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Plant Breeding Institute
Cereal Rust Laboratory

Cereal Rust Report Season 2009

Australia Cereal Cultivar Pedigree and Seedling Rust Genotype Information

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*(on secondment from NSW Department of Primary Industries)

This Circular replaces Australian Cereal Rust Control Program Circular #44, and includes information on the seedling rust genotypes (leaf rust, stripe rust and stem rust) of Australian wheat, barley, oat and triticale cultivars. It is likely that there are some omissions and possibly some errors in the information included and it would be greatly appreciated if people could notify us of any such cases.

In the past, the primary objective of cultivar circulars was to provide information on the expected field responses of cultivars to the most relevant, and often the most predominant, rust pathotypes. Where knowledge of the resistance genes present is available, it should be possible to predict likely changes in field response with exposure to other pathotypes. Whilst we can still often predict field rust responses based on seedling genotypes, significant changes in cereal rust flora in different parts of the country over the past 10 years or so have made this more challenging. We have, therefore, decided to produce documents like the current one, listing seedling genotypes only, on a 1 to 2 year basis, and to supplement them as frequently as possible with companion documents listing adult plant field responses based on data from Cobbitty and elsewhere. For wheat, in addition to seedling genotypes, we have included marker data for *Lr34/Yr18* (csLV34) and *Sr2* (D10FC5). Note that * indicates mixed genotype with respect to the indicated locus.

As in past circulars, we have listed other information on cultivars where such information is available and/or

supplied by any researcher. Your suggestions and data will help us to provide clearer indications of how we might expect our cultivars to perform over a range of stresses.

The text accompanying each cereal species provides some information on the effectiveness of resistance genes to predominant pathotypes. More detailed information on pathotype occurrence and distribution can be found in our annual survey reports, available from our website (<http://www.agric.usyd.edu.au:8888/pbi/>) as PDF files.

If a cultivar is listed with no information regarding rust response, it means we have not tested it, most likely because it did not go through our testing protocols or because we do not yet have seed of it. We would like to encourage all groups involved in cereal breeding/release of cultivars to submit seed of lines to us for rust testing prior to release. It is our desire to assemble a set of Australian cereal cultivars that can be tested at other locations in Australia, and possibly offshore. To do so, we need to receive this seed without having the restriction of signing an MTA.

Wheat

Pathotypes used

Seedling genotypes were postulated based on the following pathotypes:

Stem rust-

21-0 [=330]
 34-1,2,7 +Sr38 [=565]
 34-1,2,3,4,5,6,7 [=103]
 34-1,2,3,7,8,9 [=115]
 34-1,2,3,6,7,8,9 [=205]
 34-1,2,37,8,9 [=115]
 40-1,2,3,7,8,9 [=240]
 98-1,2,3,5,6 [=279]
 343-1,2,3,4,5,6 [=429]
 126-5,6,7,11 [=217]
 34-2,4,5,6,7,11 [=33] (Cold)

Leaf rust-

10-1,2,3,4 [=348]
 10-1,3,9,10,11,12 [=592]
 26-0 [=111]
 64-1,3 [=114]
 64-11 [=473]
 76-3,5,9,10 +Lr37 [=594]
 53-1,4,(6),(7),10,11,12 [=563]
 76-1,3,5,10,12 [=539]
 104-2,3,6,(7) [=231]
 104-2,3,6,8 [=406]
 104-2,3,(6),(7),11 [=423]
 104-1,2,3,(6),(7),11 +Lr37 [=547]
 104-1,2,3,(6),(7),11,13 [=547]

Stripe rust-

104 E137 A+ [=414]
 108 E 141 A- [=419]
 111 E143 A- Sk+ [=599]
 134 E16 A+ [=572]
 134 E16 A+ Yr17+ [=599]
 134 E16 A+ J+ [=602]
 134 E16 A+ J+ Yr27+ [=607]

Notes on individual genes

Stem Rust

Sr2 Adult plant resistance to all pathotypes, but some rust may develop.
Sr5 Effective against races 21, 194, and 326. Ineffective against races 34, 98, 343, and 222.
Sr6 Ineffective against "-1" pathotypes.
Sr7a Minor effect only.
Sr7b Effective against races 98, 326 and 343 in seedling tests.

Sr8a Ineffective against "-6" pathotypes. Effect on adult plants probably small especially if it is the only effective gene. Probably has additive effects when present with additional effective genes.
Sr9b Ineffective against "-3" pathotypes. Moderate resistance.
Sr9e Ineffective against races 116 and 40.
Sr9g Effective against races 222, 326 and 343.
Sr11 Ineffective against "-2" pathotypes. No longer useful in Australia.
Sr12 Effective against race 126 and certain types of race 34. Its effect can be shown in seedlings tested with races 326, 222, 343 etc when it is present with *Sr9g* or *Sr9b* but not when it is alone. Temperature sensitive. Often difficult to distinguish from *Sr6* in pathological tests. Assumed to confer additive effects on adult plant resistance, but difficult to show resistance to modern types when alone.
Sr13 Effective against all Australian pathotypes. Problems with degree of adult plant response.
Sr15 Ineffective against "-7" pathotypes. Although it may give reasonable resistance against the "1,2,3,5,6" group of pathotypes, *Sr15* is temperature-sensitive and frequently "breaks down" when mutations to -1,2,3,5,6,7 occur.
Sr17 Ineffective against "-5" pathotypes.
Sr22 Effective against all Australian pathotypes. Field reaction is MR; some temperature sensitivity.
Sr24 Effective against all Australian pathotypes.
Sr26 Effective against all Australian pathotypes. Moderate resistance.
Sr30 Ineffective against "-8" pathotypes. Moderate resistance that varies with particular genetic background.
Sr31 Effective against all Australian pathotypes.
Sr36 Ineffective against "-4" pathotypes. High resistance.
Sr38 Ineffective against pathotype 34-1,2,7 +*Sr38* only.
SrGt Not useful when operating alone, ineffective against certain pathotypes.

Leaf Rust

Lr1 Effective against races 53, 68, 76, and 162. Ineffective against races 10, 64, 104 and 122.
Lr2a Effective against races 53, 76 and 104. Ineffective against races 10 and 122.
Lr3a Effective against races 10, 53 and 68, but ineffective against others.

- Lr13* Ineffective against race 53, and some pathotypes of races 10 and 76. Pathotype 64-(6),(7),(10),11 possesses partial virulence for *Lr13* and is capable of causing disease on hybrid wheats where *Lr13* is heterozygous.
- Lr14a* Ineffective against "-3" pathotypes.
Lr17a (Previously *Lr17*). Intermediate or ineffective against "-7" pathotypes. Only one fully virulent isolate has been isolated from Australia, obtained from Grafton NSW in 1979.
- Lr17b* Previously *LrH* this gene gives seedling resistance to race 53 and some pathotypes of race 104.
- Lr20* Ineffective against "-1" pathotypes.
Lr23 Ineffective against "-2" pathotypes.
Lr24 Ineffective against pathotype 104-1,2,3,(6),(7),11,13, present throughout eastern Australia.
- Lr26* Virulence has become more common in recent years following the detection of the Triller pathotype in 1997 (pt 104-1,2,3,(6),(7),9,11), the Mackellar pathotype in 2004 (pt 10-1,3,9,10,11,12 and a second *Lr37*-virulent pathotype in 2006 (76-3,5,9,10 +*Lr37*).
- Lr27+*
Lr31 Complementary genes originally present in Timgalen and Gatcher - not effective against "-6" pathotypes. One of these genes appears to be *Lr12*, an adult plant resistance gene.
- Lr34* Adult plant resistance gene with limited effectiveness post anthesis in Australia. Associated with *Yr18*.
- Lr37* Mainly adult plant resistance. This gene is present in VPM1 derivatives. Ineffective against pathotypes 104-1,2,3,(6),(7),11 +*Lr37* and 76-3,5,9,10 +*Lr37*. When challenged by avirulent pathotypes, this resistance is associated with a resistant response in some wheats, and in others, moderate resistance.

Stripe Rust

- YrA* Effective against "A-" pathotypes.
Yr6 Effective against 104- pathotypes, ineffective against 108- and 110-
Yr7 Effective against 104- and 108-, ineffective against 110-.
Yr9 Ineffective against the "WA" pathotype and mutational derivatives.
Yr17 Ineffective against pathotypes 104 E137 A+ Yr17+ and 134 E16 A+ Yr17+.
Yr18 Associated with *Lr34* and is probably a component of APR in various Australian wheats. See *Lr34*.
Yr27 Ineffective against 134 E16 A+ J+ Yr27+
YrJ Ineffective against 134 E16 A+ J+, 134 E16 A+ J+ Yr27+. This gene is common in triticale cultivars (see Triticale and Rye table page 19).

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
AGTScythe	AGT1055	2004	AGT	C04080/C03749	YrA*	Lr3a*	Sr13+	-	?
Amarok	Unknown	2004	GrainSearch	Unknown	Yr17	Lr14a, Lr37	Sr38		
Annuello	VL709R	2001	VDPI (VIDA)	Pavon S/TM56//Janz	Yr7*	Lr24	Sr12 Sr24	+	-
Arrino	WAWHT1493	1997	DAFWA	77W660/Eradu		Lr3a	Sr5 Sr9b Sr30*	-	-
Axe	RAC1192			DH line from RAC875 Kukri Excalibur			Sr9g Sr12 Sr13?	-	?
Babbler	WW2455	2000		Janz/Lark		Lr24	Sr24	+	-
Barham	V02697R	2008	AGT	Bowie//Bersee/3*Bindawarra126937///Bowie	Yr17	Lr1, Lr20, Lr37	Sr5 Sr9b Sr38	+	-
Baxter	Reselected QT6258	1998	QDPI	Inia 66/Gamut//Cook/4/Jupateco/3/Lerma Rojo 64/Sonora 64A//Timgalen sib		Lr3a, Lr17a	Sr2 Sr30 Sr36*	+	+
Beaufort							Sr38		
Binnu	WAWHT2734	2006	DAFWA	Arrino/(Y89-4034)Eradu*4.VPM1	Yr17	Lr3a, Lr37	Sr38	-	-
Blade	RAC434-12	1985		Sonora 64//TZPP/Y54/3/Kite		Lr20, Lr23	Sr15 Sr26	-	-
Bolac							Sr6 Sr8a Sr17 Sr30		
Bowerbird	K3057	2001		K1056/M3348//Cook///Dollarbird	Yr7	Lr3a, Lr13	Sr2 Sr8a Sr9g Sr30	-	+
Bowie	RAC696	1997		VPM1/4*WtW18/18 (Tatiara)	Yr17*	Lr1, Lr20, Lr37	Sr9b Sr12 Sr15 Sr38	-	-
Braewood	SUN1401	2001	AGT (Univ of Sydney)	Cook*2/VPM1//3*Cook	Yr17	Lr13, Lr37	Sr2 Sr12 Sr36 Sr38	+	+
Brennan	B2006	1998		Mercia*2/Hartog		Lr13+	Sr2 Sr9g Sr30	-	+
Bullet	LPB0423				Yr7	Lr3a*	Sr6 Sr8a Sr9g Sr17 Sr30	+	-
Bumper									
Cadoux	77W:884	1992	DAFWA	Centrifen/Gamenya(F3)//Gamenya/3/Jacup	Yr6+7 ?	Lr3a, Lr13	Sr6	-	-
Calingiri	WAWHT2024	1997	DAFWA	Chino/Kulin//Reeves	Yr7*	Lr3a+	Sr8a Sr9g Sr30	-	?
Camm	WAWHT2088	1998	DAFWA	VPM1.5*Cook/4*Spear	Yr17	Lr37	Sr9b Sr11 Sr38	-	?
Carinya	SUN421T			Janz*4/Sunvale	Yr17	Lr24, Lr37	Sr12 Sr24 Sr38	+	-
Carnamah	WAWHT1380, 83Z:1380	1996	DAFWA	Bolsena-1CH(RAC529,IW911)/(77W:660)complex cross		Lr27+Lr31	Sr2 Sr6 Sr12 Sr30	-	+
Cascades	84Z:1156	1994	DAFWA	Aroona*3// (AUSEN VII-95, Qualest 601-20) Tadorna/Inia66		Lr20, Lr23	Sr5 Sr8a Sr9b Sr12 Sr15	-	-
Catalina							Sr9g Sr12 Sr24	+	-

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
Chara	VI431	1999	VDPI	Cook*2/Millewa/TM56/Pavon'S/Condor	Yr7	Lr13	Sr9g Sr12 Sr30	+	-
Clearfield JNZ	WAWHT2344	2001	DAFWA	Janz*4/Fidel selection 3		Lr24	Sr5 Sr24	+	-
Clearfield STL	WAWHT2339	2001	DAFWA	Stiletto*3//Spear/Fidel selection 2		LrMorocco	Sr5 Sr12 Sr13	-	-
Correll		2006	AGT	RAC875/Yitpi		Lr17b?	Sr9g Sr12 Sr30	-	-
Crusader			Longreach Plant Breeders		Yr7 Yr17	Lr1, Lr13, Lr37	Sr2 Sr12 Sr38	+	+
Cunningham	QT3286	1990	QDPI	3Ag3/4 Condor//Cook		Lr24	Sr5 Sr8a Sr12 Sr24	+	-
Currawong	M4997	1994		Veery 'S'/Quarrion		Lr23	Sr12 Sr26	+	+
Dakota							Sr5 Sr24	+	?
Datatine	84W:1147	1994	DAFWA	3Ag3/3*Halberd//4*Tincurrin		Lr24	Sr24	-	+
Derrimut	NGSP005				Yr17	Lr3a*, Lr13, Lr37	Sr2 Sr8a Sr9b Sr12 Sr38	+	+
Diamondbird	K2011-5	1997		Vicam //Ciano /Ciete Cerros/3/Kalyansona/Bluebird	Yr7	Lr1, Lr13	Sr2 Sr9g Sr11	-	+
Drysdale	QH-71-2	2002	GrainGene & NSW Agric	Hartog*3/Qarrion		Lr3a, Lr23	Sr2 Sr8a Sr9g Sr30	-	+
EGA 2248		2004	DAFWA			Lr3a, Lr23	Sr5+	-	-
EGA Bonnie Rock	WAWHT2281	2002	EGA (DAFWA)	Sr9e.3Warigal..3*Aroona (83Z:1048)/(82W:1097) 3Ag3.4*Condor..3*Millewa.3.Bodallin		Lr13	Sr6 Sr8a Sr30	-	?
EGA Blanco								-	+
EGA Bounty							Sr2 Sr8a Sr12 Sr30	-	+
EGA Bullaring						Lr24	Sr2 Sr24	-	+
EGA Burke				Sunco/2*Hartog	Yr7	Lr1, Lr13	Sr2 Sr24	+	+
EGA Castlerock								+	-
EGA Eaglehawk					Yr17	Lr1, Lr13+, Lr37	Sr2 Sr12 Sr30 Sr38	-	+
EGA Eagle Rock		2004	DAFWA	Sunelg/2*Blade		Lr24	Sr24	-	-
EGA Gregory	QT10776	2004	EGA (QDPI&F)	Pelsart/2*Batavia	Yr32	Lr1, Lr3a, Lr13	Sr8a Sr9g Sr12 Sr30	+	?
EGA Hume	QT8750	2002		Batavia*2/Pelsart (doubled haploid line derived from BC1F1)		Lr13, Lr23	Sr6 Sr9g Sr8a Sr12 Sr30	+	?
EGA Jaegar			AGT (NSWDPI)		Yr17	Lr24, Lr37	Sr24 Sr38	+	-
EGA Jitaming		2003	DAFWA	Harrismith sib/(83Z:1175) Bobwhite.K6290		Lr24	Sr5 Sr24	-	-

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
EGA Kidman	QT8753					Lr13, Lr23	Sr2 Sr8a Sr9g Sr12 Sr30	+	+
EGA Stampede								+	+
EGA Wedgetail	M5880	2002		M3508/Dollarbird	Yr7	Nil	Sr9g Sr30+	+	-
EGA Wentworth		2004	EGS (QDPI&F)	Janz*2/Vulcan		Lr24	Sr2 Sr5 Sr9g Sr12 Sr24	+	+
EGA Wills						Lr24	Sr5 Sr9g Sr12 Sr24	+	+
EGA Wylie	QT10198		EGA (QDPI&F)	QT2327/Cook//QT2804		Lr3a, Lr13	Sr2 Sr30 Sr36	+	+
Ellison	Sun 366A	2005	AGT (University of Sydney)	Vicam71/3*Suneca//SUN231A	Yr17	Lr3a, Lr13, Lr37	Sr2 Sr12 Sr36 Sr38	-	+
Eradu						Lr3a, Lr23	Sr2 Sr5 Sr13?	-	+
Espada					Yr17	Lr37	Sr38+		
Fang					Yr17	Lr37	Sr38		
Frame	9/9E; WI-153	1994		(Molineux/3*Dagger)/B19/H9/9E		Nil	Sr6 Sr30	-	-
Frelon						Lr14a, Lr37	Sr38*		
Gascoine							Sr13? Sr38		
GBA Combat					Yr27	Lr13, Lr24	Sr24	+	-
GBA Hunter				Attila//Altar84/Aos/3/Attila	Yr9, YR27	Lr26	Sr12 Sr31	+	+
GBA Ruby		2003	GBA		Yr27	Nil	Sr9g Sr12 Sr17 Sr30	-	?
GBA Sapphire		2003	GBA	GBA008/Janz		?	Sr5 Sr9g Sr12 Sr24	+	-
GBA Shenton							Sr17 Sr30	+	?
Giles	QT6581	1999	QDPI	Janz/Vulcan		Lr13, Lr24	Sr12 Sr24	+	-
Gladius	RAC1262			Complex; RAC875, Excalibur, Kukri, Krichauff and maybe Trident derivative	Yr17	Lr13, Lr24, Lr37	Sr24 Sr38	-	-
Glover								-	+
Gruner							Sr12 Sr30		
Guardian							Sr9g Sr12 Sr24	-	-
H45	H45	1998		Ciano67/2*Olympic/3/WW80/3*Anza//Kalyonsona/Bluebird	Yr7	Lr13	Sr9g Sr17 Sr30	+	-
H46		2005	AGT		Yr17	Lr13, Lr37	Sr17 Sr38	+	-

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
Halberd	RAC687	1969		Scimitar/Kenya C6042/Bobin/Insignia		LrMorocco	Sr6 Sr11	-	-
Hartog	QT274, Pavon 'S'	1982	QDPI	Vicam 71//Ciano 's'/Siete Cerros/3/Kalyansona/Bluebird	Yr6, Yr7	Lr1, Lr13	Sr2 Sr8a Sr9g Sr12 Sr30	-	+
Hornet						Lr13	Sr38	+	-
Janz	QT3685	1989	QDPI	3Ag#3/4*Condor//Cook		Lr24	Sr5 Sr12 Sr24	+	-
Kelalac	ZL13	1988		TM56/3/Summit/AUS11577//WW15	YrA	Nil	Sr5 Sr8a Sr9b Sr12 Sr17	-	-
Kennedy	QT6063	1998	QDPI	Veery#5/Hartog	Yr7	Lr1, Lr13, Lr23	Sr2 Sr9g Sr17 Sr30	-	+
Krichauff	WI 11/7	1997		WqKpWmH/3Ag3Ar/11/7		Lr24	Sr5 Sr24	-	-
Kukri	RAC820	1999		DRP((FNK58xN10B/Gb55)NAI60)/(TOB-CNO 'S' x TOB8156/CALxBb-CNO)/2/MDN/6*RAC177	Yr7	Lr1, Lr13	Sr2 Sr8a Sr9g Sr30	-	+
Lang	QT7079	2000	QDPI	QT3765/Sunco		Lr24	Sr24 Sr36	+	-
Leichhardt	QT5793	1995	QDPI	CNT-2/4*Hartog		Lr1, Lr13	Sr2 Sr8a Sr9g Sr30	-	+
Lincoln						Lr1, Lr13	Sr9g Sr12 Sr30	+	-
Livingston					Yr17, Yr27	Lr1, Lr3a, Lr13, Lr37	Sr2 Sr12 Sr38+	+	+
Lorikeet	M5631	2001		SR33/Rosella		Lr23*	Sr30 Sr33	+	-
Mace							S8a or 9b Sr38		
Machete	RAC460	1985		(Sonora 64/TZPP/Y54)/2*GABD/Madden		Lr23	Sr2 Sr13	-	+
Mackellar	LH64C	2002		Tatiara/TC14//Beaver/3/Soissons/4/B1073 (B1073=Mercia*2/Hartog)		Lr13, Lr17b	Sr9g Sr12 Sr30	-	?
Magenta								-	?
Marombi	SUN3601			M2369/Sunlin	Yr17*	Lr1, Lr37, LrMorocco	Sr8a or 9b Sr38	-	-
McCubbin							Sr9g Sr12 Sr30+		
Meering	RM229	1984		Condor Seln.		Nil	Sr5 Sr6 Sr8a Sr12	+	-
Merinda	SUN435D		AGT		Yr27	Lr13, Lr24	Sr2 Sr9g Sr12 Sr30	+	+
Mira	VG127*14R	1999		CW-PC#162/Matong/TM56/Agent//4*Condor	Yr27	Lr24	Sr5 Sr12 Sr24	+	?
Mitre	VK237R	2000	VDPI	Janz/Beulah		Lr24	Sr12 Sr24	+	-
Naparoo					?	Lr13, Lr24	Sr12 Sr24	-	-
Ouyen				Takari/TM56//Cocamba		Nil	Sr8a Sr9b Sr12	+	?

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
Pardalote	M5395	2000				Lr24	Sr24	+	-
Peake					Yr6*	Lr3a, Lr13	Sr2 Sr8a or 9b Sr38*	+	+
Petrel	M5600	1996		M2293/Ford (M2293= WW15/M1238-2//Kite/3/WW15)		Lr13	Sr26	+	-
Petrie	QT7634	2000	QDPI	Vasco/Batavia		Lr13, Lr24	Sr12 Sr24	+	-
Pugsley					Yr17	Lr1, LrMorocco, Lr37	Sr6 Sr38	-	+
QAL 2000	SUN385B	2002		Tincurrin*4/3/Lance*2//Condor*4/3Ag14/14/Tatiara*3//Cook*5/VPM1	Yr17	Lr24, Lr37	Sr24 Sr38	-	-
QAL Bis	2001-13	2002			Yr17	Lr24, Lr37	Sr24 Sr38	-	-
Rees				Quarrion/3*Hartog	Yr7	Lr1*, Lr13+	Sr2 Sr8a Sr9g Sr30	-	+
Rosella	M3265	1985		Farro Lunga/Heron//2*Condor/3/Quarrion sib		Lr23	Sr5 Sr7b Sr8a Sr12 Sr30	+	-
Rubric								-	-
Rudd	E30.82	2002		Rendezvous/B41	Yr1+	Lr13, Lr37	Sr6 Sr12 Sr38	-	-
Sentinel		2005	LongReach Plant Breeders		Yr9	Lr26	Sr5 Sr31	na	+
Snipe	M5429	1997		M2293/Quarrion (M2293= WW15/M1238-2//Kite/3/WW15)		Lr13	Sr26	+	-
Spear	RAC382	1983		Sabre/MEC3//Insignia		Lr1*, LrMorocco	Sr6 Sr9b Sr11 Sr17	-	-
Stillete		1993	Univ Adelaide, Roseworthy	Veranopolis/3*RAC177/2/3*Spear/3/Dagger		LrMorocco	Sr12 Sr13	-	-
Strzelecki	QT7709	2000		Vicam/4*Batavia	Yr32	Lr13, Lr23	Sr6 Sr8a Sr9g Sr30	+	-
Sunbri	SUN140C	1990		Cook*2/VPM1//3*Cook	Yr17	Lr3a, Lr37	Sr5 Sr12 Sr36 Sr38	+	-
Sunbrook	SUN224A	1995		Suneca/2*Hartog		Lr1, Lr13	Sr2 Sr30+	-	+
Sunco	SUN88E	1986		SUN9E-27*4/3Ag14//WW15/3/3*Cook		Lr24	Sr12 Sr24 Sr36	+	-
Sunlin	SUN234A	1997		Sunelg*2//3*Suneca/VPM1	Yr17	Lr1, Lr13, Lr37	Sr26 Sr38	-	-

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
Sunsoft 98		1998		Rosella//2* <i>Rosella</i> /3Ag14		Lr24	Sr24	+	-
Sunstate	SUN148L	1992		VPM1/5 Cook//4 Hartog	Yr17	Lr1, Lr13, Lr37	Sr2 Sr5 Sr8a Sr12 Sr17 Sr38	-	+
Sunvale	SUN146F	1993		Cook*2/VPM1/3*Cook	Yr17	Lr3a, Lr37	Sr5 Sr12 Sr36 Sr38	+	-
Sunvex							Sr38+		
Sunzell				Sunbrook*3/Sunstate	Yr17	Lr1, Lr13, Lr37	Sr2 Sr12 Sr30 Sr38	-	+
SW Odiel								-	+
Tammarin Rock		2005	DAFWA	Kalannie/Skorospelka.4*Lance:3*Bodallin(81Y:970)	Yr6	Lr24*	Sr9b Sr12 Sr30	+	-
Tennant	D51	1998		Birch 65/Hornet (Birch 65= Hobbit/Pitic62//Marbler Seln)	Yr9	Lr1, Lr3a, Lr26	Sr31	-	?
Teesdale	Apache	2002		Axial/NRDB84-4233		Lr13, Lr17a			
Thornbill	M6535	2000		Lr21SrX/M3087		Lr21	Sr30? Sr45	+	-
Tincurrin	70W 10-19	1977		Glucub/3/Chile 1B//Insignia/Falcon		LrMorocco	Sr6 Sr12	-	-
Trident	RAC698, DT56707	1993		VPM1/5*Cook//4*Spear	Yr17	Lr37	Sr5 Sr8a or 9b Sr12 Sr38	-	-
Ventura	Sun 376G			Sunvale/Rowan	Yr17	Lr1, Lr37	Sr2 Sr6 Sr38+	-	+
Waagan							Sr9b		
Westonia	WAWHT2109, WAW48777	1997	DAFWA	CO1190-203/84W127-501	Yr6, Yr7	Lr1, Lr3a	Sr6 Sr9g	-	-
Whistler	AUS99220, M5660	1998		Osprey/Hartog//Osprey*2/Kite sib	Yr7*	Lr3a*	Sr5 Sr9g Sr12 Sr30+	+	-
Wyalkatchem	WAWHT2212	2001	DAFWA	Machete/84w129-504		Lr3a, Lr20	Sr9b Sr15	-	+
Wylah	M5487	1999		M3458/Osprey		Lr3a	Sr12 Sr26	+	-
Yandanooka							Sr8a Sr9b Sr17 Sr30	-	-
Yenda	VN0870R			Bindawarra/Bowie//3Ag3/Wyuna	Yr6*, Yr7*	Lr24	Sr6 Sr12 Sr24 Sr38	-	?
Yitpi	59/1	1999	Waite Adelaide University	(C8MMC8HMM*Frame)/59/1		Lr13	Sr30?	-	-
Young	VQ0326	2005	AGT (VDPI)	VPM/3*Beulah/Silverstar	Yr17	Lr3a, Lr13, Lr37	Sr36 Sr38	+	?
Zebu					Yr9	Lr26	Sr31		

Variety	Synonym	Year	Breeder	Pedigree	Stripe Rust	Leaf Rust	Stem Rust	csLV34	D10FC5
Durums									
Arrivato	Selection from 94SHA#4	1994		Tetraprelude/Waitohi		?	?	na	-
EGA Bellaroi						?	?	na	-
Gundaroi							?	na	-
Hyperno							?		
Jandaroi						?	?	na	-
Kalka						?	?	na	-
Saintly							Sr13		
Tamaroi	912025	1998		Altar84/4/Tam1B-17/Kamilaroi/3/Wells/56111/Guillemot	Yr6	Lr23	?	na	-
Wollaroi	880096	1993		TAM1B-17/Kamilaroi sib//Rokel Selection/Kamilaroi sib	Yr6	?	?	na	-
Yallaroi	820946	1987		Guillemot Seln No 3/Kamilaroi sib	Yr6	?	?	na	-
Zulu							Sr9e		

Barley

Leaf rust

Seedling resistance genes to *Puccinia hordei* present in Australian barley cultivars include *Rph2*, *Rph3*, *Rph4*, *Rph7*, *Rph12*, *Rph19*, and *RphCantala*. Annual surveys of pathogenic variability in *P. hordei* from 1992 to 2001 revealed a significant shift in the composition of populations across Australia. Virulence for the resistance gene *Rph12*, first detected in a single pathotype, 4610P+, in Tasmania in 1991, was subsequently detected in 1993 in South Australia, Victoria and southern New South Wales. By the end of 2001, eight pathotypes with virulence for *Rph12* had been isolated and virulence for this gene was present in all Australian barley growing regions. Surveys in the years since have demonstrated widespread virulence for *Rph2*, *Rph4*, *Rph19*, and *RphCantala*. Virulence was not detected for the resistance genes *Rph3*, *Rph7*, *Rph11* or *Rph14*.

Stem rust

The postulated presence of *Rpg1* in Yerong is based on tests in North America with *P. graminis* races MCC (avirulent) and QCC (virulent). We are unable to detect this resistance gene in seedling tests with Australian isolates of *P. graminis*, and are not sure how effective it is in Australia.

Barley grass stripe rust (BGYR)

Most Australian barley cultivars show strong seedling resistance to BGYR, exceptions being Clipper, Maritime, Skiff and Tantangara. We are currently undertaking studies to determine the genetic basis of this resistance.

Cultivar	Synonym	Year	State	Pedigree	Leaf rust	Stem rust
Arapiles	Barley 568, 8727	1993	VIC	Noyep/Proctor//CI3576/Union/4/Kenia/3/Research/2/Noyep/Proctor/5/Domen	Rph19	
Bandulla				Prior/Lenta//Noyep/Lenta	RphCantala	
Barque	WI- 2868	1997	SA	Triumph/Galleon	Rph19?	
Baudin	WABAR2080	2002	WA	Stirling/Franklin	Rph12	
Beecher				Atlas/Vaughan	Nil	
Binalong	B%1302	2001	NSW	Blenheim//Skiff/O'Connor	Rph2+?	
Brindabella	OR 385-1-2	1993	NSW & ACT	Weeah/CI7115//HCB27/3/Jadar II/4/Cantala	Rph2	
Buloke				Franklin/VB9104//VB9104	Nil	
Bussell				Prior/Ymer	RphCantala	
Capstan		2004	SA	Waveney/WI2875//Chariot/Chebec	Rph19	
Cask				SCRI-8313/Fleet//Regatta	Nil	
Chebec	WI-2737	1992	SA	(USA) Orge Matin/2*Clipper(86)//Schooner (Aust.) (Orge Martin*Clipper#2)/86*Schooner	Rph19, RphCantala	
Chieftain	1846-4139	1995	VIC	Brittania/Prisma	Not tested	
Clipper				Proctor/Prior A	Nil	
Corvette				Bonus/CI3576	Nil	
Cosmic					?	
Cowabbie	WB236	2002	NSW	(AB6/Franklin//Franklin-early)/3/(Rubin/Skiff-early)	Rph12	
Cutter				Proctor/Prior A	Rph19	
Dash	NFC 902/909	1995	VIC	Chad/Joline//Cask	Rph12+	
Dhow	WI3102	2002	SA	WI2808//Skiff/Haruna Nijo 9	Nil	
Dictator	726.2	1997	VIC	reselection of USDA accession CI2204	Nil	
Dictator 2		2006	NSW	Reselection from Dictator		
Doolup	WABAR0563	1998	WA	(XBVT210)/3/(B6729)Prior/Lenta(75S:323)/(MndS,74S:314)Dampier//(A14)Prior/Ymer/3/Kristina(70S20-20)/4/(73S13)Clipper/Tenn65-117	Rph12+	
Empress	90BE32	1995	VIC	H1006.3/HE902	Not tested	
Fitzgerald	WABAR2030	1997	WA	Onslow/Tas 85-466	Rph4, Rph12	
Fitzroy	VB9926			WI2808/Alexis	Rph3	
Flagship	WI3408		SA	Chieftan/Barque//Manley/VB9104	Nil	
Fleet	WI3804	2006	SA	Mundah/Keel//Barque	?	
Franklin	Barley 485, 85-83	1989	TAS	Shannon/Triumph	Rph12	
Gairdner	WABAR2034	1997	WA	Onslow/Tas 83-587	Rph12	

Cultivar	Synonym	Year	State	Pedigree	Leaf rust	Stem rust
Galaxy	Osprey	1993	NSW	24719DB/Robin SIB	Rph7	
Galleon	WI- 2231B	1981	SA	Clipper/Hiproly//3*Proctor/CI3576	Nil	
Gilbert	Mx2-45B, Koru Reselection	1992	QLD	Reselection Of Mx(Q21517)	Nil	
Grimmett	BUS*ZEP 166	1982	QLD	Bussel/Zepher	Rph4	
Grout				Cameo/Arupo 31-04	Rph2	
Hamelin	WABAR2104	2002	WA	Stirling/Harrington	RphCantala	
Hannan	WABAR2321	2007	WA	WABAR2023//Windich/Morex	Rph19?	
Harrington	Barley 1935	1981	CANADA	Klages/3/Gazelle/Betzes//Centennial	Nil	
Hindmarsh	VB0324	2006	VIC	Dash/VB9409	RphCantala+	
Kaputar	Barley 577, Tr2, Arupo 'S'	1993	NSW & QLD	5604/1025/3/Emir/Shabet//CM67/4/F3 Bulk Hip	Rph2	
Keel	WI 2976	2000	SA	CPI18197/Clipper//WI2645	Rph19?	
Ketch				Noyep/Lenta	Rph19	
Lara				Research/Lenta	Nil	
Lindwall	TG121-1	1997	QLD	Triumph/Grimmett	Rph12	
Lofty Nijo	SWBI-1	2001	Japan	Kita A 66-1/Hokuiku 19	Not tested	
Lockyer	WABAR2288	2007	WA	Tantangara/VB9104	RphFT?	
Mackay	CK85	2002	Qld	Cameo/Koru	Nil	
Maritime		2004	SA	Dampier//A14(70S20-20)/3/(70S21)Clipper/M11,2Row (74S:314)/5/(74S:309) Dampier//A14(70S20-20)/4/(67S08-30)Dampier//Prior/Ymer/3/Union	Not tested	
Malebo	WWB858	1981	NSW	Selection from CPI11083(Palladium WWB 18)	Rph2	
Milby	WB238	2002	NSW	(AB6/Franklin//Franklin-early)/3/(Rubin/Skiff-early)	Nil	
Molloy	WABAR0519, 83S:519, 83S989-57-16	1996	WA	Golden Promise/WI2395(WARI2-38)/4/(72S:267)XBVT210/3/(66S08-4)Atlas57// (A14)Prior/Ymer(82S837)/O'Connor	?	
Monarch	NFC 1243-11	1995	VIC	Fergie/Peel//Cask	Not tested	
Moondyne	Barley 312, 74S/312	1987	WA	Dampier//((A14)Prior/Ymer/3/Kristina/(70S20-20)/4/(73S13)Clipper/Tenn-65-117	RphCantala	
Morrell	Barley 513, 82SN: 513, 82 595	1993	WA	WUM221/P23822(81S806)/5/(81S719)Forrest/4/(80S564) Psaknon/Dampier// M19(76T111)/3/Zepher	Nil	
Mundah	83S:514, 83S0227-17-34	1995	WA	O'Connor/Yagan	Rph2	
Namoi	AUS400533	1993	NSW	Sultan/Nackta//RM1508/Godiva	Rph2	
O'Connor	Barley 221	1984	WA	Proctor/CI3576(WI2231)/3/(XBVT212)Atlas 57//((A14)Prior/Ymer	Rph19?	
Onslow	Barley 399, 77S167-7-26	1989	WA	Forrest/Aapo	Nil	
Pacific Ranger	AC Ranger	2007	Qld	PC11/AC Rosser [PC11 is a CIMMYT selection with resistance to stem rust race QCCJ]		
Parwan				Plumage Archer/Prior//Lenta/3/Research/Lenta	Rph19	

Cultivar	Synonym	Year	State	Pedigree	Leaf rust	Stem rust
Prior				Selected from either Archer or Chevalier	Rph19	
PB216	F216	2001	Qld	Triumph/3/GP59ms/TR211/ms/Triumph/4ms/Triumph		
Picola	86045B	1998	VIC	75031/Elgina(75031= Noyep/Prior//CI3576/Union/Kenia/4/Research/Noyep/Prior)	Rph19	
Quasar	6921-23	2002	Vic	Chalice/NFC breeding line	Rph2+	
Quickstar					?	
Roe	WABAR2310	2007	WA	Doolup//Windich/Morex	Rph2+Rph12	
Schooner	WI-2468	1983	SA	Proctor/Prior A//Proctor/CI3576	Rph19	
Shannon				Proctor*4/Ethiopian line CI3208-1	Rph4	
Skiff	Barley 294, WI2584	1988	SA	Abed Deba/3/Proctor/CI-3576//CPI-18197/Beka/4/Clipper/Diamant/Proctor/CI-3576	Rph4, Rph19	
Sloop	WI2875-22	1997	SA	RL1577/84/Schooner	Rph19	
Sloop SA		2002	SA	CCN6-3/Sloop3		
Sloop Vic		2002	VIC	Sahara/WI2723//Chebec*/2/Sloop	Rph19	
Starmalt					Rph3	
Stirling	Barley 155	1981	WA	Dampier/Prior/Ymer/3/Pirolina	RphCantala	
Tallon	TMP*GMT 306/13	1991	QLD	Triumph/Grimmett	Rph12	
Tantangara	WB198, A%1055	1996	NSW	AB6/Skiff (AB6 is <i>Hordeum spontaneum</i> CPI71283/4*Clipper)	Rph2	
Tilga		1997	NSW	Forrest/Cantala	RphCantala*	
Torrens	WI3107	2002	SA	Galleon/CIMMYT 42002	Rph2	
Tulla		2002	NSW	Skiff/FM437	Rph19	
Ulandra	WU3076	1987	NSW	Warboys/Alpha	Rph2*	
Unicorn	Kinukei 21(Japan)	1997	WA	54C25/51C38	Not tested	
Urambie	WB234	2005	NSW	Yagan/Ulandra//Ulandra	?	
Vertess	T98189			Franklin/Cooper	Rph12	
Vlamigh	WABAR2175	2006	WA	WABAR0570/TR118	Nil	
Weeah		1968	VIC	Prior/Research	Rph19	
Windich	Barley 329, 75S:329	1989	WA	Atlas 57//(A16)Prior/Ymer(68S17-75)/3(B6729)Prior/Lenta//Noyep/Lenta	Nil	
Wyalong	WB190R, AUS499038	1998	NSW	Schooner/Stirling	RphCantala	
Yagan	Barley 286, IB/286, WUM143	1989	WA	Unknown	RphFT?	
Yambla	WB220, W91%3466	1998	NSW	Skiff/FM437	Rph19	
Yarra	VB0021	2005	VIC	VB9018/Alexis//VB9104	Rph3	
Yerong	WB135, GR84%4293	1990	NSW	M22/Malebo	Rph2	Rpg1

Oats

Stem Rust

Pathotype 41+Pg9, Pg13, Pga is the standard pathotype used in most greenhouse and field screening trials at PBI Cobbitty. All Australian oat cultivars are susceptible to this pathotype.

Crown Rust

Most currently recommended oat cultivars for which data are available are susceptible to at least one of the pathotypes detected in annual surveys in recent years. This includes Volta, for which virulence was detected for the first time in 2008.

Cultivar	Synonym	Year	State	Pedigree	Stem rust	Crown rust
A.C.Assiniboia	Graza 68	1997	QLD	Pc68/7*Robert (Pc68= Makuru*2//CAV4904/2*SunII)		Pc68
AC Medallion				90GC142,143/Dumont		
Amby II		1991	QLD	Cortez*5/2/Pendek/ME 1563/5/C75-12/4/Coker227/Coker234/2/TAM0-312/Tamo-301/3/CI 9221	Pga	Pc61
Bandicoot	Terra11/1	1991	SA	Terra/West//CI.4492/3/OX77;119-3-2	Pg2+	?
Barcoo	88-129	1996	QLD	Bordenave/Kenya SR res line/8025/8014/Barrow/SR cpx/1563 CR cpx	Pga	Pc39, Pc61, PcBett
Bass		1999	Tas	Nile/MA5028		
Bettong		1992	SA	Coronado*2/Cortex*3/Pendek/ME 1563	Pg4	PcBett
Bimbil	MA5027	1993	NSW	Cooba/T301	nil	Pc58+
Blackbutt	P4319	1975	NSW	Fulghum/Garry/5/Victoria/Richland//Algerian/3/Fulghum/4/Victoria/Richland//Sunrise/3/Fulghum	Pg2+	Pc1
Brusher		2003	SA	Dumont/Wallaroo/Bandicoot		
Carbeen	M2453	1981	NSW	Fulghum/Garry/VRAF.VRSF		?
Carrolup		1993	WA	Mortlock/5/Kent/Ballidu//Curt/3/Cortez/4/TAMO-312/2*West		PcMortlock+
Cleanleaf		1992	QLD	ND 78A211/ND78D316	Pga	Pc38,Pc39, Pc52
Cluan		1990	Tas	Shaw/Ogle		Pc39 or Pc55
Condamine		1994	QLD	C227/Cortez/Pendek/ME 1563/Coronado/SR cpx	Pga	Pc61+
Cooba		1961	NSW	Victoria-Richland/Algerian/Fulghum//Victoria-Richland/Sunrise/Fulghum	Pg2+	Pc45?
Coolabah		1967	NSW	Fulmark/Ballidu//Dale/Fulghum	nil	?
Coomallo	WAOAT373, 83Q:373	1996	Ag WA	Brooks/Lort//Mortlock	nil	PcMortlock+
Culgoa II		1991	QLD	Cortez*4/2/Pendek/C5-2/6/4*Cortez/2/Pendek/ME 1563/5/TAM0-312/Coker227/2/TAM0-301/TAM312*2/3/CI 9221	Pga	PcMortlock+ PcCulgoa
Dalyup		1988	WA	OT207/Swan//Moregrain/West		PcDalyup
Dawson	PAC 808	2009	QLD			
Dolphin		1984	SA	West/OT207	Pg2+	PcDolphin
Drover		2006	QLD	ND90141/ND900118		
Echidna		1988	SA	West/OT207	Pg2+	?
Enterprise		1993	NSW	W78-137/Omihi		Pc39 or Pc55
Esk		1975	Tas	Blythe/Avon		Pc1
Eurabbie	MA5064	1998	NSW	Echidna/4/Avon/Fulmark//Ballidu/3/Kent/Fulmark//2*Cooba		PcDalyup
Euro	ME/45/7	1994	SA	Mortlock/Echidna	Pg2+	PcMortlock+
Galileo		2006	QLD			
Genie		2005	QLD			Pc61+

Cultivar	Synonym	Year	State	Pedigree	Stem rust	Crown rust
Glider		1998	SA	ME1554/Crcpx/C7512/Srcpx	Pg1, Pg2	Pc58 or Pc59?
Graza 50	Valley	1994	QLD	Froker/RL3038//Hudson/3/Porter		Pc38+PcCulgoa?
Graza 51		2005	QLD			
Graza 68	Robert 68	1998	QLD	OT212/RL364		Pc68
Graza 70		1994	QLD	Panfiv/Q18994	Pg2, Pg13?	Pc38,39
Graza 80		2004	QLD			
Gwydir	PO519	1999	QLD			Pc56
Hay		1998	WA	OT207/Swan		?
Heritage Lordship		1998	NSW	W84188/Reil		
Hotham	WAOAT0421	1998	WA		Pg2+	PcHotham+
Kalgan		1988	WA		Pg2	Pc1
Kangaroo		2005	SA	88123-104/84Q406//86153-101		
Kojonup		2006	WA	CI/CC/OT207/Mortlock//Coomallo		
Mannus		2006	Waratah	MA5103/TAMO386		
Marloo		1987	SA	West*2/New Zealand Cape		?
Mitika		2005	SA	87072-13/87080-1//88045-12		Pc39
Moola	Dumont 68	1998	QLD	PC68/6*Dumont	Pg1, Pg2	Pc68
Mortlock			WA	Elan-6161/3/Fulmark/Newton//Swan	Pg1, Pg2	PcMortlock
Murray		1985	WA	Fulmark/Newton//Swan/3/Kent Ballidu/Curt		Pc1
Needilup		1998	WA	Avon/Swan//Jaycee/3/OT207/Swan//Moregrain/West	Pg2	Pc1
Nile		1982	Tas	Blythe/Avon	Pg2	Pc1
Nobby		1994	QLD	Coker234/Coker227/2/TAM0-301/TAM0-312/5/Coker227/2/TAM0-301/TAM0-312/4/Coker227/Coker234/2/TAM0-301/TAM0-312	Pga	Pc58,60?,61
Nugene	ND1, ND9308572	2000	QLD	ND881673/ND880909 (ND881673=R805065-5/Dumont, ND880909=ND830775/Dumont)		Pc48+
Numbat		1998	SA	Bandicoot/OX82;059-78 (OX82;059-78 = Mortlock/Echidna)	Pg2+	PcDolphin
Outback		2005				

Cultivar	Synonym	Year	State	Pedigree	Stem rust	Crown rust
Pallinup	81Q:359, 81Q330-14-18	1994	WA	Mort/5/(80Q:253)M127/Curt//Cortez(71Q:124)/4/IORN78.45/3.D.Palestine/Swan//M127.Curt		PcMortlock+
Pan Five		1990	SA	Lodi/PI 267989	Pg2+	PcMortlock+
Possum		2002	SA	ND863468/OX82059-58-10//Carrolup		
Potoroo	CC/21/34	1991	SA	OX79;119-20/OX80;266-2H**//Echidna	Pg2+	PcDolphin
Qantom		2006	QLD			Pc50*
Quamby	QO 215-19	1990	Tas	OT 521/RL 3060		PcDolphin
Quoll	OX87;080-2, 87080-2	1998	SA	MIOLRP-86-3/Bandicoot	Pga	Pc61
Riel		1993	QLD	RL 3057/Otana	Pg1, Pg2	Pc38,39
Saia				Avena strigosa	PgSa	Pc15,16,17
Stout		1977	QLD	Complex		?
Swan		1967	WA	Kent/Ballidu	nil	Pc1
Taipan		2001	QLD	ND879845/ND890358	Pga?	PcNugene+
TAM 0397		2001	QLD	Reselection from TAMO386		
Targa		1999	Tas	Quamby/2*Nile		Pc1
Toodyay	WAOAT347, 81Q:347	1996	WA	Mortlock/5/Fulmark/Newton//Swan/3/XBVT183/4/IORN78.45/3/Dwarf Paletine/Swan//M127/Curt		Pc38 + PcCulgoa?
Tungoo	SV95137-6-3	2009	SA			
Vasse	WAOAT0396, 84Q:396	1998	WA	IORN-82-47/75Q:198(OT207/Swan fixed)		
Volta	QA1	2003	QLD	37-9/Guiba Line		Pc50, Pc68
Wallaroo		1987	SA	West*2/New Zealand Cape		Pc1
Wandering		1999	WA	Mortlock/Echidna//OT207/Swan		
Warrego	PO535	1999	QLD	IL81-2570/ND840871		Pc61+
Winjardie		1985	WA	Fulmark/Newton//Swan/3/Kent/Ballidu(M127)//Curt	Pg2	nil
Wintaroo	SV88083-4	2002	SA	MIOLRP-86-3/Echidna/Wallaroo		
Yallara		2007	SA	Euro*2/ND931075 or ND9308572		Pc38+
Yarran	MA3236	1988	NSW	M127/Radar2//M1335/M1346/3/TAM0-312	Pg2	PcDolphin
Yiddah	MA5107	2001	NSW	Quaker82-238/Cooba//Yarran/Mortlock		?
Yilgarn		1991	WA	Unknown//Swan/Nora	nil	PcMortlock+

Triticale and Rye

Cultivar	Synonymn	Year	State	Pedigree	Chr.Status	Type	SR Genes	LR Genes	YR Genes
Abacus	OX83-1	1992	SA	K875/Snoopy//T2898/3/Currency	Complete	Grain	<i>SrSatu, SrBj</i>	<i>LrSatu</i>	<i>Yr9, YrJ</i>
Bejon	SUT40,12th ITSN entry 30	1987	NSW	Tejon/Beagle'S'(X16134-35Y-1Y-1m-1y-2B-OY)		Grain	<i>SrSatu, SrBj</i>	<i>LrSatu</i>	<i>Yr9, YrJ</i>
Bogong									
Breakwell									<i>Yr9, YrJ</i>
Canobolas									
Coorong			SA	Inia/Armadillo 'S'//1648	Substituted	Grain	<i>Sr27</i>	<i>LrCoor</i>	<i>Yr9, YrJ</i>
Crackerjack									<i>Yr9, YrJ</i>
Credit	OX83-50	1997	SA	Aroona/Snoopy//11ITSN-159/3/Currency		Grain			<i>Yr9, YrJ</i>
Eleanor	AT529	2001	NSW	Polony Q/TW179		Grazing			<i>Yr9</i>
Empat	AT 30-83GZ	1987	NSW	URSS 3814//FW121 PROC//CIN	Substituted	Grain/Grazing	<i>not tested</i>	<i>not tested</i>	<i>Yr9</i>
Envdeavour	AT528	2008	NSW	80469(I176-24)/I179-39E	Complete	Grain/Grazing			
Everest	ISR 495-50	2000	NSW	Tarasca 87-1/Poss-1-2		Grain	<i>SrSatu?</i>		<i>Yr9, YrJ</i>
Hawkeye									<i>Yr9, YrJ</i>
Heritage Zephyr		1998	NSW	Waitohi/SPY15077		Grain/Grazing			
Hillary	AT513	2000	NSW	<i>rht3</i> Hungarian Triticale/Ningadhu	Complete	Grain/Grazing	<i>Sr27, SrNln</i>	<i>LrCoor</i>	<i>Yr9</i>
Jackie	AT517	2000	NSW	Coorong//Driar/T109A	Complete	Grain/Grazing	<i>Sr ?</i>		<i>Yr9, YrJ</i>
Jaywick									<i>Yr9, YrJ</i>
Kosciuszko	ISR 497-14	2002	NSW	CMH77A.1024/2*Yogui/Lamb 4		Grain			<i>Yr9, YrJ</i>
Madonna		1991	NSW	<i>rht3</i> Hungarian Triticale/Ningadhu		Grain/Grazing	<i>Sr27, SrNln</i>	<i>LrCoor</i>	<i>Yr9</i>
Maiden		1993	NSW	<i>rht3</i> Hungarian Triticale/Ningadhu		Grain/Grazing	<i>SrSatu, SrNln</i>	<i>LrSatu</i>	<i>Yr9</i>
Muir	IT/245, 11th ITSN entry47	1988	WA	IRA (Inia/Rye/Armadillo)/Beagle	Complete	Grain	<i>SrNln</i>	<i>not tested</i>	<i>YrJ</i>
Pacific Falcon									<i>Yr9, YrJ+</i>
Prime322	AT322	2002	NSW	19thITSN 17/16thITSN 64		Grain			<i>Yr9, YrJ</i>
Rufus									<i>Yr9+</i>
Satu			NSW	Maya 2/Armadillo 'S'	Substituted	Grain	<i>SrSatu</i>	<i>LrSatu</i>	<i>Yr9, YrJ</i>
Speede									<i>Yr9, YrJ</i>
Tahara	TY2, ITSN 10-153	1987	VIC	Drira-MA	Complete	Grain	<i>Sr27, SrNln</i>	<i>? LrSatu</i>	<i>Yr9+</i>
Tiga	AT-25 83GZ	1987	NSW	Unknown(ICARDA Acc. No. 803, Sel 331)	Substituted	Grain/Grazing	<i>not tested</i>	<i>not tested</i>	<i>Yr9, YrJ</i>
Tickit	TX93-19-1-3	2000	SA	HX87-255/Muir		Grain			<i>Yr9+</i>
Tobruk	AT574	2008	NSW	CHD982/3/ANSO/ARDI.3/1	Complete	Grain/Grazing			<i>Yr9, YrJ</i>
Treat		1997	SA	T5077/4/K752//Snoopy/'Acca'/3/X77-353-1		Grain			<i>Yr9, YrJ</i>
Yukuri									<i>Yr9, YrJ+</i>

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Rusted plant samples can be mailed in paper envelopes; do not use plastic wrapping or plastic lined packages. Direct samples to:

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The Australian Cereal Rust Control Program is supported by growers through the Grains Research & Development Corporation.

