# Growers warned of new wheat leaf rust pathotype in WA

**Thursday, October 31, 2013**

An eastern Australian wheat leaf rust pathotype has been identified in four diverse regions across Western Australia (WA), reminding growers that long-distance movement of rust inoculum is a serious threat to crop health and hygiene.

The news comes only two weeks after the Australian Cereal Rust Control Program (ACRCP) announced the discovery of a new barley leaf rust pathotype in WA that can overcome resistance in cultivars carrying the *Rph3* gene.

The finding of this new wheat leaf rust pathotype follows investigations by Department of Agriculture and Food WA (DAFWA) staff, agronomists and growers after unusually high levels of wheat leaf rust were observed in September on varieties rated as R-MR.

ACRCP Director and University of Sydney Plant Breeding Institute Professor Robert Park says growers must be aware it is the first detection of this specific pathotype in WA.

“It represents the first occurrence of virulence for the resistance genes *Lr13*, *Lr17a*, *Lr17b*, and *Lr26* in WA,” he said. “It is believed that the pathotype (76-1,3,5,7,9,10,12 +Lr37) moved to WA from eastern Australia last year during the wet spring conditions, which are favorable to rust spore dispersal.

“This discovery is only the second east to west movement we have documented since 1990.”

While the movement of rust inoculum from WA to eastern Australia via prevailing winds has occurred many times in the past 90 years, the movement from the east to west is less common.

The new pathotype was first detected in eastern Australia in early October 2011 in samples collected from Victoria and South Australia followed by samples collected from southern NSW in 2012.

Grains Research and Development Corporation senior manager – plant health Dr Rohan Rainbow says the discovery of the new pathotype demonstrated the sound monitoring and evaluation work done by the ACRCP in conjunction with DAFWA.

“The ACRCP has been one of GRDC’s core investments to monitor, assess and develop a rust management strategy for Australian growers – the new finding demonstrates how quickly new pathogens can be detected by our team,” he said.

"It is important to recognise that as a result of the ACRCP, researchers have been developing new lines of resistance and screening pre-breeding wheat lines with new leaf rust pathotypes since the early 1970s.

"We have a proactive plan to ensure that plant breeders are provided with new sources of leaf rust resistance to breed into new Australian wheat cultivars."

**Implications for growers**

Growers need to be vigilant in checking their crops for the disease and be aware that varieties which carry the *Lr13* (such as Wyalkatchem, Corack and Emu Rock) and *Lr17a* (Fortune) gene may now be compromised and require additional management.

"While Mace does carry the *Lr13* gene, it seems to have a gene combination that provides its resistant to moderately resistant status and we don't expect this will change due to pressure from the new pathotype," Prof Park said. However, tests are continuing to fully understand the impact of this pathotype.

"Wyalkatchem may shift from R-MR to MS and Emu Rock from R to MS-S following further testing at the ACRCP. Some varieties have other leaf rust genes that are expected to still be effective so have a lesser rating shift- King Rock, Fortune and Zippy are likely to shift from R/MR to MRMS. Cultivars Carnamah and Cobra may also be vulnerable to the new pathotype but further tests are needed to establish their responses more accurately.

"Given the rise in resistance pathogens, we are recommending that all growers develop a rust management strategy for 2014.

"Each strategy should include a plan to consider variety selection (at a minimum avoiding S and VS varieties), managing the green bridge (volunteer plants) which can serve as a sanctuary for rust development, a fungicide control plan, crop monitoring and community communication to ensure early identification should rust be found."

This new pathotype discovery highlights just how valuable and important it is that growers and grain industry staff submit rust samples to the ACRCP for pathotype testing. Growers are encouraged to monitor crops closely and forward samples of any leaf rust detected to the University of Sydney Plant Breeding Institute.

Rusted plant samples can be mailed in paper envelopes, not plastic wrapping or plastic-lined packages, to Australia Cereal Rust Survey Plant Breeding Institute, Private Bag 4011, Narellan, NSW, 2567.

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

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**Caption:** Leaf rust on Wyalkatchem leaf. Photo provided by Ciara Beard, Plant Pathologist, Department of Agriculture and Food, Western Australia.