

5 August 2026

Independent Testing Supports Commercial Potential of WOA Lupin Fibre Ingredient

Highlights:

- *Independent CSIRO testing supports the commercial potential of WOA's lupin kernel fibre, confirming it performs under heat and shear and has excellent water-binding capacity.*
- *In vitro research also shows lupin kernel fibre is readily fermentable by gut bacteria, producing high levels of short-chain fatty acids.*
- *Published research has linked short-chain fatty acids to natural pathways involved in GLP-1 secretion; however, WOA's lupin fibre has not yet been evaluated in human clinical studies.*
- *WOA can recover lupin kernel fibre as a co-product of its lupin protein isolate process, creating an additional high-value ingredient stream and strengthening potential unit economics.*
- *Global functional fibre demand is expanding across food and beverage categories, with the relevant market estimated at approximately US\$11 billion in 2026 and forecast to reach approximately US\$21 billion by 2034.*
- *Sampling is underway to universities, research bodies and potential commercial partners ahead of customer trials and planned transition to contract manufacturing.*

Wide Open Agriculture Ltd (ASX: WOA) ("WOA" or "the Company") is pleased to provide an update on the development of its lupin kernel fibre ingredient, including independent testing recently completed by Australia's national science agency, CSIRO. This announcement sets out CSIRO's findings, explains what WOA's lupin kernel fibre is and where it can be used, and outlines why fibre is a growing focus for the Company.

Independent validation by the CSIRO

Independent testing conducted by CSIRO assessed the functional performance of WOA's lupin kernel fibre against the properties that determine its suitability for commercial food and beverage applications². The testing confirmed that WOA's fibre demonstrates:



Heat Stability

Retaining its functional and structural properties through thermal processing, with minimal change to texture or water distribution.



Stability Under Shear

Performing consistently under the mechanical stresses of food manufacturing.



High Water-binding Capacity

A key driver of texture, yield and mouthfeel in finished products.

These are important functional characteristics food manufacturers look for in a fibre. The findings complement WOA's internal testing, which has shown that the fibre has a neutral aroma and flavour, smooth mouthfeel along with superior water and oil-binding capacity. These attributes could make it an effective food fibre that can fortify foods while delivering processing advantages for manufacturers, whilst maintaining desirable taste and texture characteristics.

Craig Swan, Managing Director & CEO, Wide Open Agriculture said;

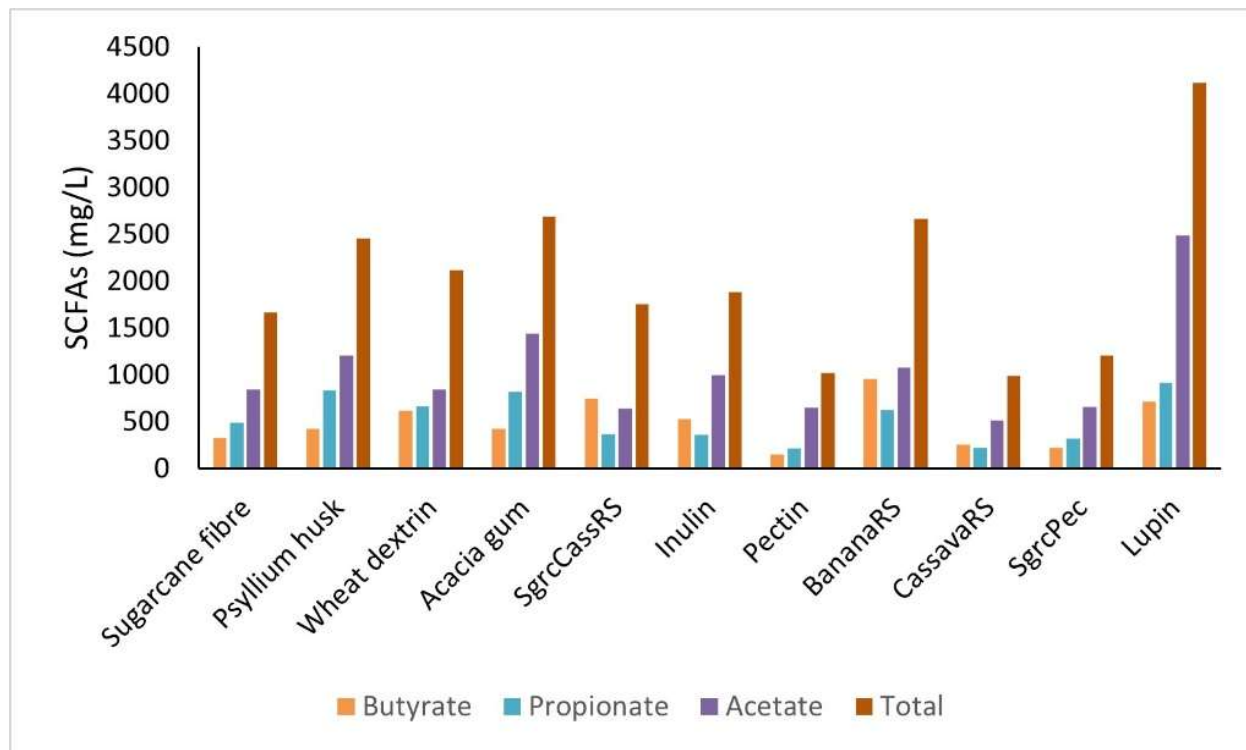
"CSIRO's testing showed our lupin kernel fibre holds up under heat and shear and binds water well. These are important indicators of whether an ingredient will work in manufacturing and offer real benefits for customers and consumers. It also shows that the same lupin seed can deliver an additional high-value ingredient for WOA, allowing us to up-cycle fibre into commercial reality in future. This would strengthen the economics of our business model and broaden the markets we can serve."

Emerging research on SCFA production and gut microbiome function

In recent research, lupin kernel fibre demonstrated the highest total short-chain fatty acid (SCFA) production among the fibres evaluated in an in vitro fermentation model, indicating strong fermentability by gut microbiota. SCFAs are recognised as important mediators of gut and metabolic health; however, whether these findings translate to increased GLP-1 secretion or other physiological effects in humans requires confirmation through future clinical studies.

SCFAs are generally recognised as playing an important role in gut health, supporting the microbiome, supplying energy to colon cells, and influencing metabolic and immune pathways. They also stimulate the release of GLP-1, a natural hormone linked to increased insulin secretion, appetite regulation, slower gastric emptying and greater satiety^{4,5}

Because this pathway is triggered naturally rather than through medication, it is an area of growing interest from industry and academia as a food-based approach to supporting satiety, weight management and the development of more functionally targeted foods.



'Beyond soluble and insoluble: A comprehensive framework for classifying dietary fibre's health effects' is published in Food Research International (DOI:<https://doi.org/10.1016/j.foodres.2025.115843>).

As shown above, in vitro fermentation testing found that lupin kernel fibre produced substantially more total SCFAs, and substantially more acetate than each of the other fibres assessed, including psyllium husk, wheat dextrin, acacia gum and inulin.

What is our lupin kernel fibre?

WOA's lupin kernel fibre is a natural dietary fibre recovered as a co-product of the Company's lupin protein production process, and part of our whole-of-seed strategy by extracting maximum value from every lupin kernel. The fibre is largely dietary fibre (insoluble fibre), with a neutral colour, clean taste and smooth texture, and exhibits excellent water and oil-binding capacity, solubility, emulsion stability and heat-stable viscosity.

These characteristics support a wide range of applications across bakery and cereals, beverages, dairy and dairy alternatives, dressings and sauces, confectionery, nutrition bars, snacks dietary supplements, and pet food, as well as broader use in products targeting digestive health. The global market for functional fibre and fibre-fortification ingredients is approximately US\$11 billion in 2026 and forecast to reach roughly US\$21 billion by 2034.¹



WOA's lupin fibre and high fibre bread prototype

Why are we focusing on fibre?

Increased fibre consumption is a major trend in its own right in global food nutrition; however WOA's manufacturing process captures both fibre and protein from the same kernel, giving it two distinct food ingredients with strong nutrition credentials. Food and beverage companies are increasingly formulating with fibre and protein to create better for you products, and WOA is positioned to supply both from the same raw material and processing line.

Lupin contains markedly higher dietary fibre than most legumes, with a distinctive mix of fermentable and non-fermentable fractions. A growing body of published research^{6,7,8} associates lupin fibre consumption with a range of outcomes, including:

Gut Health:

Fermentation in the colon supports a healthy microbiome, consistent with prebiotic ingredient



Metabolic & Cardiovascular:

Studies report favorable effects on cholesterol, blood pressure and related risk factors



Blood-sugar response

Substituting refined ingredients with lupin kernel fibre can lower a product's glycemic load



Weight management & Satiety

Food incorporating the fibre are highly satiating



This is being reinforced by a number of structural tailwinds in global nutrition:

A widening fibre gap: fewer than one in five Australian adults consume enough dietary fibre, even as awareness of its importance continues to rise⁹;

The rise of "fibremaxxing": a fast-growing consumer movement around gut health and the microbiome is prompting food companies to launch more fibre-forward products, with the trend shifting from simply maximising intake toward more diverse, better-tolerated sources¹⁰.

A resilient gut microbiome supports more than digestion: it is also linked to immunity and mood; and growing interest in satiety and metabolic health, including in the context of GLP-1 medicines, is drawing attention to fibres that support appetite regulation and blood-sugar management.^{3,11}

Fibre science is becoming more sophisticated: research is moving beyond the traditional soluble-versus-insoluble classification toward a more nuanced understanding of fibre functionality, including fermentability, diversity, and impact to beneficial nutrition outcomes.

The scientific literature referenced in this announcement relates to dietary fibre generally and, where applicable, published studies on lupin kernel fibre. WOA's proprietary fibre ingredient has not yet been evaluated in dedicated human clinical studies. Accordingly, no therapeutic or health claims are made in relation to the Company's ingredient.

Pathway to commercialisation

WOA is providing the following indicative pathway so that shareholders can track progress toward commercialisation. The sequencing reflects the Company's current expectations and is subject to change.

Phase	Milestone
Complete	Internal functional testing and prototype development of lupin kernel fibre
Complete	Independent functional validation of WOA's fibre by the CSIRO
Underway	Sampling to universities, research bodies and potential commercial partners
Forward Looking	Customer application trials and techno-functional optimisation across target categories

Phase	Milestone
Forward Looking	Commercial pilot scale manufacture of fibre
Ongoing	Research on fibre impact to health and fibre characterization

Sequencing is indicative only and subject to change. Commercial-scale fibre production is contingent on securing a suitable contract manufacturing partner as outlined in its ASX announcement 2nd July 2026

Next steps

The Company's near-term focus is to advance its lupin kernel fibre in step with its capital-light manufacturing strategy, so that the ingredient is commercial ready at the point WOA secures a contract manufacturing partner. In practice, this means continuing to optimise the fibre's techno-functional profile, progressing customer application trials, and deepening engagement with research bodies and potential commercial partners, while the Company pursues the contract manufacturing arrangements that will underpin scaled production.

Sequencing the work this way allows WOA to convert validation into commercial readiness without committing capital ahead of demand and positions the Company to move quickly to first sales once manufacturing capacity is secured. WOA will update the market as material milestones are achieved.

The Board has authorised and approved this announcement per the Company's published continuous disclosure policy.

For investors, media or other enquiries, please contact:

Craig Swan CEO, Wide Open Agriculture Ltd

craig.swan@wideopenagriculture.com.au

2/284 Oxford Street, Leederville WA 6007

About Wide Open Agriculture Ltd

Wide Open Agriculture Ltd (ASX: WOA) is a publicly listed ingredient company pioneering the development of lupin based products for the global food, beverage, cosmetics and nutraceuticals sectors. Leveraging proprietary intellectual property across its production process, WOA produces a portfolio of high-quality lupin-based plant proteins, fibres, oil and other compounds designed to enhance the functionality and performance of products across multiple sectors.

The Company's lupin-based protein isolates offer exceptional versatility across a wide range of applications, including plant-based dairy alternatives, meat substitutes, baked goods, and health-focused products. Recognised for their clean taste, high performance, and broad functionality, lupin protein isolates are emerging as an exciting new ingredient in the evolving plant-based protein market.

www.wideopenagriculture.com.au

References

- (1) Fortune Business Insights: Fiber Supplements Market Size, Share, Industry Analysis, By Form Source: <https://www.fortunebusinessinsights.com/fiber-supplements-market-112266>
- (2) CSIRO Testing Methodology
 - Sample Wide Open Agriculture Lupin Kernels Fibre dissolved in RO water at 10% w/w powder against comparator
 - Rapid visco-analyser: heat to 120C, hold 2 min, cool to 50C
 - Rheometry: Anton Paar MCR 302 with 25mm plate-plate geometry
 - Moisture sorption isotherm: DVS Adventure
 - Low-field NMR with CPMG pulse sequence
- (3) <https://doi.org/10.1016/j.foodres.2025.115843>
- (4) <https://pmc.ncbi.nlm.nih.gov/articles/PMC7332907>
- (5) <https://www.nature.com/articles/s41574-019-0168-8>
- (6) Fechner, A. et al (2014), The Formation of Short-Chain Fatty Acids Is Positively Associated with the Blood Lipid-Lowering Effect of Lupin Kernel Fiber in Moderately Hypercholesterolemic Adults, The Journal of Nutrition, May, 114(5):599-607
- (7) Fechner, A. et al (2011), Lupine Kernel Fibre: Metabolic Effects in Human Intervention Studies and Use as a Supplement in Wheat Bread, Chapter in Flours and breads and their fortification in health and disease prevention, Academic Press, pages 463-473
- (8) Malekipoor, R. et al (2022), Lupin Kernel Fibre: Nutritional Composition, Processing Methods, Physiochemical Properties, Consumer Acceptability and Health Effects of its Enriched Products, Nutrients, 14/(14), 2845
- (9) Fayet-Moore et al., 2018; Australian Dietary Guidelines
- (10) Mintel Global Food & Drink Trends (2025); Innova Market Insights (2025)
- (11) "The Microbiota-Gut-Brain Axis." Cryan et al., 2019; Fan & Pedersen, 2021; Nature Reviews Gastroenterology