

# AUSTRALIAN FOODTECH INNOVATION



With a reputation for safe, high-quality agrifood produce and an appetite for innovation, Australia ranks among the world's most trusted providers of niche, premium and novel consumer-ready food and ingredients.

The success of the Australian agribusiness and food industry is underpinned by innovation from farm to fork. Australia's food technology (foodtech) ecosystem is thriving through collaborations with research institutes, universities, startups, high-growth firms and multinationals.

## WORLD-LEADING PRODUCER AND EXPORTER OF HIGH-QUALITY, HEALTHY FOODS

Global demand for food is increasing as the world's population approaches an estimated 9.7 billion in 2050, according to UN estimates.<sup>1</sup> At the same time, consumers are demanding food that is safe, nutritious and produced sustainably along transparent supply chains.

This rising consumer demand for healthier, more convenient and functional food products is a key driver of product and process developments.

With a long history of supplying premium food products to export markets, the growing middle class across the Asian region is aware of what Australia offers.

Already, nine of the top ten destination markets for Australian food and fibre exports (62 per cent of total food exports out of a total value of A\$45 billion)<sup>2</sup> are in the Asian region, which is projected to represent the strongest growth in demand for food, doubling between 2007 and 2050.<sup>3</sup>

## COMMITTED TO INNOVATION

In 2017–18, the Australian Government is investing A\$10.3 billion in research and experimental development. Australia's R&D expenditure places it among the world's leading innovative countries, including the US, Japan, Germany and South Korea. Its gross R&D expenditure has increased on average by 8.5 per cent a year in real terms since 2000, well above the OECD average growth rate of 4.8 per cent.<sup>4</sup>

Australian innovation in agtech and foodtech is supported by the national science agency CSIRO, universities and other research institutions. CSIRO currently ranks in the top 1 per cent of the world's scientific institutions in 14 research fields,<sup>5</sup> and was recently ranked third in the Consumer Technology Association's International Innovation Scorecard.

The private sector is also committed to R&D with business expenditure accounting for 54 per cent of Australia's total R&D expenditure in 2016.<sup>6</sup> Australia has significant government and industry appetite for collaborative research efforts that benefit the agricultural and food processing industry as well as infrastructure for development and testing of agrifood technology.



Australian Government  
Australian Trade and Investment Commission



## EXTENSIVE SUPPORT FOR FOOD TECHNOLOGY R&D

Australia is acknowledged for its technological specialisation in the food industry, ranking 14th in food patenting globally—a performance comparable with Canada and Sweden.<sup>7</sup>

Australia's industry-driven, government-supported research programs in food technology (foodtech) offer opportunities for international R&D and commercialisation collaborations. Global food companies can also incorporate Australian technologies into their business to improve production efficiencies, reduce costs and foster the development of products with new differentiated attributes.

**CSIRO's food innovation centre** offers world-class laboratories and expertise at pilot plants in Melbourne, Brisbane and Adelaide. Industry and researchers can develop novel products, access innovative technologies and testing facilities, and utilise expertise in processing equipment, sensory analyses, foodtech, food safety, chemical analysis and food storage. [csiro.au](http://csiro.au)

**Food Innovation Australia Limited (FIAL)** is the food and agribusiness Industry Growth Centre, a government initiative led by industry to facilitate collaboration between the food and beverage industry and public research institutions, universities and governments.

[fial.com.au](http://fial.com.au)

The **Food Agility CRC** is a consortium of food and technology industry partners focused on driving the application of digital technologies in the food industry. [foodagility.com](http://foodagility.com)

Australia has a rich ecosystem of university research excellence, a rapidly growing venture capital market and new agtech and foodtech incubators and accelerators. In addition, global food corporates and advisory firms are increasingly engaging with the ecosystem to connect at an early stage to new ideas generated in Australia. A defining characteristic of Australia's deal flow in foodtech is the dominance of projects at seed stage.

## DIVERSE RANGE OF PREMIUM FORTIFIED AND FUNCTIONAL PRODUCTS

Australia produces a broad range of premium fortified and functional products, including fortified milk formula for babies, bread and breakfast cereals fortified with Omega-3, calcium or antioxidants, chewing gum fortified with calcium, probiotic yoghurts and prebiotic foods for digestive health, and milk and spreadable oils and fats fortified with plant sterols to reduce cholesterol.



**PERKii**, a juice drink with 1 billion microencapsulated probiotics and only 26 calories, was developed by the University of Queensland.

Using probiotics shown to be beneficial with weight control, improve gut health and boost immunity, PERKii's encapsulation technology (ProGel™) results in more probiotics to the gut and a better tasting product with low sugar, and no bitterness as found in competing products.



CSIRO has recognised barley's human health benefits and application for fortified food products. Its research found one particular barley grain had higher fibre content and enhanced nutritional benefits compared with regular barley. A program of conventional plant breeding led to the development of **BARLEYmax™**, a high-fibre wholegrain with high levels of resistant starch.

In a joint venture with Australian Capital Ventures, CSIRO bred the new BARLEYmax™ grain, then worked with food manufacturers to create products containing the grain, including breakfast cereals, food wraps, rice mixes and bread. Australian and international consumers including those in Japan have enjoyed the benefits of foods containing BARLEYmax™ since August 2009.

## ‘FREE-FROM’ AND ‘LOW-IN’ FOODS

Australia has an acute awareness of managing allergic disorders and what constitutes a healthy diet. Australian food suppliers have responded with a diverse range of quality ‘free-from’ and ‘low-in’ foods.



**Silly Yak Foods** manufactures and distributes a diverse range of bakery products free from wheat, gluten, dairy, yeast and nuts. The company’s products are suitable for consumers with coeliac disease, fructose malabsorption allergies and those who follow the Low FODMAP Diet.

## FOOD FOR SPECIFIC HEALTH NEEDS

Australian food companies are developing products for specific health needs, including for aged care facilities and hospitals to meet the challenges of declining health and the effects of the ageing process on sensory perceptions.



**Flavour Creations** is a food and drink researcher and exporter of products that aim to improve the lives of consumers suffering from dysphagia (swallowing difficulties) and promote a healthy lifestyle. Flavour Creations’ products are designed to deliver maximum hydration and nutrition, and contain innovative ingredients such as bowel motility agents and thickeners to alter viscosity for people with swallowing difficulties. Other products are fortified with fibre, protein or carbohydrates to meet specific nutritional deficiencies. The company’s products are available in Australia, New Zealand, Europe and Asia.

## AGRICULTURAL INNOVATION TRACK RECORD

Australia’s technical expertise spans the entire food value chain, from agricultural science to food science, and is complemented by a strong R&D infrastructure and multidisciplinary skills in areas like engineering, robotics and artificial intelligence.

Australian firms are also among the most innovation-active in the world and their research has global impact.

Scientific and technical advances have helped place Australian farmers at the forefront of efficiency and productivity. Australian rural industries have doubled productivity over the past 25 years<sup>8</sup> through R&D, technology transfer and adoption, while improving environmental performance and responding to changing social expectations.

**The Yield** is an Internet of Things (IoT) and data analytics business that provides farmers with smart sensors, software and services that turn complex environmental data into simple and easy-to-use information.

First tested on oyster farms across Tasmania, The Yield uses sensors to measure salinity, water temperature and water depth every 10 minutes – information that enables aquaculture farmers and food safety regulators to manage disease risk and reduce unnecessary closures.

**Australia’s Rural Research and Development Corporations (RDCs)** are the main way the Australian government and primary producers co-invest in R&D for industry and community benefits. RDCs are national service bodies that ensure Australia’s rural industries are profitable, sustainable and competitive. There are 15 RDCs across agriculture, fisheries and forestry, each focused on a specific commodity or sector.

[ruralrdc.com.au](http://ruralrdc.com.au)

**P2D Project: Accelerating Precision Agriculture to Decision Agriculture** connects government and RDCs with industry bodies, research facilities and private companies to drive the development of digital technology in the industry.

[crdc.com.au/precision-to-decision](http://crdc.com.au/precision-to-decision)

There are many examples of international companies selecting Australia for new R&D trials, and investing in partnerships and collaborating with Australian companies.

**Bayer** has operated in Australia for over 90 years. The company's Crop Science division is a long-time collaborator with Australia's CSIRO, Grains Research & Development Corporation and Horticulture Innovation Australia.

*'The large research base in Australia means it is an excellent source for world-class agricultural innovation. Bayer partners with local research institutions to create new technology with direct use in Australia, and elsewhere in the world.'*

Richard Dickmann, Bayer Australia



## MORE REASONS TO CHOOSE AUSTRALIA

### › Excellent product test market

International companies can manage the cost and risk of new product development by testing products in Australia's small and contained—yet culturally diverse—market.

### › Access to reliable high-quality food inputs

Australia offers favourable geographic and climatic conditions to support premium food production and is a leader in the production of commodities such as sugar, beef, milk and grains.

### › Strong IP protection

Australia offers strong regulatory and policy settings to nurture and protect the development of intellectual property (IP). Australian laws relating to private property protection and personal IP rights are some of the strongest in the world.

### › A globally integrated economy

Global food companies can take advantage of Australia's proximity and strong cultural ties with Asia to launch new products into the world's fastest-growing region.

### › Tax incentives and funding

The Australian federal, state and territory governments offer a range of tax incentives, grants and co-investment options.

## ABOUT AUSTRADE

The Australian Trade and Investment Commission—Austrade—helps companies around the world to identify and take up investment opportunities in Australia as well as to source Australian goods and services. Our assistance includes:

- providing insight on Australian capabilities
- identifying potential investment projects and strategic alliance partners
- helping you identify and contact Australian suppliers.

Austrade contributes to Australia's economic prosperity by helping Australian businesses, education institutions, tourism operators, governments and citizens as they:

- develop international markets
- win productive foreign direct investment
- promote international education
- strengthen Australia's tourism industry
- seek consular and passport services.

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1. <http://www.un.org/en/development/desa/news/population/2015-report.html>
2. <http://www.austrade.gov.au/International/Invest/Resources/Benchmark-Report>, pg 18
3. V Linehan, S Thorpe, et al, Global food production and prices to 2050 Scenario analysis under policy assumptions, The 43rd ABARES Outlook conference
4. <https://www.austrade.gov.au/International/Invest/Resources/Benchmark-Report>, pg 29
5. <https://www.csiro.au/en/About/Our-impact/Reporting-our-impact/Annual-reports/16-17-annual-report/part2/Program-1-1>
6. <http://www.austrade.gov.au/International/Invest/Resources/Benchmark-Report>, pg 30
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