

Cereal Rust Report

2015

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Cereal rust situation, mid-October 2015

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Samples of all cereal rusts have been received at the Australian Cereal Rust Survey at the University of Sydney's Plant Breeding Institute. Details on the current reported distributions are provided as are known pathotype details. Although wheat stripe rust is present in most states, its occurrence in the northern grain belt of Western Australia is noteworthy. For the first time in a few years stripe rust has been detected on barley in the eastern states indicating the likely presence of barley grass stripe rust. Despite receiving samples of wheat stem rust from South Australia and Western Australia in early July there have been no further reports of the disease from those states. Samples of all rusts observed in cereal crops should be submitted for pathotype analysis to the Australian Cereal Rust Survey.

Wheat stripe rust

A total of 126 samples of stripe rust have been received so far in 2015 at the Australian Cereal Rust Survey at the University of Sydney's Plant Breeding Institute. Samples have been received from all growing states except Tasmania (Figure 1). In Queensland, northern NSW and southern NSW, pathotypes 134 E16 A+, 134 E16 A+ 17+ and 134 E16 A+ 17+ 27+ have been detected. Pathotype analysis has not yet been completed for any samples from Victoria.

All samples from South Australia have comprised pathotype 134 E16 A+ 17+. Pathotype 134 E16 A+ 17+ 27+ was detected in western Victoria in 2014 and may spread into South Australia in the near future.

Of the 13 samples of stripe rust received from Western Australia, pathotype analysis has been completed on six, all of which were determined to be pathotype 134 E16 A+. Samples have been received off crops suspected to be Mace. Pathotype analysis of

these samples is ongoing, but at the moment there is no evidence of Yr17 virulence in the WA population of the wheat stripe rust pathogen. Western Australian growers need to remain vigilant for the occurrence of Yr17 virulence.

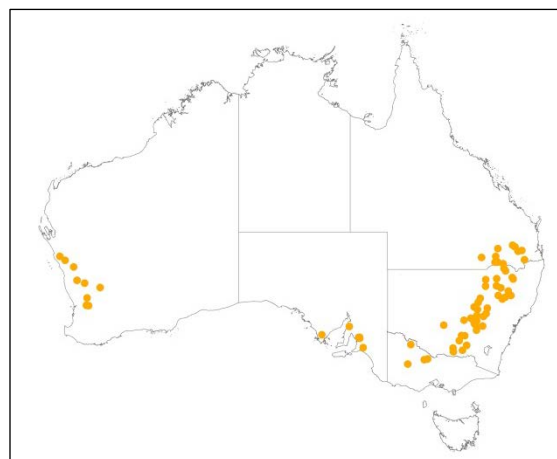


Figure 1. Reported detections of stripe rust in 2015.

Stripe rust on barley varieties and barley grass

Several samples of stripe rust sampled from barley grass and barley varieties have been received (Figure 2). Barley grass stripe rust has been confirmed on a sample from Wagga Wagga. Samples of stripe rust off barley grass have been received from Queensland, New South Wales and Victoria. Barley grass can be a host to both wheat stripe rust and barley grass stripe rust.

Samples of stripe rust from barley grown around Trangie and Breeza in New South Wales have been received. The barley varieties sampled included Buloke, Shepherd and Compass. All three varieties are partially susceptible to barley grass stripe rust, caused by *Puccinia striiformis* f. sp. *pseudohordei*. Barley stripe rust, caused by *Puccinia striiformis* f. sp. *hordei* is not present in Australia and would pose a significant threat to barley production if it ever entered the country. As a result, it is critical that all samples of stripe rust observed on barley are submitted for pathotype analysis at the Australian Cereal Rust Survey.

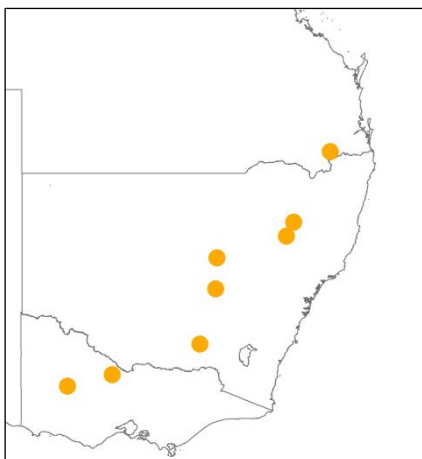


Figure 2. Reported detections of stripe rust on barley varieties and barley grasses in 2015.

Wheat leaf rust

Samples of wheat leaf rust have been received from all growing states (Figure 3). Early samples from Queensland were received in May. These samples from Warwick were identified as pathotypes 76-1,3,5,7,9,10,12,13 +Lr37 and 76-3,5,7,9,10,12,13 +Lr37. Pathotype 76-3,5,7,9,10,12,13 +Lr37 was first identified in northern NSW in 2013. Other samples from Queensland included a sample off Sunmate in Goondiwindi, and samples off wheat in Mount Sylvania and off the variety Mitch in Hopeland. Pathotype identifications of the last three samples have not yet been finalised.

Samples from NSW were received from Grafton, Wagga Wagga, Dunedoo, Tamworth, North Star, Deniliquin and Forbes. The sample from Grafton was

determined to be pathotype 104-1,3,5,7,9,10,12 +Lr37. Samples from North Star and Dunedoo were pathotype 104-1,3,4,6,7,8,10,12 +Lr37. These samples were taken off the wheat varieties Rudd and SQP Revenue. Pathotype analysis of the other samples is ongoing.

Victorian samples were received from Inverleigh, Derrinallum and Wickliffe. Since then further samples have been received from Inverleigh. Samples from Inverleigh and Derrinallum were pathotype 104-1,3,4,6,7,8,10,12 +Lr37. This pathotype was first detected in August 2014 in South Australia.

Pathotype 104-1,3,4,6,7,8,10,12 +Lr37 was detected again in South Australia this year, with a sample off Manning from Bool Lagoon received in July. A second sample of wheat leaf rust has been received off Corack sampled from Roseworthy.

Only one sample of wheat leaf rust has been received from Tasmania. The sample off wheat from Jericho was determined to be pathotype 104-1,3,4,6,7,8,10,12 +Lr37.

The first sample of wheat leaf rust in Western Australia was received off Yitpi, sampled in Lake Grace in early July. Since then samples have been received from Ravensthorpe, Mukinbudin, Yuna, Woorree, Carnamah and Coorow. Pathotype analysis has been completed for approximately half of the samples received to date. The results show that pathotype 76-1,3,5,7,9,10,12 +Lr37, which was initially detected in Western Australia in October 2013 is present from Mukinbudin to Ravensthorpe.

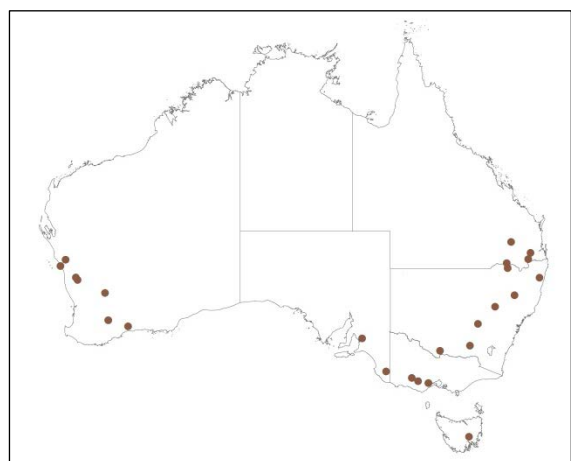


Figure 3. Reported detections of wheat leaf rust in 2015.

Wheat stem rust

One sample of the Scabrum rust (Scabrum +Sr21) was received in late May from Toowoomba (Figure 4). Two samples of wheat stem rust have been received (Figure 4). On the 9th July samples were received off susceptible buffers from Roseworthy in South

Australia and off Wilgoyne sampled from Yuna in Western Australia. The sample from South Australia was determined to be the VPM pathotype, 34-1,2,7 +Sr38. Unfortunately, the sample from Yuna in Western Australia was not recovered. The early occurrence of wheat stem rust in both South Australia and Western Australia indicates that growers in these states will need to closely monitor crops for the disease as the weather warms up towards the end of the cropping season.

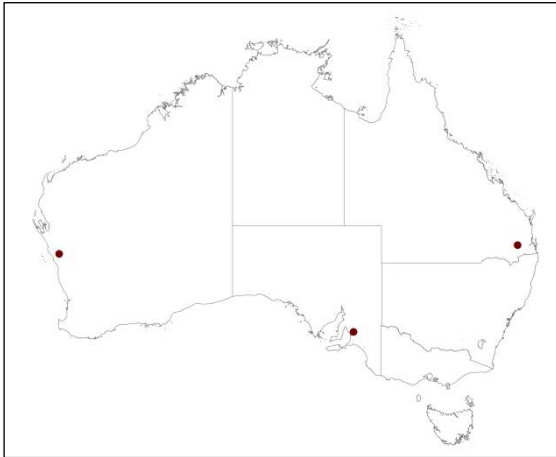


Figure 4. Reported detections of wheat stem rust in 2015.

Barley leaf rust

Samples of barley leaf rust have been received from all growing states except for Tasmania (Figure 5).

Samples of barley leaf rust were received from Dalby in Queensland, Moree in New South Wales and Inverleigh in Victoria. All samples were off the variety Compass. Pathotype analysis of one sample from Moree has been completed and was determined to be pathotype 5652P+.

Samples from South Australia were received from Langhorne Creek, Port Clinton, Brentwood and Foul Bay, Wandearah and Wharminda. Pathotype analysis of the samples from Wandearah and Wharminda is ongoing. Pathotype 220 P+ was found at Langhorne Creek, Port Clinton and Brentwood with samples taken off the varieties Scope, Maritime and Navigator. Samples off Scope from Langhorne Creek were also found to have pathotypes 210 P+, 212 P+, 5630 P+, 5652 P+ and 5672 P+. The high diversity of barley leaf rust pathotypes at the Langhorne Creek site is most likely due to the presence of the alternate host, Star of Bethlehem (*Ornithogalum* sp.), in the paddock of Scope.

Samples of barley leaf rust from Western Australia were received from mid-August. The samples received in August were from Woogenellup, Scaddan, Tenterden, Bremer Bay, Gibson and Dandaragan. Of

the samples for which pathotype analysis is complete, all samples were determined to be pathotype 5457 P-. These samples were collected off the varieties Baudin, Bass, Navigator and Oxford as well as unspecified barley varieties. The first sample, received from Woogenellup was a mixed sample of 5457 P- and 5453 P+.

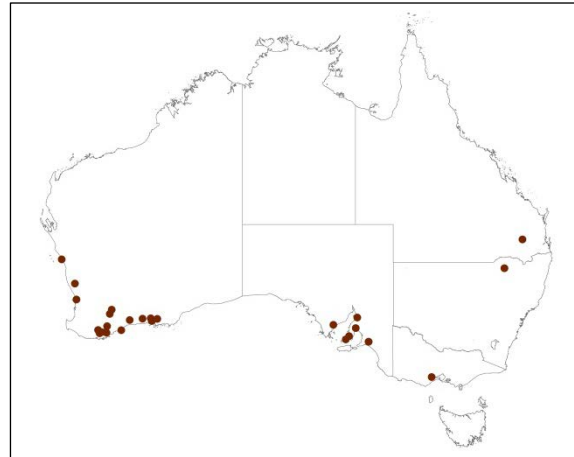


Figure 5. Reported detections of barley leaf rust in 2015.

Oat crown rust

Oat crown rust has been detected in Queensland, New South Wales and Western Australia (Figure 6). Of the seven samples received from Queensland since May, eight pathotypes have been identified including: 0001-2; 0005-6,10; 0071-0; 0107-4,6,10 +Warrego; 0307-3,4,5,6,10 +Warrego +Volta; 0707-1,4,5,6,7,10,12 +Warrego +Nugene +Genie +Drover; 1107-1,4,6,7,10,12 +Warrego +Nugene +Gwydir +Genie; 1507-1,4,6,10,12 +Warrego +Nugene +Gwydir +Genie +Aladdin; and 4473-4,6,10.

Since mid-August, five samples have been received from New South Wales, two of which have pathotype results so far: pathotype 0307-1,4,5,6,7,10,12 +Warrego +Nugene +Genie was sampled off Wild Oat in North Star and 0001-0 was sampled off Wild Oat from Tamworth.

One sample has been received thus far from Western Australia. The sample was off Carrolup and the pathotype has not yet been finalised.

Oat stem rust

Samples of oat stem rust have been received from Queensland, New South Wales and Victoria (Figure 7). Queensland samples were received from Wellcamp, Wyaga, Kingsthorpe and Malu. Pathotypes determined thus far have been 41-1,4 and 94-2,4.

In New South Wales samples were received from North Star and Tamworth. Pathotypes have not yet been determined.

One sample has been received from Victoria though the pathotype has not yet been finalised. The sample was sampled off oat in Stawell.

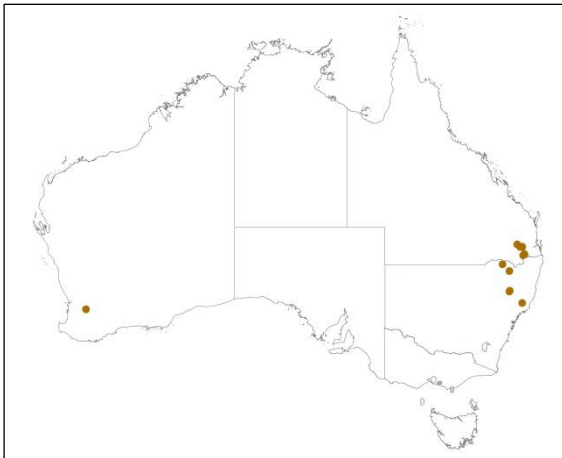


Figure 6. Reported detections of oat crown rust in 2015.

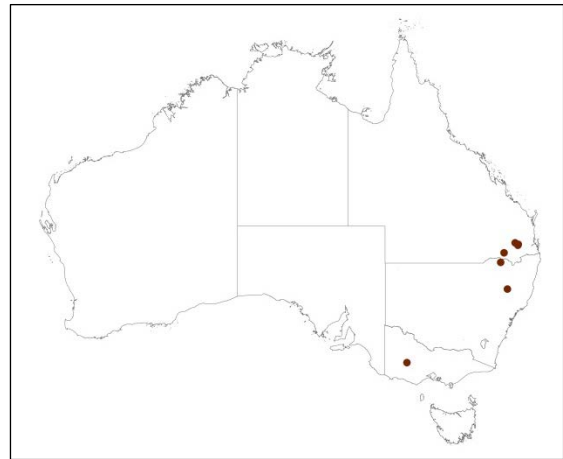


Figure 7. Reported detections of oat stem rust in 2015.

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

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

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