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## **WA SCIENTISTS SECURE FUNDS TO MAP LUPIN GRAIN GENOME**

WA scientists have secured nearly \$1.5 million to map the lupin genome – a task set to shed light on how the grain can be grown more successfully, including for use in treating obesity and type 2 diabetes.

The three-year grant to sequence the narrow leaf lupin genome has been awarded to the Western Australian Institute for Medical Research-based (WAIMR) Centre for Food and Genomic Medicine (CFGM) by the Grains Research and Development Corporation (GRDC) following a competitive national tender process.

The work will be done in conjunction with the CSIRO, The University of Western Australia, the Department of Agriculture and Food Western Australia and Perth-based biotechnology company Proteomics International.

The project will be led by Professor Karam Singh. Listen here to an interview with Professor Singh, which was broadcast on ABC radio's Country Hour.

CFGM director Professor Peter Leedman said the grant – the Centre's first from the Canberra-based GRDC – provided a great injection to the CFGM's work.

"This project will help us maximise the potential of narrow leaf lupin, which is the major grain legume grown in Australia and which our Centre's research has shown, when added to foods as a flour, may be beneficial in reducing the impact of diabetes and obesity by increasing insulin sensitivity and reducing appetite," he said.

"Understanding the genetic makeup of the narrow leaf lupin, now possible thanks to the genome revolution, will help us unravel the many mysteries that still exist about how the grain works to boost insulin sensitivity and create a feeling of being full."

The grant allows the use of powerful new tools in the form of next generation sequencing technologies and world class bioinformatics expertise which could hold the key to helping improve breeding programs for the narrow leaf lupin and other lupin crops.

"The more we know about the blueprint of the narrow leaf lupin, the easier we hope it will be for farmers to grow lupins, as they are a good break crop and also have environmental benefits," said Professor Singh.

"Our major focus is to decipher as much of the gene space sequence as possible and to use this valuable information to greatly accelerate marker discovery and identify candidate genes for agronomic traits such as drought tolerance and disease resistance," he said.

The narrow leaf lupin genome mapping project progress and findings will be published online for access by the lupin research and breeding community, as well as the broader community.

## **BACKGROUND INFORMATION**

### **ABOUT CFGM**

The CFGM is a world-class research facility that harnesses the power of plants and genetics to tackle the twin epidemics of diabetes and obesity, known as "diabesity".

Established in 2006 with \$4.5 million seed funding from the Government of Western Australia, the Centre brings together scientists from the biotechnology, medical research, agriculture and food technology sectors to investigate new ways of beating these growing health conditions.

Other CFGM partners include the major Universities and Hospitals in WA, CSIRO Plant Industry, the Telethon Institute for Child Health, the Department of Agriculture and Food Western Australia, and biotech company Proteomics International.

The CFGM's work over the past three-and-a-half years has led to the creation in WA of lupin-flour based foods like pasta, bread, biscuits and snack bars. The bread and biscuits, created by Bodhi's Bakehouse in Fremantle, are available in selected supermarkets.

Australia is one of the world's biggest producers of sweet lupins and, at the moment, the majority of lupin crops are grown for stock feed. The CFGM teams believes lupins have the potential to be used as a super food.

### **ABOUT GRDC**

The Grains Research & Development Corporation is one of the world's leading grains research organisations, responsible for planning, investing and overseeing research and development, delivering improvements in production, sustainability and profitability across the Australian grains industry.

The GRDC's portfolio department is the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF).

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