	S
Fiord	Medium	Mid	Mid	MR/MS	VS	VS	VS

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

Source: Pulse Breeding Australia trials program 2016–2020

DISEASE MANAGEMENT

Rust

- In a new classification system, all northern faba bean varieties released after Cairo[®] are classified as moderately resistant to moderately susceptible. FBA Ayla[®] also comes under this category as no complete resistance has been detected yet to faba bean rust.
- Its level of rust resistance is similar to that of PBA Nanu[®].
- For northern NSW and southern Qld, this level of resistance will provide sufficient protection against rust with a low risk of 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.
- In disease favourable (warm and humid) seasons, an application of a suitable fungicide just prior to crop closure can be very effective as it can penetrate to the bottom of the canopy and will also protect early flowering nodes.

Chocolate spot

- FBA Ayla[®] is susceptible to chocolate spot similar to PBA Nasma[®] and PBA Nanu[®]. This disease can be a serious problem in humid and extended wet weather conditions as experienced in 2016.
- 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 effective than Mancozeb against chocolate spot and preferable with high chocolate spot pressure, but this will not control rust.

Ascochyta blight

- FBA Ayla[®] is susceptible to Ascochyta blight, similar to PBA Nanu[®], PBA Nasma[®] and PBA Warda[®]. However, this disease is not prevalent in northern NSW and southern Qld where FBA Ayla[®] is recommended.

Bean leaf roll virus (BLRV)

- One of the parents of FBA Ayla[®] is PBA Nasma[®] and it has inherited this resistance.
- It has a similar level of resistance to PBA Nanu[®] and its parent PBA Nasma[®].

AGRONOMY

FBA Ayla[®] has similar features as PBA Nanu[®] and we expect there will be no additional requirement for adjusting agronomic practices for growing. Paddock selection and agronomic management is similar as for current varieties.

Plant characteristics

- Flowering and maturity time is similar to PBA Nanu[®] and PBA Nasma[®], 5-6 days earlier than Cairo[®].
- Medium plant height similar to PBA Warda[®].
- Lodging resistance similar to PBA Warda[®].
- FBA Ayla[®] can withstand mild frost at the vegetative stage similar to PBA Nasma[®] and PBA Nanu[®] and better than Doza[®]. Severe frost at flowering/early pod set may cause yield loss.
- Higher yield with the combination of rust resistance and BLRV resistance and vegetative frost tolerance will make FBA Ayla[®] a reliable faba bean variety for northern NSW and southern Qld.

Sowing

- Early sowing is recommended to achieve maximum yield potential.
- Sowing earlier than mid April and later than mid May in northern NSW is likely to cause a reduction in yield. High yield can be achieved by sowing around Anzac Day period. Limited information is available for southern Qld, but based on the results from northern NSW, sowing a week earlier than Anzac Day will be suggested for southern Qld.
- Seed crops of FBA Ayla[®] should be isolated from other faba bean varieties by at least 200 m to prevent cross-pollination.
- Seeding rate similar to other faba bean varieties should be maintained. Aim to achieve 20 plants/m² for northern NSW and southern Qld.
- Note that its seed rate will be higher than that of PBA Warda[®] and lower than of PBA Nasma[®] because of seed size differences.
- Inoculation with the commercial faba bean Rhizobium Group F is essential for efficient nodulation to support yield potential.

Herbicide tolerance

- FBA Ayla[®] has been extensively evaluated in plant breeding trials and the NVT trials with the application of recommended herbicides and no specific adverse reactions have been observed to any of the recommended herbicides over commonly grown faba bean varieties.

FBA Ayla[®]

Faba Bean

SEED QUALITY

FBA Ayla[®] seed size is similar to that of PBA Nanu[®]. The seed is uniform and maintains the premium seed size required for the Middle Eastern market. Its seed is beige to brown in colour, uniform in size in the range of 51–68/100 seeds depending on where it is grown. Seed darkening under storage is due to tannin content in the seed coat and this trait in FBA Ayla[®] is similar to other faba bean varieties.

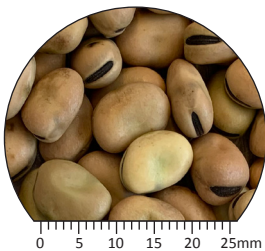
Seed weight (g/100 seeds) of faba bean varieties in northern NSW

Variety	Rainfed NVT data, 2020	Irrigated Narrabri data, 2020
PBA Ayla [®]	51–68	62–66
PBA Nanu [®]	53–72	63–68
PBA Nasma [®]	59–79	71–74
PBA Warda [®]	45–67	55–57
Cairo [®]	52–67	57–61
Doza [®]	47–64	53–55

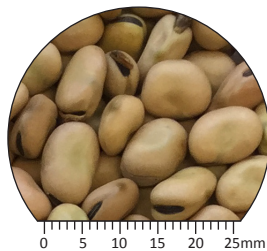
Source: NVT. Data derived from 4 rainfed trials in NSW in 2020.

MARKETING

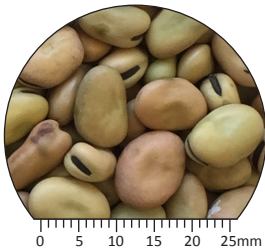
FBA Ayla[®] will be suitable in the medium seed size market for human consumption. Its desirable seed with uniform size and colour will make it attractive to the Middle Eastern market. It will provide an alternative to growers who wish to grow a large seeded variety with higher yield without compromising disease resistance and quality aspects.



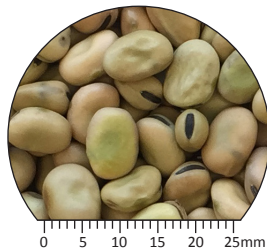
FBA Ayla[®]



PBA Nanu[®]



PBA Nasma[®]



PBA Warda[®]

BREEDING

FBA Ayla[®] (evaluated as 11NF001a-10) was developed by the northern node of the faba bean breeding program at the University of Sydney, and led by the University of Adelaide. In Arabic language, 'Ayla' refers to 'moonlight'; the name was chosen as familiar and easy to remember for customers in the Middle Eastern market.

FBA

FABA BEAN BREEDING AUSTRALIA

FBA is an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, NSW DPI and Pulse Australia.

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Seednet 
Planting Productivity

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 Faba bean Breeding Australia and invest in the improvement of Australian faba bean varieties.

AGRONOMIC ENQUIRIES

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