



Plant-based protein production

As part of the Future Protein Mission, we're developing science and facilities to turn Australian plant protein crops into new high value products to meet emerging consumer markets.

The challenge and opportunity

The annual global requirement for protein in 2050 is expected to be almost double our annual consumption today. As the world's population grows, consumer trends and dietary patterns are changing and driving significant demand for protein.

While Australia's plant protein industry is still relatively small, the market generated \$150 million in Australian retail sales in 2019. As highlighted in our protein roadmap, this rapidly growing market is estimated to be a \$6 billion opportunity for Australia by 2030.

To capture this opportunity, Australia needs to act to transform the plant protein supply chain – from reducing our reliance on imported ingredients to creating a suite of new products.

This would see Australian-grown crops, such as lupin, soy or faba beans, used as higher value ingredients in locally made plant protein products.

A whole-value-chain approach and investment in manufacturing expertise and facilities is needed to enable this fundamental shift.

With our partners, CSIRO is applying its plant-based protein research and commercialisation success to this challenge.

Our solutions

We are working with Australia's agriculture and food industry, as well as government and the research sector, to co-develop solutions along the plant protein supply chain.

Examples include:

- **Ingredient manufacturing partnership** – together with GrainCorp and v2food, we are working towards building Australian processing and manufacturing expertise to reduce reliance on imported ingredients and to add more value to grains and oilseeds so that they can be used in new products. This research is funded through the Australian Government's Cooperative Research Centres Projects Program.
- **Plant protein processing hub in North Queensland** – with our partners, we've scoped the long-term opportunities for manufacturing high-value protein ingredients in North Queensland. We identified hemp, sunflower, mungbean, soybean and chickpea as possible crops.
- **Opening market opportunities for lupins** – we're working with Edith Cowan University to identify lupin varieties with specific characteristics suitable for breeding programs to meet emerging plant protein markets.

Our goal is to scale up Australian production of plant-based products, enabling an end-to-end onshore supply chain.



Proteins can be made from yeast (pictured) using fermentation techniques.

Towards impact

The Future Protein Mission is driving sustainable plant protein production R&D to:

- Develop plant protein crops with ideal traits, such as protein content and less allergens.
- Scale-up Australia's processing and manufacturing expertise and facilities, such as plant protein fractionation.
- Create a suite of new Australian plant protein products for domestic and overseas markets.
- Understand the health and nutrition of alternative products.

Join our Mission

Partner with us to jump on one of Australia's big opportunities, including:

- Food manufacturers looking to deliver new plant-based protein products to address consumer trends such as health, wellness and convenience.
- Explore opportunities for plant protein and animal protein hybrid or blended products.
- Add value to plant protein waste or co-product streams.
- Develop and test products that use plant waste streams for aquaculture feeds.
- Take part in consumer sentiment research on plant protein products.

As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

Contact us

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For further information

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