

4 May 2021

# PRELIMINARY NUTRITIONAL RESULTS CONFIRM LUPIN PROTEIN APPLICATIONS ACROSS THE PLANT-BASED PROTEIN MARKET

## Highlights:

- *Preliminary results confirm that WOA's GM-free, gluten-free lupin protein has applications for multiple food products.*
- *Nutritional analyses showed that the production process retained the nutritional quality of the lupin, unlocking its significant commercial potential as a viable plant-based protein source.*
- *The plant-based protein market is estimated to reach USD\$15.6 bn by 2026, with Asia Pacific projected to record the highest growth during this period. <sup>1</sup>*
- *A protein content of 76% has been achieved, with the modified lupin protein samples demonstrating comparable or higher protein levels than commercially available protein concentrates from other plant sources.*
- *Laboratory testing found a desirable balanced range of amino acids with low levels of phytoestrogens and high digestibility.*
- *A Product Information Form (PIF - Version 1.0) has been developed to provide nutritional and technical information to global food manufacturers.*

**Wide Open Agriculture (WOA)** ("WOA" or the "Company"), is pleased to announce encouraging preliminary results from nutritional analysis of its modified lupin protein concentrate ("lupin protein"), marking another important step towards using lupin protein to create food and beverage products for large and growing markets.

Wide Open Agriculture CEO Ben Cole said: “The laboratory results are extremely encouraging and provide an excellent foundation to continue rapidly working towards proof-of-concept food and drink products with our patented lupin protein.”



Previous barriers for lupin to be used across a range of categories in the food sector relate to its texture and capacity for gelling and thickening. WOA can now confirm that these initial barriers have been overcome, with early analysis illustrating functional benefits that include gelling, dispersibility and wettability.

These attributes potentially make lupin suitable for plant-based meat alternatives (vegetable burgers), high protein noodles, protein enriched plant-based milks, and egg white replacer. They also confirm the Company’s ability to unlock lupin’s commercial potential to be used as a sustainable food source - less than 4% of Australian Sweet Lupin is currently consumed by humans.

The results from food matrices research also indicate that WOA’s lupin protein has potential as an instantly soluble dairy replacement product for hot drinks and as a high protein ingredient in cold liquid nutrition and sports shakes. The lupin protein can also be texturised to resemble yoghurt or soft cheese.

Application	Market Value Projection
PLANT-BASED MEAT	US\$28bn 2025 <sup>1</sup>
NON-DAIRY MILK	US\$38bn 2024 <sup>2</sup>
PLANT-BASED SNACKS	US\$73bn 2028 <sup>3</sup>
EGG ALTERNATIVES	US\$1.6bn 2025 <sup>4</sup>
PROTEIN SUPPLEMENTS	US\$36bn 2028 <sup>5</sup>

(1) PV Plant Milk Report (2) Future Market Insights (3) Zion Market Research (4) Markets and Markets (5) Grand View Research



Preliminary testing also revealed that the lupin protein had a clean, neutral taste making it suitable for use in a wide range of fully formatted food products. The enhanced gelling and viscosity properties also mimic the mouth feel of meat and dairy analogues. These traits will be further tested in upcoming sensory and taste trials.



For lupin to become suitable for new applications in a wide range of food sectors, it's critical that the manufacturing process does not reduce any nutritional qualities when converting lupin into lupin protein concentrate. WOA is pleased to announce that this has been achieved.

Nutritional analyses of the lupin protein showed that the production process did not reduce the nutritional quality of the protein or destroy any essential amino acids, all nine essential amino acids were available at desirable and balanced levels for adult nutrition.

Alkaloid levels were also well below the maximum permitted levels. Importantly, no chemical residues were found and microbial counts were low, therefore samples are accredited as food grade.



A protein content of 76% has been achieved, with the lupin protein samples showing similar or higher protein levels than commercially available concentrates from other plant sources, including pea and soy. Further investigation is currently underway to benchmark the lupin protein with other commercial plant-based protein concentrates-

#### Typical Nutritional & Compositional Analysis

(average/100g)

Energy (kJ)	1530kJ
Protein, Total	76g
Fat, Total	1.6g



- Saturated	0.3g
- Polyunsaturated	<0.2g
- Monounsaturated	0.8g
- Omega 3 fatty acids	0.06g
- Omega 6 fatty acids	0.5g
Carbohydrates	21g
- Sugars	1.5g
Dietary fibre	9.2g
Sodium	1g

The lupin protein shows a balanced range of amino acids with good levels of all nine key classes of amino acids. Dietary fibre and essential fatty acids (omega 3 and 6) were present at good levels and the protein exhibited traits of high digestibility when compared to other legumes such as soy.

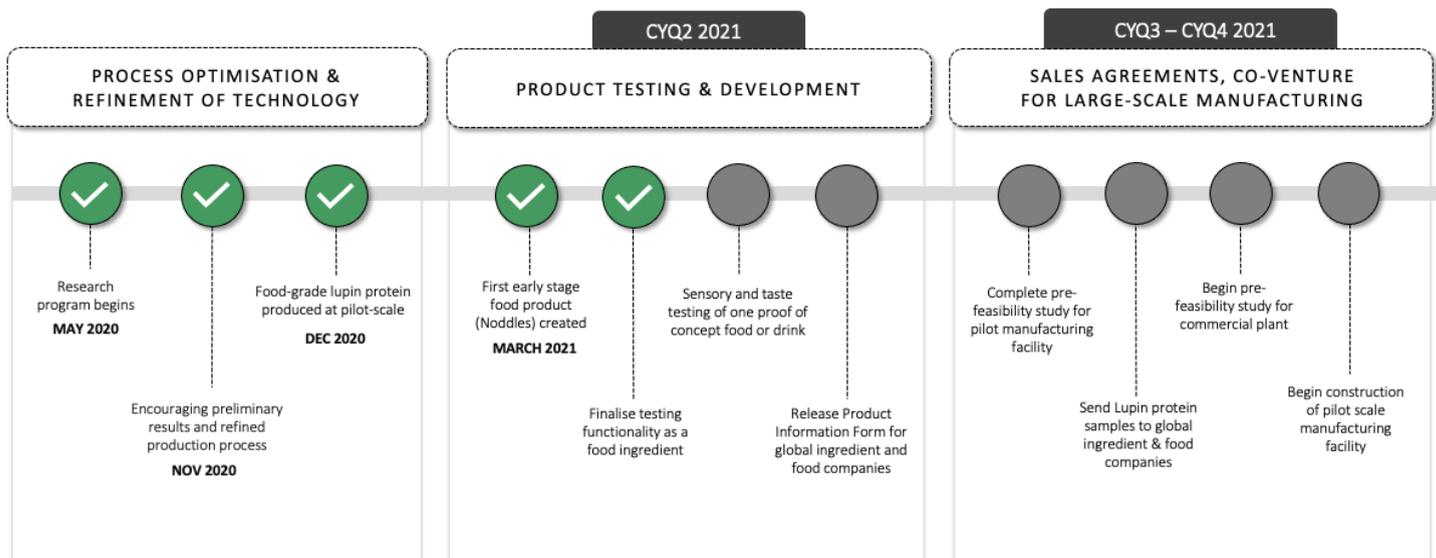


This initial testing will provide the framework for further sensory and taste testing, which will lead to the creation of one proof of concept food or drink product using the lupin protein. Version 1.0 of the Product Information Form has been developed to provide technical information for novel food development both in-house at WOA and for external food manufacturers.

Once finalised, WOA then aims to sign supply agreements with established plant-based protein brands and offer lupin protein as a plant-based protein ingredient with outstanding environmental credentials and unique techno-functionality. Food manufacturers can then develop and launch their own products globally. WOA will also develop, launch and market lupin protein products through its wholly-own consumer brand Dirty Clean Food, enabling multi-channel opportunities including its online platform – [www.dirtycleanfood.com.au](http://www.dirtycleanfood.com.au)

This announcement has been authorised and approved in accordance with the Company's published continuous disclosure policy and has been approved by the Board.





[ENDS]

To request the **Product Information Form (Version 1.0)** and for investor, media or other enquiries please contact;

Dr Ben Cole  
 Managing Director - Wide Open Agriculture  
 ben@wideopenagriculture.com.au  
 +61 415 387 270

### 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](http://www.wideopenagriculture.com.au)

[www.dirtycleanfood.com.au](http://www.dirtycleanfood.com.au)

1 - <https://www.reportlinker.com/p05949871/Plant-based-Protein-Market-by-Source-Type-Form-Application-And-Region-Global-Forecast-to.html> sourced on 30 April 2021

