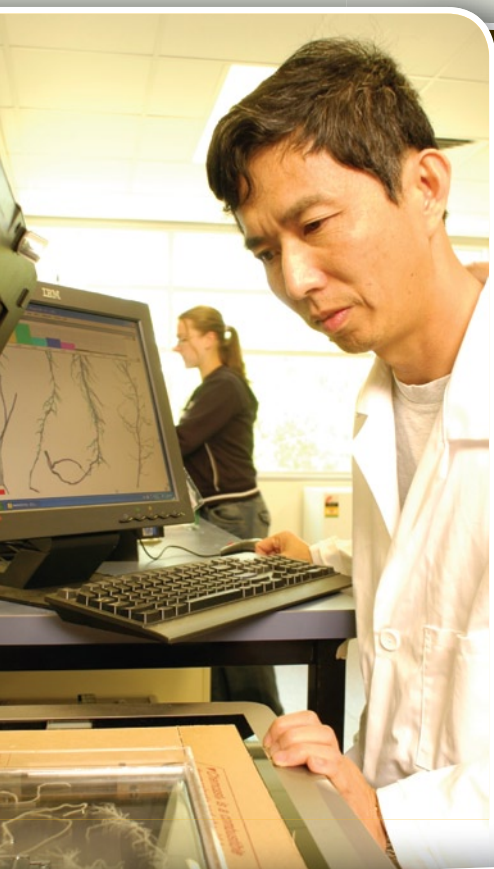
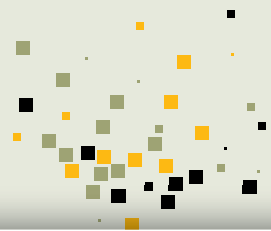


## ACPF IS INVESTIGATING WAYS TO MAKE WHEAT AND BARLEY better able to grow in phosphate AND ZINC DEFICIENT SOILS.



Phosphate and zinc, at appropriate levels, are important in maintaining healthy plant growth and yield. Most soils in Australia are deficient in these nutrients. Therefore, many farmers are dependent on fertiliser applications to maintain crop yields.

Some cereal cultivars are better able to tolerate low soil nutrient levels than others. ACPF scientists are working to identify the genes associated with phosphate and zinc efficiency in these tolerant lines.

Phosphorus and zinc transporter genes in barley have been found to play a significant role in the adaptation to low nutrient levels. These transporter genes enhance the plant's capacity to transport phosphate and zinc. In situations of low soil phosphate and zinc, the genes are activated and produce more protein. It is these proteins that transport phosphate and zinc into the plant. This process can help the plant to partially overcome soil nutrient deficiencies.

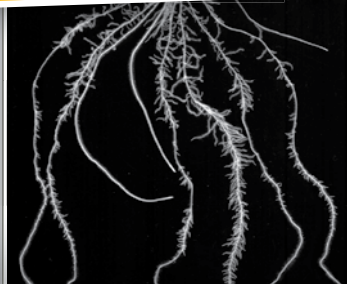
### DID YOU KNOW?

Over 70% of Australian cropping soils are low in phosphorus. Phosphate fertilisers cost Australian wheat and barley farmers \$400 million annually. Without fertilisers, phosphorus deficiency would cause yield losses worth \$1 billion per annum in the wheat and barley industries.

An estimated 61% of people in developing countries are at risk from low zinc intake. Zinc deficiency may cause stunted growth and can make childhood illnesses more severe.

CLIPPER

SAHARA

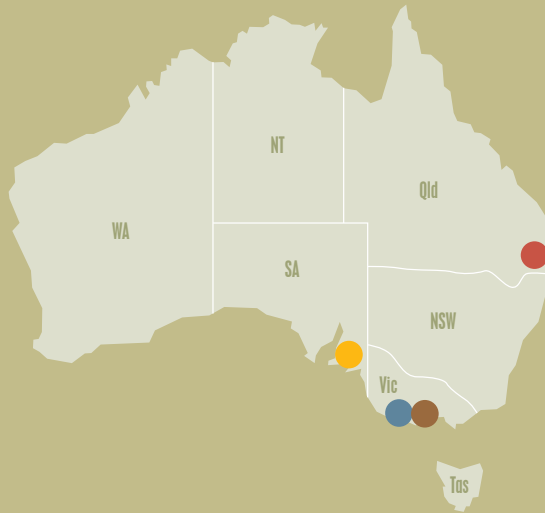


# ACPFPG Research



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, ACPFPG 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



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