



Cereal Variety Disease Guide 2015

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Summary of 2014 season and implications for 2015

Some early sown crops and a wet winter encouraged the development of many diseases in cereal crops in SA in 2014. Damage to many crops was reduced by the effective use of fungicides and a dry spring that reduced later infection of foliar diseases. The same conditions will have favoured build up crown rot and take-all inoculum for 2015.

Leaf rust and stem rust in wheat are re-emerging as high risk diseases with a new virulent strain of leaf rust detected and an increasing list of long season varieties susceptible to stem rust being released.

Leaf rust in wheat

A new strain of wheat leaf rust was identified across South Australia and into Southern Victoria in 2014. It is most likely that the strain was present in the past couple of years but went undetected being at a very low level. The effective use of fungicides to control stripe rust in Mace would have helped to control the leaf rust. Several varieties have proven to be more susceptible to this new strain including Axe, Corack, Grenade CL+, Mace, Scout, Revenue, Wallup and Wyalkatchem which have all dropped by 2 or more rating levels. This leaves South Australian crops much more exposed to leaf rust damage whilst these varieties are widely grown. Growers are therefore urged to be even more vigilant than in the past in removing volunteer wheat, the "green bridge", over summer and in having an active plan for applying fungicides should the need arise.

Stem rust

At the end of 2014 stem rust was observed in variety trials on the Adelaide Plains and South-East. In January it was also observed on volunteer barley on the Bellarine Peninsula in Victoria. Whilst the levels were only low it highlights the ability of this rust to survive and cause a problem where susceptible varieties are grown. Of particular concern are the many new long season wheats that are susceptible to stem rust. Stem rust, once established, can be hard to control with fungicides and crops of these varieties help form a green bridge for survival of rust through summer especially in the long

season areas. Varieties of particular concern are Adagio, Beaufort, Einstein, Frelon, Mansfield, Ovalo, Preston and Scenario. Some of these varieties are very new; others are used by only a few growers. Taken together they may come to cover an extensive area and present a serious risk to all growers.

Eyespot

Eyespot was observed more widely than previously with recordings from Balaklava and the Lower Yorke Peninsula as well the expected areas of the Lower Eyre Peninsula, Adelaide Plains, Mid-North high rainfall region and South-East.

GRDC funded research on eyespot in SARDI is providing some early indications of differences between varieties although it is premature to provide formal ratings at this stage. Early indications however suggest that Trojan and Emu Rock have some useful resistance whereas Axe, Cobra, Corack, Mace, Scout, Shield and Wyalkatchem are all quite susceptible.

Barley has been considered more resistant to eyespot than wheat and this appears to be the case in a variety trial at Cummins. At trials near Templars and Tarlee however the varieties La Trobe and Hindmarsh were quite susceptible to eyespot. Compass, and to a lesser extent Scope, appear to be more resistant compared to these varieties. Other DNA evidence also suggests the eyespot on the Eyre Peninsula may differ slightly from that in the Mid-North.

Shorter and/or stronger strawed varieties are likely to lodge less when infected by eyespot.

Septoria tritici blotch

This disease is becoming more severe in the South-East of SA as cropping with cereals intensifies and early sowing is practised. The septoria population in the South East and in Western Victoria appears to have different virulences to those previously observed in more mainstream areas of SA. The varieties Mace, Phantom and Wyalkatchem are rated SVS in the long season South East SA and Western Victoria regions.

Wheat	Rust Stripe		CCN Resistance	Yellow leaf spot	Powdery mildew	Septoria tritici blotch	Root lesion nematodes		Crown rot	Common root rot	Flag smut	Black point †	Quality in SA
	Stem	Leaf					<i>P. neglectus</i>	<i>P. thornei</i>					
Adagio	SVS	RMR	S	MRMS	MR	MRMS	MS	MS	SVS	MS	MS	-	Red feed
Axe	MS	RMR	S	S	MS	SVS	MS	MS	S	MSS	S	S	AH
Bolac	MRMS	RMR	S	S	MRMS	MS	MSS	MRMS	S	MS	RMR	MSS	AH
Cobra	RMR	MSS	MS	MRMS	MRMS	MSS	MS	MSS	S	MSS	S	MS	AH
Corack	MR	MS	RMR	MR	SVS	S	S	S	S	MS	S	S	APW
Correll	MRMS	MRMS	MR	SVS	MRMS	MSS	MSS	S	S	MS	R	MS	AH
Cosmick	MS	MS	MS	MRMS	MS	MSS	MS	MS	S	MSS	SVS	-	AH
Emu Rock	MRMS	MRMS	S	MRMS	S	SVS	MSS	S	MS	MSS	MS	MS	AH
Estoc	MR	MS	MR	MSS	MSS	S	S	S	S	MRMS	MRMS	MS	APW
Forrest	RMR	RMR	S	MRMS	MS	SVS	S	SVS	SVS	MS	MR	MR	APW
Gladius	MR [^]	MRMS	MS	MS	MSS	S	MS	S	S	MS	RMR	MS	AH
Grenade CLPlus	MR	MRMS	MR	S	MS	S	MSS	S	S	MRMS	RMR	MS	AH
Impalla	MR	MR	S	MSS	RMR	SVS	S	S	S	MSS	SVS	MRMS	Soft
Kiora	MRMS	RMR	MS	MSS	MRMS	MS	MS	MRMS	S	MS	MRMS	MS	AH
Kord CL Plus	MR	MRMS	MR	MSS	MSS	MSS	MSS	MS	S	MRMS	MR	MRMS	AH
Mace	MR	SVS	MRMS	MRMS	MSS	MRMS	MS	MS	S	MS	S	MRMS	AH
Manning	MR	RMR	MS	MRMS	MR	MR	MSS	S	VS	SVS	R	-	Feed
Orion	MR	MSS	S	MSS	MS	MS	MS	MSS	S	MSS	S	S	Soft / Hay
Phantom	MS	MR	MS	SVS	MRMS	MS	S	MSS	S	MSS	MRMS	MRMS	AH
Revenue	RMR	R	S	MS	MR	MS	MSS	S	S	SVS	S	MS	Feed
Scout	MR	MS	R	SVS	MS	MSS	S	MS	MSS	S	MR	SVS	AH
Shield	RMR	MR	MRMS	MSS	MRMS	MSS	MS	MSS	S	MRMS	S	MS	AH
Trojan	MRMS	MR	MS	MSS	MSS	MSS	MSS	MS	MS	MS	SVS	MRMS	APW
Wallup	MRMS	MRMS	MR	MSS	S	S	MRMS	MRMS	S	MS	SVS	MS	AH
Wyalkatchem	MS	S	S	MR	SVS	MRMS	MRMS	MS	S	MSS	SVS	MRMS	APW
Yitpi	S	MRMS	MR	SVS	MRMS	MSS	MSS	S	S	MS	MR	MS	AH

[†] Provisional rating change for the exotic strain of leaf rust

Durum

Durum	Rust Stripe		CCN Resistance	Yellow leaf spot	Powdery mildew	Septoria tritici blotch	Root lesion nematodes		Crown rot	Common root rot	Flag smut	Black point †	Quality in SA
	Stem	Leaf					<i>P. neglectus</i>	<i>P. thornei</i>					
Auroora	R	RMR	R	MRMS	MR	MS	MRMS	RMR	VS	MRMS	R	MS	Durum
Hyperno	R	MR	MS	MRMS	MR	MRMS	MS	RMR	SVS	MS	R	MS	Durum
Saintly	MR	MR	MS	MRMS	MSS	S	MS	RMR	VS	MS	R	MS	Durum
Tjilkuri	MR	MR	MS	MRMS	MRMS	MSS	MRMS	MR	VS	MS	R	MSS	Durum
WID802	RMR	MR	MS	MRMS	MRMS	MS	MS	MS	VS	MS	R	MSS	Durum
Yawa	RMR	MR	MS	MRMS	MS	MR	MRMS	RMR	VS	MRMS	-	MRMS	Durum

Triticale

Triticale	Rust Stripe		CCN Resistance	Yellow leaf spot	Powdery mildew	Septoria tritici blotch	Root lesion nematodes		Crown rot	Common root rot	Flag smut	Black point †	Quality in SA
	Stem	Leaf					<i>P. neglectus</i>	<i>P. thornei</i>					
Bison	RMR	R	R	MR	R	R	R	MR	-	MRMS	-	-	Triticale
Bogong	RMR	MRMS	-	MR	R	R	MR	S	MSS	MSS	-	-	Triticale
Chopper	MR	MRMS	R	MR	R	R	MRMS	MSS	MSS	S	-	-	Triticale
Fusion	R	RMR	R	MRMS	R	R	RMR	MS	MS	S	R	MSS	Triticale
Goanna	R	MR [^]	R	MR	R	R	MRMS	SVS	-	-	-	-	Triticale
Hawkeye	RMR	MR [^]	R	MR	R	R	MR	MS	MS	MSS	-	-	Triticale
Jaywick	MRMS	MR	R	MR	R	R	MR	-	MS	MS	-	-	Triticale
Tahara	RMR	MRMS	R	MR	RMR	R	MR	S	MS	MS	R	-	Triticale

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

[^] = mixed reaction [^] = some susceptible plants

[†] Black point is not a disease but a response to certain humid conditions
Tolerance levels are lower for durum receivals

Barley		Leaf rust*	Net form net blotch*	Spot form net blotch*	Scald*	CCN Resistance	Powdery mildew	Barley grass stripe rust	Covered smut	Common root rot	Root lesion nematodes		Black point
		Leaf rust*	Net form net blotch*	Spot form net blotch*	Scald*	CCN Resistance	Powdery mildew	Barley grass stripe rust	Covered smut	Common root rot	<i>P. neglectus</i>	<i>P. thornei</i>	Black point
Bass	MR-S	MR-S	MS-SVS	MSS	MR-S	S	MSS	RMR	VS	MS	MRMS	MR	MS
Buloke	MS-SVS	MR	MS-S	MS-S	MS-S	S	RMR	RMR	MS	MS	MRMS	MRMS	MS
Charger	MR-MS	VS	SVS	SVS	VS	R	R	RMR	MS	MS	MR	MRMS	MRMS
Commander	MS-S	MS-S	MS-S	MSS	S	R	MRMS	R	R	MS	MRMS	MRMS	MSS
Compass	MR-VS	MR-MRMS	MRMS-MSS	MRMS-MSS	MS	R	MR	R	R	MS	MR	MR	MS
Fathom	MRMS-S	MR-MS	MR-MS	MR	R-S	R	MRMS	R	R	MSS	MRMS	MRMS	S
Flagship	MS-SVS	MR	MRMS	MRMS	MS	R	S	RMR	MRMS	MSS	MRMS	MRMS	MSS
Fleet	MRMS-S	SVS	SVS	MR	MS	R	MRMS	RMR	MR	MSS	MRMS	MRMS	MS
Granger	MR-S	MR-MSS	MR-MSS	S	MS-S	R	R	R	MR	S	MR	MR	MS
Hindmarsh	MRMS-S	MR	MR	S	R-VS	R	MRMS	MR	MS	S	MRMS	MRMS	MSS
Keel	VS	MS	MS	MR	MS-S	R	S	MRMS	R	S	MR	MRMS	SVS
La Trobe	MRMS-S	MR	MR	MSS	R-VS	R	MR	RMR	MRMS	S	MR	MR	MSS
Macquarie	MR-SVS	MRMS	MRMS	SVS	MR-MSS	S	S	RMR	MSS	MS	MR	MS	MR
Maritime	MRMS-S	R-VS	MRMS	MRMS	S	R	SVS	S	MS	S	MR	-	MSS
Moby	S	MR	MR	S	MRMS	S	MS	-	MS	MSS	-	-	-
Navigator	VS	MR-MS	MR-MS	MR	R-MR	R	R	RMR	MSS	MS	MRMS	MRMS	MSS
Oxford	R-MR	MR-SVS	MR-SVS	MSS	MS-S	S	R	R	MRMS	MSS	MR	MRMS	MR
Schooner	S-SVS	MR	MR	MS	MSS	VS	SVS	RMR	MR	S	MS	MRMS	MS
Scope	MS-SVS	MR	MR	MS-S	MS-S	S	RMR	RMR	MRMS	MS	MRMS	MRMS	MSS
Skipper	SVS	MR	MRMS	MRMS	S	R	MRMS	R	MSS	MSS	MRMS	MRMS	MSS
Westminster	R-MRMS	MR-MS	MR-MS	S	MR	-	R	R	R	MRMS	MRMS	MRMS	MRMS
Wimmera	R-MRMS	MR-S	MR-S	MS-S	MSS	S	MSS	R	MRMS	MS	MRMS	MRMS	MRMS

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

* Due to multiple strains of these pathogens, the table provides a range of reactions that may be observed. Different ratings are separated by a -

Oats	Rust		CCN		Stem nematode		Bacterial blight	Red leather leaf	BYDV*	Septoria avenae	<i>P. neglectus</i> nematodes
	stem *	Leaf *	Resistance	Tolerance	Resistance	Tolerance					
Bannister	MR-S	R	VS	I	-	MI	MR-S	MS	MS	S	-
Brusher	MS-S	MS-S	R	MI	MS	I	MR-MS	MS	MS	MS	MR-MS
Dunnart	MR-S	MR	R	MT	-	MT	MR-S	MS	MR	MR-MS	-
Forester	R-S	MR-MS	MS	MI	S	I	MS-S	R-MR	MR-S	MR	-
Glider	MR-S	MS-S	MS	I	R	T	R	R	MR-S	MR	-
Kangaroo	MS-S	MS-S	R	MT	S	MI	MR-MS	MS	MR-S	MR-MS	-
Mitika	MR-S	MS-S	VS	I	S	I	MR	S	MS-S	S	-
Mulgara	MS	MR-MS	R	MT	R	MT	MR	MS	MS	MS	-
Numbat	MS	S	S	I	S	I	S	MS	S	MR	MR
Tamar	MR-S	MR-MS	MR	MT	R	T	MR	R-MS	MS	MR	-
Tungoo	MS-S	MS	R	MT	R	T	MR	R	MR-MS	MR	-
Wallaroo	S	S	R	MT	MS	MI	S	MS	MS	S	MR
Williams	MR-S	R	S	I	-	I	R	MS	MR-MS	MR-MS	-
Wombat	MS-S	MS	R	T	MR	MT	MR-MS	MS	MR	MS	-
Wintaroo	S	S	R	MT	MR	MT	MR-MS	MS	MR-MS	MR-MS	MR-MS
Yallara	S	MS	R	I	S	I	MR-MS	MS	MS	MS	-

T = Tolerant, MT = Moderately Tolerant, MI = Moderately Intolerant, I = Intolerant, VI = Very Intolerant, - = Uncertain

Net form net blotch

Net form net blotch was largely controlled with early and well-timed applications of fungicides. Virulence on Fleet was widespread and no new virulences were detected in 2014 so variety ratings for 2015 remain much the same as in 2014.

Spot form net blotch

The exceptional yield loss to SFNB observed in some crops in northern districts of SA in 2013 was not repeated in 2014. A GRDC funded yield loss trial at Wharminda where SFNB was severe indicated that Hindmarsh (S) suffered yield loss of around 13% whilst La Trobe (MSS) which is marginally less susceptible lost 10.4%. Sloop SA (SVS) lost around 21%.

Oats

It was a good year for oat production as there was little in the way of disease development. The wet winter caused some bacterial blight early in the growing season, but it did not develop. Leaf rust was observed on very susceptible varieties, but the warm, dry spring was not conducive for its development.

Explanation for Resistance Classification

- R The disease will not multiply or cause any damage on this variety. This rating is only used where the variety also has seedling resistance.
- MR The disease may be visible and multiply but no significant economic losses will occur. This rating signifies strong adult plant resistance.
- MS The disease may cause damage but this is unlikely to be more than around 15% except in very severe situations.
- S The disease can be severe on this variety and losses of up to 50% can occur.
- VS Where a disease is a problem this variety should not be grown. Losses greater than 50% are possible and the variety may create significant problems to other growers

Where a '-' is used then the rating is given as a range of scores that may be observed depending on which strain of the pathogen is present.

This classification based on yield loss is only a general guide and is less applicable for the minor diseases such as common root rot, or for the leaf diseases in lower rainfall areas, where yield losses are rarely severe.

Other information

This fact sheet supplements other information available including the SARDI Sowing Guide 2015 and Crop Watch email newsletters. Cereal Leaf and Stem Diseases and Cereal Root and Crown Diseases books (2000 editions) are also available from Ground Cover Direct or from Hugh Wallwork in SARDI.

Disease identification

A diagnostic service is available to farmers 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. Samples should be sent, not just before a weekend, to the following address:

SARDI Diagnostics
Plant Research Centre
Hartley Grove
Urrbrae SA 5064

Further information contact:
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