



Cereal Variety Disease Guide 2013

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Summary of 2012 season and implications for 2013

The cool winter and dry spring hindered the development of most foliar pathogens in South Australia in 2012. The dry spring also prevented the development of white grain in crops as only a very low level was recorded in harvest deliveries. The dry spring did however promote the development of more crown rot than usual and severe infections were recorded across the upper/western Eyre Peninsula. Crown rot survives in wheat stubbles and so many crops in 2013 will be exposed to high levels of inoculum where they are sown into these stubbles. Eyespot has been occurring in crops in the high rainfall regions of the Lower Eyre Peninsula and Mid-North. On the Lower EP the short stature of Wyalkatchem has probably reduced lodging and therefore disguised the level of infection in crops in previous years. Mace which has largely replaced Wyalkatchem therefore appears more susceptible.

Rusts

Stem rust survived until winter on a few scattered volunteers in northern districts but failed to transfer to 2012 plantings and caused no concern to crops. Leaf rust in wheat was not recorded in crops and leaf rust in barley started late on the Yorke Peninsula and caused little damage especially compared to the 2011 season. Stripe rust arrived late in winter with recordings across a wide area from mid-August onwards. One crop of Mace near Pt Germein was found with much more severe infection and may have been the source of the other outbreaks. Timely application of fungicide sprays along with widespread use of in-furrow treatments in some districts kept the stripe rust under good control.

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Information may be used with acknowledgement.

Net form net blotch

Net blotch levels were low in most crops. Ongoing analysis of samples of net form net blotch used in controlled environment tests have revealed a great diversity in virulence amongst a range of isolates obtained from around the state. Virulence in the fungus was found on Oxford, Henley, Navigator and Wimmera at Conmurra in the South-East and this is reflected in changed ratings for these varieties in this Guide. Further cases of virulence have also been recorded on Fleet at Urania and South of Port Pirie. Similar to barley leaf rust and scald, this guide is now showing the resistance ratings of barleys to NFNB as a range rather than as a single rating. This reflects variation in the fungus around SA.

White grain

Only a minimal amount of white grain was recorded in any wheat deliveries in SA due to the dry spring conditions. However the fungus remains viable in crop stubbles and could cause problems in 2013 should persistent damp conditions occur after head emergence. There is no good evidence for variation in resistance amongst varieties at this stage.

Loose smut

Hindmarsh barley has been observed with higher levels of loose smut than is commonly observed in barley crops. Whilst testing of varieties for resistance to this disease is not carried out, it would appear that Hindmarsh is more susceptible than other varieties. Where barleys are treated for mildew control then loose smut should not be a problem.

Wheat	Rust			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	Stripe#	Leaf					<i>P. neglectus</i>	<i>P. thornei</i>					
AGT Katana	MSS	MRMS	MS	MS	MS	MRMS	MS	MS	MS	MS	MS	S	S	AH
Axe	MRMS	RMR	MR	S	S	MSS	SVS	MS	MS	S	MSS	S	S	AH
Barham	MR	#MSS	MRMS	MS	MSS	SVS	MSS	MR	MSS	S	MSS	MRMS	MRMS	Soft
Bolac	MRMS	RMR	MS	S	S	-	MS	S	MS	S	MS	RMR	MSS	AH
Brennan	MS	RMR	RMR	-	-	-	-	-	-	S	-	-	MRMS	Feed
Catalina	MR	MS	R	RMR	MSS	MSS	MRMS	S	MR	S	MRMS	RMR	S	AH
Cobra	RMR	MSS	MR	MRMS	MS	MSS	MSS	MS	MS	S	MSS	SVS	MSS	AH
Corack	MR	MS	MS	RMR	MR	VS	MSS	MSS	S	S	MS	S	MSS	APW
Correll	MR	MRMS	MSS	MR	SVS	MRMS	MRMS	MS	S	S	MS	R	MS	AH
Elmore CL Plus	MR	MRMS	R/MR	S	S	MR	MRMS	-	MSS	S	MS	SVS	MS	AH
Emu Rock	MRMS	MRMS	MSS	S	MS	MSS	MSS	MS	MSS	MSS	MSS	MS	MS	AH
Espada	MR	#MRMS	R	MS	MS	S	S	MS	MSS	S	MSS	MRMS	S	APW
Estoc	MR	MRMS	MRMS	MR	MSS	MSS	S	S	SVS	S	MRMS	MRMS	MS	APW
Forrest	RMR	RMR	MR	S	MRMS	MS	MRMS	S	S	SVS	MS	RMR	MR	APW
Gladius	MR [^]	#MRMS	MS	MS	MS	S	MSS	MRMS	S	S	MS	RMR	MS	AH
Grenade CLPlus	MR	#MRMS	MS	MR	S	MSS	MS	MSS	S	S	MRMS	R	S	AH
Impala	RMR	MR	S	S	MSS	RMR	S	-	-	S	MSS	SVS	MRMS	Soft
Justica CL Plus	MR	#MRMS	MSS	MS	S	S	S	MSS	S	S	MS	R	S	APW
Kord CL Plus	MR	#MRMS	MS	MR	MSS	MSS	MS	MS	MS	S	MRMS	MR	MR	AH
Lincoln	MR	RMR	MR	S	MRMS	MR	MSS	MS	MS	VS	MS	RMR	MR	AH
Mace	MR [^]	#SVS	MR	MRMS	MRMS	MSS	MRMS	MRMS	MRMS	S	MS	S	MS	AH
Peake	MR [^]	MRMS [^]	R [^]	RMR	S	-	MS	MS	S	S	S	MRMS	MSS	AH
Phantom	MR	MR	MRMS	MRMS	SVS	MRMS	MRMS	S	S	MSS	MSS	MRMS	MR	AH
Scout	MRMS	#MS	R	RMR	SVS	MRMS	MRMS	MSS	MS	S	S	MR	S	AH
Sentinel	RMR	RMR	R	S	MS	R	MRMS	S	MS	MSS	S	MSS	MSS	ASW
Shield	MR	#MR	R	MR	S	MR	S	S	MS	S	MRMS	MSS	-	AH
SQP Revenue	R	R	R	S	MS	R	MR	MS	MS	S	SVS	S	MSS	Feed
Wallup	RMR	MRMS	MS	MR	MSS	S	MSS	MRMS	MRMS	S	MS	SVS	MRMS	AH
Wyalkatchem	MRMS	S	MS	S	MRMS	SVS	MR	MRMS	S	S	MSS	SVS	MS	APW
Yitpi	S	MRMS	MS	MR	SVS	MRMS	MRMS	MS	MS	S	MS	MR	MS	AH

- These ratings are for the WA Yr17 strain. Varieties with a # have the Yr17 resistance and so will be resistant to other strains

[^] - Some susceptible plants in mix

Durum

Caparoi	MR	MR	MRMS	-	MR	-	RMR	-	MR	VS	MS	R	MSS	Durum	
Hyperno	R	MR	RMR	MS	MRMS	MR	RMR	MR	MRMS	VS	MS	R	MS	Durum	
Kalka	MR	MR	RMR	MS	MRMS	SVS	MRMS	MR	MR	VS	MS	RMR	S	Durum	
Saintly	MR	MR	MRMS	MS	MRMS	VS	MRMS	MR	-	VS	MS	R	MS	Durum	
Tamaroi	MR	MR	MR	MS	MRMS	MSS	S	MRMS	MR	VS	MS	R	MS	Durum	
Tjilkuri	MR	MR	MR	-	MRMS	S	MRMS	-	MRMS	VS	MS	R	MSS	Durum	
WID802	RMR	MR	RMR	-	MRMS	-	MR	-	-	VS	MS	R	-	Durum	
Yawa	RMR	RMR	MR	MS	MRMS	MS	MR	MR	MR	VS	MRMS	R	MR	Durum	

Triticale

Bogong	MR	MS	R	-	MR	R	R	-	-	MSS	MSS	-	-	Triticale
Chopper	MR	MSS	R	R	MR	R	R	-	-	MSS	S	-	-	Triticale
Fusion	R	MR	R	R	MR	R	R	-	-	-	MSS	R	-	Triticale
Goanna	R	MR	MR	R	MR	R	R	-	-	-	-	-	-	Triticale
Hawkeye	RMR	MR [^]	R	R	MRMS	R	R	-	-	MS	MSS	-	-	Triticale
Jaywick	MR	MR [^]	R	R	MR	R	R	-	-	MS	MS	-	-	Triticale
Rufus	RMR	MS	R	R	MR	R	R	RMR	RMR	MS	MS	-	-	Triticale
Tahara	RMR	MS	R	R	MR	RMR	R	R	MR	MS	MS	R	-	Triticale
Treat	R	MSS	MR	MS	MR	R	R	MRMS	-	-	MS	R	-	Triticale

The stripe rust ratings for the triticales are for the WA Tobruk strain

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

† 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
										<i>P. negectus</i>	<i>P. thornei</i>	
Bass	R-MS	MSS	MSS	MR-S	S	MS	-	VS	MS	MRMS	MRMS	MR
Buloke	MS-SVS	MR	MS	MS	S	MR	R	MS	MS	MS	MRMS	MS
Commander	MS-S	MS-S	MS	S	R	MR	R	R	MSS	MRMS	MRMS	S
Fathom	MR-SVS	MS-SVS	MR	R	R	MR	-	RMR	S	MRMS	MRMS	S
Flagship	MRMS-S	MR	MRMS	MS	R	MRMS	MR	MRMS	S	MS	MRMS	MSS
Fleet	MRMS-S	MR-S	RMR	MRMS	R	MRMS	MR	MR	MSS	MRMS	MRMS	MS
Flinders	MRMS-S	MR-MS	MSS	S	S	MR	-	S	MS	-	-	-
Gairdner	MS-S	MRMS	S	R-S	S	MR	R	MSS	MSS	MRMS	MS	MR
Grange	MR	MR-MS	S	MSS	S	MR	-	S	S	MR	MRMS	MS
Henley	MR-MRMS	MR-S	S	R-SVS	S	R	-	MR	MS	MRMS	MRMS	MSS
Hindmarsh	MRMS-S	MR	S	R-SVS	R	MS	R	MS	S	MS	MRMS	S
Keel	VS	MR-S	MR	MS	R	MRMS	MS	R	S	MR	MR	SVS
Maritime	MS-S	MR-SVS	MRMS	MSS	R	S	S	MS	S	MR	-	S
Navigator	VS	MR-SVS	MR	R	R	R	MR	MSS	MS	MRMS	MRMS	MSS
Oxford	R-MRMS	MR-SVS	MSS	MS-S	S	R	-	MRMS	MSS	MR	MR	MR
Schooner	SVS	MR	MS	MSS	VS	S	R	MR	S	S	R	MS
Scope	MS-SVS	MR	MS	MSS	S	MR	R	MRMS	MS	MRMS	MRMS	MSS
Skipper	MSS-SVS	MR	MRMS	S	R	MR	-	S	MSS	MRMS	MRMS	MS
Sloop SA	SVS	MR	SVS	S	R	S	R	R	S	MS	R	S
Westminster	RMR	MR-MS	S	MR	-	MR	-	R	MRMS	-	-	MRMS
Wimmera	R-MRMS	MR-S	MS	MSS	S	MR	-	MRMS	MS	MRMS	MRMS	MR

* Due to multiple strains of these pathogens, the table provides a range of reactions that may be observed. Different ratings are separated by a -
R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, VS = Very Susceptible
T = Tolerant, -- = Uncertain

Oats	Rust		CCN		Stem nematode		Bacterial blight	Red leather leaf	BYDV*	Septoria avenae	<i>P. neglectus</i> nematodes
	stem *	Leaf *	Resistance	Tolerance	Resistance	Tolerance					
Brusher	MS-S	MS-S	R	MI	MS	I	MR-MS	MS	MS	MS	MR-MS
Echidna	S	S	S	I	MS	MT	S	MS	MS	S	MR
Euro	VS	S	R	I	S	I	MS	MS	MS	MS	MR
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	-
Marloo	S	S	R	MT	MS	MI	S	VS	MR-MS	S	-
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
Poosum	MS-S	S	VS	I	S	I	S	MS-S	S	MS	MR
Potoroo	S	S	R	T	S	MI	S	VS	MS	S	MR
Quoll	MS-S	MR-MS	S	I	R	MT	MS	MS	MS	MR	MR-MS
Swan	VS	S	MR	I	S	I	S	S	MS	MS	MR-MS
Tammar	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
Wintaroo	S	S	R	MT	MR	MT	MR-MS	MS	MR-MS	MR-MS	MR-MS
Wombat	MS-S	MS	R	T	MR	MT	MR-MS	MS	MR	MS	--
Yallara	S	MS	R	I	S	I	MR-MS	MS	MS	MS	-

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Explanation of resistance classification

Previously a '/' has been used where a rating falls between two of the ratings given below. Now there will be no / and the two ratings will be run together as one score. For example MR/MS will now be presented as MRMS. 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.

- 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.

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 2013 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 to the following address:

SARDI Cereal Diagnostics
Plant Research Centre
Hartley Grove
Urrbrae SA 5064

Further information contact:
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