

Pulse Disease Guide 2023

Joshua Fanning, March 2023

2022 in review

The 2022 season was highly conducive for pulse diseases across Victoria, particularly botrytis grey mould in lentil, chocolate spot in beans, and sclerotinia white mould in lentil and vetch. Significant yield losses were observed where management was insufficient. These losses were because of two main factors; 1) the highly conducive season, including numerous rain days and above average rainfall resulting in high canopy humidity, and 2) varieties rated moderately resistant to moderately susceptible (MRMS) or more susceptible.

2023 pulse disease management

There will be a high risk of disease carryover into the 2023 season from infected seed and stubble of crops that had high disease levels in 2022. A proactive integrated disease management strategy will be required to reduce the risk of pulse diseases causing yield loss during 2023. This should include:

- avoiding planting pulse crops into or adjacent to paddocks where there was disease during 2022,
- sowing healthy vigorous seed,
- using fungicidal seed dressings where applicable,
- avoiding susceptible varieties where possible
- implementing a fungicide management plan.

A later harvest and weed carryover will increase the risk of soil-borne diseases including root lesion nematodes and pythium. A PREDICTA[®]B test will identify paddocks at risk of some important soil-borne diseases of pulses.

Seed quality: It is important to test seed quality in 2023. Disease (e.g. botrytis and sclerotinia) carryover may be through infected seed or sclerotia (fruiting bodies) contamination in seed lots. Testing seed for germination, vigour, and seed-borne diseases before sowing is essential to ensure good plant establishment. Testing can be completed by specialist laboratories (see back page). Seed treatments are effective at suppressing many fungal diseases; however, seed treatments don't combine well with rhizobium used for inoculation. Read labels for compatibilities.

Chickpeas: Currently there is limited varietal resistance to ascochyta blight but breeding lines with improved resistance are expected in coming years. A moderately susceptible (MS) variety in an average season should require minimal fungicides in low rainfall zones. In the medium to high rainfall areas, it is likely multiple fungicide applications will be required to prevent ascochyta blight.

There is only one resistance rating change in chickpeas, with CBA Captain downgraded from MS (p) to S.

Beans: Chocolate spot was widespread and severe in Victoria during 2022, particularly in susceptible varieties like PBA Bendoc. It is important to avoid susceptible varieties where chocolate spot is common or a high risk. Minimising disease early in the season will reduce the inoculum load later in the season. Reliance on fungicides is not recommended and cannot provide adequate control in a susceptible variety in a high-risk season and/or environment.

There have been no major changes to the faba bean resistance ratings for 2023.

Lentils: Botrytis grey mould (BGM) and sclerotinia white mould (SWM) were widespread during 2022. There will be a high stubble and sclerotia (fruiting bodies) carryover, increasing the risk for the 2023 season. Therefore, avoid planting lentil crops into lentil stubble or adjacent to paddocks that had BGM or SWM during 2022. The varieties GIA Leader and PBA Hallmark XT have had BGM resistance ratings downgraded from MR (p) to MRMS (p), and PBA Kelpie XT has been downgraded from MRMS (p) to MS (p). These varieties will need to be monitored more closely during 2023.

There were no major changes to the ascochyta blight resistance ratings in lentil.

Vetch: The pathogens that cause BGM in lentil and chocolate spot in faba beans, also cause BGM in vetch, therefore, the risk will be high if vetch is sown into or adjacent to paddocks where either lentil or faba bean stubble is found. BGM and ascochyta blight are the main causes of yield loss in vetch. Ideally, the disease management strategy should be matched to the crop's end use (hay, fodder, grain, manure).

Field peas: Bacterial blight is the most significant threat to field pea production. There are no in-crop control options, so where possible avoid susceptible varieties, paddocks prone to frost, residual herbicides, or planting into pea stubble. There have been no rating changes for field peas.

Lupins: Sclerotinia and botrytis grey mould were both detected in lupins during 2022. Avoid growing lupins in rotation with other pulses and canola to avoid sclerotinia. Monitor crops for disease to ensure disease severity remains low.

If you see something different, or high levels of disease in any crop, please send a sample to Agriculture Victoria. If you suspect an exotic pest or disease contact CropSafe or the Emergency Plant Pest Hotline (see back page).

Bean Disease Reactions 2023

Variety	Ascochyta blight	Chocolate spot (<i>Botrytis</i>)	Cercospora*	Rust	Root lesion nematode (<i>Pratylenchus</i>)	
					<i>P. neglectus</i> *	<i>P. thornei</i>
Broad bean						
Aquadulce*	MS	MS	S	MR	MR	MS
PBA Kareema*	MR	MS	S	MRMS	-	-
Faba bean						
Farah	S	S	S	VS	MR	MS
PBA Amberley	MR	MRMS	S	VS	MR	MS
PBA Bendoc	MR	S	S	VS	MR	MS
PBA Marne	MSp	MSp	S	MRMS	MR	MS
PBA Rana	MRMS	MS	S	VS	RMRp	MRMS
PBA Samira	MRp	MS	S	S	MR	MS
PBA Zahra	MRMS	MS	S	S	MR	MS

Chickpea Disease Reactions 2023

Variety	Ascochyta blight (foliar rating)	Root lesion nematode (<i>Pratylenchus</i>)	
		<i>P. neglectus</i>	<i>P. thornei</i>
Desi			
CBA Captain	S	MR	MS
PBA Maiden	S	MRMS	MRMS
PBA Slasher	S	MRMS	MRMS
PBA Striker	S	MRMS	MRMS
Kabuli			
Genesis 090	MS	MRMS	MSS
Genesis Kalkee	S	MRMS	MS
PBA Magnus	S	MR	MSS
PBA Monarch*	S	MRMS	MS
PBA Royal	MS	MR	MS

Lentil Disease Reactions 2023

Variety	Ascochyta blight (foliar rating)	Botrytis grey mould	Root lesion nematode (<i>Pratylenchus</i>)	
			<i>P. neglectus</i>	<i>P. thornei</i>
Conventional				
PBA Ace	MR	MS	MR	MRMS
PBA Blitz	MRMS	MSp	MR	MRMS
PBA Bolt	MRMS	S	MR	MR
PBA Jumbo 2	RMRp	MRp	MR	MRMS
Imidazolinone tolerant				
GIA Leader	MR	MRMSp	R	MR
GIA Lightning	MRMS	MS	R	MR
GIA Thunder	MRMS	MRMS	MR	R
PBA Hallmark XT	MRMS	MRMSp	MR	MRMS
PBA Highland XT	MR	MS	MR	MRMS
PBA Hurricane XT	MRMS	MS	MRMS	MRMS
PBA Kelpie XT	MRMS	MSp	MRMS	MRMS
Dual herbicide tolerant				
GIA Metro	MR	MRMS	MR	MRMS
GIA Sire	MRMSp	MS	MR	MR

All data, except breeder data (#) and historic data (*) comes from the NVT system. Data not in the current NVT system may be less accurate as these varieties are not screened annually.

*Indicates historic data for a variety and/or disease that has not been updated in at least 12 months.

p = These ratings are provisional.

R = Resistant; RMR = Resistant to moderately resistant; MR = Moderately resistant; MRMS = Moderately resistant to moderately susceptible; MS = Moderately susceptible; MSS = Moderately susceptible to susceptible; S = Susceptible; SVS = Susceptible to very susceptible; VS = Very susceptible

Field Pea Disease Reactions 2023

Variety	Blackspot* (Ascochyta)	Bacterial blight	Downy mildew	Powdery mildew	Pea seed-borne mosaic virus (PSbMV)#*	Bean leaf roll virus (field rating) (BLRV)#*	Root lesion nematode (<i>Pratylenchus</i>)	
							<i>P. neglectus</i>	<i>P. thornei</i>
Yellow/white grain type								
PBA Hayman*	MS	-	-	R	-	-	-	-
PBA Pearl	MS	MS	S	S	S	R	MR	MRMS
Sturt	MS	MS	S	S	S	S	MR	MR
Kaspa grain type								
GIA Kastar	MS	S	S	RMR	-	-	MR	MS
Kaspa	MS	S	S	S	S	S	RMR	MRMS
PBA Butler	MS	MS	S	S	S	S	RMR	MRMS
PBA Gunyah	MS	-	S	-	S	S	RMR	MRMS
PBA Taylor	MS	S	S	S	-	-	RMR	MRMS
PBA Twilight	MS	S	S	S	S	S	MR	MRMS
PBA Wharton	MS	S	S	RMR	R	R	MR	MRMS
Australian dun grain type								
GIA Ourstar	MS	Sp	S	S	-	-	MRMS	MSS
PBA Oura	MS	MS	S	S	S	R	MR	MRMS
PBA Percy	MS	MRMS	S	S	S	S	RMR	RMR
Blue pea type								
PBA Noosa	MS	S	MS	S	S	R	MR	MRMS

Lupin Disease Reactions 2023

Variety	Brown leaf spot*	Pleiochaeta root rot*	Cucumber mosaic virus (CMV) (seed transmitted)	Anthracnose	Phomopsis	
					Stem	Pod
Albus lupin						
Luxor*	MR	R	Immune	VS	MR	S
Murringo*	MR	MR	Immune	VS	MS	S
Narrow leaf						
Coyote	MSp		MRMS	MRMS	S	MRMS
Jenabillup	MRMS	MRp	MRMS	MS	MS	MR
Jindalee	MS	MRMSp	S	MRMS	RMR	MR
Lawler	MSp	MRp	MRMS	MR	MR	MS
Mandelup	MS	MRMSp	MRMS	MRMS	RMR	S
PBA Barlock	MS	MRMS	MR	RMR	MR	MR
PBA Bateman	MS	MRp	MR	MRMS	RMR	MS
PBA Gunyidi	MS	MRp	MRMS	MRMS	RMR	MRMS
PBA Jurien	MS	MR	MS	RMR	RMR	MR
Wonga	MS	MRp	MR	RMR	MR	MR

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Vetch Disease Reactions 2023#

Variety	Rust	Ascochyta	Botrytis grey mould
Morava	R	MSp	VSp
Rasina	R	Sp	Sp
Studenica	R	MRp	Sp
Timok	R	Sp	Sp
Volga	R	MRMSp	Sp
Purple vetch			
Benetas	-	MRMSp	Sp
Popany	R	MRp	Sp
Woolly pod vetches			
Capello	R	MRp	Sp
RM4	R	MRp	Sp

Note: vetch is not included in the NVT, ascochyta and botrytis grey mould ratings are from Agriculture Victoria and the rust ratings are from the breeder.

Crop protection products

There are often changes to permits for the use of fungicides in pulse crops. See Pulse Australia's website (www.pulseaus.com.au) for current information on Crop Protection Products.

Fungicide resistance

Resistance to fungicides is an increasing threat to crops. There are no new detections of fungicide resistance in pulses.

Five strategies can be adopted to slow the development of resistance in pathogen populations and extend the longevity of the limited range of fungicides available:

1. Avoid susceptible crop varieties.
2. Rotate crops.
3. Use non-chemical methods to reduce disease pressure.
4. Spray only if necessary and apply strategically.
5. Rotate and mix fungicides / mode of actions.

For more information visit: afren.com.au

Rhizobium test

The PREDICTA® rNod test can measure Group E and F rhizobia and predict if growers need to inoculate field pea, faba bean, lentil and vetch crops. More information can be obtained by contacting Russell Burns at SARDI, Russell.Burns@sa.gov.au

Blackspot manager is a tool to predict the risk of blackspot infection in field peas. To subscribe to this free service, text 'blackspot', your name and nearest weather station to 0475 959 932 or email Blackspot.Manager@agric.wa.gov.au.

Pulse pathology (Agriculture Victoria)

Croppathology.horsham@agriculture.vic.gov.au
Joshua.fanning@agriculture.vic.gov.au

Private Bag 260 Horsham, Vic 3401

Seed testing laboratories

Crop Health Services, Agriculture Victoria, Tel. (03) 9032 7515
CHS.reception@agriculture.vic.gov.au

CropSafe

Crop.safe@agriculture.vic.gov.au

Ph: 03 5450 8301

Private Bag 260 Horsham, Vic 3401

Exotic plant pest hotline: 1800 084 881

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Contact/Services available from DJPR Field Crops Pathology, Grains Innovation Park, 110 Natimuk Rd, Horsham 3400. Tel 03 5450 8301, or the DEECA Customer Service Centre 136 186

Accessibility: If you would like to receive this publication in an alternative format, please telephone the Customer Service Centre 136 186, via the National Relay Service on 133 677 www.relayservice.com.au. This document is also available at www.agriculture.vic.gov.au

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Further Information

Detailed information on each of the pulse diseases can be obtained from:

Agriculture Victoria AgNotes

[Field Crop Disease Victoria \(extensionAUS.com.au\)](http://Field Crop Disease Victoria (extensionAUS.com.au))

Pulse Australia

Victorian Crop Sowing Guide

Australian Fungicide Resistance Extension Network

www.grdc.com.au/ManagingFrostRisk

Interpreting Resistance Classifications

Below is an explanation of the resistance ratings used in this guide for foliar diseases, and how they should be interpreted.

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.

Below is an explanation of the resistance ratings used in this guide for **nematodes**, and how they should be interpreted.

R Resistant, nematode numbers will decrease when this variety is grown.

MR Moderately Resistant, nematode numbers will slightly decrease when this variety is grown.

MS Moderately Susceptible, nematode numbers will slightly increase when this variety is grown.

S Susceptible, nematode numbers will increase greatly in the presence of this variety.

VS Very Susceptible, a large increase in nematode numbers can occur when this variety is grown and this will cause problems to a following intolerant crop.

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