

Cereal Disease Guide 2023

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2022 in review

Disease pressure was extreme due to the amount and frequency of rainfall during August to November. The Wimmera, for instance, reported its highest total and frequency of rainfall in the past 100 years. This provided ideal conditions for disease development and spread, challenging management due to reduced spray days and/or paddock accessibility. The wet conditions also provided ideal conditions for head infection by diseases in wheat; predominantly associated with stripe rust, but also fusarium head blight and septoria nodorum blotch. Despite losses to disease, in many cases, integrated and proactive disease control significantly reduced losses.

2023 cereal disease management

Cereal diseases will require proactive management during 2023 as there will be disease carry over on both volunteer cereals growing over summer and on stubble. The wet conditions across north-eastern Australia over summer will increase the risk of early rust infections due to the widespread green bridge.

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

Summer rain in eastern Australia will support a green bridge (volunteers growing over summer) which will increase the risk of all cereal rusts during 2023. Because of the high risk posed by rust it will be important to:

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

Wheat foliar diseases

Stripe rust: inoculum levels will be extreme going into the 2023 season due to carry over from 2022. 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 the high and medium rainfall regions and will require proactive management during 2023. AgVic studies during 2022 showed grain yield (~43 per cent) and quality losses in the Wimmera. Foliar fungicide applications at Z31 and Z39 growth stages were most effective. Losses can be minimised by avoiding highly susceptible varieties and

avoiding sowing into paddocks with wheat residue. Partial resistance to Group 3 fungicides (DMIs) is widespread so ensure that fungicide resistance management is used.

Powdery mildew: was common in 2022. 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 loss due to spot form of net blotch (SFNB), net form of net blotch (NFNB) and scald in susceptible varieties. Fungicide resistant strains of SFNB and NFNB increased in frequency during 2022 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 and these fungicides will be unreliable.

Oat foliar diseases

Red leather leaf (RLL) is the most common foliar disease of oats in medium and high rainfall zones. Field 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.

Crown and stem rust inoculum levels will be high during 2023 from disease carry on volunteer hosts (wild oats and oats) growing over summer.

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 / mode of actions.**

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

Wheat Disease Reactions 2023

Variety	Rust			<i>Septoria 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>	
RGT Accroc	MS	RMR	SVS	MS	MRMS		SVS	S	S	MSS	Feed
Anapurna	MSS	RMR	MS	MRMS	MRMS	RMR	SVS	MRMS	MS	Sp	Feed
Ascot	MRMS	MSS	RMR	S	MRMS	S	S	MR	S	S	APW
LRPB Bale	MRMS	MRMS	MSS	MSS	SVS	MSS	S	R	S	S	APW
Ballista	MR	MSS	S	SVS	MS	SVS	S	MRMS	S	MRMS	AH
LRPB Beaufort	SVS	RMR	MSS	S	MRMS		S	S	MS	MSS	Feed
Beckom	MRMS	MRMS	MSS	S	MSS	MSS	S	R	S	MSS	AH
DS Bennett	MS	S	SVS	MSS	MRMS	R	VS	S	S	S	ASW
BigRed	S	RMR	MRMS	MR	MR	RMR	Sp	S	MS	MS	Feed
Boree	MR	SVS	S	SVS	MRMS	SVS	S	MSS	S	MSS	AH
Brumby	MR	MS	SVS	S	MRMS	R/S	S	MRMS	MRMS	MS	APW
RGT Calabro	MS	RMR	MSS	MRMS	MR		SVS	S	S	MS	Feed
Calibre	MR	S	S	S	MRMS	S	S	MRMS	S	MSS	AH
Catapult	MR	S	S	MSS	MRMS	S	MSS	R	S	MS	AH
RGT Cesario	R	RMR	RMR	MRMS	MR		VS	MSSp	MRMS	MSS	Feed
Coota	RMR	S	MR	S	MSS	S	MSS	MR	MR	MS	AH
Cutlass	R	MSS	RMR	MSS	MSS		S	MR	MSS	MSS	APW
Denison	MS	S	S	MSS	MRMS	S	MSS	MS	S	S	APW
LRPB Dual	MRMS	MS	MSS	MSS	S	S	S	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
LRPB Kittyhawk	MRMS	MR	MR	MRMS	MRMS		SVS	S	S	S	AH
Mace	MRMS	SVS	S	SVS	MRMS	MSS	S	MRMS	MS	MS	AH
LRPB Nighthawk	RMR	MRMS	MSS	MS	MS	SVS	MSS	MS	MSS	MS	APW
LRPB Oryx	MR	MS	RMR#	SVS	MSS		MSS	S	MSS	MSS	ASFT
LRPB Parakeet	MR	MR	R	SVS	MSS		MSS	MS	MRMS	S	ANW
DS Pascal	MSS	MRMS	MS	MSS	MS		S	S	S	S	APW
Razor CL Plus	MRMS	MS	S	SVS	MSS	S	S	MR	S	MS	ASW
Reilly	MR	MS	MSS	S	S	S	S	R	MS	MSS	AH
RockStar	MRMS	S	S	S	MRMS	SVS	S	MSS	MRMS	MS	AH
Scepter	MRMS	MSS	MSS	S	MRMS	SVS	MSS	MRMS	S	MSS	AH
LRPB Scout	MRMS	MS	MS	S	SVS	MRMS	S	R	S	MSS	AH
Severn	MS	RMR	MRMS	MSS	MRMS	RMR	S	MSSp	S	MRMS	Feed
Sheriff CL Plus	MS	S	SVS	S	MRMS	SVS	S	MS	MRMS	MRMS	APW
Sunblade CL Plus	MS	MRMS	MSS	S	MSS		S	MSS	MSS	MRMS	AH
Sunmaster	MS	MRMS	RMR#	S	MSS	S	S	MSS	MRMS	MS	APH
LRPB Trojan	MRMS	S	MR#	S	MSS	S	MS	MS	MSS	MSS	APW
Valiant CL Plus	MR	MSS	S	MSS	MRMS	VS	S	MSSp	S	Sp	AH
Vixen	MRMS	SVS	SVS	S	MRMS	SVS	S	MSS	MRMS	MS	AH
Willaura	MR	S	MRMS	S	MS	S	S	MS	MS	MS	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

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 2023

Variety	Rust		CCN Resistance	Bacterial blight	Red leather leaf	Barley yellow dwarf virus	Septoria avenae
	Stem	Leaf					
Bannister	S	MSS	MR	S	MSS	MS	MSS
Bilby	S	MS	VS	SVS	MS	S	S
Brusher*	SVS	MSp	MR	S	MS	SVSp	MSS
Kingbale*	Sp	Sp	R	MSSp	S	MSp	MSS
Kowari	S	S	S	S	S	S	S
Mitika	S	MSS	VS	S	SVS	SVS	SVS
Mulgara	MRMS	MR	R	MSS	SVS	MS	S
Tungoo	MS	MR	R	S	MRMS	MSS	MRMS#
Williams	S	MRMS	VS	MSS	MS	MSS	MSS
Wintaroo	MSS	MSS	R	S	S	MS	MSS
Yallara	MSS	S	R	S	SVS	MSS	MSS

Download the most up to date ratings here:



Varieties marked may be more susceptible if alternative strains are present.

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

p These ratings are provisional - treat with caution

Barley Disease Reactions 2023

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	MR	-	MS	RMR
Compass	SVS	MS	MS	MSS	SVS	R	MRMS	MR
Kiwi	SVS	MSS	MRMS	RMR	MS	S	MRMS	RMR
La Trobe	SVS	S	MR	MSS	S	R	MRMS	MRMS
Leabrook	SVS	MS	MR	S	SVS	RMR	MRMS	RMR
Maximus CL	SVS	MS	MRMS	MS	S	R	MRMS	MR
RGT Planet	SVS	SVS	SVS	RMR	MR	R	MRMS	MR
Spartacus CL	SVS	S	S	MSS	S	R	MRMS	MRMS
Barley lines undergoing malt evaluation								
Beast	SVS	MS	MR#	S	S	MR	MRMS	MRMS
Commodus CL	SVS	MSS	MRMS	MS	S	R	MRMS	MRMS
Cyclops	S	MS	MRMS	S	SVS	S	MRMS	MRMS
Laperouse	VS	MRMS	MR	MSS	SVS	S	MR	MR
Minotaur	VS	S	MRMS	S	SVS	R	MRMS	MR
Titan AX	VS	MS	MSS	MS	S	MRp	R	MR
Yeti	VS	MSS	Sp	MSS	S	RMR	MR	MR
Zena CL	Sp	S	S	R	MSS	R	MRMS	MR
Feed barley								
Combat	S	RMR	MRp	MS	S	MRMS	MR	MS
Fathom	S	RMR	MS	MRMS	MS	R	MRMS	MR

Varieties marked may be more susceptible if alternative strains are present.

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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. Crown rot levels are expected to be high following the wet season.

Viruses and insects

Spread by the oat aphid, barley yellow dwarf virus (BYDV) was common during 2022 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 2023. 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, an issue in some barley varieties, requires a robust approach to control. 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

Download the
most up to date
guide here:



Triticale Disease Reactions 2023

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	S	R	MS	RMR
Joey	MS	S	MSS	RMR	MR	RMR
KM10	S	R	S	MR#	MR	RMR
Kokoda	MR	R	RMR#	RMR	MR	RMR
Razoo	MS	MS	MSS	RMR	MR	RMR
Wonambi	MS	R	S	R	MR	RMR
Woomera	MS	MS	MSS	RMR	MR	RMR

Varieties marked may be more susceptible if alternative strains are present.

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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