

## Detection of a new wheat stripe rust pathotype in Victoria

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For the first time since 2010, a new pathotype of the wheat stripe rust pathogen, *Puccinia striiformis* f. sp. *tritici*, has been detected in Australia. Pathotype 239 E237 A- 17+ 33+ was detected in samples from Horsham and Normanville in Victoria in late 2017. This pathotype is the first record of virulence for Yr33 in Australia. The impact of this new pathotype on wheat varieties will be better understood after this year. Early greenhouse data and data from the Horsham NVT trials last year indicate that the varieties Coolah, LRPB Flanker, Axe, B53, Buchanan, Cobalt, EGA Gregory, Forrest, Gauntlet, Grenade CL Plus, Mitch, Steel, Trojan, Viking and Zen should be monitored closely for stripe rust. Stripe rust found on any variety should be submitted to PBI for pathotype analysis. Instructions and a reply paid mailing address are at the end of this report.

#### Pathotype 239 E237 A- 17+ 33+

Pathotype 239 E237 A- 17+ 33+ was isolated from two samples of stripe rust from two separate sites in the Victorian wheat belt during 2017. The first sample was from Normanville (Mallee) from a crop of Grenade CL Plus. The second sample was from a variety of Avocet near isogenic lines (NILs) and a breeder's line from Horsham (Wimmera). All samples contained a mixture of pathotypes.

This new pathotype is virulent on the resistance genes: Yr1, Yr2, Yr3, Yr4, Yr6, Yr7, Yr9, Yr17, Yr25, Yr32, Yr33, YrND, YrS92/O, YrSP (Table 1). Pathotype 239 E237 A- 17+ 33+ is the first example of virulence for Yr33 in Australia. Field results from the Horsham stripe rust nursery indicate that the new pathotype is also virulent on at least one adult plant resistance gene in addition to Yr33.

#### Implications for the stripe rust resistance of wheat cultivars in the southern and eastern grain regions.

The current consensus ratings for most varieties in variety guides are based on the commonly occurring wheat stripe rust pathotype 134 E16 A+ 17+ 27+. Most varieties that are susceptible to the currently dominant pathotype will also be susceptible to the new pathotype. Compared to the current consensus ratings, the main varieties to monitor for stripe rust include Coolah, LRPB Flanker, Axe, B53, Buchanan, Cobalt, EGA Gregory, Forrest, Gauntlet, Grenade CL Plus, Mitch, Steel, Trojan, Viking, and Zen.

Stripe rust found on any variety should be submitted to PBI for pathotype analysis. Instructions and a reply paid mailing address are at the end of this report.

Pathotype	Resistance Gene*																Year last detected			
	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr15	Yr17	Yr25	Yr27	Yr32	Yr33		YrA	YrJ	YrT
110 E143 A+	A	V	V	V	A	V	V	A	A	A	A	A	V	A	A	A	V	A	A	2016 (rare)
134 E16 A+	A	V	A	A	A	V	V	V	V	A	A	A	V	A	A	A	V	A	A	2017
134 E16 A+ 17+	A	V	A	A	A	V	V	V	V	A	A	V	V	A	A	A	V	A	A	2017
134 E16 A+ 17+ 27+	A	V	A	A	A	V	V	V	V	A	A	V	V	V	A	A	V	A	A	2017
134 E16 A+ J+	A	V	A	A	A	V	V	V	V	A	A	V	V	A	A	V	A	V	A	2017
134 E16 A+ J+ 27+	A	V	A	A	A	V	V	V	V	A	A	V	V	V	A	A	V	V	A	2017 (rare)
239 E237 A- 17+ 33+	V	V	V	V	A	V	V	A	V	A	A	V	V	A	V	V	A	A	A	2017

\* A = avirulent (unable to overcome the resistance gene), V = virulent (capable of overcoming the resistance gene)

Table 1. The virulence and avirulence of pathotypes of the wheat stripe rust pathogen *Puccinia striiformis* f. sp. *tritici* identified in Australia since 2005

#### GENERAL ENQUIRIES

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#### RUSTED PLANT SAMPLES

can be mailed in paper envelopes;  
do not use plastic wrapping or plastic  
lined packages. If possible, include the  
latitude and longitude of the sample  
location.

Direct samples to:

University of Sydney  
Australian Rust Survey  
Reply Paid 88076  
Narellan NSW 2567

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