

# Salt-tolerant chickpea project to boost crop production

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Research Officer Mr. John Quealy measuring soil salinity in field evaluations of chickpea lines on saline soil at Bindi Bindi in the WA grainbelt.

Researchers at The University of Western Australia, in collaboration with research partners overseas, have identified which lines of chickpea grow better in moderately salty soil.

Winthrop Professor Timothy Colmer, from UWA's School of [Plant Biology](#) and UWA's Institute of Agriculture, said the project involved researchers from the University of Sussex in the United Kingdom, the International [Crops Research](#) Institute for the Semi-Arid Tropics in India and the Centre for Legumes in Mediterranean Agriculture at UWA.

The project was funded by the Australian Research Council through its

Linkage Project scheme and the industry partner was Council of Grain Growers Organization.

"Soil salinity impedes [crop production](#) in many parts of the world, including large areas of farming land in Australia and India," Professor Colmer said.

"[Chickpea](#) is a salt-sensitive [crop species](#), so improvement in its [salt tolerance](#) is a priority. The present research has highlighted that a previously widely-grown cultivar in WA (Rupali) is particularly salt sensitive.

"Many chickpea genotypes are very salt-sensitive and so suffer damage even on moderately saline soils that have little impact on bread wheat - impacting on the potential yields of chickpea in rotation with wheat on areas with sub-soil salinity."

Winthrop Professor Kadambot Siddique, Director of UWA's Institute of Agriculture and Co-Chief Investigator of the project, said genotypes with greater salt tolerance were identified and had been used as parents in the breeding program in WA and India.

The aim was to add this moderate level of salt tolerance to the new Ascochyta blight-resistant lines being developed by the breeding program.

Professor Siddique said the project had provided greater understanding of chickpea's salt tolerance and advanced breeding lines would be evaluated in follow-up work. The research had also made initial steps towards development of molecular markers to enhance future breeding strategies to improve salt tolerance in chickpea, he said.

Provided by University of Western Australia

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