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of Sydney

# PBI

Plant Breeding Institute  
Cereal Rust Laboratory

## Cereal Rust Report Season 2009

### New Barley Leaf Rust Pathotype virulent for *Rph3*

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Results from greenhouse tests just to hand have demonstrated the occurrence of a new pathotype of the barley leaf rust pathogen *Puccinia hordei* with virulence for *Rph3*. This is the first report of virulence for *Rph3* in Australia and the new pathotype will be expected to have an impact on barley varieties carrying the matching resistance gene, notably cultivars Fitzroy and Yarra, and likely Starmalt.

The pathotype was isolated from a sample of leaf rusted barley collected from experimental plots in northern NSW at Legume (SE of Warwick, Queensland), in late March. The pathotype is clearly a single step mutational derivative of pathotype 5453P+, and has the designation 5457P+. The parental pathotype was very common in northern NSW and Queensland during the 2008 season, where it reached epidemic levels in some crops of cv. Grout.

Initial greenhouse seedling tests indicated that the leaf rust sample comprised a new pathotype that was likely virulent on cultivar Estate, the international differential genotype for resistance gene *Rph3*. Repeat tests, which also included Australian cultivars Fitzroy and Yarra, and the additional cultivars Calicuchima (ICARDA) and Shryri (Ecuador), previously reported to carry a gene tentatively designated *RphX* and thought to be associated with *Rph3*, confirmed virulence on Estate and also all four additional genotypes. These results indicate that all carry *Rph3*, and further that *RphX* and *Rph3* are synonymous.

It is not yet known what the adult plant field responses of Fitzroy, Yarra or Starmalt will be to this new pathotype, but growers of these cultivars should monitor crops carefully. Fungicide applications may need to be considered.

Any rust detected from these cultivars or other cereals should be sent in paper to:

Australian Cereal Rust Survey  
Plant Breeding Institute  
Private Bag 4011, Narellan NSW 2567

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**General enquiries:**

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**Rusted plant samples** can be mailed in paper envelopes; do not use plastic wrapping or plastic lined packages. Direct samples to:

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

