FINDING FAMILY FRIENDS AMONG WILD RELATIVES

Western Australia is hosting a reunion of the global *Cicer* family tree as local scientist, Fucheng Shan, sorts through the assembled germplasm to find and transfer needed traits into local chickpea crops.

Chickpea, which globally faces 47 different disease threats due to its low genetic variability, can bring $A450 per tonne in WA, but has been ravaged by the fungal disease, ascochyta blight.

“Having been bred and selected from a narrow genetic base, cultivated chickpea doesn’t have the same natural defences to biotic and abiotic stresses as plants drawn from broad genetic backgrounds,” Dr Shan explained.

Working through the Centre for Legumes in Mediterranean Agriculture (CLIMA) at the University of WA, Dr Shan and colleagues have gathered all known annual wild relatives of cultivated chickpea from overseas gene banks to belatedly adopt a more diverse genetic heritage into commercial crops.

Supported by the Grains Research and Development Corporation, CLIMA is characterising and evaluating the international family of 108 annual wild *Cicer* accessions.

“We’ve developed molecular techniques to examine the samples and will establish a DNA profile of each member to identify which wild relatives might bolster the disease and pest resistance of cultivated chickpea,” Dr Shan said.

“These profiles will also help identify when the wide crosses needed to import desired traits from distant relatives to cultivated chickpeas have been successful.”

Once the DNA profiling is completed, CLIMA researchers will begin their molecular search of the *Cicer* genus to identify traits for crossing into commercial cultivars to build a more resilient crop.

Chickpea would provide a good lupin alternative on heavier clay soils in WA’s northern, central and eastern grainbelt and, according to CLIMA, could be grown across 200,000 ha if this research helped overcome some of its major constraints.
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