Fact Sheet

2022 South Australia Pulse Variety Disease Guide

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GRDC projects: UOA2104-012 'Disease surveillance and related diagnostics for the Australian grains industry (within the Southern region – South Australia)'; CUR00023 'Ascochyta blight in lentils and sclerotinia stem rot of canola and pulses'; UOA00163 'Pulse Breeding Australian: Faba Bean Breeding'.

Diagnostic samples received by SARDI Pulse Pathology laboratory in 2021

A total of 28 plant samples from commercial crops were received for disease diagnosis.

No. samples & crop type	Diagnosis
7 lentil	ascochyta blight, physiological damage, seed staining
13 faba bean	ascochyta blight, Alternaria, physiological damage, seed staining, two samples negative for virus
1 broad bean	nutrient deficiency
1 chickpea	physiological damage
3 field pea	ascochyta blight, physiological damage
1 lupin	root disease
1 vetch	ascochyta blight
1 canola	blackleg

Pathogen collections in 2021

Targeted pathogen collections for GRDC national projects included disease samples sent by agronomists and growers in response to social media campaigns and collections by pathologists from the field.

- 66 lentil samples with ascochyta blight.
- 90 faba bean samples of which 49 had ascochyta blight, four with cercospora leaf spot, one with chocolate spot, one with phoma.
- two chickpea samples with ascochyta blight.
- three field pea samples with ascochyta blight.
- two vetch samples with ascochyta blight.
- 47 canola samples where 18 sclerotinia isolates and one botrytis isolate were collected from petals.

Faba bean foliar disease survey in 2021

Twenty (20) faba bean crops were surveyed across South Australia (SA) in late winter and spring for disease incidence and severity (GRDC Project UOA2104-012).

Crops were selected with assistance from regional agronomists and 50 plants per crop were assessed for disease. Results would have been affected by fungicide regimes and by seasonal conditions.

Overall disease levels were low except for some paddocks in the South East where chocolate spot was observed at variable levels.

Faba bean crops in the Lower North were not infected with any of the primary foliar diseases except for one paddock where a single rust pustule was observed, whilst in another paddock a single ascochyta blight lesion was present.

In the Mid North, all five paddocks surveyed were infected with ascochyta blight, ranging from 6 to 100% of plants sampled with lesions. However, disease severity was very low (<6%). Only a single chocolate spot lesion was observed in one Mid North paddock.

In the ten paddocks surveyed in the South East, two paddocks were infected with very low levels of ascochyta blight (<1% severity) and one paddock had 84% of plants with lesions but at a low severity (6%). Five paddocks were infected with low levels (<2% severity) of cercospora leaf spot. Chocolate spot was observed in five paddocks with between 2 to 100% of plants infected however severity was low (<4%) in four of those. The paddock with 100% of plants infected had 14% disease severity and was sown to Aquadulce broad beans.

Sclerotinia, and the exotic disease, downy mildew, was not observed in any faba bean paddock surveyed in 2021.

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SARDI Crop Watch

For seasonal disease reports, subscribe to the SARDI SA CropWatch e-newsletter pir.sa.gov.au/cropwatch and follow us on Twitter @CropWatchSA.

Disease identification

A diagnostic service is available to growers and industry for diseased plant specimens. Samples of all leaf and aerial plant parts should be kept free of moisture and wrapped in paper, not a plastic bag. Roots should be dug up carefully, preserving as much of the root system as possible and preferably kept damp.

Send your samples to:
SARDI Pulse Pathology
Locked Bag 100
Glen Osmond SA 5064
Email: PIRSA.SARDIPulsePathology@sa.gov.au

For further information contact

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Government of South Australia
Department of Primary Industries and Regions

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Pulse Variety Disease Categories

Sourced from NVT Online unless indicated otherwise nvt.grdc.com.au/nvt-disease-ratings.

This publication was developed after the 2022 SA Sowing Guide, and disease categories updated based on disease screening in 2021.

[P] provisional. Rating may change in a future NVT disease ratings review once further data becomes available.

[1] Not tested in 2021 NVT Disease Ratings Program. Ratings are provided from the last time testing was conducted and may be a breeder rating.

[2] Not tested since 2019 or earlier. Ratings are provided from the last time testing was conducted and may be a breeder rating.

RATING	CATEGORY	DEFINITION
R	Resistant	No symptoms visible. No fungicides are required.
RMR	Resistant to Moderately Resistant	The disease may be visible but will not cause significant plant damage or loss. However, under extreme disease pressure or highly favourable environments conditions fungicide applications may be required e.g. to prevent seed staining.
MR	Moderately Resistant	The disease may be visible but will not cause significant plant damage or loss. However, under high disease pressure or highly favourable environments conditions fungicide applications may be required e.g. to prevent seed staining.
MRMS	Moderately Resistant to Moderately Susceptible	The disease symptoms are moderate and may cause some yield and/or seed quality losses in conducive conditions. Fungicide applications, if applicable, may be required to prevent yield loss and seed staining.
MS	Moderately Susceptible	Disease symptoms are moderate to severe and will cause significant yield and seed quality loss in the absence of fungicides in conducive seasons, but not complete crop loss.
S	Susceptible	The disease is severe and will cause significant yield and seed quality loss, including complete crop loss in the absence of fungicides, in conducive conditions.
VS	Very Susceptible	Growing this variety in areas where a disease is likely to be present is very high risk. Significant yield and seed quality losses, including complete crop loss can be expected without control and the increase in inoculum may create problems for other growers.

LENTIL VARIETY DISEASE RATINGS

Variety	Ascochyta blight: Pathotype 1 (Nipper virulent)	Ascochyta blight: Pathotype 2 (PBA Hurricane XT virulent)	Botrytis Grey Mould	*Pratylenchus neglectus* resistance	*Pratylenchus thornei* resistance
SMALL RED					
Nipper	MRMS	MR	MR[P]	RMR	MR
PBA Hurricane XT	RMR	MRMS	MS	MRMS	MRMS
MEDIUM RED					
GIA Leader	MR[P]	MR[P]	MR[P]	R	MR
PBA Ace	R	RMR[P]	MS	MR	MRMS
PBA Blitz	MRMS	MR	MRMS[P]	MR	MRMS
PBA Bolt	MR	MRMS	S	MR	MR
PBA Flash	MS	MS	MS[1]	MRMS[1]	MRMS[1]
PBA Hallmark XT	RMR	MRMS	MR[P]	MR	MRMS
PBA Highland XT	MR	MR	MS	MR	MRMS
LARGE RED					
PBA Jumbo2	R	RMR[P]	RMR[P]	MR	MRMS
PBA KelpieXT	MRMS	MRMS	MRMS[P]	MRMS[P]	MRMS
MEDIUM AND LARGE GREEN					
Boomer	MR[2]	MR[2]	MRMS[2]	-	-
PBA Giant	MS[2]	MR[2]	MS[2]	-	-
PBA Greenfield	MRMS[2]	MR[2]	MR[2]	-	-

*Pathotypes 1 and 2 of ascochyta blight on lentils are common in South Australia.

CHICKPEA VARIETY DISEASE RATINGS

Variety	Ascochyta blight*: Foliage	Ascochyta blight*: Seed[2]	*Pratylenchus neglectus* resistance	*Pratylenchus thornei* resistance
DESI TYPES				
Ambar	S[2]	S	MRMS[2]	MS[2]
CBA Captain	MS[P]	S	MR	MS
PBA Maiden	S	S	MRMS	MRMS
PBA Slasher	S	S	MRMS	MRMS
PBA Striker	S	S	MRMS	MRMS
KABULI TYPES				
Almaz	S	S	MRMS	S
Genesis™ 090	MS	S	MRMS	MSS
Genesis™ Kalkee	S	S	MRMS	MS
PBA Magnus	S	S	MR	MSS
PBA Monarch	S	S	MRMS	MS
PBA Royal	MS	S	MR	MS

*Ascochyta blight ratings are for South Australia and Victoria only.

FABA BEAN VARIETY DISEASE RATINGS

Variety	Ascochyta blight*	Chocolate spot	Cercospora leaf spot[1]	Rust	Pea Seedborne Mosaic Virus (PSbMV) seed staining[2]	*Pratylenchus neglectus* resistance[2]	*Pratylenchus thornei* resistance
Farah	S	S	S	VS	S	MR	MS
Fiesta VF	S	S	S	VS	S	RMR	MS
Nura	RMR	MS	S	VS	VS	MR	MS
PBA Amberley	RMR	MRMS	S	VS	-	MR	MS
PBA Bendoc	MR	S	S	VS	S	MR	MRMS
PBA Marne	MS[P]	S	S	MRMS	MR	MR	MS
PBA Rana	MRMS	MS	S	VS	MR	MR	MS
PBA Samira	RMR	MS	S	S	S	MR	MRMS
PBA Zahra	MRMS	MS	S	S	S	MR	MRMS
BROAD BEAN							
Aquadulce	MS[2]	MS[2]	S[2]	MS[2]	S[2]	-	-
PBA Kareema	MR[2]	MS[2]	S[2]	MRMS[2]	S[2]	-	-

*Pathotype 2 of ascochyta blight on faba beans is the predominant and widespread strain across South Australia and Victoria.

FIELD PEA VARIETY DISEASE RATINGS

Variety	Downy Mildew (Kaspa strain)*	Ascochyta blight (Blackspot)	Powdery Mildew	Bacterial Blight	Pea Seedborne Mosaic Virus (PSbMV)[1]	Bean Leafroll Virus (BLRV)[1]	*Pratylenchus neglectus* resistance	*Pratylenchus thornei* resistance
Kaspa	S	MS[1]	S	S	S	S	RMR	MRMS
GIA Kastar	S	MS[P1]	RMR	S	R	-	MR	MSS
GIA Ourstar	S	MS[P1]	S	S[P]	S	-	MRMS[P]	MSS
Parafield	S	MS[2]	S[2]	MS[2]	-	-	-	-
PBA Butler	S	MS[1]	S	MS	S	S	RMR	MRMS
PBA Gunyah	S	MS[1]	S	S	S	S	RMR	MRMS
PBA Oura	S	MS[1]	S	MS	S	R	MR	MRMS
PBA Pearl	S	MS[1]	S	MS	S	R	MR	MRMS
PBA Percy	S	MS[1]	S	MRMS	S	S	RMR	RMR
PBA Twilight	S	MS[1]	S	S	S	-	MR	MRMS
PBA Wharton	S	MS[1]	RMR	S	R	R	MR	MRMS

*The Kaspa virulent strain of downy mildew in field pea is widespread across South Australia.