

4 February 2021

PLANT-BASED LUPIN FOOD PRODUCTS NOW UNDER DEVELOPMENT FOR COMMERCIALISATION

Highlights:

- *Curtin University to commence early stage product development of plant-based burgers, milk, milk powder and pasta for the USD\$18.5 billion plant-based protein market.*
- *The 8-10 week research program will be led by technology co-founders and global lupin experts based at Curtin University to rapidly develop a preliminary range of plant-based food and drink products.*
- *Product development will focus on high-growth categories including vegan, gluten-free, soy-free and non-GMO.*
- *Research will provide information on the application of the proprietary lupin protein for WOA's own Dirty Clean Food's product range, as well as potential strategic relationships with global food companies.*

Wide Open Agriculture Limited (ASX: WOA) (“WOA” or the “Company”), is pleased to announce it has signed a Research Services Agreement with Curtin University to conduct early-stage product development using food-grade lupin protein and has secured Stuart Johnson, the co-founder of Curtin University’s lupin protein technology, as a consultant to the Company.

Product development using Lupin protein

Following CSIRO’s successful production of food grade lupin protein at pilot scale, WOA is now moving into the product development phase and has signed a Research Services Agreement with Curtin University. The agreement focuses on early-stage product development that will include plant-based meat, plant-based drinks, milk powder and gluten-free pasta and noodles.

This agreement brings WOA closer towards commercialising the proprietary plant-based lupin protein technology and will become the cornerstone research used to develop and launch products into multiple plant-based food categories.

The first step Curtin will take towards formulating food products is to understand how the proprietary lupin protein functions as a texturizing food ingredient in simple foods systems, known as matrices.

These matrices will be vegan, gluten-free, soy-free and non-GMO. The research outcomes will reduce the time required for future product development work and to incorporate into existing consumer food products.



The effectiveness of the modified lupin protein to form these matrices will be evaluated at laboratory scale and formulations and production methods optimised to give desirable textural properties such as viscosity gel strength and solubility.

These formulations and methods will form the basis of consumer product development and sensory evaluation in future phases of product testing and development phase.

The technical specifications resulting from this work will provide the foundation for developing consumer products from the food grade modified lupin protein. These will include, high protein vegan, gluten-free, soy-free and non-GMO noodles, dairy, meat and milk powder analogues.

Development activities will be conducted at Curtin University by the original researchers. Curtin estimates this initial research program will run for 8-10 weeks.

Lupin technology co-inventor secured as consultant

To advance WOA's lupin protein development program, the Company has secured prominent agrifood scientist and co-inventor of the lupin technology, Dr Stuart Keith Johnson, as a consultant.

Dr Johnson was previously Associate Professor (Food Technology) within the School of Molecular and Life Sciences at Curtin University. Currently, he is Director at Ingredients by Design - a company that services the agrifood-industries through scientific advice and research to support the innovation of plant-based food ingredients.



Dr Johnson has extensive experience and success with commercial collaborations in the agrifood sector, including being highly involved with the launch of Sanitarium's gluten free, sorghum-based breakfast cereal, Weetbix™.

Dr Johnson's research in the area of lupin and sorghum food science, technology and human nutrition has also led to a greater understanding of the food and nutrient properties of these pulses. The result has contributed to a shift in the utilisation of these pulses from low value animal feed to high value, high quality human food, food ingredients, nutraceuticals, and biomaterials as part of the sustainable food system.

Plant-based protein market

Plant-based protein is a key ingredient in high growth consumer food alternatives within the alternative meat, dairy, beverage and egg sectors. The global market is estimated to be valued at USD\$18.5 billion in 2019 and is forecast to grow at 14% p.a. to reach USD\$40.6 billion by 2025¹. The Australian market for plant-based protein is projected to be valued at AUD\$3 billion by 2030².

Beyond Meat, Impossible Foods and Burcon utilise or manufacture plant-based proteins as the key ingredient of their current alternative meat range. With an increasing number of products becoming available in supermarkets globally, these products are being accessed by consumers as to their impact on climate change, animal-welfare concerns and potential health benefits they may have.



Western Australia produces over 60% of global production of Australian Sweet Lupin and is a leading global exporter. Lupin seed contains high levels of protein and has the benefits of being non-genetically modified with a low (or no recordable) glycaemic index (low GI). Leading plant-based proteins are soy and pea proteins. The soy protein market has a market value of AUD\$3.9 billion per annum³.

Previous market uptake concerns relating to lupin have centred on its texture and capacity for gelling and thickening. With recent breakthrough results from both Curtin and CSIRO addressing these issues, WOA is now in a first mover advantage to harness lupin protein in the formulation of plant-based alternative meat, eggs, dairy and gluten-free products.



Research agreement details

- WOA and Curtin University entered into a Licence and Option Agreement on 13 May 2020
- Curtin granted a research and development licence to the Client in respect of the proprietary lupin protein technology and granted WOA an 'option'.
- WOA exercised the option and the Parties entered into a further Licence Agreement on 28 November 2020 pursuant to which Curtin granted WOA a global, exclusive commercial licence to the proprietary technology to produce modified lupin protein
- WOA has engaged Curtin to perform the Project 'Developing food systems (matrices) using the modified lupin protein'.
- Research Agreement is valued at AUD\$53,672 excl. GST
- Research Agreement outlines the 8 to 10 week period of engagement.

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About Wide Open Agriculture Ltd

Wide Open Agriculture (WOA) is Australia's leading ASX-listed regenerative food and agriculture company. The Company's innovative Dirty Clean Food brand markets and distributes food products with a focus on conscious consumers in Australia and South-East Asia. Products are chosen based on their market potential and the positive impact they deliver to farmers, their farmland and regional communities. The company is based in the Wheatbelt of Western Australia. WOA operates under a '4 Returns' framework and seeks to deliver measurable outcomes on financial, natural, social and inspirational returns.

WOA is listed on the Australian Securities Exchange (code: WOA) and the Frankfurt Stock Exchange (code: 2WO) and is the world's first '4 Returns' publicly listed company.

www.wideopenagriculture.com.au

www.dirtycleanfood.com.au

(1) Research and Markets 2019 – Plant-based protein market by type | (2) AgriFutures, 2020 | (3) MarketsandMarkets 2019
(4) Yahoo! Finance 3rd Feb 2021 (5) Investorplace.com – Buying Impossible Foods: Possible Soon (6) Yahoo! Finance 3rd Feb 2021

