



food

JAN/FEB/MAR 2018

australia

RETHINKING PROTEIN

Australians love red meat but are they hungry for other sources of protein?

- GRAINS ARE BACK!**
- THE MINDLESS EATING PROCESS**
- TOWARDS A MODERN NATIONAL FOOD SAFETY SYSTEM**
- LAMB ROASTS – AUSTRALIANS WEIGH IN**



Stand Out from the Crowd...



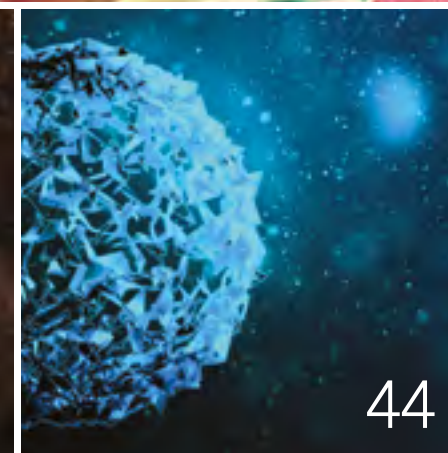
AIFST promotes the growth of the Australian food industry through an individual-focused approach supporting the professional development of individuals within sector and a joined-up network across the country.

Join AIFST for access to an Australian-wide food industry network. Take out membership online at www.aifst.asn.au or contact the Membership Services team if they can be of assistance. Email aifst@aifst.com.au or telephone 02 9394 8650.

Top 10 reasons to join AIFST:

1. Be a part of the only national, cross-discipline food industry network.
2. Career development support including a food science mentoring program, technical workshops, symposiums, CV support and career focused webinars.
3. Access to a range of scholarships, awards and competitions including the annual awards program, industry based scholarships and Student Product Development Competition.
4. Link with likeminded professionals through the specialist and geographical Communities of Interest.
5. Keep your finger on the pulse with the latest food industry news including regulatory changes and industry standards through *food australia* magazine and monthly BiteSize and Toolkit e-newsletters.
6. Access discounted rates for events, training and industry forums.
7. Opportunities to profile your individual or organisational technical expertise across the AIFST digital platforms.
8. Members-only activities including site and factory tours.
9. Members are eligible to apply for Professional recognition which includes AIFST post-nominals.
10. Expand your food connections across the science, technology and innovation sector.

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FOOD FOR THOUGHT

Welcome to the first issue of *food australia* for 2018!

The January – March issue of *food australia* is my first issue as the newly appointed CEO of AIFST and kicks off our new quarterly format for the magazine. I look forward to the opportunity to meet many members and stakeholders over the coming months and based on the content in this issue, we are already shaping up for a busy year at AIFST.

In February, AIFST is supporting the Australia-New Zealand Sensory and Consumer Science Symposium, which will be held in Brisbane from 5 – 7 February 2018. Many AIFST members will be in attendance along with colleagues from NZIFST.

Our first major event for the year is the annual AIFST Summer School. This year Curtin University in Western Australia will host the event now in its 7th year. Running from 22 – 23 February 2018, Summer School is a great event for any student, recent graduate or young professional looking to further develop their skills and industry network. Read more on page 18.

We are pleased to announce the 2018 AIFST Convention will be held from 11 – 12 September 2018 at the Melbourne Convention and Exhibition Centre alongside the annual Fine Food Australia event. Read more about this year's Convention including abstract and poster submissions on page 6 – 7.

As we focus on delivering more services and opportunities for members in 2018, I am honoured to announce the roll out of the National Mentoring Program following the successful NSW pilot program in 2017, see page 10 for all the details. Following the launch of the AIFST webinar program in 2017 with great success and uptake, webinars are lined up again for 2018 to assist members with both career and technical support.

I hope you enjoy this issue of *food australia*! 🍖

LACHLAN BOWTELL

AIFST CEO



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BY THE NUMBERS

HIGH STEAKS AUSTRALIA'S LOVE FOR RED MEAT

Australia loves red meat, with roasts and barbeques long being part of our social culture. This isn't, however, just anecdotal knowledge. A recent report by the Red Meat Advisory Council (RMAC), the first of its kind, sheds some light on the statistics of red meat consumption, the red meat industry in Australia, and reveals just how much we love a good steak.

According to the report, Australia has one of the highest red meat consumption per capita per annum, consuming four times the global average. In 2016, Australia was the largest exporter of beef and the second largest exporter of sheep meat, making it the world's third largest livestock exporter.

The value of Australian meat and livestock exports increased by almost \$6 billion from 2011/12 to 2015/16 and there is even more room for the industry to grow, according to Don Mackay, Independent Chair of the RMAC. "Our industry continues to work for our rural and regional jobs, accounting for almost a quarter of agri-food jobs in Australia. We know the key, tangible outcomes that government can deliver that help us be a bigger and better red meat nation for businesses and workers alike," said Mackay. 🍖

Read more on the RMAC report on page 42



\$15bn

EXPORTS
in 2015/16



4x

THE GLOBAL
BEEF CONSUMPTION
Average, approximately
57g/day



405,000

TOTAL EMPLOYMENT



\$62bn

TURNOVER
increasing 11%
year on year



27.4m

BEEF CATTLE
in Australia



177%

PRICE INCREASE
in goat meat

References for this article can be found on the AIFST website: <https://www.aifst.asn.au/>

Save the Date:

2018 AIFST CONVENTION

Innovate or Stagnate: Acting Today to Advance Tomorrow

11 – 12 SEPTEMBER 2018

MELBOURNE CONVENTION AND EXHIBITION CENTRE



The AIFST Convention is the premier food industry event in Australia, to be held from 11 – 12 September 2018 at the Melbourne Convention and Exhibition Centre (MCEC). The Convention will once again bring together the largest grouping of Australia's food industry professionals in one location. In 2018, AIFST will co-locate with Fine Food Australia, increasing linkages and engagement with SMEs, foodservice and hospitality representatives.

The 2018 Convention theme is *Innovate or Stagnate: Acting Today to Advance Tomorrow*. The Convention Program will be focused on providing delegates with access to tangible and practical information that will assist their businesses to respond to today's operating environment, as well as provide insights and information to assist in planning for the future. Content will be delivered through a variety of workshops, panel discussions, and scientific and technical updates from a diverse mix of speakers from both industry and academia.

WHAT CAN YOU EXPECT IN 2018?

With a new and engaging format in 2018, delegates will have the opportunity to participate in: panel discussions; practical workshops; seek business solutions and assistance at the new Ask the Expert Lounge; have the option to arrange one-on-one meetings with leading technical, research and service providers across the breadth of the food value chain; and network with Australia's leading food professionals and innovators. The 2018 Convention will also host an Exhibition providing the opportunity for delegates to engage with industry providers.

SPEAKING OPPORTUNITIES – SUBMIT AN ABSTRACT

Do you have insights that would provide tangible and practical information to assist businesses to respond to today's environment and plan for the future? If so, we would like to hear from you!

AIFST is currently calling for abstracts for the 2018 Convention that demonstrate cutting-edge science, new technologies and innovations including case study, presentation and workshop delivery options.

If you or your organisation has something new to say then let us know! If you are interested in submitting an abstract for the 2018 AIFST Convention, please see the abstract information on the AIFST website and submit your expression of interest to AIFST by midnight on Monday, 30 April 2018.

PARTNERSHIP OPPORTUNITIES

Partnership opportunities are available for companies wanting to link their brand with the 2018 AIFST Convention and extend their reach within the Australian food industry. Packages are selling fast so don't miss the opportunity to link your brand to the industry leaders and innovators at the most anticipated food industry event for 2018!

To discuss ways your organisation would like to participate in the 2018 AIFST Convention, contact AIFST today on 02 9394 8650 or via aifst@aifst.com.au.

CALL FOR POSTER PRESENTATIONS

If you would like to present a poster on your latest research at the 2018 AIFST Convention then we would like to hear from you.

AIFST is currently calling for Poster Presentation submissions. For more information on Poster Presentation guidelines and templates visit the AIFST website. To be eligible for a poster presentation, at least one of the authors must be registered to attend the Convention. To submit a poster, please use the provided poster template on the AIFST website and submit to AIFST via by midnight on Monday, 16 July 2018.

WINE AND CHEESE TASTING SENSATION – 11 SEPTEMBER 2018

The ever-popular Wine and Cheese Tasting Sensation remains a key part of the social program of the 2018 AIFST Convention. AIFST is working closely with the MCEC team to bring delegates a unique food tasting experience. The Wine and Cheese Tasting Sensation is included in all Full Convention Packages and any one day Convention Registrations purchased for Tuesday, 11 September 2018.

CONVENTION REGISTRATION

Registrations to attend the 2018 AIFST Convention will shortly open via the AIFST website. All Full Convention Registrations include a ticket to the Wine and Cheese Tasting Sensation. Early Bird Registration is available until midnight on Monday, 2 July 2018. After this date full pricing will apply. AIFST offers individual and group booking options including corporate registrations and discounted packages when you purchase five tickets in one transaction, contact us to find out more information.

Do not miss out on the food industry event of the year, mark the date in your diary today! 📅

AIFST AWARDS PROGRAM OPEN FOR 2018

Applications are open for the 2018 AIFST Awards! An award is a great way to profile your research, company or industry achievement, or to recognise a colleague or member of your organisation who has made a significant contribution to the Australian food industry. Nominations close on 1 July 2018 and winners will be presented with their award at the 2018 AIFST Convention. Visit the AIFST website for all award guidelines and nomination forms.

If you are considering applying but are not sure how to best compile a submission, a members-only webinar is running on 28 February 2018 that will include past award recipients and other industry experts talking through the components of a good award entry. Visit the AIFST website to register your place today!

For further information phone 02 9394 8650, email aifst@aifst.com.au or visit the AIFST website at <https://www.aifst.asn.au/aifst-annual-awards>.

AIFST PRESIDENT'S AWARD

The AIFST President's Award recognises and acknowledges an individual or an organisation that has made an outstanding contribution to advancing the Institute.

AIFST JACK KEFFORD BEST PAPER AWARD

Recognises the contribution to food science and technology by members who publish research and technical papers in honour of AIFST Past President, Jack Kefford.

AIFST KEITH FARRER AWARD OF MERIT

Acknowledges members' achievements within the food industry in the areas of science, technology, research, industry and education, and their contributions to advancing the Institute in honour of Keith Farrer.

AIFST SENSORY AWARD

The AIFST Sensory Award is for young members who demonstrate academic achievement, interest, enthusiasm and integrity in sensory research. The AIFST Sensory Award is sponsored annually by Sensory Solutions in honour of Anthony (Tony) Williams. 2018 Finalists in the Sensory Award category will be included in the Plenary Sessions in the main auditorium, in front of decision makers (and future employers!) from across the industry.


AIFST FOOD INNOVATION AWARD

The AIFST Food Innovation Award acknowledges a significant new development in a process, product, ingredient, equipment or packaging that has had successful commercial application in any section of the Australian food industry. The award is given in honour of AIFST Past President, Peter Seale.

AIFST YOUNG MEMBERS MALCOLM BIRD COMMEMORATIVE AWARD

This award is for young AIFST members who demonstrate academic achievement, leadership and integrity in their profession in honour of AIFST Past President, Malcolm Bird. In 2018, finalists in the Malcolm Bird award category will be included in the Plenary Sessions in the main auditorium, in front of decision makers (and future employers!) from across the industry!

AIFST BRUCE CHANDLER BOOK PRIZE

Awarded to AIFST members who have published a book that has made a great contribution to the literature on food in honour of AIFST Past President, Bruce Chandler. 



2017 AIFST President's Award
Winner Jayantha Sellahewa with
AIFST Chair Peter Schutz.



2017 AIFST Student Product
Development Competition Winners
from Deakin University with
AIFST Chair Peter Schutz and
Competition Partners.



2017 AIFST Sensory Award
Winner Lu Yu from the University
of Queensland with AIFST Chair
Peter Schutz and Award Sponsor,
Jodie Hill from Sensory Solutions.

AIFST PILOT MENTORING PROGRAM WRAPS UP

The end of November saw the conclusion of the Institute's pilot mentoring program. Seven mentoring pairs had been working together since September 2017, focusing on a range of professional development skills.

One mentoring pair were based in different states and another pair worked from a city and regional location, ensuring a useful trialling of different scenarios and identification of the support the Institute should offer in the national roll out of this membership service.

During the wrap-up function, mentees presented to the mentors, AIFST directors and other mentees about their program experiences. It was an opportunity for mentees to practice their presentation skills, which was one of the great successes of the program.

Congratulations to our 2017 mentoring pairs:

- » Annesley Watson and Bithika Saha
- » Greg Hill and Michelle Toutounji
- » Janette McDonald and Rebecca Richmond
- » Kelvin Hawkins and Kesslyn Chen
- » Soumi Paul Mukhopadhyay and Belel Rathborne
- » Fiona Fleming and Isabella Chan
- » Jayantha Sellahewa and Judy Cho

Feedback and learnings provided during the pilot program have informed the development and launch of the national mentoring program in 2018.®



Georgie Aley, past AIFST CEO, presenting AIFST Mentee Judy Cho with her certificate.



Georgie Aley, past AIFST CEO, presenting AIFST Mentor Greg Hill with his certificate.

AIFST MENTORING PROGRAM GOES NATIONAL IN 2018

Following the successful pilot mentoring program in 2017, AIFST is pleased to announce the launch of a national mentoring program as a new membership service available to assist members in building their personal and professional development.

The program is open to all AIFST members and registrations for the program open in January 2018 via the AIFST website. Members interested in being a mentor or mentee will need to complete an application form by 28 February 2018. After a matching process, induction sessions will take place during March 2018 for successful applicants. Induction venues will vary depending on program size in each state. Remote meeting access will be available for members based in regional locations.

To participate in the program mentors and mentees must be able to commit to around half an hour a fortnight to take part in the program. The frequency of meetings will be decided by the pairs themselves, but it is anticipated that at least an hour a month will be required.

The 2018 program will run for six months, culminating in a wrap-up session at the 2018 AIFST Convention in September. For further information about the national program contact the Membership Services team via aifst@aifst.com.au or phone 02 9394 8650.®

AIFST HOSTS MICROBIOLOGY FERMENTATION EVENING



Scott Woollett, Lynne Teichmann and Ken Buckle at the Microbiology Fermentation Evening

In October, the annual AIFST Microbiology Fermentation Evening was held. The 2017 theme was "Oktoberfest", with an examination of the fermentation processes involved in beer and processed meats. Before the evening festivities got underway, Julian Cox and AIFST Fellow Ken Buckle gave a moving tribute to Professor Graham Fleet whose enthusiasm and commitment to microbiology and the Australian food industry is legendary. A toast was raised to Graham whose legacy to the Institute lives on.

The first speaker of the evening Scott Woollett, Microbiology Specialist from Lion, who took the audience on a journey of beer from the yeast's point of view! This included the art of making yeast food, the microbiologist's role, and the propagation process. Scott also brought some samples from Lion's range for guests to sample and to test their sensory analysis.

Lynne Teichmann, National Quality Manager at Primo Smallgoods, presented on the manufacture of comminuted, fermented meat products. Lynne gave an overview of the highly regulated meat laws (post Garibaldi) and took the audience through the manufacturing steps in producing salami. Lynne's presentation included some insights into the starter cultures used and available in Australia as well as microbiological controls.

It was a thoroughly entertaining and informative evening. The Institute extends its thanks to Scott and Lynne for such interesting presentations. A Fermentation Evening is being planned for Victorian members in early 2018. Visit the AIFST website for more information and to register. ®



WA "Food for Thought" speakers and WA Community of Interest Committee.

WA MEMBERS ENJOY "FOOD FOR THOUGHT"

There was a stellar line up from the food industry at the Western Australia "Food for Thought" workshop in November.

The culmination of months of hard work by the Western Australian Community of Interest Committee (Dr Justin Whitely, Adel Yousif and Patricia Elphinstone), speakers included: Mark Booth, the new FSANZ CEO; Martin Cole from CSIRO; AIFST Director Fiona Fleming; Stuart Johnson and Gary Dykes from Curtin University; and Alan Adams from Sealed Air. This esteemed group covered subject matter ranging from regulatory changes across the industry through to innovations in packaging.

Our thanks to the 2017 sponsors ProMicro, Merieux NutriScience, PM Fresh and Zimbulis.

AIFST will be hosting a technical workshop for Western Australian members on 28 February 2018. The workshop has been designed to profile the latest innovations in manufacturing, analytical, chemical and support services across the food sector. From food processing, analysis, research and academia, the workshop will offer business solutions across a range of industry challenges. Presenters will be showcasing the latest innovations in their particular fields, with case studies from industry.


The evening will also include networking drinks providing an opportunity to meet with colleagues from across the sector as well as a chance to talk to speakers in more detail. To register for this upcoming event, visit the AIFST website <https://www.aifst.asn.au>. 

QLD CHRISTMAS PARTY PROVIDES OPPORTUNITY FOR FOOD SCIENCE STUDENTS



Vaughan Gough, Jana Cameron, Oliver Meldrum, Sue Avery at the QLD Christmas Party QLD Christmas party attendees

Queensland kicked off the AIFST Christmas festivities with their catch-up in November. Timed to coincide with TropAg, the evening brought together a great cross section of the Queensland food industry. Symbio Laboratories and Path4Food Group were corporate supporters for the function and with their support the Institute was able to offer some food science students tickets to the evening, which they wouldn't otherwise have been able to access. The event also provided members with the opportunity to enjoy a viewing of the recently released Food Evolution movie – an initiative of our sister Institute, IFT, giving an insight into the world of food, food science and technology.

The Queensland Community of Interest Committee is already busy planning for 2018, with the first event already in the diary. Professor Mike Briers AO will be giving an update on the Food Agility CRC on the 6 February 2018. Members can book online via the AIFST website, <https://www.aifst.asn.au>. 




Glenn Radford from Play Market Research.



Sarah Kneebone from Play Market Research.

MEMBERS GAIN INSIGHT INTO THE FUTURE OF ONLINE GROCERY

Sarah Kneebone and Glenn Radford from Play Market Research shared their insights on Australia's online retail experience in the grocery sector at an AIFST members-only webinar. Drawing on research that was presented at the AIFST 50th Convention, the webinar provided members with some interesting perspectives on the Australian consumer and what the hallmarks are of a successful online retailer.

The Institute hosted over 10 members-only webinars during 2017. If you were not able to take part in a session on the day, please visit the AIFST website for PowerPoint, video and audio downloads. Make sure you visit the AIFST website to register for upcoming webinars scheduled for 2018. The first webinar will be held on 28 February 2018 discussing how to write an award-winning submission. 



EXECUTIVES ON THE MOVE

- » Western Australian farmer and agriculture industry leader, **Terry Enright**, was appointed Chairman of Livecorp at the November 2017 AGM.
- » **Dr Chris Parker** was appointed CEO of the Australian Pesticide and Veterinarian Medicines Authority in November 2017.
- » Kellogg named former Coca-Cola Executive **Steven Cahillane** as its new CEO, replacing retiring CEO **John Bryan**.
- » Manufacturer of automated packaging machinery, HMPS, appointed **Shaun Westcott** as its new CEO.
- » Wesfarmers boss **Richard Goyder** handed over the leadership reins to Rob Scott in November 2017.



INDUSTRY BITES

KRAFT HEINZ ACQUIRES CEREBOS' BRANDS IN AUSTRALIA

Suntory Beverage & Food Ltd has entered into an agreement to sell its Cerebos Food & Instant Coffee business in Australia and New Zealand to the Kraft Heinz Company and it has also sold its Asian Home Gourmet Singapore to Kraft Heinz. Suntory Beverage & Food Ltd (SBF) will retain the Cerebos Fresh Coffee business in Australia and New Zealand. The total consideration of the transaction is \$290 million, with the sale expected to be completed in the first quarter of 2018, subject to regulatory approval. Cerebos' Food & Instant Coffee business includes Fountain sauces, Gravox, Saxa salt, Foster Clark's, Bisto and Raro. "This reinforces our commitment and long-term plan to the Australia and New Zealand markets," Chief Executive Officer of Kraft Heinz Australia Bruce Lino.

BEGA CHEESE ACQUIRES VICTORIAN KRAFT PEANUT BUTTER FACTORY

Australian-owned Bega Cheese has acquired the former Kraft Peanut Butter factory in Victoria, adding the spread to its portfolio. Bega, famously known for cheese, will produce its new product in Victoria, maintaining hundreds of jobs for Victorian factory workers. Bega Executive Chairman, Barry Irvin, said the company takes pride in looking after all of its employees and is committed to keeping jobs in Australia. Consumers will now see a slightly "refreshed" packaging on the shelves of Australian supermarkets, with the Bega logo appearing instead of the Kraft label. Despite the label change, Bega said the peanut butter recipe will remain the same. The Kraft "never oily, never dry" recipe mantra remains, with the only difference being the product is now owned by Bega.



COOPERS ANNOUNCES NEW MALT PLANT

Adelaide-based brewing company, Coopers has opened a new \$65 million malting plant at its Regency Park brewery. According to Coopers, the 13,000sq m plant is the most technically advanced malting plant in the world and is the largest single investment made by the company since Coopers' was first established 150 years ago. The new plant was entirely funded by the business and will employ eight new employees. Coopers Managing Director, Dr Tim Cooper, said at full capacity, the malting house will produce approximately 54,000 tonnes of malt per year. "South Australian farmers are recognised as producing some of the best malting barley in the world and we will be looking to establish strong relationships with them into the future," Dr Cooper said. Coopers will use 17,000 tonnes of the 54,000 tonnes of malt it plans to produce each year. The remainder is expected to be sold to both domestic and international customers. The plant was constructed by South Australian building firm, Ahrens Group. The malting equipment was sourced from Buhler in Switzerland. "Some of the innovations we have incorporated include full stainless-steel construction, enclosed conveyors, together with advanced process control and monitoring," said Dr Cooper. "In terms of water usage, process control and automation, this is the most advanced maltings in the world."

PERU-AUSTRALIA FREE TRADE AGREEMENT

Australia and Peru concluded the Peru-Australia Free Trade Agreement (PAFTA) on 10 November 2017. The agreement will launch a new chapter in economic relations between Australia and Latin America. Australia and Peru launched negotiations for a free trade agreement (FTA) on 24 May 2017. A fellow signatory to the Trans-Pacific Partnership (TPP) Agreement, Peru has been one of the fastest growing economies in Latin America, and the world, over the last decade. The Peru-Australia FTA (PAFTA) enables Australian businesses to access the opportunities presented by that growing market. It also supports our goal of capturing the TPP's benefits, and strengthens our economic relationship with Latin America. Peru is a growing market for Australian goods and services exporters. In 2016, total two-way trade in goods and services with Peru was worth \$590 million, up 51.2 per cent from the previous year. The FTA with Peru provides Australian businesses with an opportunity to expand engagement with this emerging market. »

CHINESE INVESTORS ACQUIRE BROWNES DAIRY

Brownes Dairy will move forward with plans to advance growth domestically and pursue greater export opportunities after announcing its acquisition by Australia Zhiran Co. Pty Ltd from funds managed by Archer Capital Pty Ltd in November 2017. Australia Zhiran Co. Pty Ltd is backed by a consortium of Chinese investors including investment firm Changchun Lianxin Investment Consulting Company and experienced dairy operator Shanghai Ground Food Tech Co. Ltd. The deal will see Brownes remain an integral part of the WA dairy industry for generations to come, while creating access to emerging overseas markets and the potential for new product development. The consortium was highly attracted to the Brownes Dairy business and operations, its heritage and long history, and the possibilities Brownes offers to grow the Western Australian dairy industry given its strong geographic location on the doorstep to Asia. The consortium expects Brownes to remain the premier supplier of quality dairy to WA customers and looks forward to continuing to service the domestic WA market. Under the terms of sale, Brownes will retain its current management, including Managing Director, Tony Girgis, whose decision to lead the business going forward was important to both parties. Mr Girgis said the announcement was a defining moment for the future of WA's oldest dairy as it looked to continue producing some of the highest quality dairy products anywhere in the world. "As it has done for 130 years, Brownes will remain an important part of the WA community and continue to contribute to the sustainability of the local dairy industry," Girgis said. "This deal is a significant step in positioning Brownes for growth well into the future and we are excited at the opportunities offered to the business, our suppliers, employees and consumers."

LESSER KNOWN NATIVE VEGGIES PASS THE TASTE TEST

Unique native produce could be the next buzz food with a consumer study pointing to a clear demand for Australian-grown vegetables that are not widely available through the nation's retailers. Funded by Hort Innovation and conducted by Colmar Brunton, the research comprised the opinions of more than 1700 people via surveys, focus groups and interviews. Hort Innovation Chief Executive John Lloyd said the study showed that Australians have a sense of pride in native food, are curious about little-known produce varieties, and are largely keen to buy more. "In Australia, we have more than 6000 different native food varieties, and many consumers have had limited exposure to many of them," he said. "For this reason, in consultation with Aboriginal custodians and native food specialists, we took a deep dive into a selection of native vegetables to see what consumers found most appealing, and the findings were compelling."

The research – conducted online, in consumers' homes and at a dedicated sensory testing facility – uncovered a number of specific vegetables consumers favoured, providing an insight into potential opportunities for Australia's first peoples and growers. The results showed people in the sample, particularly those aged 18 to 25, were interested in eating vegetables that were previously unknown to them, especially when they had a high nutritional profile. People were also more receptive to certain types of native vegetables when they were able to compare them to known varieties, such as kulyu, which is similar to sweet potato.

Australian Native Foods & Botanicals chair Amanda Garner said around 40 edible native foods are commercially available in Australia, and that figure is tipped to rise. "As the extraordinary health benefits and medicinal properties of unique Australian plants are being 'discovered', the market demand is sky high, especially from the national and international pharma and nutraceutical companies," she said. "Demand is far outstripping supply".

SAVE THE DATE

AUSTRALIAN EVENTS*5 – 7 February 2018***12th Australian and New Zealand Sensory and Consumer Science Symposium**
Brisbane*6 February 2018***AIFST QLD Food Agility CRC Update**
Brisbane*22-23 February 2018***2018 AIFST Summer School**
Perth*22-28 February 2018***ICFSRFS 2018: 20th International Conference on Food Science and Risks in Food Security**
Sydney*28 February 2018***AIFST WA Technical Workshop**
Perth*28 February 2018***AIFST Careers Webinar: Writing a Winning Award Submission**
National*28 February 2018***CSIRO – Australian Industrial Hemp Conference**
Geelong*14-15 March 2018***Citrus Australia – Market Outlook Forum**
Sydney*29-30 April 2018***Fantastic Food+Drink**
Sydney**INTERNATIONAL EVENTS***16 – 17 April 2018***20th International Conference on Nutrition, Food Science and Technology**
Dubai, UAE



Curtin University in Western Australia will host the 2018 AIFST Summer School.

MAKE NEW CONNECTIONS

at the 2018 AIFST Summer School

Thursday, 22 and Friday, 23 February 2018

CURTIN UNIVERSITY, PERTH, WESTERN AUSTRALIA

As part of AIFST's ongoing support for students and young professionals, the AIFST Summer School is returning for 2018. This annual event has been held for the last seven years and next year will be hosted by Curtin University in Western Australia.


The AIFST Summer School provides first-hand opportunities for student, graduates and young professional members to further develop their learning, skills and network through engagement with their peers, industry and academia.

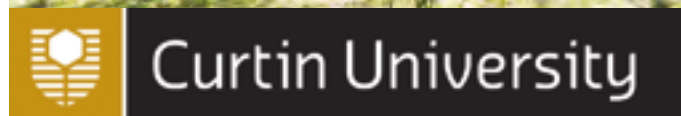
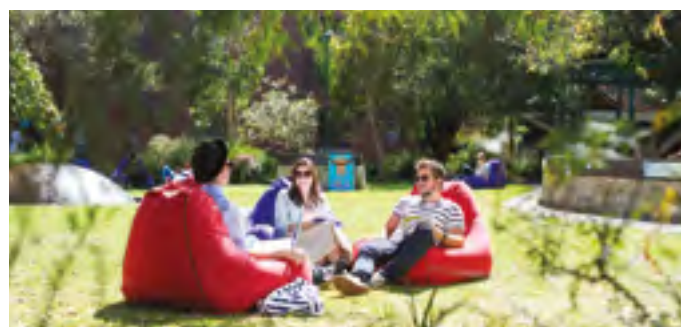
Attendance at the 2018 Summer School can assist our young members in many ways. Here are a few things Summer School attendees can look forward to:

- » The Summer School is there to help undergraduate, post-graduate and recent graduates to build their professional food industry network with their peers. To assist with networking, there will be a Welcome Function on the Wednesday evening and a BBQ dinner with industry representatives on the Thursday.
- » Attendees will be exposed to food industry opportunities through industry guest speakers, who will provide insight and advice on prospective career paths in both research and industry.

- » A highlight in previous years, attendees will be taken on a site tour that will expose them to a 'real world' industrial or research facility.
- » Attendees will be given the chance to build industry-relevant skills such as presentation and public speaking, including, where relevant, a platform to present their current research in front of their peers.
- » Attendees will build on their current skills through workshops designed to challenge their current technical knowledge and requiring them to think critically.

If you would like to present your current or recently conducted research, please submit a short abstract by 5.00pm on Friday, 2 February 2018 via aifst@aifst.com.au. The template for abstract submissions can be found on the Summer School event page on the AIFST website, visit <https://www.aifst.asn.au>.

For more information on the 2018 AIFST Summer School, including the full program, please visit the AIFST website. 



TEST YOUR SKILLS

in the 2018 Student Product Development Competition

2018 Theme: *Keeping Up with the Customer – Consumer-Led Innovation*

The AIFST Student Product Development Competition (SPDC) is on again in 2018! The annual competition is aimed at undergraduate and post-graduate students who want to take part in a real-life product development process, from brief to shelf. It also provides a platform for students and graduates to demonstrate all they have learnt in their studies and apply their skills and abilities.

The SPDC was established over 15 years ago and since then has attracted team entries from leading educational institutions across Australia, with many previous entrants and winning team members going on to find fulfilling careers in both the Australian and global food industry.

THE BRIEF

In 2018, the focus is on consumer-led innovation, which challenges students to ensure they put consumers at the centre of their development. Entrants are to develop an original product that addresses the objective of the 2018 SPDC which is to deliver an innovative food product that has been developed from the identification of a consumer need using insights. The identified need can be emotional, social or rational.

The initial entry proposal must include an analysis of the approach, methods, research and thinking that was used to generate the insight around the consumer need, why this need is important and how it is currently (largely) unmet. Entries must also describe and explain the features, functions and benefits of the new product and which consumer need/s they will address.

HOW TO ENTER THE 2018 SPDC

There are three key stages to the SPDC: an initial entry proposal; proof of concept; and finalist presentation including product testing. Below details the requirements for each stage:

INITIAL ENTRY PROPOSAL

The initial proposal submission is the first stage of the SPDC. It is a chance for entrants to identify concepts for their product in line with the product brief, develop ideas and the rationale as to why they have chosen that specific product. After all the submissions are judged, the teams with the highest scores who best fulfil the brief and have the most innovative products will be selected as finalists to proceed to proof of concept stage.

PROOF OF CONCEPT

Once selected, all finalists will need to develop their idea into a physical product to present at the 2018 AIFST Convention. This stage of the competition is not marked, however it is a



Last year's winner of the Student Product Development Competition, Buggy Laksa.


2018 SPDC KEY DATES

Initial Entry Proposals due	Early June
Finalists announced	Late June
Proof of Concept due	Early August
Finalist Presentations and Product Testing	Monday, 11 September 2018
2018 SPDC winners announced	Tuesday, 12 September 2018

check in point to address any major issues entrants may be having in developing their product, and for the judges to provide their feedback and guidance.

FINALIST PRESENTATIONS AND PRODUCT TASTING

At the 2018 Convention, finalists will present their product in person to the judges. This will be a chance to pitch their product, sell its benefits and convince the judges their product is the best! After the presentations, finalists will plate up their products for tasting. Judges will then be able to sample and assess the sensory components. Judges will ask one-on-one questions to entrants requiring them to defend their product and choices. The 2018 SPDC winner will be announced during the 2018 AIFST Convention Awards Ceremony.

Further information on the 2018 SPDC including submission dates, eligibility criteria and full competition brief can be found at the AIFST website: <https://www.aifst.asn.au>. Winners will be announced at the 2018 Convention. 



Adam Crouch MP Member for Terrigal with the Oli-go team. From left: Lauren Shoveller; Lisa Hayden; Luke Thitchener; Madelein Robinson; and Janine Mulligan.

UNIVERSITY OF NEWCASTLE 2017 product development winners

WORDS BY REBECCA RICHMOND
AIFST YOUNG PROFESSIONAL


Each year the 3rd year students of the University of Newcastle's Bachelor of Food Science and Human Nutrition program showcase their new product from their product development course at a food expo. Their brief for 2017 was to design and make a functional food product.

Five teams put forward products that included a banana flour pancake mix, Beaneficial veggie bites, Oli-go synbiotic yoghurt, red melon pasta and flavour bomb muffins. Students then presented their products at the inaugural Central Coast Food Industry Showcase.

Students were required to do an "elevator pitch" to around 150 guests including representatives from Baiada, MasterFoods, Sanitarium, Life Health Foods, Australian Food Ingredient Suppliers, Masterol Foods, Ai Group Food and Agribusiness, Glee Coffee Roasters and WildBlueGlobal Consulting. Dr Soumi Paul Mukhopadhyay also attended, representing the AIFST in her capacity as a NSW Community of Interest committee member.

The winning team was Oli-Go who created a synbiotic snack targeted at people with a busy lifestyle looking to make a healthy snack choice. The team put forward selling points that included

portion control, convenience, low calorie and a health claim around the benefits of synbiotics.


AIFST awarded the winning team complimentary tickets to the NSW Christmas Catch-Up, giving the students a chance to meet other industry representatives and the AIFST Board of Directors. 



WILLIAM ANGLISS INSTITUTE Student Product Launch Showcase

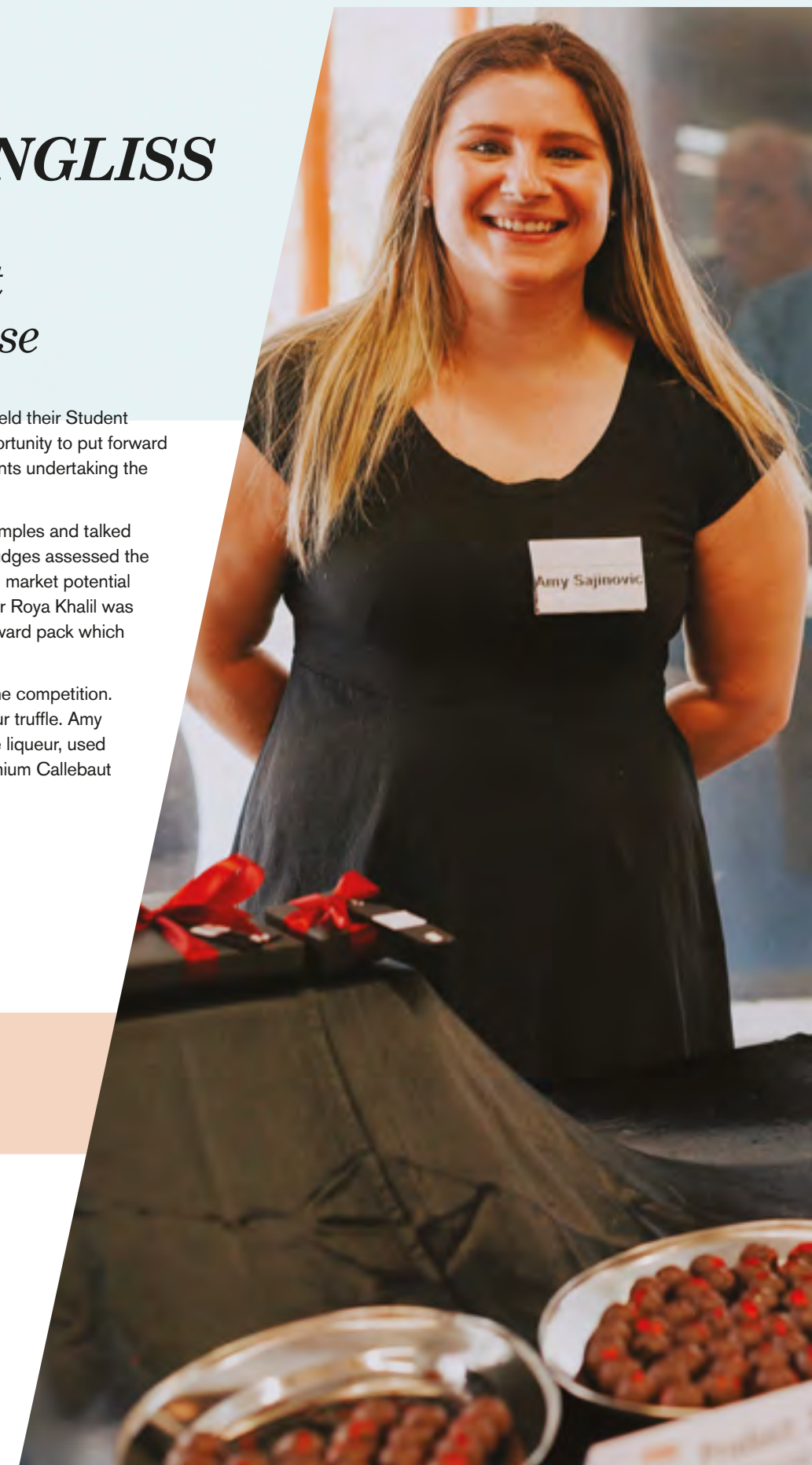
In November 2017, William Angliss Institute held their Student Product Launch Showcase. This was an opportunity to put forward new products developed by final stage students undertaking the Diploma of Food Science and Technology.

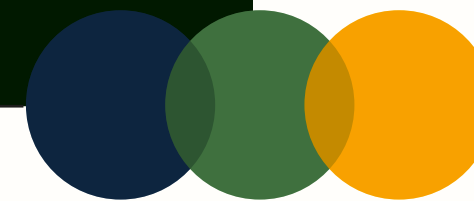
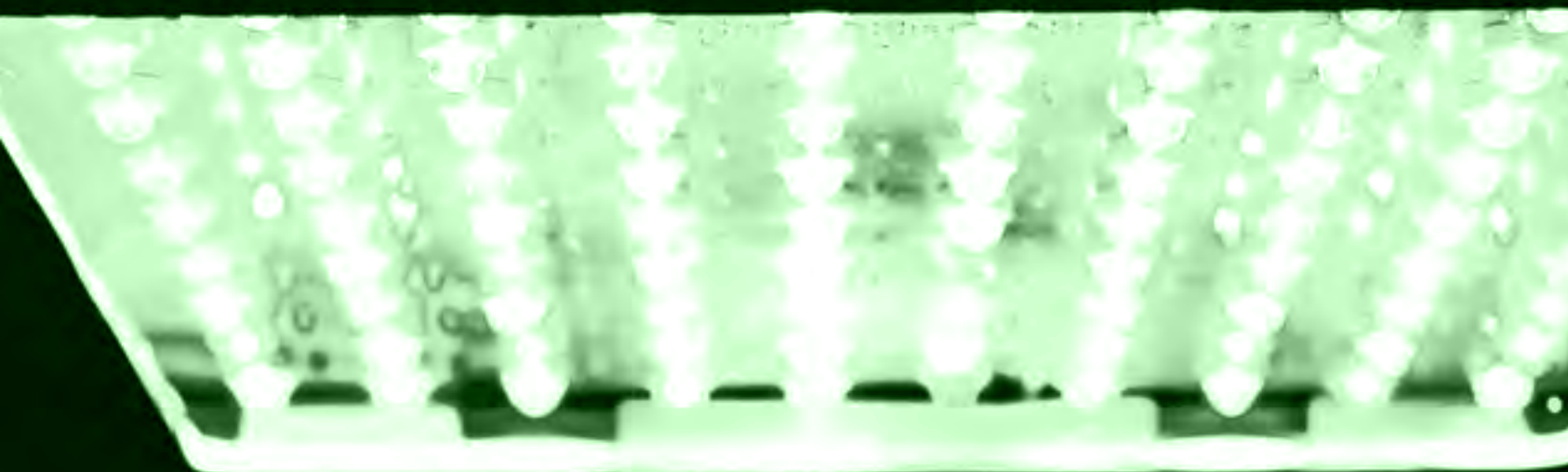
Students displayed their products, offered samples and talked about the development processes. Industry judges assessed the products on innovation, sensory acceptability, market potential and presentation. AIFST Professional member Roya Khalil was one of the judges and presented an AIFST award pack which includes a 2018 AIFST Student Membership.

Congratulations to Amy Sajinovic who won the competition. Amy developed A. Chocolate, a superb liqueur truffle. Amy made the red wine herself as the basis for the liqueur, used Roboqbo equipment for processing and premium Callebaut chocolate. 

Student Amy Sajinovic.

Photo Credit: William Angliss Institute.





IN THE SHADOW OF APEC, A LIGHT SHINES ON FOOD AUTHENTICITY

Work to identify the distinguishing characteristics of a modern national food safety system is underway.

WORDS BY GEOFFREY ANNISON, PHD
AUSTRALIAN FOOD AND GROCERY COUNCIL

November 2017 saw world leaders gather together in Vietnam to attend the 25th Asia-Pacific Economic Cooperation (APEC) Summit. The media focused on the grand spectacle of leaders Trump, Xi, Putin, Abe et al conducting both formal and informal meetings prior to the release of the Summit Declaration, which stated: “We underline APEC’s crucial role in support of a rules-based, free, open, fair, transparent, and inclusive multilateral trading system.”

Shortly after this lofty APEC ideal was declared, a workshop on “Trade Facilitation through an APEC Framework on Food Safety Modernisation” seeking to convert aspirations into reality was held, also in Vietnam. The workshop was the first in a series of planned expert meetings under the auspices of the APEC Food Safety Cooperation Forum (APEC-FSCF), which is co-Chaired by China and Australia, with Food Standards Australia New Zealand (FSANZ) taking the lead responsibility on behalf of the Australian Government.

The Food Safety Modernisation project is funded by the Australian Department of Foreign Affairs and Trade (DFAT) with FSANZ providing management and technical expertise. It has the primary objective of identifying the distinguishing characteristics of a modern national food safety system with a view to assisting APEC countries to adopt aspects of it, depending on their individual circumstances and the level of development of their domestic food safety regulatory systems and the sophistication of their food industries. Consistent with the 2017 APEC leader’s declaration, the longer term objective is to harmonise food safety regulations across the APEC region, to facilitate trade.

More specifically the project aims to (1) exchange information on approaches to food safety modernisation through transparent, risk-based approaches to food safety, and identify challenges resulting from the application of food controls that have a risk level applied; (2) develop a Framework for food safety modernisation built upon principles and standards of the Codex Alimentarius Commission (Codex), that seeks to encourage food modernisation in APEC in economies in parallel with trade facilitation; and (3) consult APEC members to reach consensus on the Framework and have the Framework endorsed by the APEC-FSCF.

Codex, of course, already provides a comprehensive set of principles and guidelines for national food control systems (CAC/GL 82-2013) “to protect the health of consumers and ensure fair practices in the food trade”. They describe, inter alia, the need for a legal foundation based on legislation and competent authorities, risk and evidence-based decision making, preventive approaches, transparency of process, clear roles and responsibilities of agencies and the importance of recognition of other systems and harmonisation. The last points are most important in the context of facilitating trade, but in reality recognition of systems with a view to facilitating trade relies on the importing country having a high level of confidence that the food control system of the exporting country does result in a safe food supply for consumers.

By now, you may be forgiven for thinking this is all a bit ho-hum – APEC, food safety systems, trade etc – we’ve heard it all before. And yes, we have heard it all before ►►



but the DFAT/FSANZ workshop was particularly interesting for two reasons. Firstly, for the first time in the APEC-FSCF meetings I've attended the issue of "authenticity" was discussed. That is, rather than simply discussing food control system responses to classic food hazards (chemical, physical, biological) assuring the authenticity of food products was also discussed at length. It was recognised that consumers blur the lines between concepts relating to the healthiness and safety of products incorporating product provenance, production systems and technologies, and product composition into an holistic view of the products wholesomeness, and so its authenticity. And this all comes down to the simple maxim – foods must be what they claim to be. With the origin of foods from around the APEC region becoming a clear point of differentiation in the market, regulators will be under greater pressure to ensure consumers are sufficiently protected from products which are not what they seem – too often due to food adulteration and fraud.

The USA's *Food Safety Modernisation Act*, which is in the process of being rolled out, specifically requires the issue of food fraud to be addressed by food companies – including those exporting

Modernising food control systems means exactly that – regulation and industry practices must keep pace with consumer demands and expectations.

to the USA. Here in Australia, the combination of the ANZ Food Standards Code and state and territory food regulations coupled with Australian Consumer Law provides high levels of regulatory protection for consumers, including from food fraud.

The second interesting point from the workshop was the clear statement and agreement that modern food control systems comprise a partnership between regulators and the food industry. The APEC-FSCF is essentially a governments-to-governments, regulators-to-regulators forum with the food industry having no formal status in proceedings. Nevertheless, this workshop and more recent APEC-FSCF meetings have recognised that industry has a key role in the delivery of safe, and indeed wholesome food, to the consumer and that role is enhanced by appropriate consultation during regulation development.


Of course, the food industry is well placed to deliver 'authentic' food from Australia into overseas markets. Apart from the strong regulatory framework, the industry is sophisticated employing advanced business management and control systems from paddock to plate. Preventive HACCP-based food safety plans,

the AFGC's Product Information Form (now being introduced in electronic form) and many private standards and certification systems ensure high levels of product integrity and traceability are maintained as food products move down the supply chain. The challenge is to make sure this is fully appreciated by regulators overseas and this is where the DFAT/FSANZ food systems modernisation project can really pay dividends. Engaging with APEC food safety regulators provides an opportunity to showcase the Australian food control system – that is the partnership between a comprehensive regulatory framework and a sophisticated agricultural and food processing industry. This will (hopefully) build further the confidence of overseas regulators in the safety of food products imported from Australia which already enjoy an excellent reputation for their quality with consumers.

As the project develops and is implemented, a greater harmonisation and alignment of food regulations and their administration across the APEC regions is anticipated. This has the potential in itself to facilitate trade as non-tariff measures, which can hinder the free flow of goods across borders, are reduced or eliminated. The Australian food processing industry stands to benefit from this as well. Our industry is heavily reliant on the import of specialist ingredients to make the range of products consumers demand and enjoy, both domestically and overseas.

Returning to the concept of authenticity, there is risk here for the food industry. In reality, the industry itself is in the best position to deliver authenticity when supported by appropriate generic regulation – regulation which says food must be safe and suitable, and consumers must be told about it, truthfully. If industry doesn't fulfil this basic requirement to the expectation of consumers there is a real risk the regulators will regulate – and in a manner which is not necessarily proportionate as judged by industry.

Modernising food control systems means exactly that – regulation and industry practices must keep pace with consumer demands and expectations. The DFAT/FSANZ initiative will assist many of our trading partners to improve their food regulatory arrangements. The main focus will be on classic food safety regulatory issues reflecting the paramount status of consumer health, safety and protection. In the longer term, however, the focus of APEC-FSCF may widen to other areas providing opportunities for the food industry, but not for those sectors that do not remain focused on meeting their consumers' needs.

The DFAT/FSANZ project is off to a good start and those involved in the planning and organising should be congratulated. The workshop in Vietnam was well attended by APEC countries and the engagement in discussion was strong. The Australian Food Grocery Council welcomed the opportunity to participate in the workshop and looks forward to providing further input to this important initiative to make sure it delivers for regulators, but more importantly for industry too. 

Geoffrey Anison is the Deputy Chief Executive at the Australian Food and Grocery Council and Professional Member of AIFST.

FSANZ UPDATE

ALLERGEN LABELLING, FOOD SAFETY, CHEMICALS IN PACKAGING AND TWO NEW APPLICATIONS.

BY FOOD STANDARDS AUSTRALIA NEW ZEALAND

PLAIN ENGLISH ALLERGEN LABELLING

In late 2017, FSANZ called for public comment on a proposal to change the Food Standards Code to make allergen declarations on food packaging clearer and more standardised.

The changes are designed to make it easier for the food industry to meet their regulatory obligations and give allergen-sensitive consumers more certainty about the safety of food that they buy.

At the moment, certain food allergens must be declared on food labels whenever they are present as an ingredient, food additive or processing aid. However, there are no requirements on how these declarations must be made on food labels.

This has led to some food labels using unclear wording to declare allergens, which puts allergen-sensitive consumers at risk, because they may not be able to identify allergens in foods. Examples of unclear allergen declarations on food labels include those that are:

- » Too vague (eg saying that the food contains 'a gluten containing cereal' rather than specifying that it is 'wheat').
- » Inaccurate (eg using the word 'fish' for foods containing molluscs).
- » Too technical (eg 'sodium caseinate' without an indication that this ingredient comes from a dairy source).

For more information on the proposed changes visit www.foodstandards.gov.au/PlainEnglishAllergenLabelling

MANDATORY ALLERGEN LABELLING FOR LUPIN IS COMING

Food businesses are reminded that mandatory allergen labelling for lupin comes into effect from 26 May 2018. If you sell products containing lupin as an ingredient, compound ingredient, additive or processing aid you need to declare it on food labels from this date.

For more information visit www.foodstandards.gov.au/lupin

FOOD SAFETY INFOBITES

FSANZ recently released a series of fact sheets to help small businesses understand and meet the food safety requirements in the Code. These 'InfoBites' cover 16

clauses from the food safety standards including cooling and reheating food, health and hygiene advice and cleaning as well as lots of practical tips to reduce food safety risks in food businesses.

The series is available for download at www.foodstandards.gov.au/infobites

CHEMICALS IN PACKAGING

In October last year, FSANZ completed a three-year project looking at the risk of chemicals migrating from packaging into food and has determined that the chemicals investigated are not a concern for human health.

Based on its assessment, FSANZ has not recommended any further regulatory measures be introduced to the Food Standards Code.


For more information see www.foodstandards.gov.au/consumer/chemicals/foodpackaging

NEW APPLICATIONS

In November FSANZ called for submissions on two applications.

The first application sought to allow a method of analysis for resistant starch as a fibre in the Food Standards Code. Resistant starch, which is dietary fibre as defined in the Code, is naturally present in starchy foods including cereals, corn, legumes, fruits and vegetables and resists digestion when consumed by healthy individuals. The second application was to allow a cotton line that has been genetically modified to be resistant to two herbicides – glyphosate and isoxaflutole.

A decision on both Applications is expected to be made by the Board in March 2018 before being notified to the ministers responsible for food regulation.

You can find out more about these Applications from our website www.foodstandards.gov.au under applications to change the code. 



RETHINKING PROTEIN

Consumers are re-examining its source, cost, how it is grown and processed, and its impact on our planet. That is not to say that demand for protein is in decline, it's just that consumers are looking for alternative sources.

**WORDS BY SARAH HYLAND
AIFST**

A Health and Wellness study from Hartman in 2017 reports that there is a strong demand for protein. Sixty per cent of consumers surveyed across a broad age and demographics said they are actively trying to increase their protein intake for reasons of satiety, weight control and general health.

This trend is seen across many categories including main evening meal protein – the traditional centrepiece of the plate, snacking alternatives and beverages. Consumers, however, are looking for alternatives to traditional meat-based protein and those alternatives extend well beyond the simple vegetable burger, soy milk latte or tofu dinner.

WHAT'S DRIVING THIS TREND?

The desire to improve health by varying protein sources, which also provide other nutritional benefits, resonates with the consumer. For example, eating plant-based foods makes reaching the recommended daily target for whole grains and fruit and vegetables easier. Alternative proteins also have less saturated fat than red meat.

The rising cost of meat has been an impetus for consumers to find alternative sources of protein sources, with beans, peas and lentils offering the cheapest options.

Consumer concerns around the environmental impact of raising livestock, such as water usage, land clearing and greenhouse gas production, has also prompted a re-evaluation of traditional meat sources. >>





“ CLEARLY, PROTEIN INVESTIGATION IS TRENDING AND THE SENSORY, FUNCTIONAL, ENVIRONMENTAL AND NUTRITIONAL BENEFITS OF ALL PROTEIN SOURCES WILL MOST LIKELY BE ON CONSUMERS' AND INNOVATORS' RADAR FOR SOME TIME TO COME. ”



Animal welfare is another concern for many consumers. Conditions under which animals are bred, raised and slaughtered are a common reason for reducing meat intake and there has been a call for more transparency about how livestock is treated. This trend is less about avoiding meat altogether and more about broadening the diet to incorporate nutritious alternatives and more flavour, textural and experiential variety.

ALTERNATE SOURCES OF PROTEIN

GOING BEYOND SOY

There are a number of innovative products offering high quality nutritional profiles, unique texture and format and appealing flavour that are becoming more mainstream. These include both plant and animal-base proteins.

THE POWER OF PEAS

Pea protein has gained significant traction with startups such as Ripple Foods, which makes a pea-based “milk” alternative. It is also an important ingredient in low-calorie ice cream brand Wink.

Yellow peas' high protein concentration is functionally harnessed to produce a creamy texture in Wink's desserts without using milk. All of other ingredients are 100 per cent

plant based, allowing Wink to offer a ‘clean’ ice cream alternative that is free of the most common allergens.

THE INSECT REVOLUTION

More than two billion people around the world regularly eat insects as part of their diet. From an environmental point of view, farming insects requires fewer resources than cattle and they grow very quickly. There is little waste as 80 per cent of most insects is edible. Rich in proteins, B group vitamins and omega 3 and 6, insects also have excellent nutritional qualities.

Switzerland's supermarket chain, Coop, has begun selling insect burgers and mealworm balls manufactured by Swiss startup Essento. The mealworms are mixed with rice, carrots and a spice mixture and are designed to be consumed like falafel with pita bread, vegetables and a yoghurt sauce.

Chirps Chips from the US are tortilla-style cricket chips made from cricket flour. These innovative products contain as much protein as an egg white per serving and 30 per cent less fat than regular chips.

Cleverly branded French start up, Jimini's, produces whole ready-to-eat insects, including grasshoppers, mealworms and

crickets. The insects are raised in specialised farms in the Netherlands with the best possible standards of traceability and quality control. The whole insects are then dehydrated and delicately processed and seasoned in Jimini's workshop near Paris and transformed into a range of crispy, tasty snacks.

Jimini's also offer energy bars made with organic ingredients and 100 per cent European cricket flour. The bars contain dried fruits, almonds and seeds and are rich in carbohydrates, fibre, protein as well as iron and omega 3 and 6.

With over 2000 species of edible insects and such a wide spectrum of flavour profiles and textures, insects may well be the next culinary revolution!

CULTURED MEAT

Despite the environmental issues, consumers still love their meat. The field of biotechnology has been instrumental in pursuing technologies that provide the same (or better) foods without animals.

There are various animal-free technologies evolving, including “clean meat”, which involves growing animal cells in lab-grown or cultured meat to create real meat without slaughtering

animals. This cutting-edge technology is currently cost prohibitive for the everyday consumer. However, it is a field worth watching as when the technology and process engineering becomes more sophisticated production may scale to a point where clean meat is readily available.

TECHNICAL MILK

Milk is in also in the sights of the new no-animal farmers. Perfect Day, a startup based in Berkeley, California, makes a high protein “milk” that has the same nutritional value and taste as traditional, dairy-based milk. It does so by engineering the relevant cattle genes into yeast cells and growing them in fermentation tanks.

Clearly, protein investigation is trending and the sensory, functional, environmental and nutritional benefits of all protein sources will most likely be on consumers' and innovators' radar for some time to come. ¹⁰

Sarah Hyland is the General Manager of Industry Services at AIFST. For more information please contact Sarah at aifst@aifst.com.au.

Grains are back!

*New research shows fewer
Australians are avoiding grains.*

WORDS BY ALEXANDRA LOCKE AND FELICITY CURTAIN
GRAINS & LEGUMES NUTRITION COUNCIL

It's good news for grains after a study of more than 1,200 Australians conducted by the Grains & Legumes Nutrition Council (GLNC) in 2017 found that grains are back on the menu. And the research also uncovered encouraging news for legumes with more Australians eating beans, peas and lentils.

This study was the fourth of its kind commissioned by GLNC and provides a valuable snapshot of how Australians are faring in their daily grain and legume consumption habits since 2009, alongside their changing attitudes towards both food groups.

In 2014, GLNC study data showed a worrying 30 per cent drop in the average number of daily serves of grains. It's likely the sharp decline was linked to the popularity of Paleo, low carb and gluten-free diets. But encouragingly, Australians are giving themselves permission to go with the grain again, with this decline halting and those choosing to limit grain foods this year sitting at just 47 per cent of the population, down from 60 per cent three years ago.

While fad diets and the demonisation of carbs are still big contributors causing almost half of the Australian population to avoid grains, these results suggest the widespread fear of grains is slowing. And with considerable evidence to support the benefits of grains, this is great news for Aussies' health.

Grains like wheat, oats, rice, barley and rye are all nutrition powerhouses, boasting more than 26 nutrients and phytonutrients that help to protect us against chronic disease and arm us with good health. In fact, an in-depth review of more than 300 studies found whole grains and high fibre foods to be the most protective against diet related diseases of all food groups – even more so than fruit and vegetables. ▶▶



But while fewer Australians are limiting grain foods, unfortunately we're choosing more of the less nutritious, refined options, such as white bread and pasta, over whole grain. In fact, the majority of Australians are eating less than half the recommended amount of whole grain foods for good health at under two serves a day, so encouraging whole grain consumption is a key opportunity for industry.

In the long-run, it's clear that those who eat more whole grains and legumes are healthier, being less likely to develop chronic conditions

WHAT ABOUT LEGUMES?

The health benefits for legumes are equally as exciting, with every additional 20g eaten daily (around a tablespoon) reducing risk of early death by 7-8 per cent. And it seems the message is getting through, with an additional 4 per cent of us eating legumes like lentils, beans and peas since 2014.

Traditionally, we're not a big country of legume-eaters, but 28 per cent of us now enjoy legumes, continuing the upward trend shown in previous studies. Baked beans are the most popular choice with 9 per cent of us eating them in 2017, closely followed by chickpeas and lentils respectively. Trends in consumption remain consistent with 2014 data, with more men and younger generations eating legumes on a daily basis.

As expected, the data showed a seasonal skew for legumes with one third of consumers eating more beans, peas and lentils in winter in foods such as soups and stews. And although more of us are eating legumes, the data also showed that 22 per cent of us are still unsure how to use them.

CONSUMER CONCERNS – WHAT WORRIES SHOPPERS WHEN IT COMES TO GRAINS AND LEGUMES?

When it comes to consumer concerns, the top worry in 2017 is added "nasties". Almost one in five people reported preservatives and additives were their number one gripe around grain foods – bumped up from number three in 2014. And in line with the ongoing trend of gut health, digestive discomfort remains high on the list of concerns driving grain avoidance. In fact, 15% per cent reported they limit grain foods due to feelings of fullness and bloating.

As such, it's unsurprising that fibre is now a key talking point for many Australians – so much so that it emerged as the key purchase influencer. With evidence continuing to emerge around its links to improved gut health, 46 per cent of us reported fibre as a strong influence on our food choices. But the lure of protein is still persisting, with 43 per cent reporting protein as a key consideration in food purchase.

Fewer Australians are self-diagnosing coeliac disease, with a decline from 14 per cent in 2014 to just 2 per cent in 2017. Greater understanding of the condition, and widespread reports on the dangers of cutting out gluten if not medically necessary have likely contributed to this encouraging finding.

WHO ARE WE TURNING TO FOR HEALTH AND NUTRITION INFORMATION?

Interestingly, we also observed a change in who we're turning to for information on health and nutrition. It seems trust in health professionals is waning, with 18 per cent turning to their GP for advice (down from 26 per cent in 2014). Instead, it seems we're keeping it in the family: 32 per

cent of people are seeking opinions from family members, up from 28 per cent three years ago.

THE BOTTOM LINE

In the long-run, it's clear that those who eat more whole grains and legumes are healthier, being less likely to develop chronic conditions like cardiovascular disease, Type 2 Diabetes and even some cancers. As such, the outcomes of GLNC's study shows that Australians are taking positive steps towards better health.

The results highlight significant opportunities for industry too, in communicating the health benefits of both whole grains and legumes to consumers. The time is right for grains and legumes, with consumers itching for natural, healthy foods rich in protein and fibre. Focusing on the superior fibre benefits of whole grains, to align with emerging research linking fibre with gut health, is a great opportunity to align with anti-fad diet messages seen increasingly in the media. Lately, the focus has shifted from carbohydrate quantity, to quality, which is helping to present grains in a more favourable light.

Similarly for legumes, showcasing their impressive nutrient profiles and incredible versatility is equally important to encourage Australians to add them to the shopping basket more often. This sits alongside a call to promote the benefits of legumes as an ingredient year-round, and a call for innovative new recipes inspiring people to use these convenient nutrient powerhouses in different ways. 🌱

To find out more about the benefits of whole grains and legumes, visit the GLNC website at www.glnc.org.au.

Interesting Facts from GLNC's Consumption Study



+5-11%

We love our oats!

Porridge-eaters have more than doubled, increasing from 5 to 11% since 2014.



76%

We still love bread!

With 76% eating it daily, but we're increasingly turning to more alternative options including flat breads and wraps.



Snacking is on the rise!

For example snack bars were previously eaten as part of a meal at lunch or breakfast, but this year's results showed they are more commonly eaten as a morning or afternoon snack.



35%

We're eating less pasta and noodles!

At only 35%, down from 43% three years ago.



THE MINDLESS EATING PROCESS

Food safety of artisan products, reducing fat in foods, and the smell of tomatoes.

**WORDS BY DRS RUSSELL KEAST, GIE LIEM, MEGAN THORNTON AND SNEHAL JADHAV
THE CENTRE FOR ADVANCED SENSORY SCIENCE
DEAKIN UNIVERSITY**

CAN A PACKAGE HELP STOP OVERCONSUMPTION?

Snack foods are often too good to put away. Although a small number of people are able to have absolute control over the amount of snack foods they consume, many are tempted to eat more than they initially wanted, especially when a large bowl of snack foods is in front of them. Several studies have suggested that by breaking the mindless consumption cycle with small nudges, snack consumption can be decreased. The idea is that we often consume snack foods without realising how much we eat. By for example wrapping snack foods in smaller volumes (ie, individually wrapped chocolate), or colouring every 10th chip in a tube of stacked chips, we can pause the mindless consumption patterns and make people think what it is that they are doing (eg "I think I have eaten enough now").

With these principles in mind, Belgium researchers conducted three experiments to find out if resealable packaging of snack foods would decrease consumption. It was hypothesised that when people are given snack foods in a resealable package, they are likely to use the resealable functionality of the pack. Every time they want more they have to open the pack, which would stop the mindless eating cycle. In the first experiment, consumers predicted their consumption based on photos of a resealable package and a non-resealable package. In the second experiment, consumers were brought into a cinema and were given either snacks in a resealable package or a non-resealable package. The cinema goers could eat as much as they wanted. In the third experiment consumers were given snack foods in both packaging formats to eat at home for six days. All experiments suggest that consumers consume less snack foods such as skittles, jelly beans and M&Ms, when the snack foods were provided in a resealable package. The data also suggest that the most likely explanation is that consumers deliberate their consumption more when provided with the resealable package.

Although more studies are needed across a more diverse population and with a larger variety of foods, the results of the studies are promising. One of the big questions is: Will the results remain the same if consumers use the resealable package over and over again? Hypothetically consumers go into a new habit of opening, closing and opening the resealable package. After a while the resealable package might no longer break the cycle of mindless eating because it is part of the mindless eating process. Nevertheless, these and other nudging solutions are interesting, because they seem to decrease snack consumption and the snack product itself does not need to be changed. >>

FOOD SAFETY OF ARTISAN PRODUCTS: CONSUMER AWARENESS VS CONSUMER PREFERENCE

Introducing food safety policies is often a challenge for food regulatory bodies. One of the primary reasons for this is the diversity in consumer attitudes towards acceptance of safety measures especially when it comes at the cost of food quality. Thus, understanding some of the factors that influence consumer assessment of food safety and preferences is very important.

A study by Waldman and Kerr investigated consumer food safety attitudes and preferences towards artisan cheeses (pasteurised vs unpasteurised cheese) when provided with 'pro-pasteurised cheese' and 'pro-raw milk cheese' food safety information. The study was carried out in multiple cities in US with 347 participants. Initially, a blind sensory evaluation of three artisan cheeses mainly pasteurised and unpasteurised (differing in ageing period) was performed to measure the general liking for the product. This was followed by conducting experimental auctions of the three cheeses on tablets, where information from consumer forums and scientific literature supporting and opposing the consumption of unpasteurised cheese was provided to the participants. Here, their willingness to pay for the pasteurised/unpasteurised cheese was measured. Finally, a survey was conducted to characterise their attitudes towards food safety risks.

The authors concluded that consumer preference for artisan unpasteurised cheeses was not driven by provision of information about food safety but was mainly affected by taste preferences and their food safety ideologies and principles. Interestingly, the participants who were more likely to choose pasteurised cheese, were also more likely to increase their willingness to pay for the pasteurised cheese after receiving the pro-pasteurisation information. However, receiving negative information about raw milk cheese did not decrease the willingness to pay for unpasteurised cheese in participants who were more likely to choose the unpasteurised cheese. Thus, the participants showed a confirmation bias by selecting information that confirms their already existing beliefs. In conclusion, the study suggested that for regulation of artisan products, consumer acceptability of risks in the food system will play a more important role compared to consumer awareness.

HOW DO YOU LIKE YOUR FAT, WITH SALT OR SUGAR?

Fat is an essential nutrient that is 1) a key ingredient in foods, 2) hedonically pleasing, and 3) consumed to excess and implicated in adverse health effects. Indeed, a study involving 25,000 participants showed that liking of fat in foods was a major risk factor for obesity. But it is not often we eat only fat. Fat is usually accompanied by other tastes such as salt and sugar, and foods with combinations of fat, salt and sugar are often considered highly palatable and easy to overconsume.

In this study published in *Food Quality and Preference*, Bouhuis and colleagues from The Centre for Advanced Sensory Science at Deakin University investigated if the level of fat in a salty and sweet food influences liking of the foods. Participants (n=47, 23 males) tasted tomato soup and custard in four fat concentrations (0, 7.5, 15, 30%), combined with four salt concentrations (0.04, 0.35, 0.7, 1.5%) in soup and four sugar concentrations (0.56, 4.5, 9, 18%) in custard.



Results showed wide variations for the level of fat in soup and custard, with no clear preferred level among consumers. Both salt in the soup and sugar in the custard were stronger influences of preference than fat. It should be noted that both foods used were semi solid and there were differences between foods in the perceived fattiness by consumers with fattiness more noticeable in the soup.

The implications for food manufacturers is that the level of fat in foods can be reduced with a lesser influence on consumer food preference than reducing salt or sugar content.


TO-MAY-TO, TO-MAH-TO...

It doesn't matter how you say it, the characteristic taste and smell of tomatoes is easily recognised (especially with BBQ season around the corner!). Researchers in Germany are currently investigating the odour of different varieties of tomatoes, in order to identify chemical changes in tomato odorants during large scale processing required for such products are tomato juice, sauce and paste. Within this research, they analysed a particular Italian vine-ripe tomato from Sicily, which was noted to have a very intense aroma.

While previous research has identified over 400 volatiles from tomatoes, different varieties may produce different aroma compounds. Utilising Gas Chromatography-Olfactometry (GC-O),

with Solvent Assisted Flavour Evaporation to extract the odorants, 44 aroma compounds were identified using Aroma Extract Dilution Analysis, whereby aroma compounds are allocated a higher Flavour Dilution (FD) factor when assessors perceive the aroma in more dilute extracts.

Of those 44, (Z)-3-hexenal (grassy, green), 3-(methylthio)propanal (cooked potato-like), and trans-4,5-epoxy-(E)-2-decenal (metallic) produced the highest FD factors (FD 2048). Interestingly, 16 compounds had not been previously identified in tomatoes, including one with a fruity, almond-like aroma, and a very high FD factor of 1024. Using numerous chemical methods, it was eventually identified as 2-methyl-2-ethoxytetrahydropyran, which had not been previously reported in any food aroma. Another "unknown" odorant, which smelt like coconut/ dill, also required further analysis for its identification as one of the eight possible isomers of wine lactone.

Finally, with concentration data, the researchers were able to simulate the Sicilian tomato aroma using 15 of the odorant compounds in their natural concentrations. Future research by this group hopes to clarify the changes to tomato aroma during processing. 

References for this article can be found on the AIFST website: <https://www.aifst.asn.au/>.

Lamb Roasts

Australians Weigh In

Australians prefer lighter cuts of roasts, despite the trend towards increased carcass weight of lamb.

**WORDS BY DAVID HOPKINS, JORDAN HOBAN
AND GAVIN MELVILLE
NSW DEPARTMENT OF PRIMARY INDUSTRIES**

HISTORY

The Australian lamb industry went through a period of re-evaluation in the mid 1980s as producers were faced with declining returns and domestic consumption dropped. This was due to a general shift away from red meat, a declining share of Australian lamb in export markets and rising production costs. The response was the development of a series of programs that encompassed an integrated approach to research, development and marketing considering the production, processing and retailing sectors of the lamb industry. A core component of these programs was increasing the carcass weight of Australian lambs while reducing fat levels to facilitate the cost-effective preparation of new retail ready cuts. These cuts were test marketed and consumer attitudes established and in the 90s this approach was significantly expanded with the launch of 'Trim Lamb' predicated on the use of heavy, lean carcasses.

One of the strategies to achieve carcasses that provided the basis for leaner, more consumer acceptable cuts was a focus on genetic improvement. This has resulted in a continuing rise in the average carcass weight of Australian lamb, with no signs that this trend is going to abate. This has presented a challenge to the industry, as when prepared in a conventional way (bone in) lamb cuts from such heavy carcasses are too heavy for many modern one to two person households. There is also evidence that if boneless leg cuts like knuckles are to be retailed, the preferred weight requires a carcass with a weight of at least 25 kg. To address this issue a program of work was undertaken to develop new cuts with a focus on the forequarter and to establish the nutritive value of these cuts. To aid this process a survey was undertaken to establish consumer attitudes towards lamb shoulder roasts with a focus on the weight and specific variations of shoulder roasts (ie type). The objective

was to quantify the impact of roast type, price and weight on consumer preference so as to guide future cut development taken from heavy lamb carcasses by conducting a survey of consumers. Demographic effects on consumer preference of roasts were also explored.

SURVEY FORMAT

Respondents were first notified of the broad survey topic, the anonymity of data and its ultimate use when first approached to participate in the survey. Respondents preferences were obtained using an online survey created using the www.surveymonkey.com website, or by personal interview and a tablet. This survey used a series of images made up of four different shoulder roasts: 1) Lamb shoulder roast, bone in, extra heavy, with shank attached; 2) Square cut lamb shoulder roast, bone in, large; 3) Square cut lamb shoulder roast, bone in, medium; and 4) Compact shoulder roast, bone in small as shown in Fig. 1. When a respondent completed the survey, they were presented with four images of different roasts (Labelled A-D), for which the total price of the cut varied. The four images were generated randomly for each respondent from 20 sets of four images. This process was repeated five times to give five responses.

Demographic questions (DQ) were then posed, pertaining to respondent gender (male and female), age group (18 or younger, 18-29, 30-49, 50-64, and 65 or older) and how many people lived in their household. They were also asked whether they were the primary shopper and how often they went food shopping (daily, few times a week, once a week, fortnightly or monthly, how often they eat meat (daily, at least twice a week, once a week, less than weekly or did not eat meat), and which of the following meats they consumed at least once a week on average (chicken, beef, lamb, »



Lamb Shoulder Options

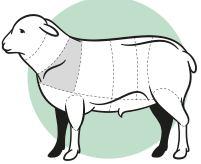
	A	B	C	D
	LAMB SHOULDER, BONE IN EXTRA LARGE, ROAST \$10 per kg 1.37kg \$13.68	LAMB SHOULDER, BONE IN LARGE, ROAST \$12 per kg 1.04kg \$12.43	LAMB SHOULDER, BONE IN MEDIUM, ROAST \$16 per kg 0.698kg \$11.47	LAMB SHOULDER, BONE IN SMALL, ROAST \$20 per kg 0.375kg \$7.50

Figure 1. An example of a set of 4 options of which a respondent had to select one as their preferred.

pork, other). If the respondents did not eat meat, did not buy meat or produced their own meat, their data were discarded.

The variable "Mchoice" was derived based on the mean choice for each respondent calculated by using the scale 10-20, where 10 represents option A and 20 represents option D. (Therefore it is essentially a price per kg scale.). "Mchoice" was modelled using a General Linear Model with frequency of meat consumption, shopping frequency, age group, meat source and gender as factors and number of persons in the household as a covariate. Yet a further model examined the effect of other meats consumed (eg chicken, beef) on "Mchoice". In all cases means were compared by taking twice the value of the s.e.d. All analyses were performed using the R statistical package (R Core Team 2017).

OUTCOMES

A total of 868 respondents participated in this study representing a range of demographics (Table 1), with more respondents being female and with the greatest number in the 30-49 age group. The majority of respondents were the primary shopper in the household. Chicken was the most popular meat, followed by beef. Each respondent was asked to choose one option from A-D on five separate occasions. Over five occasions the choices fall into one of five categories (for example option A chosen five times could be notated as 5 0 0 0 0). In fact, 313 respondents (36%) made this selection and 224 selected A four times and B once (26%) and 207 selected A three times and B twice (24%), so the bulk of people selected the larger (heavier), less \$ per kg roasts.

Table 1. Summary Statistics Of The Number (N) Of Surveyed Respondent Demographics

SEX	WHERE DO YOU GENERALLY BUY YOUR MEAT FROM?
Female	547
Male	321

AGE GROUP	HOW OFTEN DO YOU EAT MEAT?
18-29	172
30-49	395
50-64	233
65 or older	68

HOW MANY PEOPLE LIVE IN THE HOUSEHOLD?	MEATS CONSUMED AT LEAST ONCE A WEEK
No answer	3
One	112
Two	323
Three	139
Four	196
Five	68
Six	20
Seven	6
Eight	-
Nine	1

ARE YOU THE PRIMARY SHOPPER IN THE HOUSEHOLD?	
Yes	700
No	168

HOW OFTEN DO YOU GO SHOPPING FOR FOOD?	
Daily	71
Few times a week	429
Once a week	295
Fortnightly	59
Monthly	14

The variance component analysis revealed that 58 per cent of the total variance was due to the variability between respondents, this is a measure of repeatability. Daily and monthly shoppers indicated a preference for heavier cuts (P < 0.001) with lower Mchoice values (Table 2) and similarly if respondents consumed meat daily they showed the same preference for heavier cuts (P < 0.001; Table 2). Interestingly, people in the youngest and oldest categories showed a

preference (P < 0.001) for lighter cuts (higher Mchoice: Table 2). The impact of the types of meat the respondents consumed at least once a week on Mchoice is shown in Table 2 for chicken, beef, lamb and pork. In each case if the respondent consumed one of these meats except for pork then they showed a clear preference to select lower Mchoice values indicative of larger roasts.

Table 2. Least square means (± s.e.) for the effect of frequency of shopping, frequency of meat consumption and the age of the respondent (corrected for number of persons per household) on roast \$ per kg (Mchoice), and the effect of meat type and consumption of that meat type on roast \$ per kg (Mchoice).

FREQUENCY OF SHOPPING	MCHOICE	FREQUENCY OF MEAT CONSUMPTION	MCHOICE	AGE OF RESPONDENT	MCHOICE	MEAT TYPE	CONSUME	MCHOICE*
Daily	13.5 ± 0.17b	Daily	13.2 ± 0.10a	18-29	14.1 ± 0.14b	Lamb	Yes	13.8 ± 0.13a
Few times a week	14.2 ± 0.10c	At least twice a week	13.9 ± 0.10b	30-49	13.3 ± 0.12a		No	14.5 ± 0.14b
Once a week	14.2 ± 0.11c	Once a week	13.9 ± 0.18b	50-64	13.7 ± 0.13c	Beef	Yes	14.0 ± 0.10a
Fortnightly	14.4 ± 0.17c	Less than weekly	14.1 ± 0.30b	65+	14.8 ± 0.18d		No	14.7 ± 0.21b
Monthly	12.6 ± 0.34a					Pork	Yes	14.1 ± 0.12a
							No	14.2 ± 0.16a
						Chicken	Yes	14.0 ± 0.09a
							No	15.4 ± 0.33b

Although there was not perfect consistency between respondent's selection of their preferred roast when asked this question (with images) five times, there is certainly consistency across some of the demographic factors. For example, the Mchoice analysis revealed that the youngest and oldest age groups preferred lighter roasts as shown by the higher Mchoice (\$/kg) values (Table 2), and the same consistency was observed for the relationship between the frequency of meat consumption and Mchoice with the daily consumers preferring the lowest Mchoice value (less per kg and heavier weight). The preference, particularly by young consumers, for lighter roasts supports the need for the development of smaller roasts and this is a trend deemed important for urban consumers, consistent with a decrease in household numbers which has been the motivation behind the development of a new cut called the compact shoulder

roast (visit the resources section of www.sheepcra.org.au to find out about more)

It was no surprise that chicken was the most consumed meat, and the order of popularity was in line with actual consumption figures. The fact that chicken and beef consumers also select heavier lamb roasts suggests interdependence in consumption and it is probably to be expected that if consumers don't consume these meats, they will also prefer lighter lamb roasts. ¹⁶

Dr David Hopkins is a Senior Principal Research Scientist with NSW DPI specialising in Meat Science, Jordan Hoban is a former Technical Officer with NSW DPI, Dr Gavin Melville is a former Biometrician with NSW DPI.



RED MEAT RISING

Australia's red meat industry is showing no signs of slowing down according to a new report.

WORDS BY BLAKE CUNIO
AIFST INTERN



The Red Meat Advisory Council (RMAC) recently released a report on the Australian red meat industry, serving as a snapshot of the value of red meat in our economy and community. Our red meat industry shows no signs of slowing down and is in fact growing, with a turnover of \$62 billion in the 2016-2017 financial year – an increase of 11 per cent on the previous year.

According to the report, Australia has one of the highest red meat consumption per capita per annum, consuming four times the global average. In 2016, Australia was the largest exporter of beef and the second largest exporter of sheep meat, making it the world's third largest livestock exporter. The value of Australian meat and livestock exports increased by almost \$6 billion from 2011/12 to 2015/16.


There has also been significant growth in demand for goat meat, a once niche industry that has experienced significant growth both in Australia and internationally. Australia exported 2,000 tonnes of goat in 2016, recording a price increase of 177 per cent.

Total employment in the red meat industry, both direct and indirect, equalled around 40,000. "Our industry continues to work for our rural and regional jobs, accounting for almost a quarter of agrifood jobs in Australia," said Independent Chair of RMAC, Don Mackay.

In a state-by-state breakdown, NSW has the highest turnover, totalling over \$17 billion. NSW also had the highest employment at 50,759, with Victoria second at 43,853. Queensland had the highest exports at 566,973 tonnes.

Despite all of these positive numbers, Mackay believes there is a lot more potential for the red meat industry, with government conflict costing the Australian economy money and jobs.

"We've seen recent examples of the Australian red meat industry being damaged by attacks from crusading politicians who are more interested in making a name for themselves than protecting Australian jobs," said Mackay.

"We know the key, tangible outcomes that government can deliver that help us be a bigger and better red meat nation for businesses and workers alike. To attract much needed capital investment into our market we need urgent reform into our policy settings. We must tactically reduce our \$3 billion-dollar technical trade barrier bill, optimise our supply chains, which will add \$750 million and up to 4,000 jobs to our bottom line, and make all agricultural policy with a commercial and agribusiness focus." 

FISHY BUSINESS

Ciguatera fish poisoning is on the rise and no longer restricted to tropical areas of Australia.

WORDS BY HAZEL FARRELL, ALAN EDWARDS, REBECCA BOWMAN AND GENEVIEVE BONELLO (NSW FOOD AUTHORITY) AND SHAUNA MURRAY (UNIVERSITY OF TECHNOLOGY SYDNEY)



CTX = Ciguatoxin

Ciguatera fish poisoning is an illness caused by eating fish contaminated with ciguatoxins. Around the world, this is the most common non-bacterial seafood-related illness and has previously been associated with reef fish in tropical or sub-tropical regions only.

Recently, there has been a noticeable increase in reports of ciguatera fish poisoning from areas previously not known to be affected. This is due to a combination of factors including increased fish imports, more consumer demand for seafood products and the risk of more frequent and intense blooms of the algae that produce ciguatoxins.

In Australia, ciguatera fish poisoning is common in warm water tropical climates, particularly from fish caught in Queensland. Until 2014, cases of ciguatera fish poisoning caused by fish caught in NSW waters were extremely rare, however, new evidence suggests a changing paradigm. Since 2014, the southernmost confirmed cases of ciguatera fish poisoning in Australia have been reported from fish caught off the NSW coast. There have also been four cases of ciguatera fish poisoning linked to fish imported into NSW since 2015.

The risk caused by ciguatoxins is not new, and was probably something the first human to eat a tropical fish had to deal with. Ciguatoxins are naturally occurring toxins produced by microscopic algae (genus *Gambierdiscus*). These toxins accumulate in the food chain when the microalgae are eaten by reef fish which, in turn, are eaten by bigger predatory fish, which are then consumed by humans. Importantly, the toxin is colourless, odourless and cannot be destroyed by cooking or freezing the fish.

Once eaten, ciguatoxins interfere with the nervous system to cause a range of gastrointestinal, neurological and cardiovascular symptoms. Based on investigations of recent ciguatera fish poisoning cases by the NSW Food Authority, following consumption of ciguatoxin-contaminated fish, individuals commonly experienced the sensation of hot/cold temperature reversal. This is a key indicator of ciguatera fish poisoning and

could manifest as burning or pain to their skin when in contact with cold water or pain/stinging when drinking water.

Unfortunately, ciguatoxins are complex chemicals that are difficult to detect. They are odorless and tasteless, and there is no simple method to distinguish contaminated fish. Added to this, the symptoms of ciguatoxin fish poisoning will vary greatly depending on the individual's previous exposure and how much toxin they have consumed, making it difficult to diagnose. While there have been advances in recent years, an effective and economical testing regime for ciguatoxins has not yet been established. This means that treatment and diagnosis of ciguatera fish poisoning is difficult and limited. Not every warm water fish will be contaminated with ciguatoxins and the level of toxins can vary between individual fish. Where ciguatera fish poisoning is more common, locals avoid fishing from certain reef areas and certain species of fish are avoided entirely or only eaten in smaller portions. In lieu of testing, current risk management protocols include avoiding fish from known ciguatera "hot spot" areas and bans or size limitations for certain fish species. It is also recommended to avoid eating the head or viscera of warm water fish, as there is greater likelihood of ciguatoxin accumulation in these parts.

With increased incidence of ciguatera fish poisoning, the traditional perceptions of this seafood-borne illness as something rare, and restricted to the tropics in Australia, are changing. However, there is still evidence that many ciguatera fish poisoning cases are not being identified by members of the public or medical professionals.

The NSW Food Authority has prepared a factsheet to help consumers and fishers understand the symptoms, and what can be done to minimise the risk of ciguatera fish poisoning. The factsheet can be found at www.foodauthority.nsw.gov.au/rp/fish-ciguatera-poisoning. ©

References for this article can be found on the AIFST website: <https://www.aifst.asn.au/>.



5 Questions with AIFST Member **RAI PERADKA**

Lecturer, Applied Food Studies, Food and Beverage Processing Division, TAFE SA and AIFST SA Community of Interest Committee Member

1 WHAT DO YOU THINK WILL BE THE MOST SIGNIFICANT CHANGE IN OUR SECTOR OVER THE NEXT FIVE YEARS?

"Real" food will be demanded by more people. Less processed, more locally grown organic food will be what consumers will look for. Already farmers' markets are growing in popularity and youngsters shop at multiple outlets to meet their needs instead of in the one supermarket. Tasty, healthy, convenient, authentic and safe food – these will be what they base their food choices on. Yes, people still need convenience foods but healthy and safe will be greater motivators too. What we buy will be based more on our values. Plant-origin foods will be more popular. There will be increasing interest in what it takes to grow food and transport it, the amount of food grown and not consumed, of food waste, animal cruelty, greenhouse gas emissions, etc. Consumers are already increasingly making socially aware and value-based purchasing decisions.

2 WHAT HAS BEEN THE MOST IMPORTANT OR INTERESTING FOOD INNOVATION YOU'VE WITNESSED IN YOUR LIFETIME? WAS IT A SUCCESS IN YOUR EYES?

I have been amazed by the popularity of yogurt over the years. Yogurt has been a part of our diets from ancient times in most parts of the world. But after it was introduced in America in the early 20th century, it has grown immeasurably in terms of flavours, textures and popularity. Growing up, yogurt was a small but essential part of my diet and no meal was complete without some yogurt at the end or yogurt-based salad or dip. An age-old food that was a small part of diets in traditional homes is now a must-eat in everyday diets and as a healthy snack. The number of flavours and types of yoghurt on supermarket shelves indicates how popular it is. And now it seems to be coming full circle to the unflavoured forms of Greek or Indian yogurt in their natural state.

3 WHAT'S THE MOST UNUSUAL OR INTERESTING JOB YOU HAVE EVER HAD?

Setting up the first fish processing and export unit in Uganda, Africa on Lake Victoria. Before I arrived there, I did not even know that such a huge body of water existed – 68,000 square kms, as big as Tasmania! I set up the place pretty much from scratch and was involved in everything from purchase of equipment to the training of locals who had not filleted a fish before. At least not for export! There were little islands in this vast body of water whose main industry was fishing. These obscure lake dwellers were contacted to be our suppliers. I went in little fishing boats to these far away islands to train the traditional fishermen in fish handling, storage and transporting the fish to the factory (sometimes an overnight journey!). The huge Nile Perch and tasty Tilapia were thus sourced, filleted and frozen using 21st century equipment and transported over a 1000 kms to a port in Tanzania to be sent on to the markets of the world, including one buyer from Brisbane Australia.

4 WHAT MIGHT OTHER AIFST MEMBERS BE SURPRISED TO LEARN ABOUT YOU?

I am a Fish Technologist, Food Technologist and Adult Educator. I have three degrees, three diplomas and am working towards a third degree (Dan) Karate black belt.

5 WHAT DO YOU SEE AS THE MOST VALUABLE BENEFIT OF BEING INVOLVED WITH AIFST?

The foremost is networking. Through networking we get a lot of industry contacts and we are able to meet and discuss common interests including sharing the latest updates and developments in the food industry. Recognition as a member of a professional organisation benefits me greatly. I joined the Institute as a Student Member in 1996 and am now a Professional Member. I believe that the "MAIFST" on my business card adds value when meeting and interacting with industry. The *food australia* magazine provides interesting and engaging information which provides me with a lot of Institute and industry updates. The AIFST Convention and education and training workshops and webinars provide huge benefit. I have also been a part of AIFST committees where you can learn and contribute a lot of skills and knowledge. I have greatly enjoyed being associated with AIFST and will continue to do so. @



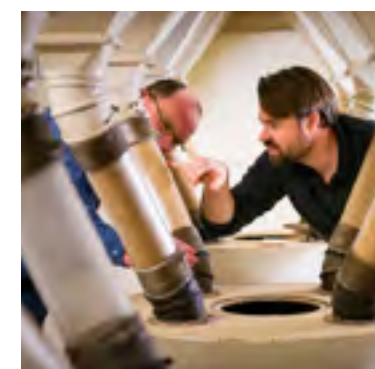
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