

Cereal Disease Guide 2024

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2023 in review

Disease pressure on cereal crops during 2023 was high. Substantial inoculum carry over from 2022 and wet conditions during winter prompted high disease severity in cereal crops and resulted in yield losses despite below average rainfall in spring. Septoria tritici blotch (STB), powdery mildew and stripe rust of wheat, and net form, spot form of net blotch and leaf rust in barley were the most common cereal diseases in Victoria. Avoiding highly susceptible varieties reduced disease risk and yield losses. New detections of resistance to fungicides highlights the importance of adopting strategies to slow further development of fungicide resistance.

2024 cereal disease management

Cereal diseases will require proactive management during 2024. There is disease carry over on both volunteer cereals growing over summer and on stubble from 2023. With early summer rain events in many parts of south-east Victoria, rust carry over on green bridge (volunteer cereals) is expected into the 2024 season.

Soil-borne diseases are a risk to cereals. Testing prior to sowing (PREDICTA B®) allows paddocks at risk to be identified and less susceptible crop varieties sown.

Cereal rusts

Because of the high risk posed by rust due to potential carryover of inoculum from 2023 it will be important to:

- Remove volunteer cereals before the end of March,
- Avoid susceptible varieties,
- Use fungicides on seed or fertiliser for early control,
- Monitor crops with a plan for timely fungicide use.

Fungicide resistance

Resistance to fungicides is an increasing threat to crops. New research by the University of Sydney detected resistance in both barley and wheat leaf rust to Group 3 fungicides in Australia controlled environment studies.

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 / modes of action.**

For more information visit: www.afren.com.au

Wheat foliar diseases

Stripe rust: inoculum levels will be extreme going into the 2024 season due to carry over from 2023. Widespread use of up-front fungicides (e.g. flutriafol on fertiliser) will provide area wide suppression and assist with later in-crop control, especially where varieties do not have adequate resistance. The free tablet-based app “StripeRustWM” is available to support in-crop fungicide decisions.

Septoria tritici blotch: is a common foliar disease in many parts of Victoria and will require proactive management during 2024. AgVic research in 2023 showed grain yield losses of ~28 in the Wimmera and 13 per cent in the Mallee. Losses in the Mallee were recorded for the first time. Foliar fungicide applications at Z31 and Z39 growth stages were most effective. Losses can be minimised by avoiding highly susceptible varieties. Partial resistance to Group 3 fungicides (DMIs) is widespread so ensure that fungicide resistance management is used.

Powdery mildew: was common in 2023. Avoiding susceptible cultivars is the best control. If fungicides are required, they should be applied before canopy closure noting that resistance to Group 11 (Qols) and resistance/partial resistance to Group 3 (DMIs) fungicides is common.

Barley foliar diseases

Stubble-borne diseases will be common due to the high stubble loads from the previous two seasons. Therefore, there is a risk of yield loss due to net form of net blotch (NFNB), spot form of net blotch (SFNB) and scald in susceptible varieties. NFNB was more common in 2023 and in AgVic trials reduced grain yield loss by ~23% in susceptible varieties when left uncontrolled. Fungicide resistant strains of NFNB and SFNB increased in frequency in 2023 which means that fungicides will need to be used according to fungicide resistance management guidelines (see below). Resistance to Group 7 (SDHI) and partial resistance to Group 3 in NFNB is now common across Victoria and these fungicides will be unreliable.

Barley rusts will be carried over by the green bridge and may become severe if the season is favourable. Barley grass stripe rust (BGYR) was observed in multiple crops in 2023 and may re-emerge in 2024.

Oat foliar diseases

Red leather leaf (RLL) is the most common foliar disease of oats in medium and high rainfall zones. AgVic trials have consistently shown grain and hay yield losses of 10-15 per cent in susceptible varieties. Losses were significantly less for moderately susceptible (MS) or better rated varieties. Fungicides are best applied during Z25-Z32 growth stages.

Wheat Disease Reactions 2024

Variety	Rust			Septoria <i>tritici</i>	Yellow leaf spot	Powdery mildew	Crown rot	Cereal cyst nematode	Root lesion nematode (<i>Pratylenchus</i>)		Quality (Victoria)
	Stem	Stripe	Leaf						<i>P. neglectus</i>	<i>P. thornei</i>	
Anapurna	MSS	RMR	MS	MRMS	MRMS	RMR	SVS	MRMS	MS	Sp	Feed
Ascot	MRMS	MSS	RMR	S	MRMS	S	S	MR	S	S	APW
Ballista	MR	MSS	S	SVS	MS	SVS	S	MRMS	S	MRMS	AH
BigRed	S	RMR	MRMS	MR	MR	RMR	MSS	S	MS	MS	Feed
Boree	MR	SVS	S	SVS	MRMS	SVS	S	MSS	S	MSS	AH
Brumby	MR	MS	SVS	S	MRMS	MR/S	S	MRMS	MRMS	MSP	APW
Calibre	MR	S	S	S	MRMS	MSS	S	MRMS	S	MSS	AH
Catapult	MR	S	S	MSS	MRMS	S	MSS	R	S	MS	AH
Coota	RMR	S	MR	S	MSS	S	MSS	MR	MR	MS	AH
Cutlass	R	MSS	RMR	MSS	MSS	MSS	S	MR	MSS	MSS	APW
Denison	MS	S	S	MSS	MRMS	S	MSS	MS	S	S	APW
DS Bennett	MS	S	SVS	MSS	MRMS	R	VS	S	S	S	ASW
DS Pascal	MSS	MRMS	MRMS#	MSS	MS	RMR	S	S	S	S	APW
EG Titanium	MS	MR	MS	MSS	MSS	S	MSS	R	MSS	MSS	AH
Hammer CL Plus	MR	MS	S	MSS	MRMS	S	MSS	MRMS	MSS	S	AH
Illabo	MRMS	MRMS	S	MSS	MS	R	S	MRMS	MSS	MSS	AH
Kingston	S	MSS	S	S	MSS	S	S	R	S	MRMS	AH
LRPB Anvil CL Plus	MR	S	SVS	VS	MSS	SVS	MSS	MS	MSS	S	AH
LRPB Bale	MRMS	MRMS	MSS	MSS	SVS	MS	S	R	S	S	APW
LRPB Kittyhawk	MRMS	MR	MR	MRMS	MRMS	MS	MSS	S	S	S	AH
LRPB Matador	MS	MS	MSS	Sp	MRMS	MS	S	MSP	S	MRMS	AH
LRPB Nighthawk	RMR	MR	MSS	MS	MS	SVS	MSS	MS	MSS	MS	APW
LRPB Scout	MRMS	MS	MS	S	SVS	MRMS	S	R	S	MSS	AH
Mace	MRMS	SVS	S	SVS	MRMS	MSS	S	MRMS	MS	MS	AH
Patron	RMR	MRMS	MR#	MRMS	MRMS	MSS	SVS	S	MRMS	MR	ADR
Razor CL Plus	MRMS	MRMS	S	SVS	MSS	MSS	S	MR	S	MS	ASW
Reilly	MRMS	MS	MSS	S	S	MSS	S	R	MS	MSS	AH
RGT Accroc	MS	RMR	SVS	MS	MRMS	MSS	SVS	S	MS	MSS	Feed
RGT Calabro	MS	RMR	MSS	MRMS	MR	RMR	SVS	S	S	MS	Feed
RGT Cesario	RMR	RMR	RMR	MRMS	MR	RMR	VS	MSSp	MRMS	MSS	Feed
RGT Waugh	MS	RMR	S	MRMS#	MRMS	R	S	MS	MSS	MSS	Feed
RGT Zanzibar	VS	MR	SVS	MSS	MS	RMR	S	MSS	S	MSP	Feed
RockStar	MRMS	S	S	S	MRMS	SVS	S	MSS	MRMS	MS	AH
Scepter	MRMS	MSS	MSS	S	MRMS	SVS	MSS	MRMS	S	MSS	AH
Severn	MS	RMR	MRMS	MSS	MRMS	RMR	S	MSSp	S	MRMS	Feed
Sheriff CL Plus	MS	SVS	SVS	S	MRMS	SVS	S	MS	MRMS	MRMS	APW
Sunmaster	MS	MRMS	RMR	S	MSS	MSS	MSS	MSS	MRMS	MS	APH
Valiant CL Plus	MR	S	S	MSS	MRMS	VS	MSS	MSSp	S	Sp	AH
Vixen	MRMS	SVS	SVS	S	MRMS	SVS	S	MSS	MRMS	MS	AH
Willaura	MR	S	MRMS	S	MS	SVS	S	MS	MSS	MRMS	AH
Yitpi	S	MS	S	S	SVS	MS	S	MR	MSS	S	AH

Varieties marked may be more susceptible if more virulent strains are present. p These ratings are provisional - treat with caution. / Variety reacts differently to different strains.

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.

Oat Disease Reactions 2024

Variety	Rust		CCN Resistance	Bacterial blight	Red leather leaf	Barley yellow dwarf virus	Septoria avenae
	Stem ^A	Leaf					
Archer	MS	R/Sp	VSp	MSSp	SVSp	MSSp	MRMSP
Bilby	S	MSS	VS	SVS	MS	S	S
Brusher	SVS	MR	MR	SVS	MS	S	MSS
Kingbale	Sp	S	R	MSSp	Sp	MS	MSS
Koala	MSS	MSS	R	S	S	MSS	MSS
Kowari	S	SVS	S	S	S	S	S
Kultarr	-	Rp	MRMSP	MSP	Sp	MSSp	MSP
Mulgara	MRMS	MR	R	MSS	SVS	MSS	S/MS
Wallaby	-	Rp	MRp	MSSp	SVSp	MSP	MSP
Williams	S	MRMS	VS	MSS	MS	MSS	MSS
Wintaroo	MSS	S	R	S	S	MS	MS#
Yallara	MSS	S	R	S	SVS	S	MSS

Varieties marked may be more susceptible if alternative strains are present. p These ratings are provisional - treat with caution.

/ Variety reacts differently to different strains. ^A Data from 2023 testing is pending.

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ratings here



Barley Disease Reactions 2024

Variety	Scald	Spot form of net blotch	Net form of net blotch	Powdery mildew	Leaf rust	Cereal cyst nematode	Root lesion nematode (<i>Pratylenchus</i>)	
							<i>P. neglectus</i>	<i>P. thornei</i>
Malting barley								
Bottler	SVS	MSS	MR	RMR	MRMS	-	MS	RMR
Compass	SVS	MS	MS	S	SVS	R	MRMS	MR
Kiwi	SVS	MSS	MRMS#	RMR	MSS	S	MRMS	RMR
LaTrobe	SVS	S	MS	MSS	S	R	MRMS	MRMS
Leabrook	SVS	MS	MS#	S	SVS	RMR	MRMS	RMR
Maximus CL	SVS	MS	MRMS	S	S	R	MRMS	MRMS
RGT Planet	SVS	SVS	SVS	RMR	MRMS	R	MRMS	MR
Spartacus CL	SVS	S	S	MSS	S	R	MRMS	MRMS
Barley lines undergoing malt evaluation								
Beast	SVS	MS	MRMS	S	S	MR	MRMS	MRMS
Commodus CL	SVS	MSS	MSS	MSS	S	R	MRMS	MRMS
Cyclops	S	MS	MRMS	SVS	SVS	S	MRMS	MRMS
Laperouse	VS	MRMS	MRMS#	MSS	SVS	S	MRMS	MR
Minotaur	VS	S	MRMS	S	VS	R	MRMS	MRMS
Neo CL	Sp	MRp	MSP	RMRp	Sp	R	RMRp	MRp
Titan AX	VS	MS	MS	MSS	SVS	MRp	MR	MR
Yeti	VS	MS	MR#	S	SVS	RMR	MR	MR
Zena CL	S	S	SVS	RMR	MS	R	MRMS	MR
Feed barley								
Combat	S	RMR	MRMS#	MS	S	MR	MRms	MS
Fandaga	SVS	S	MRMS	R	MSS	R	MR	MR
Fathom	S	RMR	MSS	MRMS	MS	R	MRMS	MR

Varieties marked may be more susceptible if alternative strains are present. p These ratings are provisional - treat with caution.

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.

Root and crown diseases of cereals

With a lack of in-crop control options for soil-borne diseases, a soil test (PREDICTA B®) is recommended before sowing to identify paddocks at risk. Most cereal root (take-all, and cereal cyst and root lesion nematode) and crown diseases (crown rot) can be controlled with a one or two-year break from susceptible hosts. Break crops are to be free of grass weeds.

Viruses and insects

Primarily spread by the oat aphid, barley yellow dwarf virus (BYDV) incidence increased in 2023, being observed in paddocks from September onwards. Russian wheat aphid activity was observed late in the season (Nov-Dec).

A widespread green bridge in eastern Australia will increase the risk of virus and insects in 2024. The green bridge should be removed prior to sowing to prevent virus and insect build up. During the season, monitor crops for aphid activity with a plan for timely insecticide application.

Bunt and smut

Seed treatments provide cheap and effective control of bunt and smut diseases and should be applied every year with good coverage. These diseases can develop rapidly and result in large yield losses and unsaleable grain. Loose smut was common in some barley varieties during 2023. Infected seed should not be used. Fertiliser treatments do not control bunt and smuts.

Further Information

Detailed information on cereal diseases can be obtained online from:

- [Agriculture Victoria Information Notes](#)
- Field Crop Diseases Victoria: extensionaus.com.au/FCDVic
- GRDC National Variety Trials: www.NVTOonline.com.au
- Fungicide Resistance: www.afren.com.au

Services available from Agriculture Victoria

Field Crops Pathology, Grains Innovation Park,
110 Natimuk Rd, Horsham 3400.

Tel (03) 5450 8301,

or the Customer Service Centre 136 186

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Triticale Disease Reactions 2024

Variety	CCN	Stem rust	Stripe rust	Leaf rust	Yellow leaf spot	Septoria tritici
Astute*	R	MR	MSS	RMR	MRMS	RMR
Cartwheel	R	R	RMR	R	MR	RMR
Fusion	R	R	RMR	R	MS	RMR
Joey	MS	S	MR	RMR	MR	RMR
KM10	S	R	MR	MR/S	MR	RMR
Kokoda	MR	R	RMR	RMR	MR	RMR
Razoo	-	MRMSp	MR	RMRp	MRp	RMRp
Wonambi	MS	R	MRMS	R	MR	RMR
Woomera	MS	MS	MR	RMR	MR	RMR

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

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, the disease will not multiply or cause any damage on this variety.
- MR** Moderately Resistant, the disease may be visible and will multiply slightly, but will not cause significant loss.
- MS** Moderately Susceptible, the disease may cause losses up to 15% or more in very severe cases.
- S** Susceptible, the disease can be severe on this variety and losses of 15-50% can occur.
- VS** Very Susceptible, this variety should not be grown in areas where a disease is likely to be a problem. Losses greater than 50% are possible, and the build-up of inoculum will 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.

These classifications are only a guide, and yield losses will depend on the environment and seasonal conditions.

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