

Common weed could spell bellyache for gluten intolerant

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New research has identified proteins in a common weed which could play havoc for Australian farmers growing gluten-free crops, such as millet, buckwheat and sorghum, and people suffering from gluten

intolerance.

The gluten-like proteins found in ryegrass could be mixing with crops commonly used as gluten-free products or wheat replacements and causing a reaction among people with [coeliac disease](#) or gluten intolerance.

The work, led by Edith Cowan University (ECU) and Australia's national science agency, CSIRO, identified the proteins in 10 cultivars of ryegrass (*Lolium* species), a costly and invasive family of weeds commonly found in Australian cereal crops.

Dr. Sophia Escobar-Correas, a researcher based at ECU and CSIRO said the team identified 19 proteins found in ryegrass which had similar properties to gluten proteins.

"We have developed a method to detect these ryegrass proteins that allows us to distinguish them from other grains," she said.

"While these proteins aren't strictly defined as gluten, they have the potential to trigger reactions for people who are coeliac and those with a gluten intolerance."

This [fundamental research](#) helps understand whether ryegrass might be a problem so science can start to determine the impact it might—or might not—be having and devise solutions that give the best outcomes if it is.

Dr. Escobar-Correas said the next step is to undertake [clinical studies](#) to investigate whether these proteins trigger a coeliac response.

"If these proteins cause a reaction for people with [gluten intolerance](#), then it's important that we develop tests to detect their presence in [food products](#) which are otherwise gluten-free," she said.

A burgeoning market

Professor Michelle Colgrave from ECU and CSIRO was a co-author on the research and said it has identified an important potential challenge for gluten-free products

"In 2019, the global market for gluten-free foods was worth around \$6.3 billion and its growth shows no sign of slowing," she said.

"This research will help give consumers and producers confidence that products labelled as [gluten-free](#) are free from other proteins which may trigger reactions resulting from agricultural co-mingling."

Top class weed

The WA Department of Primary Industries and Regional Development defines a close relative of the species studied in this project, annual ryegrass as one of the most serious and costly weeds across Southern Australia.

Several cultivars of ryegrass are used as feed for livestock and is commonly used as a turf for sports pitches, particularly winter sports, and is famously the grass of choice for tennis courts at Wimbledon.

'Perennial ryegrass contains gluten-like proteins that could contaminate cereal crops' has been published in the journal *Frontiers in Nutrition* and [can be accessed](#) on the journal's webpage.

More information: *Frontiers in Nutrition*, [DOI: 10.3389/fnut.2021.708122](#)

Provided by Edith Cowan University

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