

PREPARED food

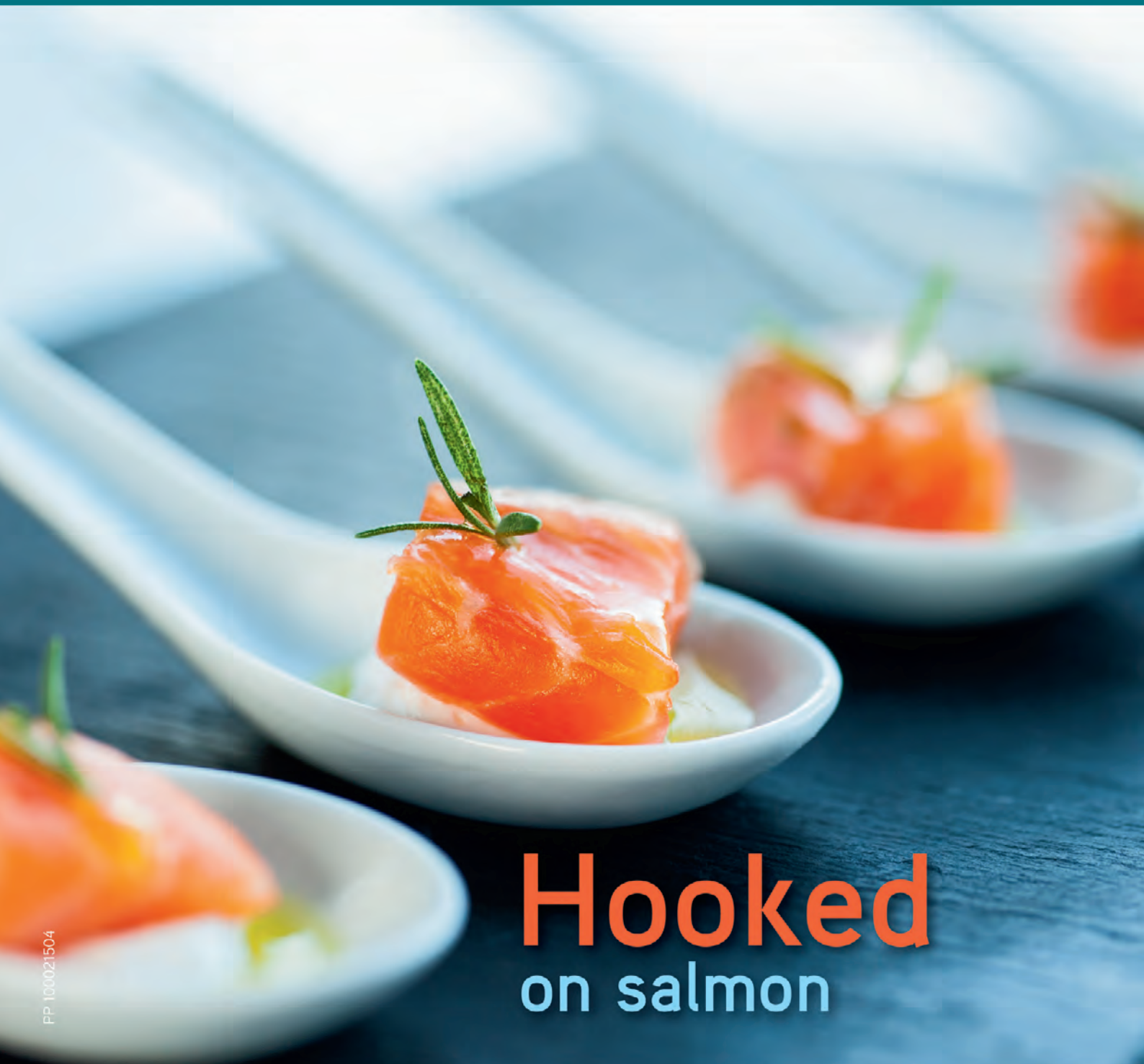
AUGUST 2016

VOL.1 NO.6

READY MEALS

HIGH-VOLUME CATERING

BULK MEAL COMPONENTS



Hooked on salmon

PP 100021504

INGREDIENTS | PREPARATION EQUIPMENT | PACKAGING | DISTRIBUTION | AND MORE

A revolutionary mixer/tumbler



utilising standard 200 litre trolleys

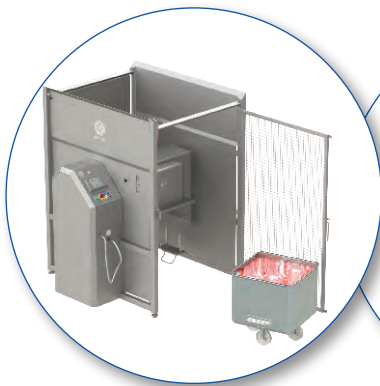


- Operation based on standard 200 litre trolleys
- ZERO loading time
- ZERO unloading time
- Minimum cleaning time
- Very quick mixing times
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- Variable speed 2 to 13 rpm
- Transfer hood similar size to trolley allowing thorough mixing

Processing can't be more simple

GAROS GBT 300 mixers/coats/marinades

(Salads, Poultry, Meats, Nuts and Snack Foods)



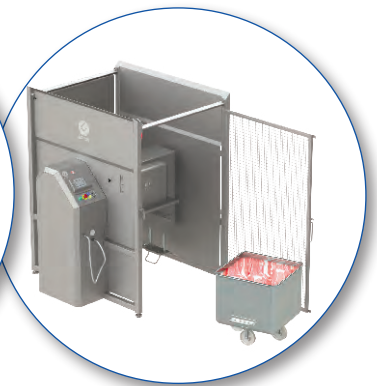
Batched ingredients
in the trolley



Trolley pushed into the
machine



Run the
programmed cycle



Trolley with the finished batch
discharged for further processing

Before and after mixing results with the GAROS GBT 300

**VEGETABLES
SALAD**



After 1 minute

**CHICKEN COATED
WITH SPICES**



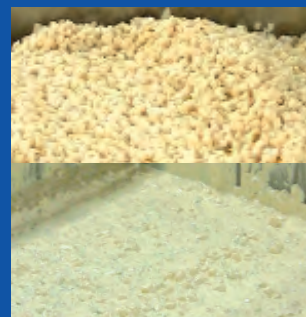
After 5 minutes

**MEAT COATED
WITH SPICES**



After 1 minute

**MAYONNAISE BASED
POTATO SALAD**



After 12 minutes

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www.foodprocessing.com.au/magazine

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Something for everyone — exhibition and conference season

August to October always seems to be exhibition and conference season — I don't know why. But I do know that these events are always worth attending and usually what you come away with is what you least expected.

Take Fine Food in Melbourne in September — you may go intending to find out about the latest oven technology but actually come away with a new ingredient you didn't even know existed. One thing you can be sure of is that with more than 1000 exhibitors at Fine Food, there will be lots of new products and services for you to discover.

Earlier this year I was at Foodservice Australia. There were over 250 exhibitors showing the latest food, drink and catering equipment, but the product that really caught my eye was the lightweight Preparation Board that could store waste or chopped items through a chute positioned at the front of the board. A very clever idea that had never occurred to me. You will find a little more about the board in this issue of *Prepared Food*.

If you are NZ based, Foodtech Packtech in Auckland in October is the place to be. Although this event focuses on larger scale food and beverage processing, there will be lots to interest large-scale caterers and ready meal producers.

If you are interested in food safety, hygiene and HACCP procedures (and in the food industry, who isn't?) the 23rd HACCP conference in Melbourne in October is worth attending. The keynote speaker will be Hugh Pennington, Emeritus Professor of Bacteriology, University of Aberdeen Scotland, who will talk about *E. coli* outbreaks in the UK.

Prepared Food and our sister magazine *What's New in Food Technology & Manufacturing* will be at all of these major food and beverage industry events. Please come by and say hello (and get a totally useless but very cute penguin-shaped stress ball).

In the last issue of *Prepared Food* I was talking about the contaminated sprouts sickening SA and NT consumers, but the size of that recall pales into insignificance when compared to the General Mills flour recall in the US. Initially 10 million pounds of flour was recalled, but that quantity has since been extended. Advice to consumers that they should never eat uncooked dough or cake batter seems a little hard to implement to me.



Regards

Janette Woodhouse



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Hooked

on salmon





Salmon consumption in Australia is tracking well, with a quarter of us eating it at least once a week.



In the past two years the number of people eating salmon once a week has increased by 300,000. Now 25% of Australians are eating salmon each week.

The most voracious salmon eaters live in NSW, where 28% enjoy the fish each week (up marginally from 27% in 2014), but the greatest increase in uptake has been in Victoria, where 26% eat salmon each week, up from 23% two years ago. Queenslanders increased their salmon eating from 22 to 24%.

But two states saw a decline — South Australia (down to 18% from 21% in 2014), and ironically, given its flourishing salmon-farming industry — Tasmania, from 27% down to 23%.

The age of salmon eaters is fairly consistent across the country with the over-50s being the largest consumers.

The fish fancied by foodies

Applying Roy Morgan's culinary profiling system, Food Segments, to the country's salmon-eaters reveals how someone's overall attitude to food and cooking can influence whether or not they are likely to consume salmon.

The fact that almost a third of Australians from the 'Trendsetter' segment and an almost identical proportion of 'Entertainers' eat salmon in an average week indicates that the fish is rated highly by those who take their food seriously. Trendsetters are culinary adventurers, constantly in search of new flavours and gourmet ingredients, while Entertainers love the social aspect of enjoying fine food with friends and family.

At the other end of the spectrum, people from the decidedly anti-gourmet 'Zappit' and 'Take-it-away' segments are well below average for salmon consumption. As their names suggest, these folks prefer to spend as little time in the kitchen as possible and are not remotely interested in the finer points of their food.

Norman Morris, industry communications director, Roy Morgan Research, said: "Salmon consumption in Australia is tracking well, with a quarter of us eating it at least once a week. Celebrated for its nutritional benefits, such as omega 3 and protein, as well as for being low in fat, salmon is especially popular with people who restrict how much fattening food they eat, those who prefer to eat healthy snacks and those who are eating less red meat these days.

"The decline of salmon consumption in Tasmania is puzzling, given the state's thriving aquaculture industry (not to mention the widespread — if gradual — upward trend elsewhere). More research is required to identify the reason for this.

"Meanwhile, Roy Morgan's Food Segments provide a different perspective on Australia's salmon-eaters. Salmon brands would be interested to learn that, as well as being more inclined than most to eat salmon, more than half of all Trendsetters are aged between 25 and 49: an age bracket not usually as enthusiastic about the pink fish as the 50-plus brigade. By gaining a deeper understanding of what makes Trendsetters tick, savvy salmon brands can then tailor their marketing to appeal to this potentially lucrative consumer group." □

Cricket farming in New Zealand

Alex Figg is one of three founders of Critter Farms, an enterprise raising an orchestra of crickets for food.

The University of Auckland final-year Masters of Architecture (Professional) student was researching sustainable architecture when he learnt the World Health Organisation (WHO) had declared our current agricultural practices unsustainable. According to the WHO, by 2050 an estimated 9.3 billion people will require feeding, with protein being the nutrient in short supply.

While pondering how this would impact on future land use and architecture, Figg and co-founder Elliot Olsen began investigating alternative protein sources. They discovered that crickets were a sustainable, efficient and nutritious protein source which far outperforms traditional livestock. The insects use 2000 times less water, 12 times less feed and emit a hundred times fewer greenhouse gases compared to beef.

High in protein, essential salts, vitamins, minerals and omega 3 and 6 fatty acids, crickets are a super food of sorts.

While the global population grows and becomes increasingly urban, there will be less arable land available for agriculture.

"Crickets don't require earth to be farmed, so they can potentially utilise vertical space which can be designed into buildings," said Figg.

With a personal goal to use truly sustainable practices in his life and work, Figg has also been researching a new biodegradation method to recycle problem plastics, utilising advances in environmental science. The idea recently won a Velocity Innovation Challenge Prize worth \$1000.

In between plastic recycling and finishing his architecture degree, Figg and his colleagues at Critter Farms are prototyping cricket farming in Auckland with the target of helping enable a paradigm shift away from our dependence on land for food.

With approximately two billion people already eating insects to supplement protein, if you're not keen on eating whole crickets never fear...

"The crickets are toasted and ground into a nutty flavoured powder which can be used as a tasty, high-protein food ingredient. I recommend you try it," said Figg.



Image courtesy of shankars. (CC BY-NC) under CC BY 2.0

Flat-bottom bag

Foster Packaging's Flat Bottom Bag offers both a strong shelf presence and space efficiency. Its box shape allows for efficient packing and its robust design creates high stability. The bag's self-standing ability is augmented by the strength and rigidity provided by strong lamination.

The space-efficient design reduces the cost of storage and transportation.

A variety of special features, including resealable zippers, spouts and easy-tear perforations, can be incorporated in the packaging.

Other benefits of the flat-bottom bag include increased space for branding elements. Some companies opt to move their nutritional information and ingredients to the two side gussets or bottom gusset, freeing up space for eye-catching windows and artwork on the front and back of the bag.

In Norway, Hofseth wanted to use the flat-bottom bag to launch its seafood products. Foster Packaging was able to take Hofseth's artwork and concept and make it a reality by digitally printing a small quantity and hand-making them into mock-ups that Hofseth presented to its customers and buyers. The feedback received was so successful that the company decided to move ahead with a full production run for its salmon and cod products.

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Sweet and savoury shortcrust tartlet shells

HUG offers a broad range of sweet and savoury shortcrust tartlet shells from 3.8 to 9 cm in various shapes and flavours. The slightly sweetened dessert tartlets are suitable for sweet filling while the Universal tartlets offer a neutral base for both sweet and savoury fillings.

HUG tartlets are shelf-stable, ready-baked and bake-stable. For ready-baked applications, simply fill the HUG tartlet shells with pre-cooked or chilled fillings and serve. For bake-stable applications, simply fill with ready-to-cook fillings such as a quiche mix, bake and serve.

The tartlets are freeze stable for deep-frozen applications.

The tartlets are coated with a thin glaze of non-hydrogenated vegetable oil to ensure crispness and freshness. This also means that the tartlets can be prepared with hot or cold fillings hours before serving.

Tartlets need only be stored in a cool, dry place away from light (15–25°C, max. 65% rh).

Dalya Australia Pty Ltd
www.dalya.com.au



Could automation save the foodservice industry?

Tight profit margins and increasing labour costs may force reinvention of the foodservice industry, with automation offering the potential to offset increasing wage costs.

A study by US researchers has found that businesses in the foodservice industry are significantly more labour intensive and have decreasing returns to scale compared to other service industries, and that simply raising prices to become profitable may not solve the core problem.

“Some aspects of the foodservice model will

have to be rethought,” said Amit Sharma, associate professor of hospitality management, Penn State. “Professionals in the foodservice industry need to find a way that will be economically viable and sustainable in the future, which might mean rethinking the model of how the business is being run.” The researchers, who report their findings in the *International Journal of Contemporary Hospitality Management*, said that compared to other industries, the foodservice industry performed significantly differently in intermediate input. A key indicator of the partly finished goods value that an industry produces, intermediate input is calculated by taking an industry’s gross output and subtracting its value added — employee compensation, taxes on production and imports less duties and gross operating surplus.

“Intermediate input measures what goods and services an industry is either getting from its suppliers and/or how much value the industry is adding before they pass the final product onto consumers,” said Sharma. “In this case, restaurant owners may buy raw vegetables, turn them into a meal and then sell that dish to customers, or buy prepared vegetables, such as chopped lettuce and use them to create the meal or dish.”

The intermediate input for the foodservice industry is actually negative, while all other service industries showed a positive intermediate input, according to the research.

“So, what this means is that if your intermediate input is negative, either the industry gross output is low, or value added is high,” said Sharma. The study shows that the foodservice industry gross output is also relatively lower than that of other service industries and that foodservice businesses have decreasing returns to scale. This means that increasing all inputs would lead to disproportionately lower increase in total output. Sharma said that businesses could better use automation and technology to improve efficiency and save on labour costs.

“We are not talking about robotic restaurants, but we are now looking at where automation makes sense,” Sharma said. “Small measures of automation can also help, as long as it is focused on increased customer service while increasing labour efficiencies.”

For example, a restaurant could install technology that lets customers alert staff when they need assistance, rather than have the staff check on them every few minutes.

“There have been similar studies, for instance, in the manufacturing industry, but we wanted to compare our industry — hotel, restaurant and recreation-gaming industries — with the rest of the service sector,” said Sharma.

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Why hygienic design matters when choosing cleaning tools

When it comes to the equipment used to clean the food production environment and production equipment, very few cleaning tools are developed with good hygienic design in mind.

Hygienically designed production equipment is quicker and easier to clean and minimises the risk of product contamination by microbes, allergens, foreign bodies etc. This, in turn, maximises food safety and quality, reduces the risk of expensive product rejection or recall, and minimises food waste.

However, the cleaning equipment itself has been shown to be a major source of contamination. One recent study showed that 47% of the cleaning equipment investigated was contaminated with a harmful bacterium (*Listeria monocytogenes*). It was not clear whether this was due to poor cleaning of the cleaning equipment or to their poor hygienic design (or both).

Vikan's Ultra Safe Technology brushware (UST) has been developed specifically to minimise the risk of contamination from trapped food, microbes and moisture, and reduce bristle loss. The fully moulded construction eliminates the need for drilled holes, staples and resin, thus minimising the presence of crevices where contamination can be trapped. The construction enables every bristle to be individually fixed so that the loss of one bristle does not affect the security of others in the bundle — minimising the risk of bristle loss and therefore of foreign body contamination.



The ability to quickly and easily decontaminate a cleaning tool not only saves time and effort but also improves food safety, quality and shelf life.

Another study found that much of the cleaning equipment currently used in the food industry is difficult to clean due to poor hygienic design. The hygienic design of brushware poses a particular challenge. The most commonly used construction method for brushes and brooms currently involves the drilling of holes into a solid plastic block and then stapling tightly packed filaments into the holes. This creates possible dirt traps both within the holes and between the filaments. Other brushware manufacturing techniques such as fused filament and resin set do exist, but all were shown to have hygienic design issues.

The poor hygienic design of brushware in some high-risk dry goods environments, like baby formula manufacture, has resulted in manufacturers using brushes once and then throwing them away, rather than risk the possibility of cross-contamination.

The ability to clean the cleaning equipment itself is critical to ensuring food safety and quality, and the application of good hygienic design principles makes this possible. This may be the driver behind the new audit requirement in the British Retail Consortium (BRC) Global Standard for Food Safety v7(5), that “cleaning equipment shall be: hygienically designed and fit for purpose” (section 4.11.6).

The European Hygienic Engineering Design Group (www.ehedg.org) has defined principles of hygienic design. To meet their recommendations, hygienically designed cleaning tools should meet the following criteria:

- Free of crevices and contamination traps — use of smooth joins and the absence of small holes, recesses and sharp internal angles.
- A smooth surface finish (Ra less than 0.8 µm).
- Easy to clean (and dry). The equipment must be quick and easy to dismantle and reassemble or be of one-piece construction and have easy access to all areas for cleaning and disinfection.

- Made of food-safe materials. It must be non-toxic (in compliance with EU food contact material legislation).
- Well constructed and durable.
- Non-absorbent.
- Appropriately temperature and chemical resistant. It must be able to safely withstand dishwashing and autoclaving and cleaning and disinfection chemicals.

Deb Smith, a committee member of the UK:IE EHEDG Regional Section and Global Hygiene Specialist with Vikan, explained, “There are many reasons why the application of hygienic design to cleaning equipment is so important. The ability to quickly and easily decontaminate a cleaning tool not only saves time and effort but also improves food safety, quality and shelf life. By minimising the risk of cross-contamination, the risk of product rejection ... consequently, product waste is reduced. The risk of product recall or prosecution is also reduced, thus protecting/improving company reputation and income.”

Vikan, represented in Australia by WR&D Wells and in NZ by Wells Hygiene, is pioneering the development and use of hygienically designed cleaning tools through its Ultra Hygiene range. Using the hygienic design principle defined by EHEDG, Vikan has developed the Ultra Hygiene range for use in areas where hygiene is critical for the maintenance of food quality and safety. The range includes handles, squeegees and brushware. All feature a fully moulded construction, minimal presence of crevices and contamination traps, smooth surface finishes, easy access to all areas for cleaning and disinfection, and durable construction. Additionally, all are made of non-absorbent EU and FDA food-safe materials, which are appropriately temperature and chemical resistant.

Next time you are purchasing cleaning equipment, give a little thought to the benefits hygienic design can offer. □

WR&D Wells Pty Ltd
www.wrdwells.com



Vikan's Ultra Hygiene handles are easy to clean with a smooth surface finish and a large hanging hole for easy-to-clean access. They are made entirely from food-grade, reinforced and recyclable polypropylene that can withstand industrial cleaning chemicals with no corrosion.



Vikan's Ultra Hygiene squeegees, available in both handheld and floor-use versions, have been hygienically designed with a fully moulded construction and smooth, sloped and rounded surfaces to make them easier to clean. The materials used in the squeegee's construction are chemical and heat resistant. They are also dishwasher and autoclave safe.

Vegie Magic introduces gluten-free and vegetarian foods for foodservice operators

Family-owned food business Birubi Foods has created a range of gluten free, pre-cooked vegan burgers, mini burgers, sliders and bites under its Vegie Magic brand. The products allow foodservice businesses to cater for different dietary needs using the same menu items without increasing complexity and producing food waste.

"Many foodservice businesses find it difficult to cater for customers looking for gluten-free foods or customers looking for real food experiences with less or no meat. As these customers are currently a small percentage of their visitors, catering for a wide range of special needs adds menu complexity, additional costs and food waste," said Leanne Fitzpatrick, general manager and founder of Birubi Foods.

There is a growing demand by consumers for gluten-free foods, and a rapidly growing number of vegetarians, vegans and flexitarians looking for flavoursome, real-food experiences when they eat out. Leanne said these consumers are looking for a wide range of meat-free snack and meal choices, rather than being forced to adapt menu items to suit their food preferences.

"Creating mouth-watering and flavoursome gluten-free vegan products with the potential to be used on the menu for all customers is a focus for us. Our gluten-free foodservice range does not compromise on these basics and being pre-cooked, frozen and easily re-heated in many ways provides a lot of scope for new menu ideas that suit a range of customer needs," she said.

The Vegie Magic gluten-free vegan products are distributed frozen and are quick and easy to reheat.



Image courtesy of Couleur (via Pixabay) under CCO Public Domain

Modular packaging for airline food

Faerch Plast has developed a range of modular packaging for airline catering. The series is easy to handle for the cabin crew, can be used in conventional ovens, is attractive and is user-friendly for passengers.

The product line meets the standard dimensions which are required for existing ovens, drawers and service trolleys in the aircraft. They also meet stringent onboard weight and space restrictions. In addition, the modular packaging ensures a more eco-friendly profile as the multi-use packaging is recyclable in markets where facilities exist.

The packaging series comprises a range of transparent APET (amorphous polyethylene terephthalate) containers for fruit and cold foods and heat-resistant CPET (crystalline polyethylene terephthalate) containers that can be transferred directly from the freezer to the oven. This eliminates the need for aluminium trays, ensuring a more uniform presentation when serving.

The high-clarity APET packs are suitable for cold foods with a temperature resistance of -40 to +70°C, while CPET trays can be used in temperatures from -20 to +220°C and provide many additional benefits for airline caterers.

Unlike aluminium, meals packed in CPET containers can be inspected by food industry metal detection equipment and offer excellent sealability to eliminate leakage and provide product integrity and safety. They are suitable for freezing and pasteurisation, are not easily dented, retain their shape for improved handling and passenger safety, and provide major impact resistance.

This uniform design allows the CPET containers to be easily denested for more efficient and cost-effective automation of the food manufacturing process.

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BOPP film for IML in thermoforming

Treofan EPT is a BOPP film developed for in-mould labeling in thermoforming that delivers a similar look and feel to injection-moulded products. The solution features a surface that enables stable fusing of thermoforming and label film at comparatively low temperatures and pressures, allowing the benefits of deep drawing to be harnessed without compromising quality.

Deep drawing — or thermoforming — is an increasingly popular alternative to injection moulding for certain product groups, partly due to potential economies of scale. Until now, however, attaching BOPP labels to thermoformed products has required a separate process step; as temperatures and pressures used in thermoforming are much lower than those in injection moulding, direct fusion is not possible.

The company has developed a surface that attaches to deep-drawn films under the conditions typically used for thermoforming. The resulting join between container and label is visually and functionally near-indistinguishable from the complete fusion achieved by injection moulding.

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The future of ancient grains

Einkorn, emmer and spelt fed large swathes of the world's population for thousands of years but disappeared almost completely during the rise of industrial farming and the green revolution. Could these ancient grains provide an opportunity to tap into current demand for high-quality, healthy food?

In an opinion published in *Trends in Plant Science*, two plant breeders argue that the current environment presents an opportunity to reintroduce ancient wheat varieties and other plant species by creating 'farm to fork' supply chains that satisfy consumer demand, provide niche markets for small farmers, millers and bakers, and increase agricultural biodiversity.

Friedrich Longin and Tobias Würschum, both from the University of Hohenheim in Germany, say that consumer preferences in the US and Europe, driven more by a desire for novel products and healthy ingredients than a demand for low prices, create markets that ancient wheat species can fill.

The wheat flour in breads and baked goods comes almost exclusively from bread wheat, just one of the three species, 20 subse-

cies and thousands of varieties of wheat cultivated and consumed across the globe for thousands of years. The development of industrial agriculture in the mid-20th century focused on developing cultivars that produce a high yield and have short stalks which are less likely to collapse in the field, exposing the grains to pests and mould. Other varieties ceased to be commercially viable and, as they fell out of favour, traditional dishes and regional food diversity also began to disappear.

Many of these varieties still exist in gene banks all over the world and scientists view them as an important source of genetic diversity. Longin and Würschum say a holistic approach that looks at both agronomic properties like disease tolerance and yield potential, as well as nutritional and taste profiles, is needed to select the best candidates to reintroduce to the market.

In their research, they screened hundreds of varieties of einkorn and emmer and tested the 15 best candidates at four different locations in Germany. The results showed the importance of looking at these plants holistically.

"When you look at einkorn, it is really fantastic-looking in the field, but when you

get the agronomic performance, it is low yielding and it falls down in the rain. But then we found there were so many healthy ingredients, and you taste and even see it in the end product," said Longin.

They point to the sizeable and growing market for spelt products as an example of how ancient grains can be successfully reintroduced in modern markets. Spelt, the main cereal crop in Southern Germany, Austria and Switzerland until the early 20th century, nearly disappeared. By the 1970s, when its rediscovery started, only a few millers and bakers were still familiar with traditional spelt recipes such as Swabian seelen, a baguette-like pastry. Today, more than 100,000 ha of spelt are grown annually in and around Germany, with an annual turnover of €1 billion across Europe and an annual growth rate of more than 5%.

Longin and Würschum say that to successfully reintroduce other ancient grain varieties, interdisciplinary cooperation all along the supply chain, from plant breeding to nutritional analysis to marketing, is needed. They believe the end results can create a self-financing strategy for providing high-quality foods and preserving ancient species. □

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Colour-coded, stainless steel hose nozzles

Designed and manufactured in Europe, Tecpro's Blue and Red Hose Nozzles allow users to easily distinguish between hot and cold water hoses. Workplace safety is immediately enhanced as users can easily identify which hose is the most appropriate for the job and be vigilant when using hot water.

The heavy-duty nozzles are available in both brass and 316L stainless steel. The stainless steel model is particularly suited to the food, beverage and pharmaceutical industries where hygiene is critical.

A heavy-duty white rubber version of the hose nozzle with a 316L stainless steel body is available for plants that use white to signify cleaning equipment.

The nozzles are built to last and include a replaceable EPDM rubber cover. If wear occurs, users can simply replace the

cover rather than having to purchase an entire nozzle. In addition, the EPDM cover is designed to minimise heat transfer up to 80°C max, making them safer for staff to use.

The inline nozzles are less likely to become caught on machinery compared to washdown guns and the twist head is claimed to be more comfortable to use than a hose trigger. The simple twist operation provides a high-pressure, conical spread of water at up to 16 bar of water pressure.

The hose nozzles will fit ½", ¾" and 1" hoses and are suitable for any high-volume washdown application.

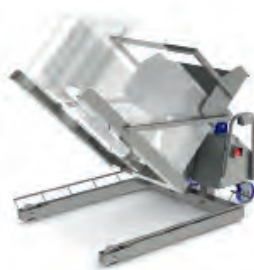
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How useful are nutrition labels in dining halls?

Dining halls at the University of Illinois voluntarily label food items with nutrition information but are students using the information to make healthy food choices? A new study shows that students who are already health conscious are the primary users.

"Those who track their food intake by using an app or some other sort of food diary are 6.6 times more likely to use the information on the labels to make food choices. This was the biggest predictor," said U of I food economist Brenna Ellison. "We also found that students who exercised

regularly, ate breakfast and reported good or excellent eating habits were more likely to use nutrition labels."

Ellison and her colleagues surveyed 2729 university students in four different dining halls. "It's an important population for nutrition studies because they're developing lifelong habits," Ellison said.

After students sat down with their trays of food, they were asked to participate in a written survey. About 45% of the students surveyed said they saw the labels but only 20% used the information on the labels to make food choices. The surveys were conducted during weeks four, eight and 12 of a semester.



... this is the first study on dining hall nutrition labelling to look at the relationship between label use and sleep, stress and exercise.

"We specifically waited to do the first wave until week four of the semester so that the newness of eating in the dining hall had worn off and the student's natural routines had a chance to establish," Ellison said.

Ellison said data collection was spread out over the semester to provide data on label awareness and usage over time. "Being sceptical, I thought usage of labels might go down over time. It was a pleasant surprise that, even with different people taking the study each week, we continued to see similar rates of noticing and using the label even in week 12 of the semester. Ideally, more people would have used the labels as the semester progressed, but at least it does not appear that students' awareness and use are going down."

Of those who didn't use the labels, 61% said that they don't care about the information, 32% said they already know the information and 25% said they didn't have time to use the information.

"I think that the 'don't-care' factor is an important finding," Ellison said. "We know

that 80% of the 'don't care' respondents exercised at least once a week, but only 12% had taken a college-level nutrition course. So is more education needed? Will it make a difference? Our results suggest promoting other behaviours such as exercise or tracking intake may also encourage label use."

Ellison said this is the first study on dining hall nutrition labelling to look at the relationship between label use and sleep, stress and exercise.

"With those who exercise, there was a dose response. The more often you exercise, the more likely you are to use the labels. We expected this because people who practise one good behaviour are likely to practise a suite of healthy behaviours.

"We didn't know if stress would be a good or a bad influence," she said. "We thought someone under high stress wouldn't have time to look at labels, but what we found is that people who perceived themselves as having higher stress paid more attention to the labels. We didn't find a big effect with sleep, but

the survey only captures one data point per person, so it may not represent a regular pattern of sleep."

The survey also asked students what information they wanted to see on labels.

"We found it interesting that the people who didn't use the labels wanted a lot of the information that was already available to them," Ellison said. "They were more likely to say that they wanted vegan and vegetarian items, locally sourced items and ingredients labelled — information that was already on the labels or available through the dining hall website."

The impetus for the study was to learn if label placement makes a difference in students' awareness. Two of the four dining halls in the study placed nutrition labels above the sneeze guard. The other two dining halls placed the labels directly in front of the food. Ellison said placement doesn't matter after all.

"We thought that students couldn't help but see a label near the food," Ellison said. "If anything, placing the labels closer to the food became problematic." She said food such as pasta sauce regularly splashed onto the label, making more of a mess for the dining hall staff having to remove or replace the labels in the middle of a lunch period. "For practical purposes, it's good that label placement doesn't matter. They really need to be placed above the sneeze guard to keep them clean and legible."

The research paper, titled *The Influence of Nutrition Label Placement on Awareness and Use among College Students in a Dining Hall Setting*, appears in the *Journal of the Academy of Nutrition and Dietetics*. It was co-authored by Mary Christoph, Brenna Ellison and Erica Nehrling Meador. □





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Sunny Queen Meal Solutions' Mini Fritters and Egg Bites are a nutritious and light alternative to deep-fried finger food, suitable for parties, festivities, corporate functions and commercial kitchens.

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With a rustic, home-made appearance, the fritters are available in Corn & Cheese

and Spanish with Chorizo flavours, while the light egg bites are available in Smoked Ham & Cheddar, Creamy Fetta & Garden Spinach and Goats Cheese & Caramelised Onion.

The products can be prepared with no waste or mess and have a shelf life of 12 months from the date of production. The egg canapés can be prepared using a microwave, grill, hotplate, combi or conventional oven.

Sunny Queen Meal Solutions
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Bakery machine for cream production

Bakon's Top Cream produces cream, mousse and bavarois products.

The bakery machine has a stirring device with two speeds to distribute cold air into the cream. During the whipping process, air is cooled down to 2°C and is blown into the container through the perforated bottom. A system of three filters ensures that clean air is blown into the container. The transparent lexan lid enables users to watch the whipping process.

The constant injection of cooled air increases the volume up to 50% and makes it possible to keep finished whipped products in the container for several hours without loss of quality.

The stainless steel stand-alone machine is movable via four swivel casters and has two closing doors and a large container, available in two sizes: 40 L for 2–10 L of liquid product or 90 L for 5–30 L of liquid product. A digital panel sets the time, speed and temperature. The equipment can be disassembled for cleaning and its parts are dishwasher proof. A steriliser automatically disinfects after cleaning.

The cream produced is suitable for decorating as it is consistent and stable.

Bakon bv Food Equipment
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The multibillion-dollar meal kit delivery market

In the US, meal kit delivery services have exploded into a \$1.5 billion market in just the past few years — and the rate of growth does not seem to be slowing.

Meal kits offer consumers home-cooked meals without having to do any planning or grocery shopping.

Picture menus on online portals show gorgeous photos of the finished dish.

Consumers simply click the 'buy' button and the service provider will deliver the premeasured fresh ingredients, along with full instructions. The consumer prepares chef-quality meals at home from fresh ingredients and avoids the preprepared heat-and-eat meal, takeaway or having to dine out.

Participants across the entire US food spectrum — from grocery home delivery services like Peapod and FreshDirect, to packaged foods marketers like Barilla, to meal-kits-only grocery store Pantry — are climbing aboard the burgeoning meal kits bandwagon.

Marketers are aiming for — and finding — a 'sweet spot' with consumers who do not have the time, inclination or know-how to shop for individual ingredients, navigate a recipe and cook from scratch.

In response to this growing market trend, Packaged Facts has released a first-edition report, 'Meal Kit Delivery Services in the US'. The report looks at the history and the changing eating trends that are making meal kits viable. It also delves into the scope and demographics of users of meal kit delivery services and profiles more than two dozen competitors and their strategies, including Ahold USA, Blue Apron, Chef'd, Cooking Simplified, Din, Foodstirs, FreshDirect, Gobble, Green Blender, Green Chef, Handpick, HelloFresh, Home Chef, Hungryroot, Just Add Cooking, Markey Spoon, Munchery, Pantry, PeachDish, Plated, The Purple Carrot, Saffron Fix, Sun Basket, Terra's Kitchen and Tyson Foods.



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Partnership serves up 40 million pasta meals to Aussies in need

40 million pasta meals have been provided to people in need thanks to a unique partnership between Foodbank, Australia's largest food relief organisation, and food companies Mauri ANZ and Rinoldi Pasta.

Foodbank provides food for 644,000 people each month and is constantly seeking new ways to find more supplies for those in crisis. One innovative program entails collaborating with the food industry to manufacture the key staples needed to provide nutritious and filling meals on a consistent basis.

The first and most successful of these collaborations is in the production of pasta.

Since 2010, Rinoldi Pasta has been producing spaghetti and macaroni for Foodbank with flour donated by Mauri ANZ.

The program has just marked 40 million serves manufactured and distributed to frontline charities around the country.

Commenting on the program's milestone, Foodbank Australia CEO Geoff Starr said: "The Pasta Program sets the benchmark for our food industry partnerships.

"Through the commitment of Rinoldi and Mauri ANZ we have a constant and sustainable supply of a product that forms the foundation of a variety of hearty meals.

"This is crucial if we are to reliably supply charities with the food they need for their vital relief work."

He went on to say: "The Foodbank Hunger Report, which was released in June, reveals that 43,000 people are still being turned away by charities every month due to lack of food. If we are to bridge this gap, we need to find new and sustainable ways to supplement our existing sources of food. The Pasta Program is a standout example of what commitment and teamwork can achieve."

Speaking on Rinoldi Pasta's involvement in the program, its director, Bill Quayle, said: "This is a cause we feel strongly about as an organisation and we are proud to be part of such a smart initiative."

David Wallace, MD of Mauri ANZ, said: "We are committed to, and proud of, what we've achieved as part of the Pasta Program. Working with Foodbank provides us with the opportunity to tap into our resources and the passion of our people to benefit those in need in our community."

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Swab detects food residues

FLASH is a total protein visual swab that rapidly detects protein residues left on food contact surfaces after cleaning. Protein can be difficult to remove and is a good indicator that food residues have been left behind due to inadequate cleaning.



Improper cleaning can lead to biological contamination and also result in cross-contamination to allergen-free products. Most allergens are proteins, so a total protein detection test can help minimise allergen risks.

The self-contained sampling device contains a premoistened tip and all necessary reagents. One swab provides two sensitivity levels, allowing flexibility depending on the criteria for limits of detection of protein residues. Simply swab, activate and read the colour change.

The system complements other cleaning verification methods such as ATP or direct testing for allergens.

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The lightweight Preparation Board has the ability to store waste or chopped items through a chute positioned at the front of the board.

The counterweighting built into the board enables up to 1500 g of waste or product to be stored after chopping.

For waste, the board works using any everyday plastic shopping bag which is fed into the toggles positioned on the side of the board. The removable and washable chute is then placed into position, sitting inside the plastic bag to allow removal of waste straight from the chopping surface into the bag, which can then be unhooked, tied and removed.

When using for storage, the chute can be removed and replaced with a specially designed, plastic, dishwasher-safe container which slots directly into the front of the board. Chopped food can be scraped straight into the container, which has a lid for airtight storage in the fridge or freezer until required.

Preparation Board
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3-wheel electric forklift trucks for the food industry

Mitsubishi's series of 3-wheel electric forklift trucks are suitable for the logistics and warehousing industry, providing clean and robust power with nearly maintenance-free operation.



With its ultracompact design and high manoeuvrability, the FB13-20TCB series is particularly suited to confined working areas such as narrow warehouse aisles and containers. The forklift trucks are equipped with a 48 V battery, efficient AC Power traction and hydraulic motors and regenerative systems.

All FB-TCB series forklift trucks are installed with the innovative AC Power control system which provides for more powerful and more advanced capabilities by integrating travel, hydraulic and electric power steering functions into one cohesive system.

While these trucks are suitable for indoor applications where noise, pollutants or particulate contamination is undesirable, they also now come with a higher IPX4 rating, which means the forklift and its systems are protected against water spray from all directions and angles, making them safe to operate in rain.

The FB-TCB series is particularly effective in creating the best work-

ing conditions for its operators. Electric power steering, good visibility, ergonomic controls, comfortable seat and plenty of leg room are just some of the ways this is achieved.

The FB-TCB range also comes with an array of safety improvements. An essential feature is its integrated speed control on slopes. On an upslope, if the accelerator or brake pedal is released, the truck will only roll backwards at a speed of less than 1 km/h, providing peace of mind for the operator.

Mitsubishi's electric 3-wheeler comes with a standard digital load indicator. Operators can quickly tell the weight of the load to prevent overloading and enjoy a safe working experience. When overloaded, the truck will warn the operator through the display and by a warning buzzer.

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Ramping up production

Continuous cooking and chilling systems are being used by ready meal processors to increase production volumes and efficiencies.

As food processors around the world increase production and gain access to international markets, they are shifting from conventional batch processing to more advanced and efficient continuous cooking, chilling and freezing systems.

To remain competitive and also meet consumers' broadening preferences, large and small processors are adopting continuous systems of various capacities that can provide higher productivity and dramatically increased yields as well as improved food safety and quality.

A wide range of continuous cooking equipment is getting attention, like sous-vide cookers, small footprint spiral ovens, continuous grilling systems for searing and bar marking — anything that can further automate this 'value-added' market. Each of these eliminates inefficiencies of batch cooking, including manual loading, inconsistent results, double handling and extended cooking times.

In South Africa one of the leading domestic processors, Paarman Foods, has incorporated a highly efficient spiral oven into its production facility to facilitate the company's rapid growth.

Paarman, a family-owned food processor based in Cape Town, produces a wide selection of spices, sauces, seasonings, mixes and dressings as well as protein products for retailers. The company also manufactures for a select number of private label companies as well as servicing a large domestic food services market.

Paarman Foods was founded in the 1980s by Ina Paarman, who was inspired by her Grandma's homemade recipes when she was a child. She worked in London





We continuously revisit our recipe formulations and production methods in a quest to make 'homemade food' on a factory scale

and travelled extensively, soaking up everything she could about the cuisines of other cultures. She combined elements of many of these cuisines with the uniquely South African style and, after a successful teaching and lecturing career, started Ina's Kitchen, creating various mixes of spices and seasonings in a converted garage at her home in Cape Town.

In the 1990s, Ina's son Graham expanded the food processing facility and product line to the point where it has become a significant business servicing both local and international markets with a diverse product offering.

Many Paarman items were already exported to retailers around the world to make them available for South Africans living abroad who were longing for an authentic taste from home. (Many processors from different regions and cultures can appreciate this opportunity.)

As Paarman Foods continued to grow, it was confronted with the need to ramp up production. Yet, management was insistent on incorporating manufacturing processes and equipment that would enable the company to continue with its passion — producing authentic home-style foods, but now in increased volumes.

"We continuously revisit our recipe formulations and production methods in a quest to make 'homemade food' on a factory scale," said Nikki Edwards, manager of product development. "Our philosophy is to base our recipes on classic ingredients

and preparation methods to develop a product that is instantly ready to eat yet delivers the same experience as if the customer had made it themselves from scratch."

Recently, Paarman decided to acquire more advanced equipment to cook a number of spiced protein products (lamb, chicken and beef) as well as vegetables that are used in various products. The equipment upgrade would provide greater throughput

while preserving the traditional authenticity of these foods.

In 2015 the company acquired a Micro Spiral Oven to cook vegetable and protein products such as seasoned lamb, beef and chicken dishes.

Developed and manufactured by Unitherm Food Systems, this spiral oven provides a number of benefits over linear ovens. The benefit that most appealed to Paarman Foods was the ability to maintain home-style food qualities.

Micro Spiral Ovens are sized as entry-level systems that are remarkably productive and versatile. They have the flexibility of a batch system, but the efficiencies and yield advantages of a continuous system. These Micro Spiral Ovens can roast, steam, bake or combination cook.

"The flexibility of Unitherm's spiral oven enables us to cook a wide variety of meats and vegetables in order to react quickly to changing market trends in the future," Edwards said. The onboard controls enable us to utilise many different recipes and also scale up on product throughput as required to meet increasing demands. At the same time, the automation features of the equipment also allow us to enhance productivity through labour savings."

While Paarman Foods may be a leader in the region, many other local processors are taking note and looking to modernise their cooking processes to better compete, grow and export their traditional South African fare throughout the world. □





Packaging for Sustainability handbook

Under pressure from regulators and customers to improve packaging's

sustainability, the packaging industry is seeking to reduce its environmental and societal impacts. *Packaging for Sustainability* is a concise and readable handbook for practitioners who are trying to implement sustainability strategies for packaging.

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To place an order, visit the AIP bookstore.



Global slump in alcohol sales

Global consumption of alcoholic drinks fell in 2015, the first such drop in over a decade.

Research released by Euromonitor International showed a decline of 0.7%, a loss of 1.7 billion L of alcoholic drinks volume sales since 2014.

The decline registered across the globe, with sales falling in China (down 3.5%), Brazil (down 2.5%) and Eastern Europe (down 4.9%). While Western Europe and Australasia flatlined, North America's 2.3% growth bucked the overall trend.

Premium English gin, Irish and Japanese whiskey, and dark and non-alcoholic beer were strong performers, while tequila and bourbon remained solid. Cognac sales bounced back strongly, and cider performed well but has softened as Americans move to hard soda drinks.

Meanwhile, rum and vodka were among the worst performers, while still light white and red wine varietals join sparkling wines at healthy levels, according to Spiros Malandrakis, senior alcoholic drinks analyst.

"While initial forecasts suggest a gradual recovery from 2016, performance will remain substandard compared to historical trajectories," Malandrakis concluded.



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CryoMarks are easy to use: simply activate and place inside the packaging next to the goods. There are different CryoMarks for different temperature cut-offs, so whether goods are frozen or just refrigerated, there will be a CryoMark to suit.

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The ingredient is suitable for creating bakery products — such as doughnuts, cakes, waffles, pancakes, croissants and pita bread — that have a soft crumb structure, good volume and moistness with 50% less fat.

Also suitable for meat products such as sausages, frankfurters and veggie burgers, the product can reduce fat by up to 60% without sacrificing taste, texture or succulence.

Reduced-fat sauces, condiment and glazes can be produced with appealing appearance, texture, consistency and taste, despite having less oil. In mayonnaise, fat content can be reduced from 65% oil to 20% oil without sacrificing the feel and taste of full-fat mayonnaise.

Saturated and trans fats can be replaced with healthy alternatives such as omega-9, sunflower and olive oils.

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The appliance offers energy-efficient operation, ramping down power in quieter times and automatically ramping up when new toast is added, and a hinged lift-up lid for ease of cleaning. Its illuminated and clear-view toast holding bay has cutaway sides, which allow viewing from a distance.

Roband Australia Pty Ltd
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Country of origin labelling: reform started 1 July

Clarity for consumers drove the reform of country of origin labelling for foods. Under the changes, which came into effect on 1 July this year, all food that currently needs to be labelled with a country of origin will continue to do so. Most food that is made, produced or grown in Australia will need to carry a label that also includes a kangaroo symbol, as well as text and a bar chart indicating the percentage of Australian ingredients.

Labels for most products packed in Australia that contain imported foods which have undergone no or only minor processing in Australia will carry a 'packed' statement, as well as text and a bar chart indicating the percentage of Australian ingredients. They will not carry the kangaroo symbol.

Imported food will continue to show where it was grown, produced, made. If the food was not grown, produced or made in a single country, it will need to indicate where it was packed and that it is of multiple origins or comprises imported ingredients.

The new Information Standard has been registered and businesses can start using the new labels now. Those needing more time to implement their labelling changes have two years after the 1 July start date before the changes become mandatory. This means that any food labelled under the current rules before 1 July 2018 can still be sold and allowed to see out its shelf life.

A national consumer information campaign has begun to raise awareness of Australian Government reforms to country of origin labelling for food.

A national campaign will inform consumers about the changes and explain what the new labels on foods mean.

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Meet the Kalette — our newest vegetable hybrid

The newest vegie on Australia's chopping blocks is the Kalette — a cross between kale and brussels sprouts.

Following successful sales last year, South Australian grower Samwell & Sons has increased its planting of Kalettes by 600%.

Grown in the Adelaide Hills by the South Australian family business in collaboration with Fresh Select, they are currently available exclusively through Coles.

Samwell & Sons Managing Director Scott Samwell saw the Kalettes trend emerging around the globe and recognised the opportunity to introduce the tasty hybrid vegetable to the Australian market.

Kalettes were originally developed in the UK by Tozer Seeds, with the intention of creating a vegetable similar to kale that was versatile, easy to cook and visually appealing. The result is a fresh fusion of sweet and nutty flavours.

"Kalettes are the first new vegetable Australia has seen in over a decade and the response to their debut in Coles was unbelievable. In a single day we sold the entire volume of Kalettes we were hoping to sell in the first week, so this year we've planted six times more.

"For more than 50 years my family has been growing brussels sprouts in the Adelaide Hills and I wanted to bring something to the business that was different, and this definitely has added a new dimension to our business," Scott said.

Kalettes can be sautéed, steamed, blanched, roasted or grilled, or eaten raw in salads and smoothies.



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- When: 12–15 September, 2016
- Where: Melbourne Convention Centre
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Don't eat before you go to Fine Food Australia

Fine Food Australia is a trade show for the foodservice, hospitality and retail sectors and is suited to high-volume caterers and ready meal manufacturers.

More than 1000 exhibitors will be displaying everything from kitchen fit-outs, processing, packaging and plating equipment and raw ingredients to semifinished products and finished products. There are always lots of food and beverages to sample — take our advice and don't eat before you go. Also anticipate spending at least one whole day at the exhibition and wear comfortable shoes.

Bringing together world-class producers and leading suppliers to the one location every year, Fine Food Australia is the largest trade show of its kind in Australia. New and innovative products from around Australia and

from over 45 countries will be complemented with live demonstrations, masterclasses and industry-recognised competitions.

Returning to the city that is arguably the nation's food capital, Fine Food Australia's presence in Melbourne this year is set to be its biggest yet. With its biggest offering ever, Fine Food Australia 2016 is a non-negotiable date on the calendar for anyone in the country's vast and great foodservice industry. As the country's largest and most relevant food and hospitality event, Fine Food Australia brings the best of the industry together in one place, providing unmatched opportunity to network and do business. Free entry is available to all who register online at <https://register.finefoodaustralia.com.au/FINEFOOD16M/index.php>; otherwise, there is a \$30 door charge.



Instant liquid thickener

The Trisco Foods Precise Thick-N INSTANT thickener solution has been developed to meet the needs of consumers that suffer from swallowing problems or neurological-related dysphagia (an estimated 20% of Australians over 60).

Swallowing difficulties can be a symptom of a number of prevalent diseases, particularly amongst the elderly. Parkinson's disease, motor neurone disease, Alzheimer's disease and stroke all carry the risk of dysphagia.

A common problem amongst this group is aspiration, where patients cough or choke because food or liquid enters the windpipe. If this happens the person could go on to develop more serious problems, such as pneumonia.

Thickened fluids are key in reducing aspiration or choking risk in people with moderate to effective swallowing difficulties. But with 40–50% of aged care residents suffering from dysphasic symptoms, the nutritional value and variety of current thickening products are a growing issue in Australia's aged care sector.

Being lactose- and gluten-free, Thick-N INSTANT has been designed to give people more freedom and variety, thickening a wide range of foods, beverages and nutritional supplements.

Suitable for hospital, aged care and in-home use, the product thickens within 30 s with little mixing required. The pump action provides easy and accurate dosing.

Single and bulk are preparations available.

Trisco Foods Pty Ltd
www.triscofoods.com

New CEO for George Weston Foods

George Weston Foods has announced the planned departure and retirement of Andrew Reeves, chief executive, and the appointment of internal successor Stuart Grainger, who will assume the role of chief executive in September 2016 following a transition period of four months.

Grainger has extensive experience in the food industry and in driving value across the entire food supply chain from 'farm to fork'. Most recently, as managing director of Don Smallgoods, he led the business through a significant period of change, including commissioning a new \$280m state-of-the-art smallgoods factory in Castlemaine, Victoria.





Sweet potato wraps

BFree has expanded its range of wraps with the launch of Sweet Potato Wraps which provide consumers with allergy-free alternatives without compromising on flavour.

The wraps are free from the top-named allergens including soy, gluten, wheat, dairy, egg, nuts and are high in fibre, vegan friendly and have no added sugar. The wraps contain only 95 calories each.

The BFree wraps do not crack when filled.

The impetus for expanding the BFree range in Australia has been driven in large measure by the growing demand for quality allergy-tolerant and wheat-free products that also taste good.

BFree Foods

<https://au.bfreefoods.com/>



Natural pyrethrin spray

The Fly Lady has released its natural pyrethrin insect spray — a fast-acting spray against a range of insects, including flies, vinegar flies, pantry moths, mosquitoes and midges. Efficient in low quantities, it enables users to leave doors and windows open while keeping their establishments fly-free.

The spray units are suitable for use in cafes, restaurants, fish-mongers, butchers, bakeries, juice bars, delicatessens, pubs and clubs. One unit covers approximately 30 m, varying depending on the air movement, range hoods, prevailing breezes, etc. They are effective in bar areas, wet areas and dry stores areas, and can be used front or back of house.

To combat vinegar or beer flies, mount the units beneath bar areas where the insects like to breed, in the warm, dark, sticky, moist areas. The units spray once every 5 min, 24 h/day, for six weeks. Units are battery-operated and wall-mount or zip-tie under the bar.

The pyrethrum is derived from Tasmanian-grown chrysanthemum flowers. It is safe, natural, virtually odourless and human- and pet-friendly. The environmentally friendly spray photo-biodegrades, so there is no residue build-up.

The spray complies with Australian and New Zealand Food Safety Standards and local council health requirements. It comes with MSDS and HACCP approval. It is also approved by the Australian Pesticides & Veterinary Medicines Authority and the Australian Quarantine Inspection Service.

The Fly Lady
www.theflylady.com.au



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Biscuit baking oven

The Baker Perkins TruBake biscuit baking oven is a direct convection oven, suitable for baking biscuits, cookies and crackers.

The burner and fan module creates a laminar flow of air over the full width of the burner. This continues into the ducts and plenums and leads to a stable and even distribution of convection air over the full width and length of the oven band.

A high-capacity fan ensures that the volume and velocity of air is maintained. In conjunction with a burner turndown ratio of up to 20:1, this creates a wide operating envelope, making the oven suitable for products from soft brownies to crackers.

Hygiene is enhanced by stainless steel covers and improved access for cleaning. Clean-out ports have been added to top and bottom plenums enabling dust and debris to be removed. The frame is stainless steel and no paint is used inside the oven.

The oven is modular, and zone lengths can be varied to achieve the baking conditions required. A choice of process options is available, including the option of a hybrid oven, with an initial direct gas-fired section to achieve high levels of radiant heat in the early stages of baking, followed by direct convection to dry and colour the product. The oven itself can be specified in either direct convection or radiant mode.

The extraction system has been optimised to minimise energy consumption. Air that has given up its heat to the product is drawn back to the burner module for reheating by the circulation fan. A proportion of this air is vented to atmosphere to remove product moisture and maintain a constant humidity level in the baking chamber. No additional extraction fans are required, contributing further to energy efficiency.

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“Our products can make you ugly, fat, and unhappy”

— alcohol marketing in Sweden

In Sweden you can only buy alcohol during restricted weekday hours, until 3 pm on Saturdays and not at all on Sundays or holidays. And you can only buy it from one state-owned monopoly — Systembolaget.

This restricted access to alcohol exists for one reason: to minimise alcohol-related problems by selling alcohol in a responsible way, without profit motive.

“Our mandate is to limit the medical and social harm caused by alcohol and thereby improve public health,” said Evelina Westblom, store manager at Systembolaget in Liljeholmen, Stockholm. And it seems the Swedes don’t mind. In its 2015 national survey, Opinion Index (OPI) showed that 77% of the Swedish public supported

Systembolaget and its right to exclusivity.

Systembolaget does have one of the most comprehensive product assortments in the world. It has also produced widely acclaimed advertising campaigns advocating “less and more” responsible social drinking. Here’s one campaign quote: “Our products can make you ugly, fat, and unhappy (Which we wouldn’t have told you if we were privately owned.)”.

What are the flipside then, besides the limited opening hours? If you’re a smaller wine producer or brewery — having only one buyer and distributor of alcohol for an entire country could be an advantage or disadvantage, depending on your position, as Swedish wine importer Michael Wising explains: “Systembolaget is both good and

bad, depending on whether you are ‘in or out’. If you are selling wines to the monopoly, it is very good... but if you are not successful in getting the listings with them, you don’t really have a lot of alternatives.”

In many ways, Systembolaget mirrors the values of the Swedish welfare state, which may be why Swedes accept certain limitations of their freedom (in this case, the possibility to buy alcohol everywhere and at any time), for the greater good of a healthier society.

Hence, you may drink, but please keep it at a lagom (not too much — not too little) level. Perhaps we should think about how responsibly we market alcohol, too? □



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Australian technology prevents avocado browning



In a breakthrough for the avocado industry, an Australian company has developed a processing technology which stops browning of freshly cut avocado and prolongs shelf life for a minimum of 10 days.

Naturo All Natural Technologies' Natavo Zero technology switches off the enzyme responsible for the fruit's browning via pressure fluctuations generated by steam, preventing browning of cut or pulped avocado for a minimum of 10 days when refrigerated, even after packaging is opened.

The natural process preserves the nutritional properties and taste of the avocado, without chemicals, additives, preservatives or processing aids, while meeting food safety standards.

The technology is capable of processing any cut of avocado or avocado pulp at the rate of about 4000 avocado fruits/hour via a machine Naturo has fondly named the 'Avocado Time Machine'.

Naturo Director Jeff Hastings said that the technology has the potential to become the new industry standard.

"By understanding the avocado's life cycle and the complex correlation of enzymes involved in the browning process, we have made it possible for the world to enjoy 100% natural, ready-to-eat avocado slices, dices, chunks or pulped products while retaining the flavour and fresh taste of avocado, without browning," he said.

Director Frank Schreiber said that the arrival of the technology would open up new markets and new opportunities for fresh and frozen avocado products.

"Although there is a range of avocado products currently on the market, nearly all of them contain additives such as antioxidants, acids and preservatives which not only alter the taste of the fruit but do very little to stop the browning once the packaging is opened.

"Our Natavo Zero process and machinery complies with all international food safety standards, including US FDA standards, and can even satisfy organic certification in its country of operation."

Hastings said the relatively high cost of avocados, combined with the fruit's short shelf life, makes it a challenge to incorporate the fruit into a daily diet, especially in countries which have no access to fresh avocados.

The company said an Australian processor will be the first to use the technology, with products expected to be launched later this year.

Coconut handbook

Tetra Pak has published a guide to coconut beverage production, offering expert advice and practical information on everything from plantations and nutritional benefits to production and distribution.

The 180-page Coconut Handbook, which includes a mix of general insight and technical detail, draws on specialist knowledge from all parts of the coconut industry. Ready-to-drink coconut beverages have rapidly gained popularity with consumers in recent years, with sales of packaged coconut water now estimated to be worth more than US\$1 billion worldwide. However, the delicate composition of the coconut presents many challenges for manufacturers: the contents degrade quickly when exposed to air and measures are required at every step of the production process to protect product quality. This issue is discussed in detail in the handbook, along with such topics as harvesting, product composition, rheology and packaging.

Tetra Pak Marketing Pty Ltd
www.tetrapak.com/au



Preparing pineapple

The Kronen PGW pneumatical grid cutter makes pineapple preparation easier. After topping and tailing, the pineapple can be peeled and cored in one motion. This creates a complete cylinder of pineapple without any lateral cuts.

The peeling diameter is 82 mm, coring diameter is 25 mm and the cylinder height of the pineapple is 132 mm. Other peeling and coring diameters are available on request.

Reactive Engineering Pty Ltd
www.reactive-eng.com.au



Portable heat-retention oven

The EasyOven is a heat-retention oven which retains heat to slow cook food with less energy. The energy-efficient device reduces CO₂ emissions, electricity and fuel costs while enhancing the quality of the food. Its design also allows it to be used to transport frozen products.

Made of fabric, the oven is lightweight (230 g) and easy to clean, carry and store when not in use.

EasyOven is currently working on projects in the mountainous areas of Lesotho and in clean cooking projects aimed at reducing human/animal conflict situations along the Kruger National Park, based in South Africa. The company is also currently working closely with the government of Nepal and NGOs based in Nepal, looking at initially disseminating the oven into the earthquake-affected areas.

EasyOven
www.easyoven.com.au

Easy open pouch

The Nitto Pack Easy Open Pouch combines a tab with an easily peelable film to create the WOC Wide Open Cut pouch.

This pack recognises the constraints on current packaging designs for people with disabilities and the ageing population. Special treatment on the sealing section makes it easy for children and seniors to open.

The WOC pouch is suitable for hot or cold dry foods.

A microwaveable version of WOC is available and it can be microwaved without opening the pouch. The hot contents are retrieved from the pouch easily by pulling the tab along the length of the pouch.

WOC has tamper evidence with the seal under the tab turning white when peeled open.

The pouch opens only from one side of the pouch and the peel can be controlled to open a little at a time or the full length of the pack.

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www.auspouch.com.au



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Chrono-nutrition and public health

Is 'when we eat' as important as 'what we eat'?

Eating irregularly has been linked to a higher risk of metabolic syndrome — is more research needed to look at the impact of chrono-nutrition on public health?

In a review of research on the effect of meal patterns on health, the few studies available suggest that eating irregularly is linked to a higher risk of metabolic syndrome (high blood pressure, type 2 diabetes and obesity). The limited evidence highlights the need for larger scale studies to better understand the impact of chrono-nutrition on public health, argue the authors of two new papers, particularly with the rise in shift workers and 'social jetlag', where many of us live by social clocks rather than our internal body clocks.

Our current lifestyle has become demanding and more irregular. Food consumption patterns have changed markedly over the past decades: more meals are skipped, consumed outside the family home, on the go, later in the day and more irregularly. Two papers published in the *Proceedings of the Nutrition Society* explore the implications for health from different eating habits,

reviewing the evidence from a number of dietary studies as well as global differences in eating habits.

Eating inconsistently may affect our internal body clock or 'circadian rhythms', which typically follow a 24-hour cycle. Many nutritionally related metabolic processes in the body follow a circadian pattern such as appetite, digestion and the metabolism of fat, cholesterol and glucose. Food intake can influence our internal clocks, particularly in organs such as the liver and intestine, while our central clock is also regulated by the dark/light cycle, which in turn can affect food intake. Chrono-nutrition involves studying the impact of nutrition on metabolic processes and how these may be influenced by and also alter circadian patterns through nutrient intake (ir)regularity, frequency and clock time.

A number of studies have shown that people working shifts have an increased risk of a number of diseases including cancer, cardiovascular disease and metabolic syndrome. For shift work, changes in dietary patterns are therefore an important aspect to consider when investigating its effects on health.



Most national dietary guidelines focus on 'what' you should eat in terms of food and nutrients, with only a few also providing recommendations on 'when' you should eat over the course of a day.

Social jetlag is estimated to affect more than 80% of the general population in central Europe, especially people living in urban areas. This discrepancy between our internal body clock and social clock has been linked to a greater risk of diseases like obesity and metabolic syndrome, while shorter periods of sleep have been linked to weight gain.

Consuming small but frequent meals to regulate appetite and weight is a concept that has been adopted in many fad diets, yet some studies have shown that a greater number of daily meals has been linked to a greater risk of obesity and thus one could argue that we should consume fewer meals per day, write the authors. However, without a reduced calorie intake, fewer meals are unlikely to bring major health benefits.

Moreover, when studying the impact of irregular meal patterns, it is also important to consider what people eat; some studies have found a link between how regularly people eat and what they choose to eat; for example, with poorer food choices linked to breakfast skipping.

Along with studying the impact of what and when we eat, we should also consider

'with whom we eat', say the authors, pointing to evidence that regular family meals contribute to healthy eating habits in children and adolescents.

Globally, eating patterns vary widely according to the studies reviewed by the authors. The fact that lunch is the most important meal of the day is characteristic of France and the Mediterranean region, and reflects beliefs of the importance of pleasurable and social eating. Consequently, the French tend to eat together as a household more regularly and to follow a regular meal pattern of three meals a day. By contrast, in central England, drivers such as individual preferences and convenience dictate food choices, which translates to greater consumption of ready-prepared and takeaway meals, more meal skipping and calorie-dense snack foods such as crisps.

In the UK and US, the proportion of energy intake increases gradually across the day, with breakfast providing the lowest proportion of energy and dinner the greatest. A shift towards greater energy intake at the evening meal has been reported in France in recent decades due

to changing working patterns, although French eating patterns are not yet on par with those observed in England.

A recent clinical trial showed greater weight loss and improved blood sugar levels in overweight and obese women who ate more calories in the morning than in the evening. Further studies point to the importance of the ratio of evening-to-morning energy intake, and that evening intake may affect BMI differently based on whether people are regular or irregular consumers of breakfast.

Most national dietary guidelines focus on 'what' you should eat in terms of food and nutrients, with only a few also providing recommendations on 'when' you should eat over the course of a day. As such, further research is needed to shape future dietary guidelines, concluded the authors.

Dr Gerda Pot, visiting lecturer in the Diabetes and Nutritional Sciences Division at King's College London, said: "There seems to be some truth in the saying 'Eat breakfast like a king, lunch like a prince and dinner like a pauper'; however, this warrants further investigation.

"Whilst we have a much better understanding today of what we should be eating, we are still left with the question as to which meal should provide us with the most energy. Although the evidence suggests that eating more calories later in the evening is associated with obesity, we are still far from understanding whether our energy intake should be distributed equally across the day or whether breakfast should contribute the greatest proportion of energy, followed by lunch and dinner."

The authors of the two papers in the *Proceedings of the Nutrition Society* are from King's College London, Newcastle University, University of Surrey and Nestlé Research Centre. □



Waiter, there's a bristle in my burger!

A review of injuries caused by ingesting wire bristles from grill brushes has prompted calls for greater awareness by medical professionals and consumers.



Wire-bristle grill brushes, used for cleaning barbecue grill grates, may lose bristles when used. These bristles can adhere to the grill, become stuck to food and then accidentally be ingested. Research published in the journal *Otolaryngology-Head and Neck Surgery* examined the incidence in the US of injuries caused by ingestion of wire bristles, which sometimes requires surgery.

Researchers reviewed literature and used the Consumer Product Safety Commission's National Electronic Injury Surveillance System and the consumer reported injury database SaferProducts.gov to estimate emergency department visits for wire bristle injuries. The study's authors estimated that in the period between 2002 and 2014, 1698 cases presented to emergency departments. But they caution that the estimate doesn't include cases presenting at urgent care facilities or other outpatient settings.

"The issue is likely under-reported and thus underappreciated," said the study's lead author, CW David Chang, MD. "Because of the uncommon nature of wire bristle injuries, people may not be as mindful about the dangers and implications. Awareness among emergency department physicians, radiologists and otolaryngologists is particularly important so that appropriate tests and examinations can be conducted."

The most common location of injury was the oral cavity and the oropharynx, which includes the throat and tonsils. In all databases, injuries involving the esophagus and head and neck were more frequent than abdominal injuries.

The study's authors encourage consumers to exercise caution when cleaning grills with wire-bristle brushes, examining brushes prior to each use and discarding if bristles are loose. They recommend inspecting cooking grates prior to cooking and checking on alternative cleaning methods.

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Janette Woodhouse

How lighting affects what we eat

It seems that dining in well-lit rooms makes us more likely to order healthy foods — not because we are worried that others will see what we eat but because we are more alert in well-lit environments.

Those dining in well-lit rooms are about 16–24% more likely to order healthy foods than those in dimly lit rooms, according to Dipayan Biswas, PhD, University of South Florida, who was the lead author of the study published in the *Journal of Marketing Research*. “We feel more alert in brighter rooms and therefore tend to make more healthful, forward-thinking decisions,” explained the lead author.

This may help counteract the fact that dining in low-light environments makes us eat more slowly and consume less!

First, the researchers surveyed 160 restaurant patrons at four casual chain restaurant locations. Half of those diners, who were seated in brighter rooms, were more

likely to choose healthier options (such as grilled/baked fish, vegetables or white meat) over relatively unhealthy items (such as fried food or dessert). Furthermore, sales records showed that those in dimly lit rooms actually ordered 39% more calories. In four additional lab studies involving 700 college-aged students in total, the researchers replicated these results.

The follow-up studies also showed that when diners’ alertness was increased with the use of a caffeine placebo or by simply giving a prompt to be alert, those in dimly lit rooms were just as likely as their peers in brightly lit rooms to make more healthful food choices. From this, the researchers conclude that the main reason that we make healthier choices in well-lit spaces is because we feel more alert.

Lighting is used to create ambience and enhance the dining experience, which is why many restaurants have dim lights.

“Dim lighting isn’t all bad,” said co-author Brian Wansink, PhD, director of the Cornell Food and Brand Lab and author of *Slim by Design: Mindless Eating Solutions for Everyday Life*, “despite ordering less-healthy foods, you actually end up eating slower, eating less and enjoying the food more.”

So, what’s the real takeaway here? According to Dr Wansink, doing what you can to make yourself feel alert is the best way to avoid overindulging when “dining-in-the-dark”.

However, it is not only the lighting that affects what we order and eat in restaurants — in separate research Dr Wansink found that if the waiter had a higher BMI diners were four times as likely to order desserts and they ordered 17.65% more alcoholic drinks.

Who knew that choosing food in a restaurant was so fraught? □

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