October / November 2025

Food New Zealand

NZ'S AUTHORITY ON FOOD TECHNOLOGY, RESEARCH AND MANUFACTURING

Who were crowned the champions of ice cream?

NZ Ice Cream & Gelato Awards 2025

In focus:
Ingredients

Enviro friendly packaging
For your next picnic

Conference 2026
Call for abstracts

THE OFFICIAL JOURNAL OF THE NEW ZEALAND INSTITUTE OF FOOD SCIENCE AND TECHNOLOGY INC.

Contents

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NZ'S AUTHORITY ON FOOD TECHNOLOGY, RESEARCH AND MANUFACTURING

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46

32

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ON THE COVER
A celebration of our country's finest ice cream – Takapuna beach café is one of the supreme winners in this year's ice cream and gelato awards with their Licorice ice cream. Photo credit: Kate Battersby for Takapuna Beach Cafe.

December/January edition of Food New Zealand magazine

Features:
- Analytical, food safety and consulting services, including HACCP auditing, food safety planning/review, routine and special requirements plus new product development and problem solving.
- NZIFST conference paper highlights.
- News from AIP.

Editorial and advertising deadline: 12 November 2025
Publication date: 1 December 2025

I am writing this from a tiny bach overlooking the Tasman sea at Cape Foulwind. It is the middle of school holidays and even though various work projects are throwing multiple demands, it is great to get the kids out of town for a couple of days. We are so fortunate to have the internet availability we do across our country these days – technology making our days a little easier (although no less busy!).

Our country is really facing a lot of challenges. In August and September I think we saw more notices of food companies and primary sector organisations closing or significantly restructuring to downsize, than we have for many years.. This is not about maximising profits. This is about survival.

While much of the world is really doing fairly well, Aotearoa New Zealand is struggling. Largely due to the events and subsequent economic policies over the last five years, spanning different governments. And some of it, are factors we just can't change. Our land sits near the bottom of the world, geographically isolated from the majority of our trading partners bringing significant cost in simply getting our product to market. When those costs escalate there are only so many options at hand for survival; increase volume (not possible in some sectors such as those working to a quota system or producing foods that can come into our country and sell for less than our home grown foods). We can look to decrease cost of production, perhaps using automation. We can downsize. Or add value. The idea of adding value is hardly unique to New Zealand. Producers of food all around the world look to increase value for consumers, but how we do that can be.

I am excited to see the conference theme for next year: growth. Once our producers are set for survival, they can look to grow again. Our science and technology sectors and our industry partners will be right there in support, continuing to enhance our learning, delivering new concepts, driving efficiencies and developing sustainable outcomes for growth. Much to look forward to.

On a lighter note, as we put this issue together I was struck by the vibrancy and energy within our organisation. Take a look at our Branch updates section and you will see some regions delivering not one but several events for members to come together, learn and network every couple of months. I especially love reading of those involved with school science and technology challenges. It shows the sector continues to attract young people with bright and exciting ideas for the future. We are in good hands.

Julie North
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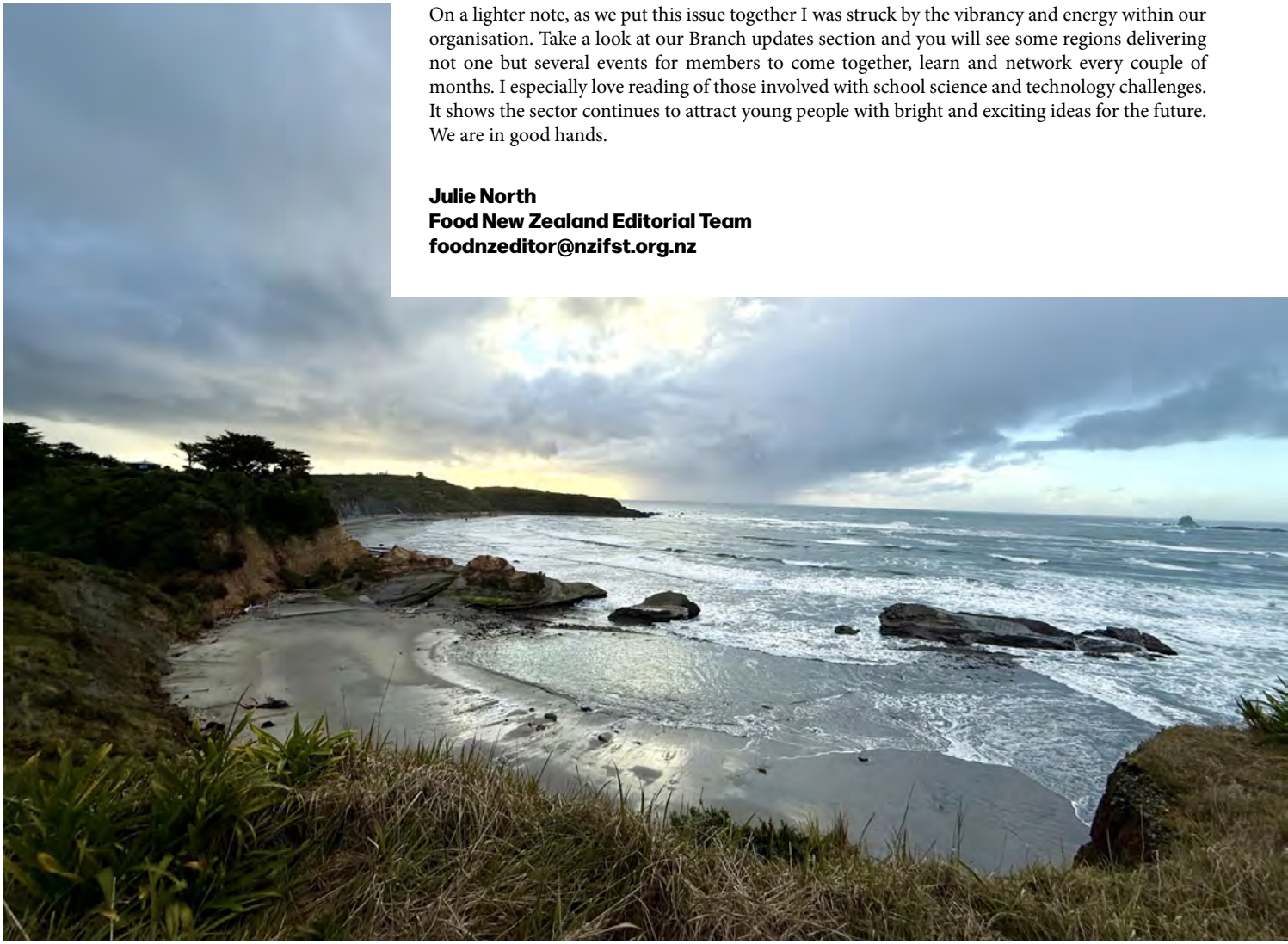


Cape Foulwind on South Isand's West Coast

Read updates from around Aotearoa New Zealand on pages 40-47!

Newsbites

Food New Zealand's round up of news about NZIFST members, associated companies and other items of interest.

Auckland University puts the spotlight on baby food

New research suggests some marketers of baby and toddler foods 'over-egg the pudding' with misleading claims.

The study led by Waipapa Taumata Rau, University of Auckland, reviewed packaging of more than 200 processed foods for infants and toddlers and found all featured marketing and nutrition claims, which didn't necessarily stack up when they examined the ingredients.

The researchers found 60 percent had images of fruit and 40 percent had pictures of vegetables, but many had very small amounts of those products in them. For example, a snack food with 'purple carrot' in its name contained a miniscule quantity of purple carrot juice and no actual vegetable. Many with images of fruit contained processed fruit sugars, while one in five contained less than five percent fruit.

"These little packages are cluttered with messages about why you should buy them," says Dr Sally Mackay, a senior lecturer in population nutrition in the Faculty of Medical and Health Sciences. "There are so many messages that it's hard for carers to know what is useful and what is not."

The average number of claims per package was 7.5, ranging from three to 15. They were mainly 'free from' claims, for example, 'free from additives', and marketing claims, e.g., 'for growing kids on the go'.

"Our findings are important because it's vital parents have accurate information, so they can make informed choices," Mackay says.

Food Standards Australia New Zealand is currently reviewing regulatory options for infant and young childhood foods.

Webinar: AIP State of Industry

The Australasian Institute of Packaging (AIP) will be holding a State of Industry Webinar on the 'Landscape of Extended Producer Responsibility (EPR) and Eco-Modulation in the United Kingdom' on Wednesday 15 October.

Packaging Producer Responsibility obligations and regulations have been in play in the United Kingdom (UK) since 2023, replacing the 2007 Regulations in 2025. Alongside this change is the introduction of further regulatory requirements around Deposit Return Schemes, and harmonised packaging collection for businesses and at kerbside.

Alison Appleby, Packaging Sustainability Specialist for Ecosurety, a UK packaging compliance scheme, joins the AIP to highight:

- The UK Packaging Extended Producer Responsibility Regulations, including detail on the Recyclability Assessment Methodology (RAM) and eco-modulation of Waste Management Fees.
- Updates on Simpler Recycling regulations, with detail on upcoming kerbside collection requirements.
- Deposit Return Schemes and how they will operate throughout the UK.
- Additional regulations in the region which need to be considered for packaging design.

Register here

KiwiNet

2025 KiwiNet awards finalists

Groundbreaking research commercialisation turning science into global impact.

This year's 2025 KiwiNet Research Commercialisation Awards celebrate 18 exceptional finalists leading the charge in turning bold ideas into real-world breakthroughs. These pioneers are translating cutting-edge research from universities, Crown Research Institutes, and research organisations into powerful technologies, thriving businesses, and tangible economic benefits for Aotearoa and beyond.

Two finalists represent our foods sector and both are nominated for the AJ Park Commercialisation Impact Award. KiwiNet Awards winners for 2025 will be announced at an evening reception on 22 October.

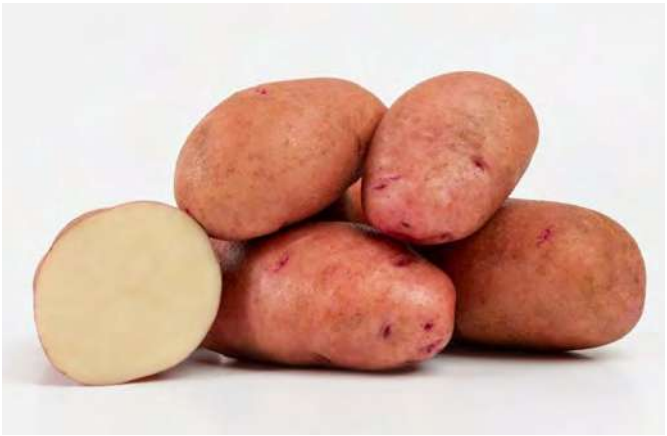
A sustainable French fry future

A stand-out potato variety developed by Plant & Food Research that produces higher yields with less environmental impact, is challenging the status-quo of the global French fry market.

Russet Burbank has become the gold standard for French fries in fast food chains globally. But despite its cooking quality it has considerable drawbacks, and there has long been the need for more sustainable potato varieties that can deliver to the exacting standards of the global French fry market.

Plant & Food Research have done just that. 'Crop78' is a new potato variety with excellent cooking quality that is outperforming the others - consistently delivering high yields, strong disease resistance, efficient water and nitrogen use, and resilience to cold-induced sweetening that negatively impacts performance.

'Crop78' is now in commercial production in New Zealand and advancing rapidly towards international uptake.



Hop culitvar Nectaron®

Next-generation flavours brewing global success

The hop cultivar Nectaron® has set a new standard for aromatic hops in the brewing industry, becoming an instant success in the USA, the world's largest hop market. Demand is growing rapidly – just a year after its release, it was ranked the fifth most desired hop by US brewers.

Brewing is a fast-moving consumer-driven industry, with brewers and beer drinkers always looking for something new. To maintain New Zealand's reputation for unique and high-quality hop varieties, our hop industry must continually innovate and stay ahead of global trends.

In 2020, NZ Hops Ltd launched the Plant & Food Research-bred cultivar 'Hort4337' under the brand name Nectaron®, bringing a whole new flavour profile of full, tropical notes to the market. Plant & Food Research and NZ Hops Ltd also signed a 10-year collaborative breeding agreement with significant investment, focusing on the commercialisation of new cultivars with unique flavours and aromas. Sales have reached over $3 million per season and are expected to grow around 10% per annum.

Kerry Templeton (L) hop breeder at Plant & Food Research and Dr Ron Beatson NZ Hops brand ambassador

New REDA low temperature evaporator at FoodSouth

FoodSouth is excited to announce the arrival of a REDA low temperature evaporator, further expanding their processing capabilities for clients working with delicate, high-value products.

The new system offers a water removal rate of up to 100 litres per hour at evaporation temperatures between 25 – 30 °C, significantly lower than traditional evaporators. By operating at low temperatures and using heat pump technology, the REDA evaporator achieves excellent energy efficiency, while preserving sensitive volatiles and bioactive compounds.

It is ideally suited to processing products that are heat-labile or aroma-rich, such as:

- Fruit and vegetable juices
- Protein isolates
- Nutraceuticals and functional ingredients

This technology enables the concentration of ingredients without compromising quality, flavour, or nutritional integrity. This makes it an ideal processing step before spray drying, complementing FoodSouth's pilot spray dryer and offering clients an integrated pathway from liquid to powder, while protecting product functionality and value.

FoodSouth's new REDA low temperature evaporator

Roy Biggs first lifetime member of the NZ Association for Food Protection

Congratulations to Roy Biggs, who is the first person to be awarded lifetime membership of the NZ Association for Food Protection. A wonderful recognition of openness, collegiality, and technical knowledge, which have contributed so much to ongoing efforts to improve the sharing of information and industry collaboration for food safety in the poultry sector.

Roy's willingness to discuss food safety challenges and successes, highlighted the enormous value that can be obtained by the food industry, regulators and researchers working together in a trusting and respectful manner and set the stage for the collegial and successful way in which these groups continue to engage with each other.

Following 25 years in factory and technical management in the dairy and salmon processing industries in the UK, Roy emigrated to New Zealand in 1997 and began a new career in technical management in the poultry industry. Roy's interest in the practical application of microbiological controls has been instrumental in improving management of Salmonella and Campylobacter on raw poultry and the robust control of Listeria in "Ready To Eat" food production.

Roy was named a Fellow of NZIFST in 2011.

Summit participants discuss precision fermentation

Precision fermentation in Hawke's Bay's sights

By 2050, the world will need up to 70 per cent more food than it consumes today. That is a lot! So the race is on to find new ways of producing safe, consistent and functional ingredients, and Hawke's Bay could play a part.

Foodeast Haumako recently held its first summit on Fermentation for Future Food in Hastings. Scientists, entrepreneurs and manufacturers gathered to debate how novel and precision fermentation could be developed locally, and what is still missing.

Fermentation is as old as bread and beer, but its modern application is far broader. Novel fermentation uses microbes (yeasts, fungi, bacteria) to create proteins, fats, and other valuable compounds. Precision fermentation takes this further by programming microbes to produce specific, well-characterised ingredients. These can replicate known properties - for example, egg proteins that whip, foam and bind - or enable entirely new ones.

Global examples show the potential. A US company has commercialised animal-free egg proteins already approved by the FDA, while an Australian start-up has demonstrated how tiny amounts of precision-fermented fats can transform the taste of plant-based foods.

Forum panellists were clear: this is not about replacing New Zealand's primary industries. Instead, fermentation can complement them — adding new value streams, improving resilience, and creating hybrid products that combine traditional strengths with new functionality.

Hawke's Bay has clear strengths: abundant forestry and horticultural side-streams, a strong food reputation, and an emerging cluster of agritech start-ups, including in the precision fermentation space.

But gaps remain. Panellists highlighted five essentials if New Zealand wants to compete:

- Faster, clearer regulatory pathways.
- Access to mid-scale facilities (10,000–100,000L fermenters).
- More capital depth, especially at the $2m to $5m stage.
- Specialist skills beyond research science.
- Stronger business-to-business collaboration so new ingredients match real-world demand.

Without progress, start-ups risk moving offshore to places like Singapore, where regulation, scale and capital are already in place.

Foodeast Haumako is Hawke's Bay's innovation hub for food, beverage, and agritech development. foodeast.co.nz

The summit was part-sponsored by Nexia New Zealand, a long-standing advisory and accounting services business.

IFF inspires innovation in adult beverages with new platform

IFF is a global leader in food, beverage, health and wellness and recently unveiled their new platform designed to inspire innovation in the rapidly evolving adult beverage landscape.

Named "SipScape", the platform offers insights with new personas showcasing the evolving beverage consumer landscape. It includes actionable insights and trends, such as product design, flavour modulation and sweetness reduction in no-and low-alcohol beverages. The platform also highlights IFF's expertise in incorporating botanicals, natural colours and other functional additions based on current trends and market demands.

"Understanding how and why people drink today is essential to staying ahead," said Fernanda De Paula, vice president of global beverages category for IFF Taste. "Consumers are looking for more than a buzz, and drinks are no longer defined solely by their alcohol content. The most successful new products are those that reflect people's values, fulfil specific occasions and genuinely resonate with their needs. When done right, beverages can turn fleeting moments into joyful and meaningful experiences. SipScape is a vibrant virtual social scene, where brands can meet today's beverage consumers, learn more about their preferences and uncover exciting innovation opportunities."

Leadership announcements for new Bioeconomy Science Institute

The Bioeconomy Science Institute has appointed the first two people to its new Leadership Team.

Keri-Anne Tane, Chief People Officer

Keri-Anne has been a human resource leader for 28 years in both the private and public sector, and she will be familiar to many of you. Keri-Anne spent eight years at Scion as General Manager, People, Culture & Safety. She joined Plant & Food Research in July 2024 as Director People & Culture. Prior to this, Keri-Anne also worked with Fletcher Steel, Mercy Hospital, OfficeMax, Unilever, Toi Ohomai, and Te Pūkenga. As Chief People Officer at Te Pūkenga she was responsible for executive leadership of people, culture and wellbeing, bringing together 10,000 people from 25 previously separate educational organisations. Keri-Anne holds a Bachelor of Business Studies in Human Resource Management.

Keri-Anne has whakapapa to Te Arawa (Ngati Rangiteaorere, Ngati Uenukukōpako) and Te Rarawa. She will be based in Rotorua.

Quentin Smith, Chief Financial and Operating Officer

Quentin joined Plant & Food Research in 2018, with responsibility for the Finance function and the management of Infrastructure and Information Technology.

Prior to joining Plant & Food Research, Quentin was the Director of Finance and Development for McDonalds Restaurants (New Zealand) Limited, with responsibility for the Finance, Equipment, Real Estate and Construction functions for New Zealand and the Pacific Islands. Quentin joined McDonalds in 2002 and held a variety of roles in the finance, operations and property areas. Quentin started his career at Price Waterhouse, having graduated from the University of Auckland with a BCom (Hons) in Finance and a BSc in Psychology. Quentin will be based in Auckland.

Keri-Anne Tane

Quentin Smith

About the Bioeconomy Science Institute

The Bioeconomy Science Institute brings together AgResearch, Manaaki Whenua - Landcare Research, Plant & Food Research and Scion into a single organisation, conducting research to advance innovation in agriculture, horticulture, aquaculture, forestry, biotechnology and manufacturing; protect and enhance ecosystems from biosecurity threats and climate risks; and develop new bio-based technologies and products. The Bioeconomy Science Institute is a Crown Research Institute, owned by the New Zealand Government and governed by an independent Board of Directors.

The Bioeconomy Science Institute was formed on 1 July 2025, with Mark Piper as Transition Chief Executive and Barry Harris as Chair.

Inside the new site

Sherratt Ingredients opens new Halal blending and manufacturing site

Sherratt Ingredients has opened a second manufacturing and dry-blending facility in Auckland. The new site is a dedicated halal facility, located close to its main manufacturing site in Hobsonville.

Managing Director Duncan Sherratt said the new halal facility is a significant investment for the company and allows them to once again offer halal-certified blends and manufacturing services to both existing and new customers. As with their main site, the halal facility is equipped with market-leading automated processes and machinery. They also have a dedicated halal team on-site to ensure the highest standards of quality, hygiene and service.

Established in 1986, family-owned Sherratt Ingredients has become a major player in New Zealand's specialty food ingredients and blending industry. Sherratt Ingredients supplies larger New Zealand food, beverage and pet food manufacturers with a growing range of specialty ingredients sourced from leading suppliers worldwide. The company also provides bespoke blends and solutions produced locally at its Auckland facilities.

At the opening, Duncan Sherratt said the success of its customers and of the New Zealand food industry is what drives Sherratt Ingredients to keep innovating, evolving and expanding their offerings.

Managing director Duncan Sherratt opens the new site

AsureQuality opens brand new People Hub

In a major step for New Zealand food industry, the new People Hub at AsureQuality was officially opened at their Lynfield site in Auckland on 29 September by Hon Simeon Brown and Hon Dr Shane Reti.

The new building is part of a three-year investment in the site, supporting the evolution of testing technologies and the growth of New Zealand's food and primary industries through increased capacity and flexibility of food testing services. It is the first stage of the redevelopment of the company's laboratory, a critical part of New Zealand's $70+ billion food industry.

The redevelopment project has freed up valuable space in the lab, providing flexibility to accommodate new AI- and tech-driven automations that will enable greater scalability, efficiency and increased capacity.

CEO, Kim Ballinger, says that the development demonstrates AsureQuality's commitment to its role in assuring food safety and quality in New Zealand and overseas markets, and protects New Zealand's reputation of providing high quality products for export. This investment ensures we can adapt and keep pace with our customers' expansion plans and support their growth with fast, reliable testing for food products.

At the opening of the People Hub (L to R) Kim Ballinger, AsureQuality CEO, Hon Dr Shane Reti, Minister of Science, Innovation and Technology, Hon Simeon Brown, Minister for State Owned Enterprises, Peter Landon-Lane, Chair of AsureQuality Board

New Zealand Food Network celebrates 5 years of feeding the need with whopping donation from ANZCO

NZFN donation from ANZCO - Kath Weir & Nicki Crosbie in Christchurch

The New Zealand Food Network (NZFN) celebrated five years of transforming Aotearoa's food support ecosystem and supporting Kiwis in need – with a mammoth 5 tonne donation from ANZCO.

Since inception in July 2020, NZFN has been on a mission to redirect surplus and donated food (largely from the corporate and food production space) to its Food Hubs, which distribute it to recipient charities, social supermarkets, and other support groups tackling food insecurity on the front lines.

For their birthday NZFN's one wish was for their donor partners to gift food and essential items from their 5th Birthday Wishlist. It included meat and fish, dairy, eggs, fruits and vegetables, hygiene products and more.

The very first gift was generously made by beef and lamb producer, ANZCO Foods, who donated a whopping five tonnes of beef.

That equates to 10,000 standard packs of mince, 40,000 meals, or 250,000 meatballs!

ANZCO Foods Chief Executive Officer, Peter Conley, said the company was proud to contribute to the Wishlist and help ensure nutritious food reaches those who need it most.

NEW ZEALAND FOOD NETWORK

Sustainability in the laboratory: from packaging to paperless

Laboratories are known for being resource-intensive, consuming far more energy and materials than standard office spaces. Yet as climate change continues to sharpen global focus on environmental responsibility, many are rethinking their practices to reduce their footprint without compromising scientific integrity.

Hill Labs has made sustainability a core value, embedding environmental responsibility into daily operations. Its progress illustrates how science and sustainability can work hand in hand.

Carbon Certification

A cornerstone of this approach is the achievement of **Toitū Carbon Reduce Certification**, which provides independent verification of emissions management and reduction targets. This framework not only measures impact but also sets out a clear path for continual improvement.

Packaging Changes

Simple operational decisions have delivered significant results. By replacing polybins with **recyclable cardboard packaging** for both consumables and incoming samples, the laboratory has removed **6,000 kilograms of waste** from its system.

Tackling Plastics

Plastic remains one of the sector's toughest challenges. The laboratory is actively minimising single-use items by introducing **reusable labware** where possible. Beyond its own walls, it has partnered with **Future Post**, which repurposes waste plastics into durable products such as fence posts—ensuring discarded materials take on new, long-lasting value.

Reducing Hazardous Waste

Laboratory methods are also under review, with an emphasis on reducing hazardous waste. Refinements to processes have allowed the team to maintain accuracy while generating less chemical waste, easing the burden on disposal systems.

Going Paperless

Digital transformation has been another key initiative. The introduction of **digital worksheets** has already reduced paper use, and a full shift towards **online submissions** is underway. This not only cuts waste but also increases efficiency and accuracy in laboratory operations.

A Forward Path

The measures already taken show how sustainability in a laboratory setting is achievable and impactful. From carbon certification to waste reduction and digital processes, this organisation is proving that environmental responsibility and scientific excellence can progress together.

Flavour wins in this year's ice cream and gelato awards

Licorice, Chocolate, Cucumber & Yuzu, Spiced Biscoff and Green Tea are among the trophy winning flavours in this year's NZ Ice Cream & Gelato Awards 2025.

Hot off the heels of awarding a record 68 gold medals, the 18 Trophy winners - aka New Zealand's top ice cream, gelato and sorbets of 2025 – were named at the NZ Ice Cream & Gelato Awards 2025 in Auckland in August.

NZ Ice Cream & Gelato Awards 2025 Chief Judge, Geoff Scott said; "Overall, the standard of entries has never been higher. The flavours were great, and texture was excellent across all categories. It's clear that creativity and innovation are alive and well in the New Zealand ice cream and gelato industry."

Scott led a panel of 24 food judges through the 'arduous' task of tasting 266 entries with meticulous attention to detail. Creations were assessed across 15 categories – including Classic and Premium Ice Cream, Gelato, Sorbet, Open Creative, Dairy-Free and Low-Fat Ice Cream or Frozen Yoghurt. This year, entrants were invited to create something special with 'Best of Biscuit' and they delivered some truly delicious and exciting combinations.

The Awards, run by the New Zealand Ice Cream Association, have been held since 1997 to celebrate Aotearoa's finest with results shared with Kiwi ice cream lovers. This annual celebration of the finest frozen creations that New Zealand has to offer, showcases the innovation, craftsmanship, and mouth-watering flavours produced by the nation's leading ice cream and gelato artisans. ▪

Island Gelato Spiced Biscuit

Marcus Moore, Founder and Managing Director Much Moore Ice Cream Company

Supreme Champions

- **Takapuna Beach Café, Licorice Gelato**
  Award sponsored by Chelsea Sugar, Supreme Boutique Champion
- **Much Moore Wonders Strawberry Low Fat Yoghurt Ice Cream**
  Award sponsored by Hall's Cold Chain Logistics, Supreme Champion

Category Champion Winners

- **Much Moore Ice Cream Co Marvels Creamy Vanilla Ice Cream**
  Award sponsored by INVITA, Classic Vanilla Ice Cream Champion
- **New Zealand Natural, Chateau Peach & Raspberry**
  Award sponsored by Bonson Packaging, Classic Flavoured Ice Cream Champion
- **New Zealand Natural Ice Cream, Killinchy Gold Pure Vanilla Bean Ice Cream**
  Award sponsored by IFF, Premium Vanilla Ice Cream Champion
- **Lewis Road Creamery, Chocolate Truffle with Chocolate Ganache**
  Award sponsored by Americold, Premium Flavoured Ice Cream Champion
- **Kohu Road, Dark Chocolate Ice Cream**
  Award sponsored by DKSH & Belcolade, Chocolate Ice Cream Award Champion
- **Kohu Road, Dark Chocolate Sorbet**
  Award sponsored by DKSH & Belcolade, Chocolate Gelato or Sorbet Champion
- **Takapuna Beach Café Licorice**
  Award sponsored by Sensient Technologies, Gelato Champion
- **Little 'Lato, Chocolate Orange Sorbet**
  Award sponsored by New Zealand Ice Cream Association Sorbet Champion
- **Island Gelato Co, Island Gelato Spiced Biscuit**
  Award sponsored by RD 2 International, Best of Biscuit Champion
- **Island Gelato Co, Island Gelato Cucumber & Yuzu**
  Award sponsored by Hawkins Watts, New Zealand New to Market Champion
- **Little 'Lato Pink Wafer Gelato**
  Award sponsored by Formula Foods, Open Creative Champion
- **Little 'Lato, Mango Lassi Vegan Gelato**
  Award sponsored by Tetra Pak, Dairy-Free Champion
- **Much Moore Ice Cream Co, Wonders Strawberry Low Fat Yoghurt Ice Cream**
  Award sponsored by New Zealand Ice Cream Association, Low Fat Ice Cream or Frozen Yoghurt Champion
- **Open Country Dairy, Green Tea Ice Cream**
  Award sponsored by Primary ITO, Export Champion
- **Kohu Road, Dark Chocolate Sorbet**
  Award sponsored by New Zealand Ice Cream Association, New Member Champion
- **Little 'Lato**
  Award sponsored by Pact Packaging, Sustainability Champion

Top: Takapuna Beach Cafe Cabinet
Bottom: Takapuna Beach Cafe team

In focus: Ingredients

EUOLIGO® Fructooligosaccharides: Supporting Health, Enabling Innovation

In today's health-conscious market, EUOLIGO® Fructooligosaccharides (FOS) from Tate & Lyle help manufacturers meet growing demand for clean-label, functional products. This prebiotic dietary fibre, enzymatically derived from sugar, supports digestive wellness by feeding beneficial gut bacteria—helping reduce bloating and improve regularity.

EUOLIGO® delivers mild sweetness with fewer calories, enabling sugar reduction without compromising taste. Its stability across pH and heat conditions makes it ideal for diverse applications—from baked goods and dairy to beverages and supplements.

Beyond gut health, EUOLIGO® enhances calcium absorption, supporting bone health and energy metabolism—ideal for formulations targeting women's health, active aging, and fortified nutrition.

Certified Organic, Vegan, Halal, Kosher, and GMP-compliant, EUOLIGO® meets global standards. Backed by Tate & Lyle's technical expertise and reliable supply, it empowers brands to innovate with confidence and deliver on consumer expectations.

Why plant-based colours make sense in the modern market

Over the last five years, only around 15% of product launches in New Zealand have featured artificial colours.[1] Their growth rate (CAGR) over the same timeframe stands at -7%. New Zealand's consumers are increasingly seeking out natural food and drink with ingredients they know and trust.

GNT create EXBERRY® colours from non-GMO fruit, vegetables and plants. They allow for consumer-friendly label declarations such as "concentrates (carrot and blackcurrant)."

The colours offer a cost-effective way for manufacturers to clean up their labels and ensure their products remain relevant in a competitive marketplace.

The EXBERRY® portfolio features a complete spectrum of vibrant shades that can be used to create food and drink with widespread appeal. The colours are available in a wide range of formats to ensure effective results in almost any application, including beverages, confectionery, snacks, and dairy products.

While plant-based colours can create technical challenges, switching to EXBERRY® is easy. GNT offer full support throughout the product development cycle, including colour selection and matching, stability testing, concept development, and regulatory support. With global reach and tailored, local technical support also ensure cost and time efficiency by streamlining the product development process.

EXBERRY® is the leading global brand of plant-based, sustainable colours for food and drink.

[1] Innova Market Insights (January 2020-August 2025)

An award-winning, science-backed solution for immune and gut health

Invita is proud to be the exclusive distributor for *Benicaros*® from *NutriLeads*.

An award-winning, science-backed solution for immune and gut health, *Benicaros*® is a clinically validated precision prebiotic for use in functional foods and beverages.

Benicaros®, scientifically known as RG-I (rhamnogalacturonan-I), is a unique prebiotic fibre derived from upcycled carrot pomace. Its unique structure sets it apart from other prebiotic fibres.

Unlike other prebiotic fibres, *Benicaros*® is stable in low pH products. This offers beverage manufacturers a unique prebiotic ingredient with excellent process tolerance at a low dosage that is backed by scientific studies.

Clinical and preclinical research have recognised *Benicaros*® and its unique mechanism of action, enabling self-substantiated claims to be made under Food Standards Australia and New Zealand (FSANZ) for food, beverages, and supplemented foods:

- Supports beneficial gut bacteria
- Supports healthy immune function
- Supports immune defences
- Supports a healthy gut microbiome

Nutrition is important and products need to look great too. *Benicaros*® strengthens Invita's nutritional offering, complementary to natural ingredients such as colours, flavours and extracts.

GNT EXBERRY® natural colours are sourced from non-GMO fruit, vegetables and plants, offering high performance and stability. *EXBERRY*® offers vibrant shades for all applications with natural ingredient declarations. *Benicaros*® and *EXBERRY*® provide you plant-based solutions with optimal performance.

Invita is a New Zealand-owned company with global reach and exclusive distribution arrangements, welcoming the opportunity to share our market intelligence and ingredient innovations, ensuring you are always at the forefront of industry developments.

Whether used on their own or in combination, Invita's portfolio of nutritional and technically functional ingredients offers you a toolbox of solutions: Prebiotics – Probiotics – Nutritional Premixes – Fruit & Vegetable Powders – Chia Ingredients – Colours – Flavours – Taste Modulation – Masking Flavours – Sweeteners – Starches – Hydrocolloids – Emulsifiers & Texturising Systems.

Invita. Global Reach, Local Delivery.

Beneo's functional carbohydrate ingredient shows promise

A new clinical study conducted across leading international research institutes shows that BENEO's functional carbohydrate Palatinose™ (isomaltulose) enhances the body's hormonal and glycaemic response to meals.

The findings reveal that Palatinose™ increases levels of the gut hormones GLP-1 and PYY, which help regulate appetite and blood sugar. This not only reduced post-meal glucose spikes, but also improved the so-called second-meal effect — meaning better blood sugar stability even hours after consumption. Importantly, the study highlighted that adults with metabolic syndrome particularly benefit from these effects, suggesting the potential role of Palatinose™ in supporting long-term metabolic health.

"This study shows how smart sugar choices like Palatinose™ can help the body manage blood sugar not just after eating, but even hours later. It strengthens the evidence for the second-meal effect, resulting from the sustained release of GLP-1 and PYY," says Dr Stephan Theis, Head of Nutrition Science and Communication at BENEO.

Creative ingredient solutions: where innovation meets expertise

At Hawkins Watts, we're passionate about developing products that consumers will love and want to buy over and over again.

To do this we use our unmatched ingredient knowledge to optimise **Texture, Flavour, Colour** and **Health & Nutrition**.

Texture is critical to product success, playing a growing role in delivering innovative multisensory experiences. Working with customers across multitudes of applications such as dairy, beverage, and bakery, we provide quality texture ingredients including hydrocolloids, starches, fibres, and emulsifiers that help deliver creaminess in yoghurts, body in beverages, and softness or structure in baked goods.

Flavour has a significant influence on food and drink decisions, serving as a key purchase motivator. New Zealand consumers are highly motivated to discover new flavours or buy foods in their favourite flavours. Specifically, 36% of New Zealanders actively look for new foods and flavours to try all or most of the time, and 39% say that the appeal of a new flavour encourages them to try a product for the first time (Mintel 2025). Our flavour solutions include natural and nature-identical flavours, masking agents, top notes, and umami enhancers along with TGA approved flavours.

We eat with our eyes, so our **Colour** portfolio includes both natural colours for clean label and natural formulations and synthetic options for applications requiring high stability.

Wellness is now mainstream. We have a growing range of quality **Health & Nutrition** ingredients including whole fruit powders, fibres, collagens, prebiotics, probiotics, postbiotics, plant proteins, vitamins, minerals, and botanicals. Our Health & Nutrition portfolio meets consumer needs for Mobility, Mental Wellbeing, Inner Wellbeing, and Women's Health.

From sugar reduction systems and natural preservatives to acidulants and antioxidants, we help you meet regulatory requirements and deliver cleaner, smarter formulations.

Beyond ingredients, our in-house laboratories in Auckland and Melbourne are equipped with advanced analytical tools, such as texture analysers, UV-Vis spectrophotometers, and pilot UHT plants enabling rapid prototyping and problem-solving.

Supported by market insights, trend reports and concept prototypes, we help customers stay ahead of consumer expectations. Whether you're developing the next multisensory flavour sensation or reformulating for health-conscious consumers, Hawkins Watts is your partner in innovation.

Arla Foods Ingredients' MFGM approved for use in infant formula, in Australia

Milk fat globule membrane (MFGM) has been approved for use in infant formula products in Australia, with Arla Foods Ingredients granted exclusive commercialisation rights.

Lacprodan® MFGM-10 is Arla Foods Ingredients' first early life nutrition product to be approved by Australian authorities. It will also be the only MFGM ingredient approved for use in products for infants in the country for at least 15 months.

MFGM occurs naturally in human milk and contains phospholipids, sphingolipids and gangliosides. Lacprodan® MFGM-10 was the first bovine MFGM ingredient for the global formula market, and has the most clinical documentation for infant nutrition and immune health.[1]

Food Standards Australia New Zealand (FSANZ) approved the use of MFGM as a nutritive substance in infant formula products this year.

It applies across Australia, where Lacprodan® MFGM-10 can be labelled as "Milk fat globule membrane-enriched whey protein concentrate", but not New Zealand, which recently opted out of the Australia-New Zealand joint infant formula products standard. Earlier this year, it was confirmed that Lacprodan® MFGM-10 is not considered a novel food in the EU, allowing its use in products for infants, as well as adults.

Jakob Madsen Pedersen, Senior Director, Specialised Nutrition at Arla Foods Ingredients, said: "We're proud to have pioneered the use of MFGM in infant nutrition, which has allowed significant improvements in the creation of scientifically backed formula products. Following the recent positive decision about Lacprodan® MFGM-10 in the EU, this is another highly welcome regulatory development. We're delighted that its many clinically supported benefits for infants are now also available in Australia."

[1] Li et al 2019, Timby et al 2014, Colombo et al 2023, Zavaleta et al 2011, Li et al 2019, Timby et al 2015, Ren et al, 2024, Billeaud et al 2014, Li X et al 2019, Hedrick et al 201, Jaramillo-Ospina et al 2022, Best et al all 2023, Christensen et al 2024

Chicory root fibre: Supporting natural weight management

In today's health-conscious landscape, dietary fibres are gaining recognition for their role in supporting long-term wellness. Chicory root fibre, a plant-based prebiotic, is especially valuable for its ability to nourish beneficial gut bacteria and promote digestive health. This contributes to improved satiety, better nutrient absorption, and overall metabolic balance.

As weight management becomes a growing priority, chicory root fibre offers a natural and effective solution. It is low in energy and can replace sugar and fat in food formulations, helping to reduce energy intake without compromising taste or texture. Its fermentation in the colon produces short chain fatty acids (SCFAs), such as acetate, which are known to influence appetite regulation via the gut-brain axis—helping individuals feel fuller for longer.

Recently, GLP-1 receptor agonists—originally developed for type 2 diabetes—are being used more widely as weight loss treatments. While promising, these medications may cause side effects such as digestive discomfort and nutrient deficiencies. Chicory root fibre may help mitigate some of these effects by supporting gut function and improving calcium absorption, which is important for maintaining muscle and bone health.

Sensus offers chicory inulin and oligofructose, the only plant-based prebiotics recognised by ISAPP. Frutafit® inulin and Frutalose® oligofructose are designed for targeted food applications and contribute to a healthier microbiome, improved digestive comfort, and natural weight support—making them a smart choice for modern food innovation.

Specialty ingredients for gut health and functional nutrition

Gut health has rapidly moved into the spotlight, driving innovation across food and beverage categories, from dairy and baking to beverages and even carbonated soft drinks. As consumers increasingly connect digestive health with overall wellbeing, demand for functional ingredients that deliver tangible benefits continues to rise.

Sherratt Ingredients supplies Fiberest® Resistant Dextrin and Genu-in Collagen, alongside technical expertise and formulation support, to assist food and beverage manufacturers in developing and producing products that align with consumer demands for gut health and wellbeing.

Fiberest® Resistant Dextrin from Samyang Specialty Ingredients

Fiberest® Resistant Dextrin, a soluble dietary fibre, is produced from roasted corn starch using an enzymatic process. Fiberest resists digestion in the small intestine and is instead fermented by microorganisms in the large intestine, acting as a proven prebiotic that nourishes beneficial gut bacteria and promotes the growth of probiotics, such as *Lactobacillus spp.* and *Akkermansia muciniphila*. Samyang's research also links Fiberest to additional health benefits including improvement in glycaemic control, blood triglycerides and bowel function. With neutral colour and taste, a dietary fibre content of 90% and versatile functionality, Fiberest is ideal for a wide range of product applications.

Collagen from Genu-in

Collagen is another growth area in functional nutrition. As the body's most abundant structural protein, it underpins tissue strength, elasticity and resilience. Genu-in hydrolysed collagen peptides, extracted from bovine hides, are highly digestible and clinically validated to support joint, bone and skin health. Composed of over 90% pure protein, Genu-in collagen peptides are ideal for nutritional supplements, protein enrichment, fortified foods as added collagen, and improved protein in pet food. Genu-in's full control of its supply chain, from herd to finished product, ensures quality, traceability and consistency.

Sherratt Ingredients provides high-quality specialty ingredients and bespoke solutions to food and beverage manufacturers across New Zealand. Ingredients are sourced from trusted ingredient suppliers worldwide.

Rethinking crop processing

Knowledge-rich plant-based ingredients from New Zealand's arable crops

Mike Weeks, Richard Edmonds and Scott Knowles, AgResearch Group and Plant & Food Research Group of the New Zealand Institute for Bioeconomy Science

Modern demands for nourishment and novelty have expanded the traditional roles of plant materials. Familiar whole foods are increasingly disassembled and represented as specialty ingredients intended for manufacturing. Unfortunately, many are highly refined and fall short in nutrition, texture, and sustainability.

Other approaches are possible. A five-year MBIE programme explores efficient fractionation of local crops into high-performing protein ingredients with fewer compromises [1]. It focuses on eco-sensitive processing models incorporating value chain dynamics and circular bioeconomy, demonstrating how complex plant-based ingredients can surpass generic isolates by retaining more of the natural structure for healthier food applications.

Peas, oats and hempseed were selected for their nutritional value, suitability to local conditions, and relevance to global food systems. They represent pulses, cereals, and oilseeds, offering a broad basis for studying mechanisms and modelling behaviour. Laboratory examples are trialled at pilot scale for commercial applicability.

The programme brings a *systems approach* to a prospective ingredient industry, by extending the focus beyond factory production. Cultivar selection, processing, techno-functional attributes, end user requirements, and inevitable side streams are included.

Figure 1. Clockwise oats, field peas and hempseed.

Research collaborators include the AgResearch and Plant and Food groups of the newly formed Bioeconomy Science Institute, Riddet Institute, Massey University and the New Zealand Institute of Economic Research. Industry partners are participating in knowledge transfer and technology implementation, and international advisors provide global perspective and benchmarking.

The science is organised around three objectives:

1. Mathematical modelling of sustainable process design
2. Engaging with deep understanding of ingredient composition, microstructure and functionality interactions
3. 'Omics analytical methods that enable interpretation of the metabolic effects of experimental ingredients.

Together, these will deliver a new way to retain and improve the functionalities of plant proteins.

A framework for selecting production suites

An early step is identifying how exemplar crops are processed into ingredients. Those product targets are typically simple, such as concentrated fractions of protein, starch or fibre. Mechanical, chemical, and enzymatic operations involve costs and benefits. Our research describes these processes, defines their interactions, and models their manipulation to consider novel approaches without extensive experimental permutations.

A collection of unit operations in a factory is a *production suite,* and systematic appraisal of different suites requires a robust *selection framework*. We have leveraged and modified the Kepner-Tregoe (KT) decision analysis methodology [2]. This structured approach defines decisions, sets weighted objectives, and evaluates options. KT evaluation guides research by quantifying trade-offs in proposed suites.

Fractionation methods

Diverse factors influence suite optimisation, as illustrated by conventional *wet fractionation* for plant protein concentrates. After cleaning and grinding grain, alkali extraction solubilises protein, followed by isoelectric precipitation, solid separation, resuspension, neutralisation, and desalting—steps familiar to the dairy industry. While yielding high-purity protein and starch fractions, this suite generates by-products, requires significant energy, water, and chemicals, produces waste, and uses harsh conditions that alter natural structures, affecting composition and manufacturing suitability.

Conversely *Dry fractionation* uses fine milling and airflow classification to separate particles based on size and density. Depending on the crop and distribution of the components within the cell structure, it is possible to create fractions enriched in protein, starch or fibre with no water and less energy.

While less concentrated than conventional processing, these ingredients suit many food applications where high purity isn't required. Complex ingredients can generate useful synergies and reduce formulation components, though raw-state ingredients require food safety clearance.

Hybrid suites lie between wet and dry extremes, including mild water-only fractionation, low-alkali conditions, enzyme enhancement, and membrane separations. From 37 identified process operations, we strategically distilled six generalised production suites to make assessment manageable.

Themes and criteria

Based on literature, company reports, and factory manager information, we identified 12 broad *themes* for assessing and optimizing suites and products. These include Economics, Environmental, Techno-functionality, Sensory, and Regulatory affairs. Each theme contains multiple *criteria* influencing quality and value—totalling 45 criteria across themes (e.g., eight Environmental, two Sensory). Theme weighting ensures holistic, equitable decision-making across all relevant characteristics.

Criteria scoring is subjective but grounded in understanding "good" and "bad" outcomes and their transitions—whether linear, exponential,

stair-stepped, or sigmoidal. We captured these features through dynamic functions mapping criterion metrics to two- or three-level fuzzy logic systems (Figure 2).

Processing compared

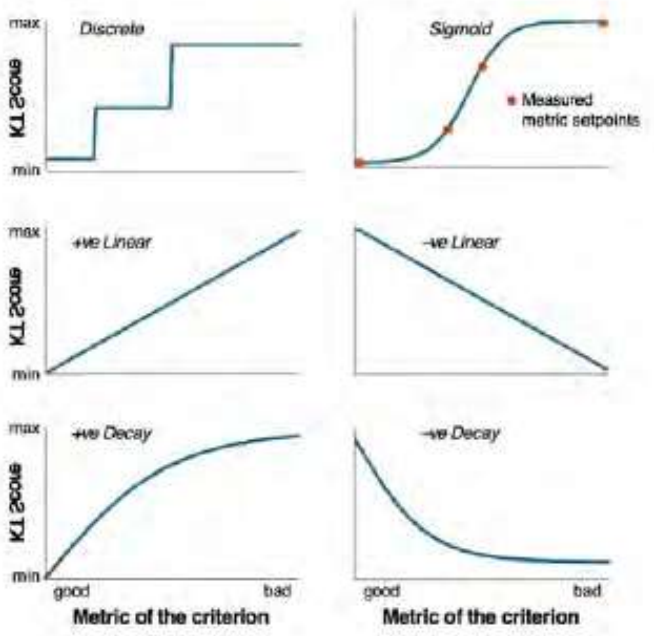


Figure 2. Dynamic relationships for each criterion within a production suite theme. Underlying metric values map onto fuzzy-logic functions representing real-world responses. Each criterion's KT score contributes to the theme total.

The KT selection framework provides a means to compare and prioritise diverse processing combinations. Figure 3 shows the results of scoring our exemplar crops for each production suite. The 12 themes make up the scores.

Grouped by crop, oats emerge as the top opportunity due to post-harvest stabilization enabling year-round processing. Hempseed presents challenges in crop production, social licence, regulatory compliance, and sensory attributes. By production type, simple wet fractionation ranks highest, reflecting its global prominence for plant protein concentrates. Dry fractionation showed strong environmental performance despite experimental difficulties.

The next phase involves incorporating techno-economic analysis (TEA) and process modelling into the KT framework. TEA evaluates process flows and mass balance through to net present value, while process modelling provides the mathematics describing material transformations within a theoretical factory.

The unit operations, theme weightings, measurable criteria, and dynamic models reflect current research needs and will be revised as laboratory and pilot data become available. This flexibility allows the framework to transition from identifying research opportunities to highlighting investment opportunities.

This article is the first in a series of three. ▪

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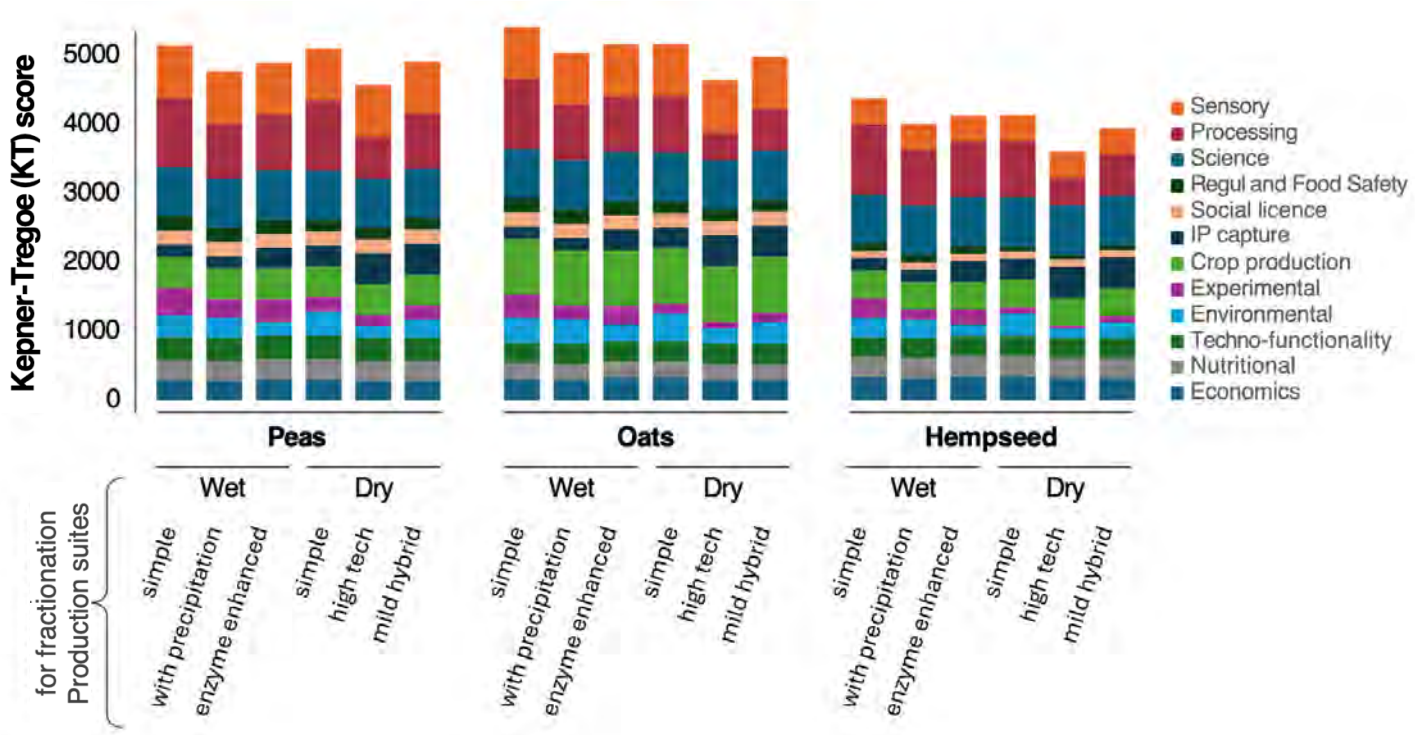


Figure 3. Kepner-Tregoe evaluation of 3 crops across 6 production suites (3 wet, 3 dry) distilled from 37 identified process operations. KT scores sum 45 criteria across 12 themes relevant to plant-based ingredient production costs and benefits.

Midlands Nutrition – supplier of speciality oils

Established in 2002, Midlands Nutrition is primarily focused on developing, producing and supplying high quality specialty oils to the global food, skincare, and health product sectors. They specialise in natural nutritional oils and plant-based superfoods rich in essential fatty acids such as Alpha-linolenic acid (ALA, Omega 3) and Gamma-linolenic acid (GLA, Omega 6).

The range includes an extensive list of food ingredients, with a focus on bulk nutritional oils, closely integrating contract growing, product development, oil processing, and distribution to ensure efficient delivery of the highest product quality and service to customers. All products are designed to benefit and promote health and well-being in today's busy lifestyles.

Their purpose-built premises is based in the agricultural heart of New Zealand. Their commitment to food safety, and a focus on the highest quality standards, ensures complete traceability from the planted seed, right through to final product.

They dedicate themselve to providing healthy and nutritious products from natural sources to our customers. From consultation to formulation, conception to fulfilment, their emphasis on quality and attention to detail at every stage of the supply chain is second to none.

Q&A with Julie Bryant

We meet Julie Bryant, a professional member of NZIFST, and part of the Nelson network.

Julie has a Bachelor of Technology (Food) from Massey and Advanced HACCP certification. Her career spans quality management and 15 years with SIS Training, providing NZQA training and system development for seafood. For 10 years, she has been Director of Food Compliance Specialist Ltd, offering RMP auditing and regulatory compliance advice.

What sparked your interest in food science and technology?

As a keen science and maths student, I attended Massey University's open day. One of the Food Technology lectures was how can lacquers be used to inhibit the chemical reaction between food and metal. It was a practical, real-world application of science so I was hooked. Funnily enough, my first job was working as a QC at Enza fruit cannery.

What achievements are you most proud of?

A recent highlight was supporting the Pic's Peanut Butter team in their journey to BRCGS certification. It was far from straightforward—Covid lockdowns, global supply chain issues, and even my own challenge of working with two broken arms after a bike accident. But the team's resilience paid off, and the site proudly achieved an AA pass on its very first audit in 2022.

What major changes have you witnessed during your career, and how have they shaped your work?

In my business of regulatory compliance, the shift to real-time online access to information has been transformative. Today, I can instantly source Overseas Market Access Requirements, scientific publications, and government regulations to support informed decisions. Looking ahead, the integration of AI promises another era of rapid change and opportunity.

Mentorship is often a key part of professional growth. Were there any mentors who made a significant impact on your path?

John Hannah, then General Manager of Sealord Shellfish Ltd was a visionary in aquaculture, he led through trust and respect, and valued training highly. Thanks to his support, I gained both formal education in quality management and hands-on experiences. This cemented my path in quality and emphasised the importance of excellence from raw material through to final product.

What advice would you give young food science and technology professionals starting out today?

There are a wealth of opportunities. Explore as many different areas as you can. Your true passion may reveal itself in unexpected ways. Stay adaptable, as the future of food science will continue to evolve rapidly. Enjoy the journey.

Contact Julie at julie@foodcompliance.co.nz ▪

FCS FOOD COMPLIANCE SPECIALIST LTD

The value of food technology amidst a world of idealism

Raewyn Bleakley, Chief Executive, New Zealand Food & Grocery Council

In a time when movements advocating for organic, local, and minimally processed foods hold powerful sway, there's a prevailing narrative: the "ideal" diet is fresh, unprocessed, and often home-grown. But as the world grows more complex and urbanised, this ideal is increasingly out of reach for billions. Enter food technology—a field that quietly, but fundamentally, underpins modern life, transforming the way we grow, preserve, and consume food.

Photo by Jonathan Kemper (Unsplash)

Beyond the Farm: A reality check

It sounds idyllic to picture families harvesting vegetables from their own gardens or shopping daily at local markets for fresh produce. And no one is denying the health benefits of a diet high in vegetables and fruits. The reality, however, tells a different story.

- The global population surpassed eight billion in 2023, with most people living in cities and leading fast-paced lives.
- Urban dwellers often lack space, time, or climatic conditions necessary for self-sufficiency in food.
- According to the last NZ Health Survey results, just 9% of our adults and 8% of our children aged 2-4 years are eating the recommended amount of vegetables each day.

Without intervention, such constraints would widen the gap between food abundance for some and insecurity for others.

Food Technology: Bridging the gap

I don't need to tell food technologists about the value you bring to this conundrum, but I also don't think we celebrate it enough. So let's take a moment to look at what food technologists achieve:

- *Affordability*: By enabling mass production, food technology dramatically lowers the cost per unit of many staple foods, making essentials accessible to more people.
- *Safety*: Pasteurisation, canning, freezing, and irradiation kill harmful microorganisms, preventing foodborne illnesses and extending shelf life.
- *Reduced Food Waste*: Preservation methods such as dehydration, freezing, and vacuum-sealing prevent spoilage, helping food last longer and reducing waste—an environmental and economic win.
- *Nutritional Enhancement*: Formulating new foods containing more desirable ingredients such as vegetables, nuts, legumes and good quality protein, in addition to fortification with essential vitamins and minerals where warranted. These interventions help to combat deficiencies and support national nutrition recommendations on a massive scale globally.
- *Convenience*: Ready-to-eat and easy-to-cook options save time for busy families and professionals, ensuring they get nourishment even when time is short.

"Food technology—a field that quietly, but fundamentally, underpins modern life, transforming the way we grow, preserve, and consume food."

Photo by Bozhin Karaivanov (Unsplash)

Challenging the "Processed vs. Fresh" binary

Much criticism of food technology comes from the idea that "processed = bad." This oversimplifies a complex landscape. While dietary patterns high in in sugars, salt, and unhealthy fats deserve scrutiny, not all processing is detrimental. In many cases, processing means washing, cutting, or fortifying; in others, it means harnessing cutting-edge science for enhanced safety, shelf-life and nutrition. Where would we be without pasteurised milk and milk or gluten alternatives for those with allergies? Would people eat as many pulses if it weren't for baked beans and would they eat as much fibre if it weren't for wholegrain breads? These are all processed foods.

A tool for equity and sustainability

Beyond convenience and safety, food technology is also crucial for solving some of the world's biggest challenges. As arable land becomes scarcer and our climate changes, food technologists develop crops and production methods that use fewer resources, resist disease, and deliver higher yields under more extreme conditions. This helps to feed a growing population and provide greater food security, while lessening environmental impacts.

The human element

Food processing doesn't replace whole foods; rather, it augments them, making diverse diets possible worldwide. It empowers people with limited resources or busy lifestyles to access safe, affordable, and healthful food. By fortifying staple foods, developing allergen-free substitutes, or innovating packaging that preserves freshness with less waste, food technologists quietly democratise good food.

Beyond ideals, toward solutions

While the aspiration to eat perfectly fresh, local, organic diets is admirable, it's simply not feasible for all. Food processing doesn't undermine that ideal; it brings practical solutions, ensuring that nutrition, safety, taste and sustainability don't remain privileges for the few, but basic rights for all. Without food science's advances, our modern food system would look remarkably less equitable—and far less able to meet the pressures of today and tomorrow. ▪

New Zealand Food Safety
Ministry for Primary Industries
Manatū Ahu Matua

Equipping households with science-backed food safety advice

Vincent Arbuckle, Deputy Director General, New Zealand Food Safety

Food plays a central part of our lives at home. From cooking family dinners, heating up leftovers, packing lunch for the kids, or having friends over for a barbecue, we constantly interact with food at home. Food safety is not just about what happens on farm, at food processors or at the retail level. As consumers, parents and hosts, we can play our part to ensure that the food that we serve is as safe as it can be. This is especially important for vulnerable family members such as the very young, pregnant, frail elderly, or those who are immunocompromised. By following some simple tips at home, we can protect those that we care about.

Our *Food Safety at Home* booklet offers practical science-backed advice to prevent foodborne illness

Foodborne illness is often attributed to incorrect food handling at home. The *Food Safety at Home* booklet is a practical and useful guide that uses science-based food safety advice to educate anyone handling food at home. This resource has recently been updated with the latest advice.

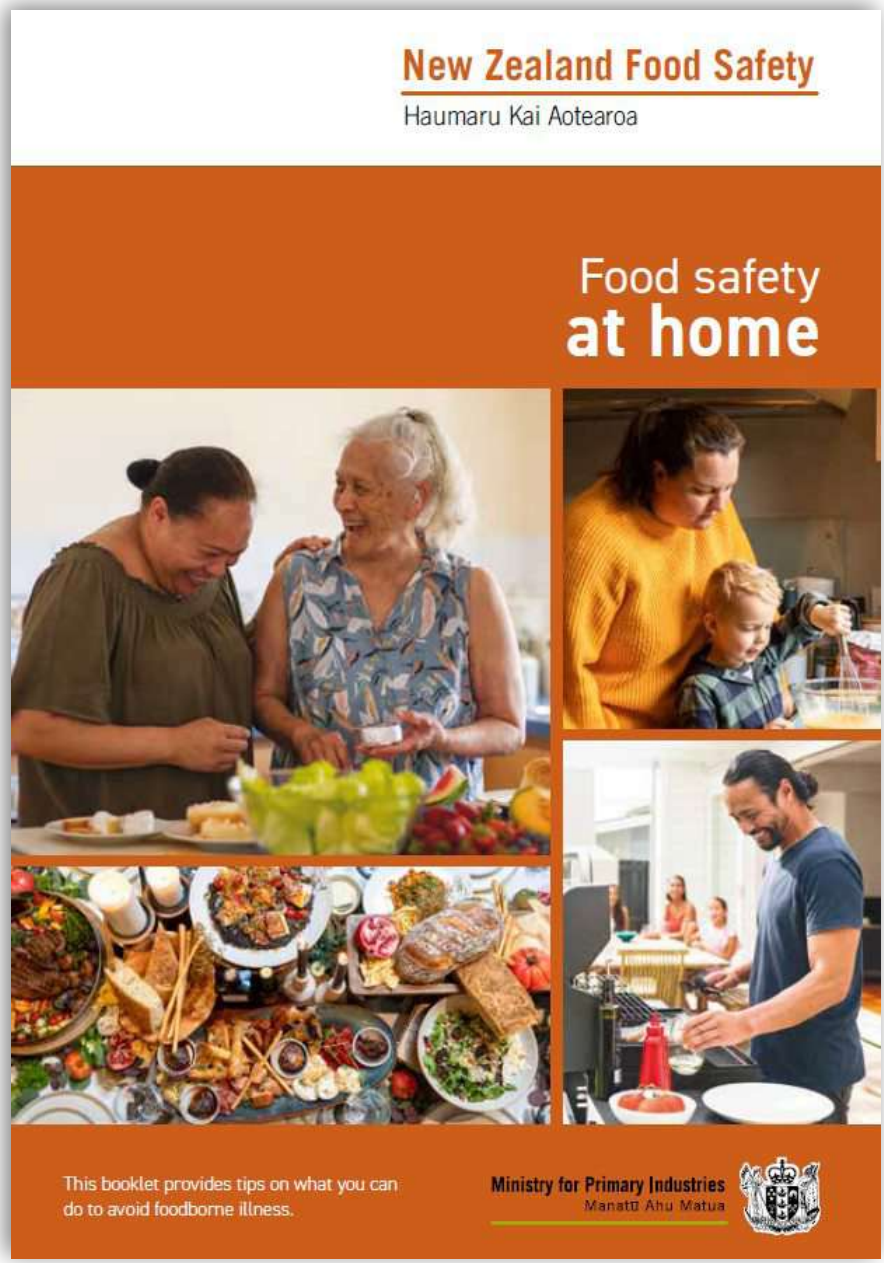
The booklet contains recommendations for preparing, cooking, storing, and transporting food safely. It even has dedicated sections for shellfish gatherers and advice for keeping at-risk people safe.

Our top tips for consumers include:

- Handwashing is one of the best ways to prevent foodborne illness. Washing hands before and after preparing or eating food helps prevent germs spreading to your food.
- To prevent cross contamination, use different chopping boards for raw meat, seafood, and ready-to-eat foods (like cheese or salads). If you only have one chopping board and have used it to prepare raw meat or seafood, wash it in hot and soapy water, and dry it well before using it for other food.
- Cooking your food to the right temperature and for the right amount of time, helps to kill harmful germs. Foods should be cooked to 75 degrees and over.
- For cooked foods eaten hot, you can leave the leftovers for up to four days in the fridge. Before eating them, ensure you reheat the food until it is piping hot.
- Cooked food eaten cold (like pasta salad) and rice-based leftovers should only be kept for two days. If you eat rice-based leftovers hot, ensure you reheat it until it too is piping hot.

Our booklet encourages all readers to consider how small changes in daily habits can prevent foodborne illness and protect your friends and family.

Scan the QR code to download the Food Safety at Home booklet



Find our Food Safety at Home Booklet on the Ministry for Primary Industries website.

The *Food Safety at Home* booklet is free and easy to download

The *Food Safety at Home* booklet is available on the Ministry for Primary Industries website. It is a free downloadable resource that can be printed or saved on consumers' devices and kept in the kitchen for easy reference.

I encourage you to use the advice in your own homes, and share the booklet with your colleagues. By keeping it handy, everyone in your home will know the basics of food safety.

You can also subscribe to receive updates for the latest food safety developments or food recall alerts. ▪

Food recalls review

John Brooks' view of the food world through the lens of a microbiologist.

Professor John D Brooks, FNZIFST

With the exception of the mass sickness at two Canterbury University halls of residence caused by a shredded chicken dish, there hasn't been any major food scare recently, just the usual culprits. The chicken appears to have been contaminated with *Campylobacter* through "inappropriate food preparation processes". (Update: A brand of tahini - sesame paste - is being recalled owing to the possible presence of *Salmonella*. As at the date of writing, no notification of associated illness has been made).

I thought it was a useful exercise to examine food recalls in New Zealand over the past year and compare them with those in other countries, with a focus mainly on microbiological contamination events. I have reviewed the major causative agents in various countries and it is clear that New Zealand is no different from America, Sweden or the UK, though obviously, the extent of contamination may be much greater where there are very large processing and distribution networks. The number of outbreaks doesn't seem to be lessening.

Perhaps the first thing to note is the comment by Vincent Arbuckle, New Zealand Food Safety Deputy Director-General. Arbuckle noted that the number of recalls is not an accurate indicator of the level of risk to consumers. "Numbers are dependent on many factors, including regulatory changes, business and public awareness of food-related problems, and reporting of those problems," he said.

In New Zealand, the most common pathogens involved in recalls include *Salmonella*, *Listeria*, and *Escherichia coli*. In 2024, there was a significant increase in food recalls: a total of 88, with 29 attributed to microbiological contamination. Sixteen *Salmonella* recalls were caused by four serotypes; *Listeria monocytogenes* was behind four recalls; *Campylobacter* three, and *Bacillus cereus* two. Of these, 56 were for domestically produced foods and 32 were for imported foods, which is perhaps an important statistic.

The incubation period for *L. monocytogenes* is normally 5-14 days, but can be as long as 70 days post exposure, so it is often difficult to tie down the cause of the infection.

In 2025, New Zealand Food Safety was also notified of two confirmed cases of campylobacteriosis. The two sick people consumed raw milk, and as a result, the raw milk operator issued a recall.

Food-borne infection or intoxication is not confined to bacterial causes. In 2024, the National Public Health Service reported 14 cases of illness, five of which were confirmed to be norovirus. An investigation identified oysters as a common food source, and a consumer-level recall was initiated.

Of course, microbiological contamination is not the only reason for food recalls. In fact, in 2024, allergens were the leading cause with 40

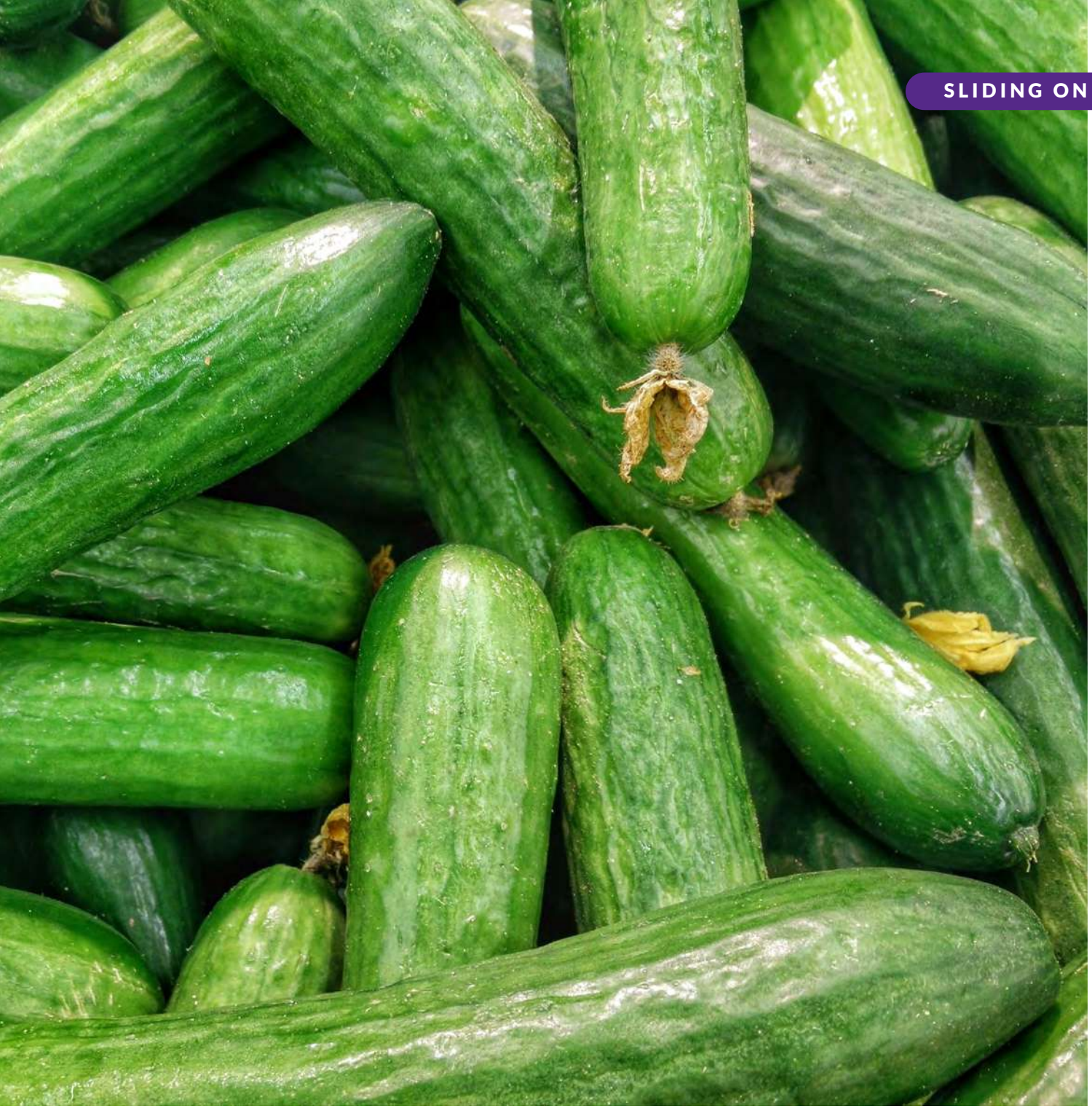


Photo by Harshal S. Hirve (Unsplash)

alerts. Gluten triggered the most recalls, with 12.

One very interesting and unusual recall is caused by Cs-137 contamination of at least 16,000kg of cooked, tail-off shrimps in Seattle. It appears that the shrimps imported from Indonesia may have been contaminated in unsanitary shipping containers. The investigation by the FDA is continuing.

It is tempting to claim that food contamination is caused by carelessness on the part of the producer, and this may well be the case with cooked foods packaged in sealed containers. But what of foods distributed and consumed raw? It is very difficult to ensure that raw foods, such as fruits and vegetables, are not contaminated with *Listeria*. Indeed, it is to be expected that these foods may be contaminated by soil and the bacteria normally found in soil. Even careful washing cannot guarantee removal of all bacteria, such as *E. coli*, that may enter the stomata of leafy vegetables. Many studies have shown that both *Salmonella spp*. and *E. coli* O157:H7 can internalise within a variety of plant tissue types, perhaps drawn in with water. Greater awareness of healthy eating has increased the demand for fresh fruits and vegetable, leading to the development of fruit and vegetable farms near other agricultural areas, such as cattle farms, or in previously undeveloped land. This can increase the likelihood of contamination of the produce by farm animals and/or indigenous wildlife. I was involved in the investigation of contaminated basil leaves imported from Fiji. The normal washing process was unable to remove the contaminating bacteria.

Speed is important when food recalls are required, otherwise, the faulty products remain in the market and continue to be eaten by unsuspecting consumers. A prime example comes from the salmonellosis outbreak of 2024 in 34 states in the USA, shown to be caused by consumption of contaminated cucumbers. There were 551 cases, resulting in 155 hospitalisations, though fortunately no deaths. Testing identified the Salmonella Braenderup outbreak strain in untreated canal water used by two growers in Florida. The first illness was reported in March 2024, and the recall was issued on May 31. People were still getting sick in July 2024, suggesting that the affected cucumbers were still in the market place two months later. ▪

A new look at Bagnums and reusable containers

Nerida Kelton FAIP, Executive Director AIP, Vice President Sustainability & Save Food WPO

Sifting through all the new innovations recognised in the annual Australasian Packaging Innovation & Design (PIDA) Awards each year is a great way to see what design features or material choices are shifting the trends.

Every year the focus is on designing out waste initially, making sure that packaging is recycle ready, and where possible includes recycled content and mono materials.

Two 2025 PIDA winners that stood out were:

- Hidden Story Pinot Grigio Bagnum
- Katermaster Regen reusable food container

Hidden Story Pinot Grigio Bagnum

A Bagnum? That's magnum in a bag, and was developed by Victorian Alps Wine Co. and Auspouch Australia.

Victorian Alps Wine Co. was created by seven local industry families who together built a winery and brand showcasing wines from a selection of premium Victorian grape growing regions. Their ranges offer classic and emerging varieties which over deliver on quality, while being excellent value for money.

The team behind the Hidden Story Bagnum wanted an 'adventure ready', lightweight, convenient pack that offered a lower environmental footprint. The Bagnum takes over from the conventional bag-in-box wine cask, or the traditional magnums in the market, and elevates the pack to new functional and aesthetic heights. The absence of glass enhances portability and doesn't break – perfect for parties and events in the outdoors!

The design offers a stand-up mono material pouch with a convenient carry handle and finger holes, a front-facing dispenser tap, and high-quality gravure printed graphics.

What really makes this a winner is that the Hidden Story Pinot Grigio is the first-to-market in Australia for a mono material wine pouch that is classified as a CEFLEX compliant recyclable structure.

The elimination of problematic materials such as PET, Nylon, Aluminium foil and carbon black ensure that the Bagnum can be accepted into existing and expanding soft plastics recycling collection systems in Australia and New Zealand.

Being lightweight it offers the company significant transport optimisation, shipping space efficiencies, pallet optimisation and improved storage capacity of the empty packaging before filling.

The Bagnum also offers functional and superior oxygen and moisture barrier properties to ensure that the wine stays fresh for up to 30 days after opening. Victorian Alps Wine Co can still offer their customers premium wines without compromise on product quality or taste in a Bagnum.

Katermaster Regen reusable food container

Now is the time for brands to see if they can introduce reusable and refillable solutions into their range as the Packaging & Packaging Waste Regulations (PPWR) in the EU are prioritising the reuse model. It has been an underutilised area of the waste hierarchy for packaging design so it is great to see this new development in this space.

Katermaster Regen reusable food container was developed by Bunzl Australia & New Zealand (Bunzl ANZ) and is their exclusive reusable and refillable food service solution brand. It is a locally made mono material pack with locally sourced resins.

It brings a reliable, high-quality kitchen and food service durable product to catering customers who want choice and quality guaranteed and are looking for a solution with a lower environmental footprint. Plus it can be used in a microwave and refrigerator, and lasts 700 commercial dishwashing rounds.

For those catering in remote locations it provides practical and reliable alternatives to single-use food containers. The Katermaster's Regen products have been designed to be easily recycled by kerbside recycling at its end of life.

Bunzl and Genfac Plastic have a strategic partnership, collaborating for many years on different projects. Genfac Plastics is a 100% Australian-owned family business and the leading manufacturer of plastic food packaging in Australia. Operating from a state-of-the-art, highly automated Melbourne facility with over 30 years of industry experience, Genfac Plastics is committed to sustainability through manufacturing recyclable products and a low carbon footprint.

"So next time you are invited to a friend's birthday party don't forget to take a Hidden Story Pinot Grigio Bagnum and some Katermaster refillable containers for the extra pieces of cake."

By making Katermaster Regen a mono material, Bunzl ANZ are not only addressing circular economy principles, but also reducing cost and streamlining the supply chain, making it a cost-effective option for their customers.

The Australasian Packaging Innovation & Design (PIDA) Awards are the exclusive entry point for Australia and New Zealand into the prestigious WorldStar Packaging awards; with Hidden Story Pinot Grigio Bagnum and Katermaster Regen both eligible to enter the next round opening later in 2025.

So next time you are invited to a friend's birthday party don't forget to take a Hidden Story Pinot Grigio Bagnum and some Katermaster refillable containers for the extra pieces of cake. ▪

Recalls: new 2D labelling has multi-dimensional potential for food safety

From the NZ Food Safety Science & Research Centre (NZFSSRC, aka the Centre)

No one wants a product recall – they can be a logistical horror story and put a lingering dent in brand reputation. But mistakes can happen, even in the best organised companies. Humans will be humans. You'll see from the table below that undeclared allergens have been the primary offenders over the last three years, including milk, nuts, eggs, gluten and soy. The incidence of allergies in the population is increasing and can result in death, so this relatively high number is a concern. New Zealand Food Safety (NZFS) publishes a comprehensive account of consumer-level recall events each year (available here).

The presence of Listeria is another dangerous possibility keeping food safety warriors awake at night. There are only a handful of recalls each year due to the detection of Listeria in ready-to-eat foods, but even one is one too many.

As the regulator, NZFS coordinates all recalls. Chris Martin at the global non-profit barcode labelling company, GS1, aligns with them to manage their one-stop-shop recall service. He conducts a weekly training webinar and devises practice recalls; NZFS requires companies to undergo at least one simulated recall a year.

It goes without saying that speed is of the essence. Ideally mistakes are noticed in time for wholesalers and retailers to act before affected products get onto retail shelves or out of the store (a consumer-level recall). If it's a consumer-level recall, NZFS must alert the public. NZFS Deputy Director General, Vincent Arbuckle, is notable for his readiness to talk to media. His seniority adds credibility and gravitas and gets the messages through high rating programmes like RNZ's Morning Report and TV1's Seven Sharp.

The switch from bar codes to "2D labelling" as they call it (actually QR codes) now underway globally, will greatly assist recalls, making it easier to identify and locate the batch concerned, and put an automatic stop on sales at checkout, should it get that far. Chris says batch numbers can be hard to read which leads to wasted food, as retailers wisely err on the side of caution and isolate more product than they may need to.

The new technology has the big tick from Vincent Arbuckle, who says, "New Zealand Food Safety is supporting the roll-out of 2D barcodes as a critical step in strengthening supply chain processes to ensure consumer food safety and reduce food waste. The new 2D barcodes are an exciting innovation that will add a valuable layer of food-safety protection for New Zealand consumers. Recalled products will be more easily identifiable and affected products can be blocked at the point of sale."

Even the least 'tech savvy' among us are now familiar with QR codes post pandemic. If you want to know more about a product you'll be able to just point your smartphone at the mysterious black and white pattern and get the full product story. Consumers are increasingly interested in where a food product comes from, the ingredients it contains, how to use it and maybe some recipes, any allergens, health claims, recycling information and other consumers' feedback, etc. While key food safety and compositional information is available on the label, QR codes offer access to much more information about the product than what is required on the product label. Of course, the information is only as reliable as the human input. Companies will need to take due care, especially when it comes to listing ingredients, allergens and health claims. But 2D labelling will make inventory management much more precise.

"GS1 QR Codes will do more than just scan at checkout," says Dr Peter Stevens, CEO, GS1 New Zealand. "They will revolutionise how New Zealand businesses manage stock, reduce wastage, provide allergen information and engage with consumers in real time. Their adoption is

Who is GS1?

GS1 is a neutral, not-for-profit organisation represented in 118 countries and supporting over two million businesses worldwide. GS1 brought the humble and ubiquitous barcode to the world 50 years ago. GS1 New Zealand is the local affiliate of the federation and is owned by over 8,000+ New Zealand members across business and government.

gaining traction in Australasia and it's only a matter of time before we see higher volumes of product from global brands hitting our shelves with these new barcodes. What we are concerned about is the readiness of Kiwi businesses to scan these products and assist their consumers."

To convert from barcodes to 2D labelling will require the installation of new equipment and software, with associated costs. But as this is the way the world is going, any exporter needs to meet customer expectations sooner rather than later. GS1's global ambition is for these new-age barcodes to be scannable at point of sale in retail by the end of 2027.

In the meantime, NZFSSRC director, Libby Harrison, says "Having a better backstop doesn't make recalls any more desirable or less likely to happen. The Centre has talked a lot about food safety culture in companies, and this year organised (together with AsureQuality) another workshop by Frank Yiannas. He pointed out that the greatest risk for the New Zealand food industry, which comes as a byproduct of its excellent food safety reputation, is complacency. The Centre is running another workshop on how to manage the risk of Listeria at Lincoln University on the 21st of October"

You can read more about industry requirements for food recalls here: Food recalls | NZ Government

Consumers and interested parties can also keep themselves and their family safe by subscribing to NZFS recall alerts. Information on how to subscribe is on the NZFS food recall page. ▪

Product Recall™ NZ

Recall event statistics from New Zealand Food Safety reports

2024

88 consumer-level recalls.

29 recalls were due to microbiological contamination.

Allergens were the leading cause for recalls (40).

Gluten was the allergen that triggered the most recalls (12)

10 recalls were due to physical contamination

56 recalls were initiated from domestically produced foods and 32 recalls were from imported foods.

2023

70 consumer-level recalls.

Allergens in food were the leading cause for recalls (26).

Milk was the allergen that triggered the most recalls (12).

23 recalls were due to microbiological contamination.

14 recalls were due to physical contamination.

48 recalls were initiated from domestically produced foods and 22 recalls were from imported foods.

2022

60 consumer-level recalls.

Allergens in food were the leading cause for recalls (20).

Milk was the allergen that triggered the most recalls (9).

16 recalls were due to microbiological contamination.

10 recalls were due to physical contamination.

33 recalls were initiated from domestically produced foods and 27 recalls were from imported foods.

A tribute and thank you to Tanya Soboleva

Tanya Soboleva recently signed off from her position as a Principal Advisor with NZ Food Safety (MPI). It is hard to imagine what it was like for her family escaping the chaos and violence in the wake of the collapse of the Soviet Union, thirty years ago. Tanya was determined to provide a safer place for her daughter. She arrived in this strange new land without job or money and found her English somewhat at variance with the New Zealand dialect.

Fortunately, science, and particularly mathematics, are more standard international languages. She found a haven at Auckland University, which couldn't offer her a job in the Mathematics Department, but kindly gave her a desk, a computer, and staff privileges. Tanya soon met other scientists, and her potential was recognised by AgResearch, where she worked for 12 years, ultimately as a Theoretical Biology Team Leader.

Thus began her exponential learning curve to master animal nutrition and physiology, more specifically dairy cow physiology. Not much crossover there with theoretical physics and superconductivity, her former specialty. Add this challenge to all the other challenges of learning to live in a new country and raising a child.

When a job came up at NZ Food Safety in Wellington 15 years ago, she took the opportunity to join her daughter (and now grandchildren), and switch to more human-oriented science. Notably, Tanya happened to be the one who did initial risk assessments when the WPC-80 Incident blew. This was huge, and multi-dimensional, involving her former employer AgResearch, industry, politicians, media and the public – all of whom had an interest in the crisis. This experience gave her a heightened sense of just how important NZFS work is – it mattered for the country's economy, for people's health, and for our number one export industry.

Tanya's knowledge of science is as broad as it is deep. She has been critically involved in all the key dairy food safety issues. Centre Chief Scientist, Distinguished Professor Phil Bremer, says, "Tanya's willingness to share her in-depth knowledge via presentations and meeting reports has been greatly appreciated by the food safety community over many years. Her insights and experience will be missed by the food industry and food safety researchers across New Zealand."

Philip Wescombe (R&D Manager of Oceania Dairy), former chair of the Centre's Industry Leadership Group, adds, "Tanya has given us a wealth of knowledge, experience and expertise over the years we have been involved with the NZFSSRC, and she has played a significant role in ensuring the accuracy and interpretation of our research results have been world class, often going well beyond expectations to provide insights for us. Always engaged, friendly and informative, she will be sorely missed."

But she deserves a break. Thanks for everything Tanya. We're glad you came to New Zealand. ▪

Tanya Soboleva

THE NEW ZEALAND INSTITUTE OF FOOD SCIENCE & TECHNOLOGY INC

Work Stream update

Tēnā koutou katoa e te whānau o te NZIFST,

Following our NZIFST Conference, our Workstream Leads and their Committees have been diligently working to achieve key milestones. Below are some notable accomplishments from the past few months:

Networked Community

This workstream is now led by Grant Boston, who successfully proposed the creation of a new Coordinator role to the Executive Committee. This part-time role (up to 7.5 hours a week) will support local Branch Committees by standardising and enhancing national branch events, organising advertising and sponsorship drives, and developing standard operating procedures for continuous improvement.

With the Executive Committee's approval, the recruitment process will commence soon. The primary goal of the Networked Community workstream is to 'Stop membership decline by 2026.'

Vibrant Food Industry

Under Paulette Elliott's leadership, the Vibrant Food Industry workstream has set clear targets for the quarter. They are prioritising the review of NZIFST awards nomination forms and requirements, with Wendy's assistance, to test online forms for a more streamlined nomination process before the next awards season.

The team is also launching the NZIFST Industry Research Collaboration Award and working on securing sponsorship. Additionally, they have reviewed our current support for Science Fairs and will present their recommendations at an upcoming meeting. The main goal of the Vibrant Food Industry workstream is to 'Increase awards nominations by 20% by 2026.'

Demonstrating Impact

The Demonstrating Impact workstream, led by John Lawson and formerly known as the Brand workstream, has made significant progress on the brand refresh project. After presenting a proposal and resource requirements to the Executive Committee, the project team has been gathering input from the Food Science and Technology community on a new name for NZIFST.

The team is currently synthesizing the input and will provide a shortlist to the Executive Committee before seeking a community vote. Look out for an email soon! The goal of the Demonstrating Impact workstream is to 'Improve NZIFST perception.'

Professional Development workstream

Marcus Loi's Professional Development workstream is developing a roadmap of professional development opportunities for various 'personas' and exploring collaboration opportunities with other Institutes of Food Science and Technology.

This effort aims to leverage the best offerings and strengthen our own. The team is now prioritising their list to present a recommendation to the Executive Committee by the end of the year. The goal is to 'Increase attendance at PD events by 10% by 2026.'

If you would like to be involved in any of the workstreams or have any questions or comments, please get in touch!

Ngā mihi,
Esraa El Shall
Immediate Past President

Esraa El Shall, NZIFST Immediate Past President

NZIFST Conference 2026

Anne Scott, 2026 NZIFST Conference Committee Chair

Why growth?

We are going to explore strategies to expand all sectors and facets of our industry.

In a time of international economic volatility our country holds its place as a major food producer: "We feed 40 million". The bulk of food produced here is exported as commodities that go to become ingredients for offshore manufacturers – milk powder for baby food, beef for hamburgers, potatoes for chips, for example.

Meanwhile our local manufacturing industry is shrinking. Many products in supermarkets that once were locally manufactured; biscuits, dairy products, frozen foods, come from as far away as Canada and Ukraine. Companies that were born in the 20th century, are now owned by corporate investors or international operations with their brand names a distant memory.

Investment in New Zealand, in people, in primary producers and in facilities has declined.

Along with this shrinkage, employment is becoming tougher – our members' opportunities for growth in their careers are fewer.

The cry for added value is not new and many hours of research and graft have been invested without, apparently, making much difference, we are still a commodity producer. Perhaps a speaker can share data to the contrary?

This year's Conference will explore the successes, the opportunities and then look forward to driving the growth our food industry needs. It is, after all, the foundation of our country's economy.

Call for abstracts/proffered papers

The Conference Committee is inviting potential speakers to submit abstracts as follows:

- Presenting an Oral Paper
- Entry in the 3 Minute Pitch Competition (Post-grad student members)
- Entry in the Poster Competition (Student members)

The QR code will take you to the NZIFST Conference Abstract portal. We have included a list of possible topic areas that you can cover. This list does not exclude any potential topics, but leads you towards a possible focus for your paper.

The New Zealand Institute Of Food Science & Technology Inc

New members

NZIFST welcomes the following new members.

New standard members

Dipin Pappachan, *Account Manager,* IMCD New Zealand Ltd

Anupama Anand

Lucy Harris, *Senior Food Technologist*, Cookie Time

Lucia Olmos, *Microbiology Product Specialist*, ThemoFisher Scientific

Sophia Zhuang

New graduate members

Harikrishnan Puthanveetl

New student members

Lincoln University: Leeba Baby, Louise Edmondson, Nipun George, Jhumana Jhumana, Maria Jose, Ayush Kandari, Ye Eun Kim, Bin Mu, Harikrishnan Puthanveetl, Rajani Singh, Krupa Sunny, Dhyanesh Veera.

University of Auckland: Anna Ding, Xiao Hu, Ali Jamshidi, Chun Hey Leung, Isabel Sebi, Junru Wang, Isabella Yap.

University of Otago: Swedel Dsouza, Rebecca McBeath.

AUT: Xiaotao Deng, Sandip Gaihre, Adrija Mahajan, Greeshma Pulikkathara Joseph.

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The New Zealand Institute Of Food Science & Technology Inc

Branch news

Updates from around Aotearoa New Zealand

Catch up on the latest happenings from our national branches — from recent events and speaker sessions to prizegivings and member gatherings, this section showcases the vibrant activity and community spirit across our network.

Matt Steven at the Danone Nutricia Factory Tour

Otago-Southland

In August, a group of NZIFST members travelled south to the Danone Nutricia Dairy Plant in Clydevale, Southland, near Balclutha. Danone is a global food and beverage company known internationally for making yoghurts but in New Zealand they focus on specialised nutrition, particularly infant formula. This focus fits well with their vision of 'One Planet, One Health', where the company is on a global mission to bring health through food to as many people as possible. Our tour was conducted by Matt Steven the Quality & Food Safety in Design Manager and his colleagues Stella Xiao, Joy Sim & Taylor Wilson.

To the surprise and delight of students and lecturers in attendance, we were told of the importance of HACCP to the company, seeing real world applications and implications of HACCP being used in a fun and interactive environment for staff. We also learnt about the strides Danone is proudly making in the sustainability space. Matt and Taylor told us about the ups and down in their switch to using solely a biomass boiler to power the plant and how they are investing in the cow water treatment facility.

On our tour, we got a sneak peek at the sifter in action, the quality testing lab and sensory testing booths and saw all the packaged powder ready and waiting for shipment around New Zealand and to the Asia markets. We learnt some impressive stats; they process four different milk streams (one being sheep milk), from 20 local farms producing a whopping 28,000 tonnes of powder per year, in peak times up to 4.5 tonnes an hour in any given spray drier.

We ended the night with a shared meal at a local restaurant catching up with old friends and making new ones. Thanks again to Matt and the team at Danone for the visit!

Science and Technology Fair judges Jessica O'Connor, Erin Young, Karen Lusk

Our junior food scientists were also hard at work recently with the NZIFST awards being judged for both the Otago and Southland Science Fairs.

At this year's Southland Science Fair, NZIFST judges Anne Gatenby, Claire Cooper and Urte Bierlin were impressed by the creativity and scientific rigour shown in food-related projects. Students explored topics ranging from how to prevent crying when cutting onions, to developing and evaluating gluten-free recipes, the impact of storage conditions on the shelf life of fruit and investigating how sight influences flavour perception. The judges commended the thoughtful experimentation and relevance to real-world food science. Prizes were awarded by Evelyn Fraser, recognising the outstanding efforts of these budding food scientists.

At this year's Aurora Otago Science and Technology Fair there were 25 relevant entries ranging from Year 7 to Year 9 that were fit the criteria for food science. Seven prizes were awarded (1st, 2nd and 5 runners up). First prize was awarded to Freda Clark (a Year 8 student from Dunedin North Intermediate) for their project named Bamboozled by Biscuits, and 2nd prize was awarded to Fletcher Webster (a Year 8 student from Fairfield School) for their project named Fletcher's Eggsperiment. The Judges were impressed with the quality of these projects and many of the others. Freda's winning project was a good example of the intersection between consumer food science and psychology and confirmed that a product's description and labelling can lead to perceived differences in taste and preference when no such differences exist in the product itself. Thanks again to Seperex Nutritionals for your ongoing sponsorship and support of both Science Fairs.

Well done to all the students on their projects, we look forward to seeing what you come up with in years to come.

Brigitte Klimek, Anne Gatenby & Erin Young

Evelyn Fraser presents an award at the Southland Science Fair

NIWA Science and Technology Fair

Waikato

Waikato NIWA Science and Technology Fair – NZIFST Special Award

The Waikato NIWA Science and Technology Fair was held on Monday 11 August at the Distinction Hotel Conference Centre in Hamilton. Representing NZIFST, Katharine Adam and Naila Aishath judged the NZIFST Special Award for a food or food-processing-related project. The prize was awarded to **Hannah Easton** and **Isla Devon** for their project *Cracked It!*. They investigated baking cakes with egg alternatives and found that faba bean protein performed well in terms of appearance, texture, and flavour. Several projects at the Fair explored ingredient alternatives, including butter and raising agents. Others examined sensory aspects of food – for example, how perception changes when you smell one thing and taste another. Of note was **Ben Taylor's** enthusiastic and thorough investigation of the "five-second rule" in his project *Rapid Rescue*.

Katharine Adam

Katharine Adam (L) and Naila Aishath proudly represent NZIFST on the panel

Maldives – A Local's View on Food Technology

On Wednesday 27 August, members joined an engaging online Fed Talk titled "Maldives – A Local's View on Food Technology", presented by Ali Ahmed (Bio). Bio shared valuable insights into the unique challenges of food production and storage across the many islands that make up the Maldives. He also highlighted the innovative approaches and advances being made to address these issues, providing a fascinating perspective from his local experience. The session was both informative and thought-provoking, offering members a deeper appreciation of how geography and environment shape food technology solutions in island nations.

Marcus Loi

Waikato Science Fair Prize Giving Ceremony

The Waikato NIWA Science and Technology Fair Prize Giving Ceremony was held on Thursday 28 August at the Auditorium of Fairfield Intermediate School. This event was a celebration of innovation and curiosity, with prizes presented by the judges across a wide range of categories. Many science-related industries sponsored awards, demonstrating their support for inspiring young minds in science. Naila Aishath was there to present the NZIFST Special Award for food science and technology projects on behalf of NZIFST. The prize went to Hannah Easton and Isla Devon for their project Cracked It!, which explored baking cakes with egg alternatives using faba bean protein. The event showcased the potential of New Zealand's future scientists and emphasised the importance of encouraging scientific curiosity to ensure the country continues to contribute to global scientific progress.

Naila Aishath

Judges at Waikato NIWA Science and Technology Fair Prize Giving Ceremony, including NZIFST representative Naila Aishath (second from left).

Canterbury Westland

It has been a busy couple of months for the Canterbury Westland branch.

United Fisheries Factory Tour

This tour of United Fisheries on 1 August, hosted by Stella Stacy (Quality Manager), provided insights into one of the country's largest fish exporters, which remains family-owned and operated. Founded in 1974 by Kypros Kotzikas, who came to NZ from Cyprus as an 18 year old, the company notably introduced a fresh fish auction for local sales. Over the years, it expanded into mussel and oyster farming, securing a significant portion of the Individual Fishing Quota established by the government in 1986.

From its humble beginnings with a few mussel farms, United Fisheries now operates 30 farms, delivering the unique New Zealand Green Shell™ mussels and Pacific oysters. The company's fish supply, vital to its operations, is safeguarded through quotas for key New Zealand species. They work closely with various fishing vessel companies, adhering to United's quotas and focusing on inshore species around the South Island. The company produces premium products in a purpose-built, 5,000-square-metre, temperature-controlled factory. This state-of-the-art facility employs advanced technology designed to meet international standards, including automated VALKA machinery.

The tour started with issuing of full PPE then a three-stage hygiene process, consisting a boot brusher, boot sanitizing bath and handwashing station. Once in the processing area we observed the processing of Hoki, a fish highly sought after globally. United Fisheries employs precise processing techniques to maximize yield including:

- Fish are hand-filleted to preserve the flesh.
- Skin is removed using rapid blast-freezing to minimize meat loss.
- By-products are utilized in processed seafood products.
- Bones are repurposed for nutraceutical supplements and fertilizers.

The quality controller detailed their dedication to maintaining high-quality standards and GMP practices, which include environmental monitoring, product testing, and water testing.

United Fisheries highlighted its strong commitment to sustainability, ensuring that nearly every part of the fish is used, and their minimal-waste operations underscore their ecological responsibility within New Zealand's food industry.

The branch thanks Stella for her time, especially as this is the second tour she has hosted for us in just a couple of years.

Malvika Vashisht & Margot Richards

Bob Olayo speaking on shelf-life and the expertise provided by Matt Solutions.

Miranda Burdon presenting "Leadership in these Challenging Times"

Matt Solutions Showcase of Shelf-Life Science

Matt Solutions, a leading provider of analytical instruments and shelf-life testing services, recently opened its doors to the Canterbury-Westland branch of NZIFST for an exclusive factory tour and technical presentation.

The event began with an interactive discussion led by Bob Olayo, Matt Solutions Manager, on the complexities and common gaps in shelf-life determination. With over 30 years of experience serving NZ food manufacturers, Matt Solutions encouraged participants to look beyond standard testing routines, highlighting risks such as packaging interactions and the potential blind spots that can arise from over-reliance on certain testing regimes. The team focused on the importance of a holistic and science-driven approach.

Attendees were then guided through the company's laboratory, where they saw how Matt Solutions' state-of-the-art technology is used to solve real-world challenges. Demonstrations included advanced colour analysis techniques, which allow accurate predictions of product colour changes under both real and accelerated conditions, ensuring results are relatable to real world conditions. The company also highlighted their innovation in water activity and vapor sorption analysis, using the latest VSA instrumentation to pinpoint moisture "tipping points" and strengthen packaging specifications for clients.

Further conversations centred on texture analysis, gas analysis, leak detection, and other essential shelf-life tests, giving an insight into the suite of expertise offered by Matt Solutions that enables a "complete picture" shelf-life service.

The branch wishes to thank Matt Solutions for this very informative and positive evening, and the insights into their great collaborative relationship with the food industry.

Bob Olayo & Margot Richards

Leadership in these Challenging Times

In August, the Canterbury-Westland Branch hosted another Hybrid event with guest speaker Miranda Burdon, a highly experienced entrepreneur, strategist, shareholder, director and innovator.

Currently the Chair of Meadow Mushrooms, Miranda talked her experiences on Leadership and how Leadership is Challenging at all times.

She shared her insights about the Stockdale Paradox "You must retain faith that you will prevail in the end, regardless of the difficulties. At the same time, you must confront the brutal facts of your current reality, whatever they might be". This paradox is highlighted in the book "Good to Great" by Jim Collins.

Among other experiences, Miranda described her journey in launching Food Nation, a plant-based food brand, which was Inspired by EAT-Lancet Planetary Health by 2050 Plate. This is a global framework for healthy, sustainable eating.

Food Nation was recognised as the Winner of 2021 United Nations Food Systems Summit 2021, and the Best Small Business Award.

Locally, Food Nation was awarded NZ's FMCG 2020 product of the year and was the 2021 winner of the NZFOOD Awards – Health and Well Being at the core. Despite these awards and other recognitions, the business unfortunately had to close in Sept 2023, after four years in business. One of many examples of challenging times.

The group enjoyed networking before and after Miranda's presentation, and appreciated both her time and willingness to share her experiences with us.

Jasmin Estrera

Auckland

Student Careers Event

The annual Auckland branch NZIFST Students Careers evening kicked off on Wednesday 31 July at the University of Auckland. The event highlighted the diverse career pathways of Food Science and Technology professionals working across a wide range of companies. Speakers represented different areas of the industry, including research and development, quality, and operations. To complement these insights, a recruitment specialist also shared valuable tips and tricks for navigating employment in the field.

We had a terrific panel of speakers who discussed their career journeys since leaving tertiary studies. They spoke about their career progressions, what a typical day looks like in their roles, and the steps they took to get to where they are today. The evening was led and directed by one of our Auckland Branch committee members, Ella Zwagerman, who also facilitated the Q&A panel session at the end.

The event had over 70 students from both Auckland University of Technology and the University of Auckland in attendance who enjoyed networking with the speakers, committee members and recruitment specialists during the food and mingling session at the end.

A massive thank you to the following speakers who shared their amazing insight to our students:

- Yvette Harrison - Specialist Recruitment Consultant
- Grace Van Tilborg - Senior Applications Technologist at Hawkins Watts
- Carlo Anselmi - Applications Technologist at Sensient's R&D Team
- Milesha Yonali Amarasinghe - Quality Management System at Hilton Foods New Zealand
- Rebecca Roberts - Graduate Program in Operations at Lindt & Sprüngli

This event would not be possible without the work of our student subcommittee, Peter Swedlund from University of Auckland and the product donations from Suntory Oceania.

Eyka Susanto

Student Careers event (L to R) Rebecca Roberts, Carlo Anselmi, Milesha Yonali Amarasinghe, Grace van Tilborg

Social Coffee & Connect

Our regular Coffee and Connect social event went off without a hitch on Sunday 10 August. We spent the morning networking with some fantastic food professionals. This was a great affordable way to connect with others in the food industry, members and non-members alike.

The event was laid out to encourage in-depth conversations, with attendees breaking off into smaller groups, rotating approximately every 20 minutes. There were plenty of engaging conversations, fuelled by prompt cards, snacks, and drinks at the start of the event.

A big thank you to Harper Cafe, Mt Wellington for providing such a warm and inviting space, to the Auckland Branch subcommittee members for organising, and to everyone who came along and contributed to the great atmosphere and insightful discussions.

We're already looking forward to the next one in a few months—feel free to join us!

Rhiannon Hudson

NIWA Science Fair

NIWA Science Fair Judging - Central & West Auckland

This was the second year the Auckland Branch was invited to judge the NIWA Science Fair Awards for the Central and West Auckland region. This annual event celebrates the excellence in scientific and technological investigation carried out by year 7-13 students. Each student or pair creates a project with a hypothesis that they want to test and use scientific methods to process and gather data.

The judging was held on Friday 29 August at Michael Park School where over 200 projects were showcased on exhibit boards. The students were able to present and show their problem solving and creative discovery to the judges and answer any follow-up questions from the judges. I was fortunate to be judging the Food Science Category for 17 projects within years 7-8 and four projects within years 9-10.

It was truly amazing to see the level of detail, passion and dedication all the students showed to make their project come to life and how many of these topics are still relevant in the food industry today. The trending theme seen amongst the different projects was how different sugars played a role in creating final products with different textures and tastes. This was proved with sensory tasting (some even did blind tastings to remove any bias). I was impressed with the innovative thinking of not just using classic white and brown sugars, but expanding into more natural versions like honey, dates and stevia to test in brownie, cookie and ice cream prototypes.

I can definitely see future food scientists and technologists in the making.

Rebecca Fok

Sayaheer How (How) at the Fonterra Research and Development Centre in Palmerston North

Central

Baking Global Tech Scan

Sayaheer How (known as "How") is a valued member of the Central Branch Committee and is a Bioprocess Engineer based at Plant & Food Research (P&FR) in Palmerston North. He gave an excellent presentation at the June Conference and kindly agreed to repeat it for our Branch event.

Although the audience was small—supplemented by several online attendees—those who came to the Fonterra Research and FSANZ facilities were pleased they did. The talk sparked lively discussion and thoughtful questions.

By way of background, the Energy Efficiency and Conservation Authority (EECA) engaged P&FR to conduct a technology scan of emerging innovations in the baking sector, both locally and globally, and to consider how these technologies could be applied in New Zealand.

How explained that across all bakery processes, more than 60% of greenhouse gas (GHG) emissions come from the baking ovens themselves, as gas-fired ovens are the main emitter in New Zealand bakeries. This therefore became the study's focus.

He also highlighted technology trends in key markets such as Europe, the UK, and the USA, where developments like heat recovery systems and alternative heating sources (e.g. electricity and hydrogen-fuelled ovens) are starting to replace traditional gas-powered models.

We then heard about How's rigorous methodology. After defining the problem, he applied a range of tools—from distributing questionnaires to New Zealand bakeries to consulting with leading global experts—to identify 10 technology options relevant to our baking industry.

Using an evaluation matrix, he assessed each shortlisted technology against key factors such as Capex and Opex costs, GHG savings, and New Zealand's technical readiness level. Each factor was scored, and the technologies ranked accordingly.

At the top of the list was the use of "high-temperature heat pumps to recover and reuse low-temperature heat." How explained each option with the help of clear diagrams, photos, and cartoon-style images. Colour-coded captions showed whether the technology focused on heat recovery, retrofitting, fuel switching, process technology, or a greenfield option—an approach that simplified and clarified the message for the audience.

To conclude, How described several potential future technologies to watch.

It will be interesting to see how and when these innovations are adopted by the NZ baking industry, as the global sector gradually shifts to reduce GHG emissions and contribute to sustainability. In a relatively short time, How has delivered a highly valuable piece of work—one that will, I am sure, help decision-makers in this industry make informed choices for the future.

Craig Honoré FNZIFST

We remember: Gerald (Gerry) Townsend 1946–2025

Long serving NZIFST member, Gerald Townsend (known as Gerry), died peacefully in August this year. He is survived by his wife Jane (married for 54 years), their three children and their partners. His eight grandchildren remember him as their fun-loving Grandad who kept them entertained with his antics.

I remember him as a wonderfully supportive boss with a fabulous sense of humour when he employed me into my much-loved role with Wattie's in 2002. *(Editor: Julie North)*

Gerry's career in food technology

Upon leaving school Gerry went to Massey University and studied Food Technology - graduating in 1969, condensing a four-year degree into five years!

Gerry's career began at Unilever where he stayed for some 22 years as a loyal company man, before moving on to Heinz-Wattie's for a further 15 years. In semi-retirement, Gerald established GWT Resources and continued to contract to Heinz Wattie's and also worked as a science technician at Lindisfarne College.

Gerry was involved in the 'Dick & Mary Earle Trust' as Chair of the Trust's Board. The Earle Trust offers scholarships to young New Zealand graduates to attend conferences and professional development overseas and supports the fields of science, technology, engineering and the arts.

He was a recipient of the coveted JC Andrews Award in 2005 and mentored and managed many food technologists throughout his 35 years in product development and technical roles.

Regarded as a top-class food scientist and as being highly creative, one of his great abilities was as a mentor, always bringing the best out in young people and helping them to realise their potential. He was considered a charismatic leader, great at building up team spirit and engendering a sense of common purpose in a new team. He had a wonderful sense of humour and endless optimism.

It was once noted that Gerry had not published research papers, he had done something better – he helped create future generations of highly skilled food technologists. He was well respected within his career, he could relate to all people, at all levels and this instilled great confidence in those he worked alongside. ▪

With thanks to Jane Townsend for providing this excerpt from Gerry's eulogy Aug 25

Gerry Townsend

In Gerry's words: JC Andrews address 2005 *[edited]*

In November 1969, I commenced my 22-year career with Unilever at their Motueka plant as Factory Chemist involved in dehydration, canning and freezing of fruit & vegetables. I transferred to the Unilever Birdseye frozen vegetable operation in Christchurch for another two years, before moving to Hastings where I undertook Technical Management roles.

Of particular note was my innovative development work on the new technology of instant dry soups - the Continental Cup-a-Soup.

After eight years, I returned to Motueka as the Factory Manager of the vegetable dehydration plant. 1984 saw me back at Unilever Hastings as Technical Manager responsible for Product and Process Development, Engineering and QA. In 1988 I was seconded to Unilever in Sydney to help establish a new large food development laboratory and also recruit and train the R&D team.

In 1992, the call of the kiwi saw me back in Auckland to begin a 16 year career with Wattie's starting as Technical Manager with Wattie Frozen Foods. Under Heinz Wattie's Ltd I moved to Hastings (for the third time) as Group Product Development Manager in 1999 with a team of 33 Food Technologists, Process Design Engineers, Chefs and Technicians. With company restructuring in 2006, I opted for semi- retirement and formed my own consulting company GWT Resources Ltd – mainly contracting back to Wattie's and playing with chemicals and science at Lindisfarne College.

The good old Massey Days

It's the quirky, extra-curricular activities that I remember most and still often recall.

Here is a favourite:

The hundred mile marathon stilt walk as a capping stunt, walking from the Wellington Town Hall to the Palmerston North Cenotaph. Included in the nine walkers were five stoic Food Techies (Dave, Pete, Roger M, Torben & Gerry).

(L to R) Dave Pooch, Peter Veen, Roger Montgomery, Torben Sorensen, Gerry Townsend. .Massey students from 1965.

My Interests:

- I did enjoy my rugby after leaving Massey – playing at halfback for Nelson Bays Reps and also Canterbury Open Junior Reps. Made the NZ Rugby Almanack as a "promising" halfback, but the bones got old, so I coached Motueka Huia Under 19 rugby team and later Havelock North Bearcats.
- The great fly-fishing rivers and coastal seawaters of Hawke's Bay have yielded many a fine catch. As the memory fades, the catches have got bigger.
- Family get-togethers are the No.1 priority. Jane and I have 3 kids and 3 grand-children.
- Tramping in New Zealand and Australia has been enjoyed over the years. Now it is bush walking between lodges in New Zealand & Australia.

Upcycled synbiotic foods: A sustainable solution for gut and planet health

Every year, millions of tonnes of seafood by-products are tossed aside - yet hidden within that waste is one of the most valuable proteins in the health and beauty industry: collagen.

Xie Chengqi, Massey University-Jiangnan

Introduction

Our gut has trillions of microbes that help digest food, make vitamins, and support immunity. Probiotics are live friendly bacteria that can benefit health when eaten (e.g. strains of *Lactobacillus* or *Bifidobacterium*). Prebiotics are non-digestible fibers in food that "feed" those good microbes (Al-Habsi et al., 2024). A synbiotic combines probiotics and prebiotics so they work together. In simple terms, a synbiotic product (like a yoghurt with added inulin) gives your gut both helpers and their food, boosting beneficial microbes more than alone. A healthy microbiome aids digestion and nutrient absorption, protects against harmful germs, and even influences immunity and mood (Hou et al., 2022). At the same time, reducing food waste and greenhouse emissions is an urgent issue. For example, wasting food squanders all the energy used to growing and shipping and actually causes about 8% of human-made greenhouse gases (Drawdown, 2020). Thus, upcycled synbiotic foods which are made from food byproducts can improve gut health and help the planet.

Why we focus on upcycled synbiotics foods

Using leftovers from food production to make synbiotic foods tackles two big problems at once: food waste and gut health. Every year, one-third of all food meant for people over 1 billion tonnes is thrown away, which causes about 8% of global greenhouse gas emissions (Drawdown, 2020). Making fiber from food scraps uses far less water and land than growing crops just for fiber (Drawdown, 2020). On the health side, synbiotics live bacteria combined with the food they grow on work better than just taking probiotics or fiber alone. They strengthen the gut barrier, reduce inflammation, and help balance the immune system. Some studies even show they can lower cholesterol and reduce bloating (Hou et al., 2022). Synbiotics also influence the connection between the gut and brain as friendly bacteria turn fiber into short-chain fatty acids, which travel in the blood and affect our mood and memory. Previous research shows that eating synbiotics may reduce anxiety and improve focus (Silva et al., 2020). More importantly, turning waste into useful food offers strong potential for future development. Some organizations have introduced the "Upcycled Certified" label to help identify products that truly use recycled ingredients. Interestingly, surveys show more than 80% of consumers say they are willing to pay more for sustainable produced or sourced goods. This suggests that these kinds of products have strong market potential and are gaining growing support from consumers (PricewaterhouseCoopers, 2024).

How we use upcycled foods as novel prebiotic sources

Think of kitchen scraps and factory leftovers as hidden nutrition gold. For example, Banana peels and other plants have fibers like pectin and inulin that our own stomachs can't break down, but they feed friendly bacteria such as *Lactobacillus* and *Bifidobacterium* in lab tests. Researchers have found banana peels (often 35–40% fiber) support probiotic growth: banana- peel powder doubled the growth of *Lactobacillus* in lab tests (Sarker et al., 2024). Breweries' leftover grains (rich in arabinoxylan fiber) are another example. One study extracted fiber from spent brewers' grain and found it roughly doubled *Lactobacillus* levels and tripled *Bifidobacterium* levels in a gut model (Lynch et al., 2021). Even coffee-processing byproducts (coffee husks and spent grounds) contain fermentable fibers and compounds like melanoidins that stimulate growth of healthy gut bacteria and short-chain fatty acids (Machado et al., 2024). Using these upcycled ingredients as food adds fiber to diets while keeping waste out of landfills. In sum, banana peels, spent grain, coffee grounds and other food byproducts can be turned into nutritious, fiber-rich ingredients. This not only feeds our gut microbes but also cuts emissions: remember, upcycling avoids the 8% of global CO_2 that wasted food would otherwise emit.

How synbiotics work and their potential health benefits

A bowl of probiotic yogurt illustrates a common synbiotic example. Synbiotics are designed so the prebiotic fiber "feeds" the probiotic strain it's paired with. In practice this means combining a live culture (like a *Lactobacillus* strain in yogurt) with a matching fiber (such as inulin or FOS) that helps that strain survive and grow. For example, adding chicory inulin to a yogurt can help the yogurt's bacteria flourish in the gut. When both parts arrive together, they work synergistically, enhancing each other's effects (Al-Habsi et al., 2024). The overall result can be stronger: synbiotics are thought to improve digestion, promote healthy bowel habits, and help maintain the gut barrier. As good bacteria grow, they produce beneficial metabolites (short- chain fatty acids) that support gut cells and immunity. Some research reports that synbiotic supplements can increase anti-inflammatory signals (like IL-10 and IgA in the gut) and crowd out harmful microbes (Li et al., 2023). Clinically, synbiotics have been linked to benefits such as reduced symptoms of IBS or diarrhea, better cholesterol levels, and milder food allergies (Al-Habsi et al., 2024). In short, by giving probiotics the food they need, synbiotic foods may enhance gut balance, digestion, and even systemic health more than probiotics alone.

What should we do in choosing the right symbiotic?

Choosing a synbiotic that meets your personal health needs is a simple but powerful way to reduce resource loss. Look for the "Upcycled Certified" label, which this third-party certification ensures that the product includes ingredients that would otherwise be discarded, such as banana peels, brewer's spent grain and fruit pulp. Supporting upcycled-certified products not only reduces food waste but also encourages green innovation and contributes to sustainable job creation in the food industry.

In a market crowded with vague claims, selecting a truly upcycled synbiotic product helps you avoid wasted money and ingredients while securing real health benefits: look for the Upcycled Certified seal to guarantee the use of rescued ingredients like banana peels or brewer's spent grain; check that each probiotic strain is fully named (e.g., *Lactobacillus acidophilus* La-5) and that the CFU count is guaranteed through the "best by" date, not just at manufacture; ensure the label specifies prebiotic fibers such as inulin or fructooligosaccharides and their amounts (Sanders, 2022); trust products bearing independent certifications like NSF or USP, which verify manufacturing quality; and follow storage instructions, freeze-dried capsules can often reside on a cool pantry shelf, while fresh-culture foods like yogurt must stay refrigerated to retain potency. By demanding transparency, scientific backing, and clear usage guidelines, you make every scoop or capsule count turning potential waste into genuine, sustainable wellness.

Challenges, opportunities, and conclusion

Despite challenges like regulatory inconsistencies, unclear labeling, and probiotic fragility, innovations such as microencapsulation and freeze-drying are advancing the development of upcycled synbiotic foods. Ensuring safety especially when using food waste requires strict quality control. At the same time, researchers are exploring targeted formulations for specific health benefits, and companies are creating products like fibre-rich yogurts and sourdough bread made from brewery leftovers.

Upcycled synbiotics offer a win–win for people and the planet. By recycling food waste into prebiotic-rich ingredients, they support gut health, reduce emissions, and encourage sustainable innovation. As consumer demand grows for eco-friendly nutrition, mindful choices like selecting a certified synbiotic yogurt or snack bar can help improve both digestion and environmental outcomes. A healthy gut and a healthier planet truly go hand in hand. ▪

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This article was awarded second prize in the NZIFST Undergraduate Writing Competition 2025. The annual competition is open to undergraduate food science and food technology students who are invited to write on any technical subject or latest development in the food science and technology field that may be important to the consumer.

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