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Monday, 24 August 2009
No. 52

OILSEEDS NEWS - MEDIA RELEASES

SEARCH FOR A CANOLA BREAKTHROUGH



HOPING FOR A BREAKTHROUGH: Rosy Raman, left and Belinda Taylor aim to beat blackleg in canola using DNA marker technology.

Photo: courtesy Simone Dalton, Victorian DPI.

Scientists believe they are on the cusp of making a breakthrough which will have far-reaching benefits for the entire canola Industry.

A number of new “molecular markers” are close to being identified by NSW Department of Industry and Investment

researchers, which should make breeding of canola varieties with resistance to blackleg and management of the disease by farmers a much easier prospect.

Rosy Raman and Belinda Taylor were in Horsham in Victoria this month to collect plant samples which had been inoculated with blackleg to take to Wagga Wagga for further study as part of Canola Molecular Marker Program supported by the Grains Research and Development Corporation.

Dr Raman said her team was getting close to identifying a number of molecular markers for blackleg resistance in Australian canola varieties. The molecular markers identify the presence of genes in the plant that give it resistance to the serious disease.

“Once we have identified the markers for blackleg resistance, canola breeders can use them to speed up the breeding process,” said Dr Raman.

She said it also means breeders will be able to choose which different blackleg resistance genes they use in their varieties.

“A third benefit of knowing which resistance genes are in our varieties is that it will give canola growers the opportunity to better manage the disease,” she said.

Blackleg resistance is being screened by canola pathologist Stephen Marcroft, of Marcroft Grains Pathology, for the project.

“If growers know which disease resistance genes their varieties contain, they will have the opportunity to rotate their canola varieties to prevent virulent populations of the blackleg fungus building up in their paddocks, said Dr Marcroft. A separate GRDC-funded project is investigating this strategy.

Dr Raman said that another benefit of the research will be the ability of canola breeders to identify new sources of blackleg resistance in canola plants and related species.

“Once all the molecular markers are identified for the numerous blackleg resistance genes in our current canola varieties, breeders will be in a sound position to find new sources of disease resistance,” Dr Marcroft said.

Breeders may eventually find other canola plants or closely related plants with good blackleg resistance that don't carry the identified genes, he said. This would signify that the plant is carrying a previously unknown resistance gene, giving them another leg-up in their efforts to combat the potentially devastating disease.

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