

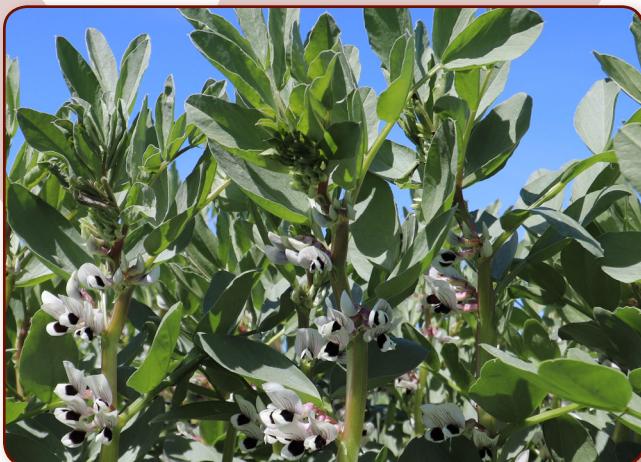


# PBA

PULSE BREEDING AUSTRALIA

*Better pulse varieties faster*

## Improved Disease Resistant Faba Bean



### MAIN ADVANTAGES

PBA Amberley<sup>®</sup> is a mid-season flowering faba bean that has high yield potential in the higher rainfall and long growing season districts of south eastern Australia. It has a greater level of resistance to chocolate spot than all current varieties and is also resistant to both pathotypes 1 and 2 of ascochyta blight. The improved disease resistance of PBA Amberley<sup>®</sup> offers the potential to reduce the risk and cost of faba bean production in high rainfall areas where foliar fungal diseases are a major constraint.

Seed is light brown and medium in size and suitable for co-mingling with the current faba bean varieties for export to the major food markets in the Middle East.

### SEED PROTECTION & ROYALTIES

PBA Amberley<sup>®</sup> is protected by Plant Breeder's Rights (PBR) legislation. Growers can only retain seed from production of PBA Amberley<sup>®</sup> for their own seed use. An End Point Royalty (EPR) of \$3.85 per tonne (GST inclusive), which includes breeder royalty, applies upon delivery of this variety.

Seed is available from the commercial partner Seednet.

### KEY FEATURES

- High yielding faba bean for high rainfall areas in the Southern Region
- Most resistant of all varieties to chocolate spot
- Resistant to pathotypes 1 and 2 of ascochyta blight
- Excellent standing ability and low level of 'necking'
- Medium size seed, similar to PBA Samira<sup>®</sup> and suited to the Middle East markets

### AREA OF ADAPTATION



**Seednet**

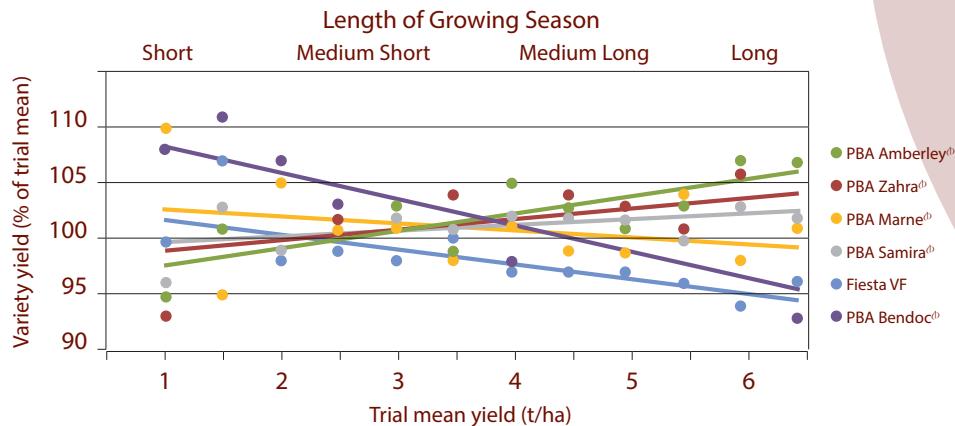
Planting Productivity

## YIELD & ADAPTATION

PBA Amberley<sup>®</sup> is a mid-flowering faba bean variety that is very well suited to higher rainfall or long growing season districts of southern Australia. It has produced its highest yields, relative to other varieties, in trials where the yield has been greater than 3.0 t/ha, including the Western Districts of Vic, Lower South East SA, higher rainfall areas of the mid-north of SA and in some irrigated trials in Vic and southern NSW. The overall disease resistance profile of PBA Amberley<sup>®</sup> is better than all other Southern Region faba

bean varieties, and in particular it is moderately resistant to chocolate spot. As PBA Amberley<sup>®</sup> is targeted to regions where there is a high risk of foliar fungal diseases, crops should be monitored regularly and diseases managed when present.

PBA Amberley<sup>®</sup> is not recommended for growing in Northern NSW or Southern QLD as it is lower yielding than varieties that have been released for the Northern Region and it is susceptible to rust.



**Figure 1:** Average relative yield of Amberley<sup>®</sup> and other faba bean varieties, compared to the average trial yield, in breeding trials across a range of yield scenarios.

**Source:** Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs. Data sourced from the ACAS Long Term Yield Reporter.

### Agronomic and disease resistance ratings of faba bean varieties in southern Australia

Variety	Plant height	Flower time	Maturity	Lodging resistance	Necking resistance	Ascochyta blight*		Chocolate spot	Cerco-spora	Rust
						Pathotype 1	Pathotype 2			
PBA Amberley <sup>®</sup>	Medium	Mid	Mid	MR	R	MR/R	MR/R	MR	S	S
PBA Marne <sup>®</sup>	Med/Short	Early	Early/Mid	MR	MR	MR/R	MS/MR	S	S	MR
PBA Bendoc <sup>®</sup>	Medium	Mid	Early/Mid	MS	MS	MR/R	MR/R	S	S	S
Fiesta VF	Medium	Early/Mid	Early/Mid	MS	MS	S	S	S	S	S
Farah <sup>®</sup>	Medium	Early/Mid	Early/Mid	MS	MS	MR/R	S	S	S	S
Nura <sup>®</sup>	Short	Mid	Early/Mid	MR	MS	MR/R	MR/R	MS	S	MS
PBA Rana <sup>®</sup>	Med/Tall	Mid	Mid	MR	MR	MR/R	MS/MR	MS	S	MS
PBA Samira <sup>®</sup>	Medium	Mid	Early/Mid	MR	MS	MR/R	MR/R	MS	S	MS
PBA Zahra <sup>®</sup>	Med/Tall	Mid	Mid	MR	S	MR/R	MS/MR	MS	S	MS

\* Ascochyta blight ratings are for Pathotype 1 which was the dominant pathotype in the Southern Region prior to 2013, and Pathotype 2 which has become widespread in recent years.

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

**Source:** Pulse Breeding Australia trials program 2014–2018

## DISEASE MANAGEMENT

### Ascochyta blight

- PBA Amberley<sup>®</sup> is Resistant (MR/R) to pathotype 1 of ascochyta blight, and MR/R to pathotype 2 which is now widespread throughout the Southern Region.
- Foliar fungicides that target ascochyta blight control should be applied at 6–8 weeks post-sowing in high risk situations. Crops should be monitored and managed if significant disease occurs.
- Ascochyta blight protection during podding should be applied if significant disease occurs on foliage earlier in the season.

### Chocolate spot

- PBA Amberley<sup>®</sup> is rated as Moderately Resistant (MR) to chocolate spot, more resistant than all other varieties.
- Crops should be monitored regularly and managed accordingly with strategic fungicide applications, particularly in higher rainfall districts or seasons with above average rainfall.
- Foliar fungicides that target chocolate spot may need to be applied before flowering in very early sown crops.
- In high risk situations applications of fungicides that target chocolate spot are recommended prior to canopy closure and during late flowering and pod fill.

### Cercospora leaf spot

- PBA Amberley<sup>®</sup> is Susceptible (S) to cercospora leaf spot, similar to all other Australian faba bean varieties.
- The risk of cercospora leaf spot is greatest in paddocks with a long history of faba/broad bean production and when bean crops are grown in tight rotations.
- A foliar fungicide that targets cercospora leaf spot is recommended to be applied at 5–8 weeks post-sowing.

### Rust

- PBA Amberley<sup>®</sup> is Susceptible (S) to rust.
- A foliar fungicide that targets rust is required in high risk situations, and management should be similar to that used for Fiesta VF and Farah<sup>®</sup>.

## AGRONOMY

### Plant characteristics

Paddock selection and basic requirements for production are similar to other faba bean varieties.

PBA Amberley<sup>®</sup> has the following characteristics:

- Mid-season flowering and maturity, similar to recent varieties including PBA Samira<sup>®</sup> and PBA Zahra<sup>®</sup>.
- Medium height plant, generally similar to most other varieties.
- Lodging and necking resistance better than other faba bean varieties but can experience some degree of lodging in very high biomass conditions.

### Sowing

- Seed crops of PBA Amberley<sup>®</sup> should be isolated from other faba bean varieties by at least 200 m to prevent cross-pollination.
- PBA Amberley<sup>®</sup> is similar to other faba bean varieties and generally benefits from early sowing, particularly in lower rainfall or short season environments. Delaying sowing until late May or early June can result in significant reduction in yield.
- Very early sowing can increase the risk of foliar fungal disease and excessive canopy growth for all faba bean varieties.
- Seed of PBA Amberley<sup>®</sup> is similar in size to PBA Samira<sup>®</sup> and seeding equipment must be able to handle the larger seed to reduce the risk of blockages.
- Inoculation with the commercial faba bean Group F Rhizobium is essential for proper nodulation.

### Herbicide tolerance

- PBA Amberley<sup>®</sup> has been extensively tested in breeding yield trials in which a range of herbicides registered for use in faba beans has been applied at recommended rates. No specific adverse reactions have been observed in these trials.

# PBA Amberley<sup>®</sup> Faba Bean

## SEED QUALITY

PBA Amberley<sup>®</sup> produces medium size seeds that are comparable in size to PBA Samira<sup>®</sup>. The seed size varies between locations and seasons and larger seed is produced under more favourable conditions.

The overall colour of seeds is similar to other major faba bean varieties and seeds of PBA Amberley<sup>®</sup> have a black hilum.

Seed weight (g/100 seeds) of faba bean varieties		
Variety	Average	Range
PBA Amberley <sup>®</sup>	72	60–84
PBA Marne <sup>®</sup>	72	57–87
PBA Bendoc <sup>®</sup>	62	50–71
Fiesta VF	67	51–78
Farah <sup>®</sup>	69	56–78
PBA Rana <sup>®</sup>	79	62–94
PBA Samira <sup>®</sup>	73	58–87
PBA Zahra <sup>®</sup>	78	58–91

Source: NVT. Data derived from 25 rainfed trials in SA, Vic and sth NSW in 2016–2018



PBA Amberley<sup>®</sup>



PBA Zahra<sup>®</sup>



PBA Samira<sup>®</sup>

## MARKETING

The seed of PBA Amberley<sup>®</sup> should be suitable to co-mingle with similar varieties for export to the major food markets in the Middle East.

## BREEDING

PBA Amberley<sup>®</sup>, evaluated as AF11023, was developed by the PBA Faba bean breeding program led by University of Adelaide. It is the result of an inter-cross between PBA Rana<sup>®</sup>, Farah<sup>®</sup> and accession 1322/2. It was selected for response to ascochyta blight, chocolate spot, yield, adaptation, standing ability and seed quality.

*Better pulse varieties faster*

PBA is an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, Agriculture Victoria Research, NSW DPI, DAF (QLD), DPIRD WA and Pulse Australia.

## PULSE AGRONOMY

Agronomy and disease management information has been developed with the assistance of the 'Southern region pulse agronomy project' co-funded by GRDC, SARDI, DEDJTR Victoria and NSW DPI.

## FOR MORE INFORMATION

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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.

**Seednet**   
Planting Productivity

## AGRONOMIC ENQUIRIES

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