

TWO ALUMINIUM TOLERANT PLANTS are helping scientists at ACPFG DEVELOP ALUMINIUM TOLERANT CEREAL CROPS.

MICROLAENA STIPOIDES

The Australian weeping grass *Microlaena stipoides* is very tolerant to aluminium. ACPFG found that this plant releases an organic acid at the root tip, called malate, to overcome the effects of high levels of aluminium in soils. This acid binds with the aluminium ions detoxifying them. The next step is to use this knowledge to develop aluminium tolerant cereals.



RYE

Previous research in wheat discovered the aluminium tolerance gene, *Almt1*. ACPFG has found that, in rye, the *Almt1* genes controlling aluminium tolerance have more copies than wheat.

Current investigations aim to discover how these and possibly other genes in rye make it the most aluminium tolerant of all cereals.



DID YOU KNOW?

Aluminium toxicity causes significant losses in crop yields both in Australia and worldwide.

40% of the world's farming land is affected by aluminium toxicity.

In Australia, Aluminium toxicity affects 1.5 million hectares of cropping land and causes yield losses worth approximately \$180 million annually.

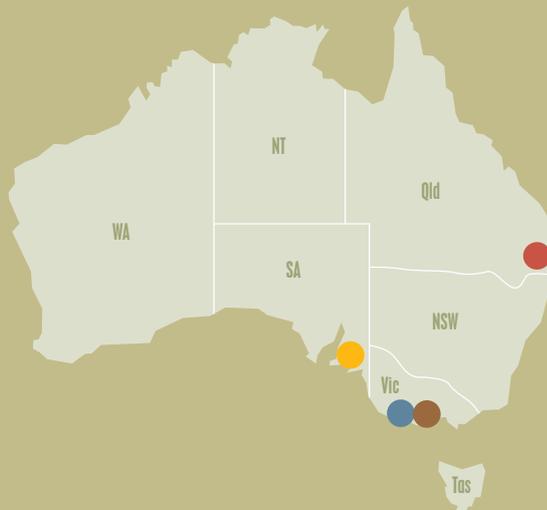
Aluminium is the most common metallic element in the earth's crust!

ACPFPG Research



The Australian Centre for Plant Functional Genomics (ACPFPG) uses functional genomics to improve the resistance of wheat and barley to hostile environmental conditions such as drought, salinity, frost and mineral deficiencies or toxicities. These stresses, known as abiotic stresses, are a major cause of cereal crop yield and quality loss throughout the world.

To meet our mandate of delivering research outcomes nationally, ACPFG has four nodes throughout Australia. The headquarters is at the University of Adelaide's Waite Campus, with other major research nodes at the University of Melbourne, the University of Queensland and the Department of Primary Industries (DPI) at La Trobe University.



Australian Government
Australian Research Council



For further information or media enquiries contact:

The Australian Centre for Plant Functional Genomics Pty Ltd, Plant Genomics Centre, Hartley Grove, Urrbrae SA 5064

Postal: PMB1, Glen Osmond SA 5064 P: +61 8 83037155 F: +61 8 8303 7102 E: enquiries@acpfg.com.au W: www.acpfg.com.au