



Red leather leaf infection on an oat leaf. Image: DPIRD.

Protecting WA crops

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Growers urged to be on the lookout for Red leather leaf disease in oats

At a glance:

- Red leather leaf (RLL) in oats was first detected in Western Australia in 2021.
- RLL can be mistaken for bacterial stripe blight, barley yellow dwarf virus or nutrient deficiencies.
- Rapid and accurate diagnostic tests could aid in more targeted management of RLL.
- Growers are urged to monitor for RLL in oat crops and are encouraged to submit samples to aid in the validation of diagnostic tests.

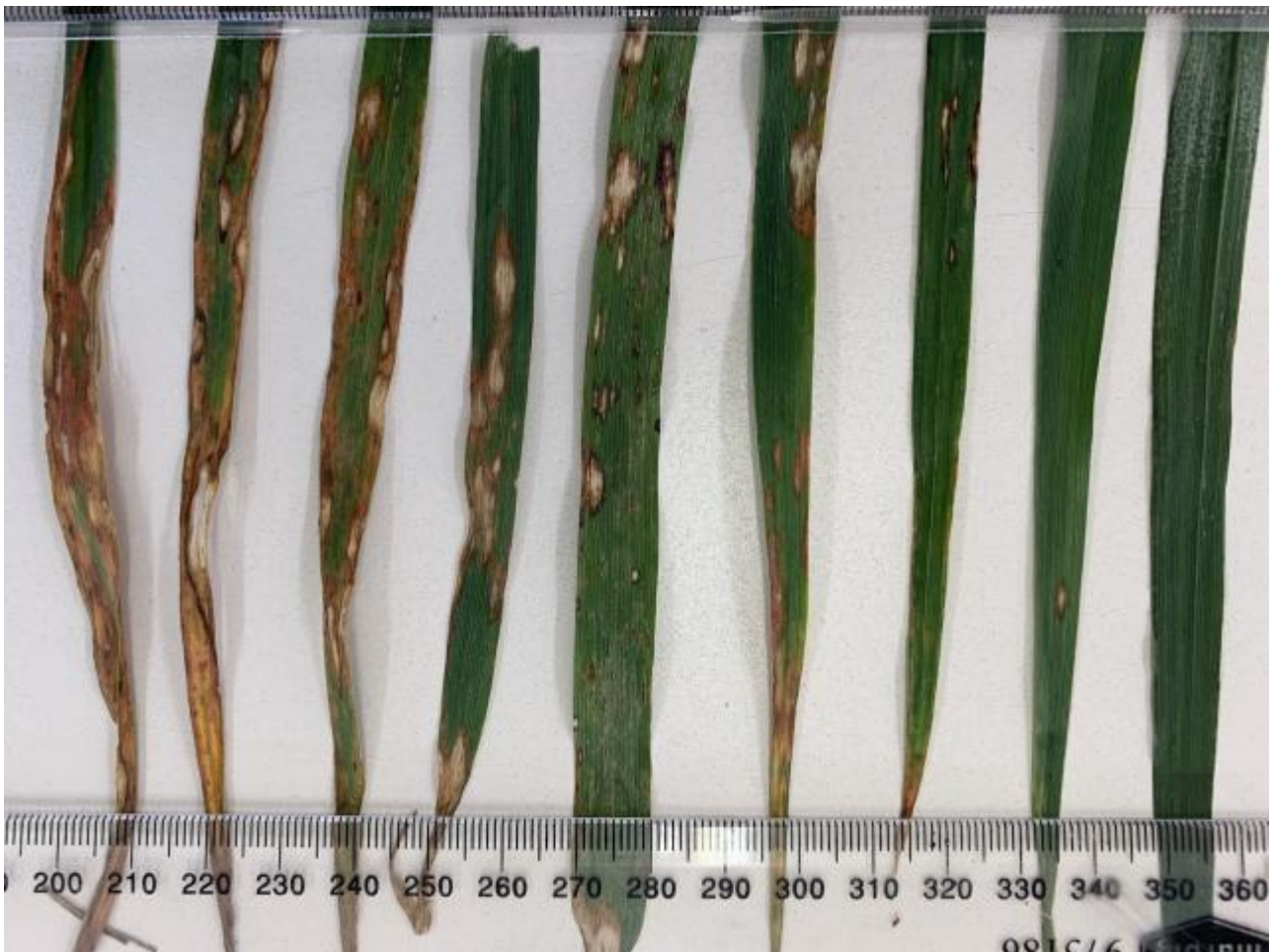
Red leather leaf (RLL) is a foliar disease found in oats which was first detected in Western Australia (WA) in 2021, although it is likely that the disease has been present for several seasons. The disease has been found in medium-high rainfall oat growing regions of WA around Narrogin and Wagin.

RLL is one of the most common and prevalent and damaging oat diseases in the medium- and high-rainfall regions of south-eastern Australia.

The disease, caused by the fungal pathogen *Neospermaospora avenae*, favours cool and wet seasonal conditions.

In the eastern states, RLL can result in significant yield and quality losses in both hay and grain varieties susceptible to the disease, with reductions of up to 22% in hay biomass and 10-17% in grain yield. Although we have not yet identified RLL at high levels in WA, it is worth keeping an eye out for.

The RLL fungus persists from season to season on infected seed and stubble. It can be identified by the distinct lesions on the leaves, which feature lighter centres and darker red-brown margins. Over time, these lesions join until the whole leaf becomes red and leathery in appearance and may be slightly rolled. The disease is sometimes mistaken for other issues, such as barley yellow dwarf virus (BYDV), bacterial stripe blight or nutrient deficiencies.



Progression of development of red leather leaf symptoms on oat leaves. Image: Agriculture Victoria (Hari Dadu).

The National Grains Diagnostic and Surveillance Initiative (NGDSI) is a collaborative project led by the Grains Research and Development Corporation (GRDC) in partnership with five state government departments, including the Department of Primary Industries and Regional Development (DPIRD). As part of this initiative, DPIRD's crop protection

team is developing rapid and accurate molecular diagnostic tests to identify hard to identify diseases including RLL.

The correct identification of diseases is important to enable oat growers to implement timely and economical disease management decisions.

The accurate diagnosis of RLL will help enable DPIRD to determine how widespread RLL is in WA. To support this research, DPIRD is currently collecting oat samples to aid in the development and validation of the testing techniques under investigation and welcomes growers to send samples in to facilitate this. If you have any oat leaf samples that you suspect may have RLL, please contact Kylie Chambers, DPIRD Plant Pathologist on +61 8 9690 2151.

For more information on RLL refer to:

- DPIRD's Protecting WA Crops Issue 23, August 2022 newsletter
- DPIRD's Oat growers to keep watch for plant disease, red leather leaf media release
- Agriculture Victoria's [Red leather leaf of oats](#) webpage
- AgriFutures [Red leather leaf of hay oats disease management guide](#) webpage.

Meet Crop protection team member – Geoff Thomas



Geoff Thomas assessing a lupin crop. Image: Zia Hogue, DPIRD.

Geoff Thomas is a Plant Pathologist based in the Perth DPIRD office. Geoff was raised on a farm in Jerramungup which is where his interest in WA agriculture was developed.

Geoff has worked with DPIRD for more than 30 years. He joined the Cereal Pathology group as Technical Officer in the late 1980s, before taking a position as a Research Officer in lupin pathology in 1996, specializing in epidemiology and management of anthracnose. Since the mid-2000s Geoff's role has expanded to include a return to cereal pathology (wheat, barley, oat), involvement in pulse pathology and continued research in lupins. His research encompasses epidemiology, integrated management, disease modelling and

variety screening for major foliar diseases. Geoff is also passionate about providing extension services and training in disease identification and management.

Outside work, Geoff enjoys a variety of exercise pursuits and is a keen runner, having run the Great Ocean Road Marathon this year. He also enjoys keeping his family supplied with fresh produce from his home vegetable garden.

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