



Crop Pathology

SARDI

SOUTH AUSTRALIAN
RESEARCH AND
DEVELOPMENT
INSTITUTE

Crop Watch



August 2015

Volume 12, Number 1

Crop Watch is distributed for SARDI through Jon Lamb Communications.

Barley leaf rust

Leaf rust of barley, unlike the wheat rusts, is able to survive in stubbles and infect barley the following year. It does this through the production of sexual spores from the stubble that can infect the small bulbous weed Star of Bethlehem (*Ornithogalum umbellatum*). The fungus produces further different spores stages on the weed that can then re-infect barley. This scenario is not common and exists only where the Star of Bethlehem occurs in paddocks that are also used for the growing of barley. For the full infection cycle to occur, it is necessary for the weed to be close to both infected barley straw from the previous year in order to become infected and also close to young barley plants to receive the inoculum as the infective spores are unlikely to travel far.

It had been thought that the only area where this situation occurred was on the lower Yorke Peninsula where the weed has been a problem for a long time and where barley is widely grown in close rotations. In this region, the problem has been well publicised and hence measures have been taken over the years to reduce the close rotation of barley in weed-infested paddocks.

We have now learnt that a similar situation has existed on the lower Fleurieu Peninsula where the connection

between the disease and the rust was not known. A crop of Scope barley with heavy infection of leaf rust was recently reported by Orville Hildebrand in a paddock with very thick infestation with the Star of Bethlehem. The paddock was sown in barley stubble presumably infected with leaf rust in 2014. Close observation revealed the presence of aecia on the leaves of the weed although insects were also busy eating out these infected leaves presumably for the extra taste or nutrition they provided. Biological control in action!

Unfortunately, the barley crop will have been sending spores to downwind destinations for a significant period of time.

Meanwhile, Sam Holmes has tweeted the presence of leaf rust on the Yorke Peninsula.

Growers at risk from barley leaf rust should, therefore, monitor their barley crops for leaf rust to ensure effective early control of this disease.

Wheat leaf rust has been observed in a long season wheat near Bool Lagoon in the South-East of SA. This is the new rust strain with increased virulences on varieties such as Mace, Wyalkatchem, Corack, Scout, Wallup and Revenue. This strain was first observed in SA in 2014 and is capable of causing considerable losses this season unless kept under good control.

The precise reaction of several varieties to this new strain is uncertain so all crops should be monitored carefully and unexpected responses reported to us in SARDI for follow up.



Star of Bethlehem in a leaf rust infected crop near Langhorne Creek.



Aecia on leaf of Star of Bethlehem.

Crop Watch is an electronic newsletter service provided by SARDI.

If you would like to receive this newsletter please send your email address to Jon Lamb, Jon Lamb Communications jlcom@chariot.net.au - titled "Crop Watch request".



FEEDBACK WELCOME

The SARDI Pathology team invites you to contribute to this publication by reporting local observations or commenting on items in the newsletter.

Unless specifically requested otherwise the name and location and/or company of the reporter may be included with published comments.

Reports, particularly of early sightings of rusts or where diagnosis is not certain, would have added value if accompanied by a paper-packed sample. Please do not send samples in plastic bags.

Send samples to
Field Crop Pathology, SARDI
GPO Box 397, Adelaide SA 5001

Rust samples can also be sent direct to
Australian Cereal Rust Survey
Plant Breeding Institute
Private Bag 4011, Narellan NSW 2567

Comments should go to:

Hugh Wallwork (cereals)
hugh.wallwork@sa.gov.au,

Jenny Davidson (pulses and oilseeds)
jenny.davidson@sa.gov.au

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