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Paraquat Resistance Discovered in Major Weed

ScienceDaily (Oct. 19, 2010) — Scientists at the University of Adelaide have discovered new cases of herbicide resistance in annual ryegrass, one of the world's most serious and costly weeds.

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For the first time, researchers have found that annual ryegrass has developed resistance to paraquat, the second most important "knockdown" herbicide used by cropping farmers.

Weed management experts Dr Peter Boutsalis and Associate Professor Christopher Preston, from the University's Waite Research Institute, made the discovery in samples taken from two separate farming properties near the South Australian town of Naracoorte.

Annual ryegrass is a major weed worldwide. It is particularly damaging to crops in countries with a

Mediterranean climate, with Australia, South Africa, Argentina, Spain and Italy among the worst affected.

Dr Preston says farmers should be concerned about the development of herbicide resistance.

"This discovery has major implications for farmers," Dr Preston says.

"Paraquat is the only viable herbicide alternative to the most commonly used herbicide, glyphosate. With more than 100 annual ryegrass populations in Australia already having developed resistance to glyphosate, the discovery of paraquat resistance means that none of the currently available knockdown herbicides can be guaranteed to control ryegrass," he says.

"The paraquat resistant ryegrass was discovered on sites where pasture seed crops have been grown for a long time and paraquat extensively used."

Dr Preston says farmers should rotate their knockdown herbicides in alternate seasons and adopt integrated weed management practices.

Dr Preston is the lead investigator on a research project investigating annual ryegrass resistance to glyphosate, which has been funded by Australia's Grains Research and Development Corporation.

Drs Preston and Boutsalis are based in the School of Agriculture, Food & Wine at the University of Adelaide's Waite Campus.

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