

PBA Zahra[®]

Faba bean



PBA

PULSE BREEDING AUSTRALIA

Better pulse varieties faster

Large seeded, improved grain quality



MAIN ADVANTAGES

PBA Zahra[®] is a large seeded faba bean that has shown wide adaptation throughout southern Australia. It is superior to PBA Rana[®] with uniform seed size and colour. PBA Zahra[®] is generally higher yielding than current varieties in most areas and is particularly responsive to high yielding situations.

PBA Zahra[®] has a good overall level of disease resistance. It is resistant to the most prevalent strain of Ascochyta blight (pathotype 1) found in the southern region.

PBA Zahra[®] is less susceptible to chocolate spot and faba bean rust than Farah[®] and Fiesta VF, and equivalent to PBA Rana[®] and PBA Samira[®].

SEED PROTECTION & ROYALTIES

PBA Zahra[®] is protected under Plant Breeder's Rights (PBR) legislation. Growers may only retain seed from production of PBA Zahra[®] 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.

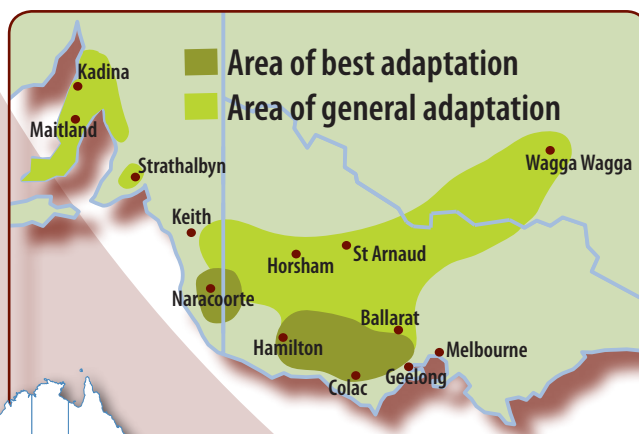
Seed is available from the commercial partner, Seednet.

Seednet
Planting Productivity

KEY FEATURES

- Large seeded, similar to PBA Rana[®], suited to the Middle East markets
- Wide adaptation and very responsive to high yielding situations
- Suggested as an alternative to PBA Rana[®]
- Vigorous plant type with good standing ability
- Resistant to the most prevalent strain of Ascochyta blight (pathotype 1)
- Moderately susceptible to the new Ascochyta blight strain (pathotype 2) recently identified in the mid north of South Australia
- Improved chocolate spot and faba bean rust resistance compared to Farah[®] and Fiesta VF

AREA OF ADAPTATION



YIELD & ADAPTATION

PBA Zahra[®] is one of the highest yielding faba bean varieties in southern Australia. It has shown a yield advantage of more than 5% over older varieties such as Fiesta VF, Farah[®] and Nura[®] in many districts throughout South Australia, Victoria and southern NSW.

PBA Zahra[®] is well suited to higher rainfall districts where its lower susceptibility to disease reduces the production risk.

It is resistant to the old strain (pathotype 1) of Ascochyta, but not to the new strain (pathotype 2) that has recently been identified in the mid north of South Australia.

PBA Zahra[®] is not adapted to northern New South Wales or southern Queensland as it is too late to flower and mature, and is susceptible to faba bean rust, which is the major fungal disease in the region.

Long term (2007–2014) yield of faba bean in South Australia

(yields expressed as % Fiesta VF)

| Variety | Mid North | South East | Yorke P | Lower EP | Murray Mallee |
|-------------------------|-----------|------------|---------|----------|---------------|
| PBA Zahra [®] | 106 | 107 | 102 | 91 | 97 |
| Farah [®] | 101 | 100 | 101 | 101 | 100 |
| Nura [®] | 98 | 98 | 100 | 101 | 98 |
| PBA Rana [®] | 93 | 92 | 91 | 96 | 90 |
| PBA Samira [®] | 104 | 104 | 98 | 92 | 101 |
| Fiesta VF (t/ha) | 2.66 | 2.87 | 3.58 | 2.05 | 1.57 |

Source: Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs

Long term (2007–2014) yield of faba bean in Victoria and southern New South Wales

(yields expressed as % Fiesta VF)

| Variety | Victoria | | | | Southern NSW | |
|-------------------------|----------|---------------------------|------------|------------|--------------|------------------------|
| | Wimmera | North Central (irrigated) | North East | South West | South East | South West (irrigated) |
| PBA Zahra [®] | 101 | 114 | 102 | 106 | 105 | 95 |
| Farah [®] | 100 | 101 | 99 | 99 | 99 | 100 |
| Nura [®] | 93 | 94 | 96 | 99 | 94 | 95 |
| PBA Rana [®] | 89 | 99 | 96 | 100 | 94 | 93 |
| PBA Samira [®] | 99 | 115 | 98 | 105 | 101 | 92 |
| Fiesta VF (t/ha) | 2.36 | 4.62 | 2.59 | 3.55 | 2.361 | 3.74 |

Source: Trial results from Pulse Breeding Australia (PBA) and National Variety Trials (NVT) programs

Agronomic features and disease resistance rating of faba bean varieties in southern Australia

| Variety | Plant height | Flower time | Maturity | Lodging resistance | Ascochyta blight* | | Chocolate spot | Cercospora | Rust | PSbMV Seed staining |
|-------------------------|--------------|-------------|-----------|--------------------|-------------------|-------------|----------------|------------|------|---------------------|
| | | | | | Patho-tpe 1 | Patho-tpe 2 | | | | |
| PBA Zahra [®] | Med/Tall | Mid | Mid | MR | R | MS/MR | MS | S | MS | S |
| Farah [®] | Medium | Early/Mid | Early/Mid | MS | MR/R | S | S | S | S | S |
| Fiesta VF | Medium | Early/Mid | Early/Mid | MS | MS | S | S | S | S | S |
| Nura [®] | Short | Mid | Early/Mid | MR | MR/R | MR/R | MS | S | MS | VS |
| PBA Rana [®] | Med/Tall | Mid | Mid | MR | R | MS/MR | MS | S | MS | MR |
| PBA Samira [®] | Medium | Mid | Early/Mid | MR | R | R | MS | S | MS | S |

* Ascochyta blight ratings are for pathotype 1 which is widely distributed throughout the southern region, and pathotype 2, which has been recently identified in the mid-north of South Australia

Source: Pulse Breeding Australia trials program 2007–2014

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

DISEASE MANAGEMENT

Ascochyta blight

- PBA Zahra[®] is resistant to pathotype 1 of Ascochyta blight that is prevalent throughout the southern region. However, it is moderately susceptible to moderately resistant to the new pathotype 2 recently identified in the mid north of South Australia.
- Foliar fungicides that target Ascochyta blight, applied at 6–8 weeks post-sowing, should not be required for PBA Zahra[®], with the exception of areas where the new pathotype 2 occurs. Monitor crops and manage accordingly if significant disease levels develop.
- The level of resistance to Ascochyta blight should reduce the risk of seed staining due to this disease. Ascochyta blight protection during podding should only be required if significant disease occurs on foliage earlier in the season.

Chocolate spot

- PBA Zahra[®] is rated as moderately susceptible to chocolate spot. It is more resistant, than Farah[®] and Fiesta VF and comparable to Nura[®] PBA Rana[®] and PBA Samira[®].
- Monitor crops 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 Zahra[®] is susceptible 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.

Faba bean rust

- PBA Zahra[®] is rated as moderately susceptible to faba bean rust.
- A foliar fungicide that targets faba bean rust is required in high risk situations, and management should be similar to that used for Nura[®], PBA Rana[®] and PBA Samira[®].

Pea Seed Borne Mosaic Virus (PSbMV)

- PBA Zahra[®] develops seed staining from by Pea Seed borne Mosaic Virus (PSbMV) at a level similar to PBA Samira[®].
- Seed staining of susceptible varieties can have an impact on grain quality.
- No management practices are available, however as the virus originates from PSbMV infected field pea, it is advisable to keep a distance from crops of field pea varieties that are highly susceptible to PSbMV.

AGRONOMY

Plant characteristics

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

PBA Zahra[®] has the following characteristics:

- Mid to late flowering, similar to Nura[®], PBA Rana[®], PBA Samira[®] and Nura[®] and 5–10 days later than Farah[®] and Fiesta VF.
- Mid maturity, similar to PBA Rana[®].
- Medium/tall plant, similar to PBA Rana[®] and taller than other varieties.
- Lodging resistance better than Farah[®] and Fiesta VF and similar to Nura[®], PBA Rana[®] and PBA Samira[®]. Can lodge in very high biomass situations and more susceptible to necking than some other varieties.

Sowing

- Like other faba bean varieties, PBA Zahra[®] benefits from early sowing. Delaying sowing until late May or early June can result in significant yield reduction.
- Very early sowing can increase the risk of foliar fungal disease and excessive canopy growth for all faba bean varieties.
- Seed of PBA Zahra[®] is similar in size to PBA Rana[®] 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 effective nodulation.
- Grow seed crops of PBA Zahra[®] in isolation of other faba bean varieties to prevent cross-pollination.

Herbicide tolerance

- PBA Zahra[®] has been extensively tested in breeding yield trials in which a range of herbicides registered for use in faba bean has been applied at recommended rates. No specific adverse reactions have been observed in these trials.

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GRAIN QUALITY

PBA Zahra[®] produces large, light brown, plump grain that is comparable in size to PBA Rana[®], with a weight of 60–85g/100 seeds. Seed size varies between locations and seasons, with larger seed produced under more favourable conditions.

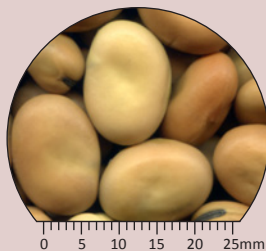
The overall grain colour is uniform and bright. There is generally a low rate of darkening during storage.

PBA Zahra[®] should be suitable to co-mingle with PBA Rana[®] for a medium-large faba bean category for export to the major food markets in the Middle East.

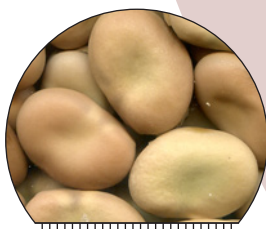
Seed weight (g/100 seeds) of faba bean varieties

| Variety | Average | Range |
|-------------------------|---------|-------|
| PBA Zahra [®] | 74 | 62–86 |
| Farah [®] | 64 | 54–75 |
| Fiesta VF | 64 | 56–76 |
| Nura [®] | 60 | 49–69 |
| PBA Rana [®] | 75 | 64–93 |
| PBA Samira [®] | 67 | 56–82 |

Source: National Variety Trials (NVT) programs 2012–2014
Data derived from 30 rain fed trials across South Australia, Victoria and southern New South Wales



PBA Zahra[®]



PBA Rana[®]



PBA Samira[®]

BREEDING

PBA Zahra[®] (evaluated as AF05095 and reselected as AF05095-1), was developed by the PBA Faba bean breeding program led by University of Adelaide.

It is the result of a cross between Farah[®] and Accession 920/3, which originated from Morocco. It was selected for resistance to Ascochyta blight and chocolate spot, yield, adaptation and seed quality.



Better pulse varieties faster

PBA is an unincorporated joint venture between the GRDC, University of Adelaide, University of Sydney, SARDI, DEDJTR Victoria, NSW-DPI, DAF QLD, DAFWA and Pulse Australia.

FOR MORE INFORMATION

PBA

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PBA Faba bean

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SEED ENQUIRIES

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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

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Version September/2015