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NEWS FROM THE TASMANIAN INSTITUTE OF AGRICULTURE

Media Release

Chiefs of Staff, News Directors

Monday, 1 August 2016

Breeding for waterlogging tolerance

Researchers at the Tasmanian Institute of Agriculture (TIA) have identified a major gene controlling the tolerance of waterlogging in barley.

The gene could be the key to producing a new type of barley that can withstand the harsh conditions of a Tasmanian winter.

This winter has seen record rainfalls across the State and waterlogging of crops is a big concern for local farmers.

Associate Professor Meixue Zhou is leading the research, which has received funding from the Grains Research and Development Corporation and an Australian Research Council linkage project with the Department of Primary Industries, Parks, Water and Environment.

“Barley is Australia’s second biggest cereal crop, after wheat, with annual production averaging eight million tonnes,” Associate Professor Zhou said.

“High rainfall during winter can significantly damage crops so farmers in northern Tasmania tend to hold off sowing barley until spring, when conditions are drier.

“Farmers and plant breeders have consistently asked for waterlogging tolerance genes to be incorporated into the current commercial varieties.”

Having identified the gene, Associate Professor Zhou says the next step is to determine how the gene can be introduced into commercial varieties through backcrossing (instead of genetic modification) and marker-assisted selection.

“We want to integrate a specific gene that encourages the development of roots with large air-filled spaces. These air-filled spaces (aerenchyma) help transport air from the above-ground shoots to supply the roots of waterlogged plants,” Associate Professor Zhou said.

“Our research could deliver a new line of barley to farmers with the same background of selected varieties, but with added waterlogging tolerance genes.”

The research has also screened 300 wheat germplasm for waterlogging tolerance.

Associate Professor Zhou will be presenting the research findings and leading a field walk through the barley and wheat trials as part of the Water for Profit Principles of Drainage workshop in Launceston on Wednesday, 3 August.

The workshop is free and will cover the causes and impact of poor drainage on crops and the environment and how producers can use technology to make smart drainage decisions.

Attendees will also hear from soil management consultant Dr Bill Cotching and producers Greg Gibson and David Whishaw.

Event details: Water for Profit Workshop: Principles of Drainage.

Time: 8am - 3pm, Wednesday, 3 August 2016,

Location: "Armidale", 1305 Meander Valley Highway, Carrick, and then to the TIA Offices, 165 Westbury Road, Mount Pleasant

Register: Contact Georgie at: georgie.pengilley@utas.edu.au or on 0428 353 045.

TIA is a joint venture between the Tasmanian Government and the University of Tasmania.

High-resolution image of Associate Professor Meixue Zhou available on request.

Information released by:

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