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www.foodprocessing.com.au March/April 2018
Are vinyl gloves a food safety hazard?

Vinyl gloves are claimed to be inherently poorer fitting, more permeable to bacteria and viruses, more liable to develop holes during use and bad for the environment. So why are they still used in the food and beverage processing industry?

Eagle Protect has just announced that the food safety risks of vinyl gloves are so high that they will not be supplying them to US food handling and processing industries any more. The disposable gloves and protective clothing supplier is the world’s only disposable glove and clothing specialist to be B Corp certified. The company was founded in New Zealand over a decade ago and has now expanded into the US.

Previously Eagle sold vinyl (PVC) gloves with a number of recommendations based around the shortcomings of the gloves — in relation to their permeability and potentially toxic raw materials — and did not recommend them for direct food handling. However, from 1 January this year the company has discontinued sales completely.

The company recommends nitrile gloves as a food-safe and cost-effective alternative. Explaining that the raw material formulations and manufacturing of disposable nitrile gloves have resulted in thinner yet stronger, more flexible and better fitting gloves. The higher the quality of the nitrile glove, the fewer failures (holes and rips), mitigating the risks of food contamination from a disposable glove.

International food safety consultant Barry Michaels was contracted by Eagle to investigate the food safety risks of vinyl gloves. He described vinyl gloves as “infection control nightmares”, that “the best disposable gloves to spread Listeria are cheap vinyl gloves” and that “vinyl gloves possessed triple (3x) the propensity to pick-up and transfer microbial contamination and associated carrier soils, compared to clean hands”.

**Health and environmental concerns**

The impacts of PVC across its life cycle, including manufacturing and disposal issues, finds PVC leads to the release of dangerous quantities of dioxin and other carcinogenic emissions. A report from the US Green Building Council found that “the risk of dioxin emissions puts PVC consistently among the worst materials for human health impacts…”

Added to this, it is claimed that up to 50% of vinyl gloves include plasticisers, which can contain phthalates and BPA. Phthalates have been shown to leach from products into the human body and can easily leach into food, particularly fatty food. Phthalates DiNP and DEHP have been found to adversely impact human health.

So perhaps it’s time to do a little research and make sure the gloves in your facility are not compromising your food safety, the environment and or your health.
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IN NEW ZEALAND the Ministry for Primary Industries (MPI) has introduced new treatment requirements to stop brown marmorated stink bugs (Halyomorpha halys) moving into New Zealand via sea containers from Italy.

Paul Hallett, MPI's biosecurity and environment manager, explained that MPI officers have been detecting increased numbers of the invasive pest in cargos from Italy and this has prompted the new requirement that all sea containers from Italy must be treated before or on arrival in New Zealand.

Italy accounted for nearly 50% of the stink bugs uncovered by MPI officers this season. Previously, imported containers from Italy had been subject to auditing and inspection by biosecurity officers but did not require treatment unless they carried vehicles or machinery, or there was evidence of contamination. The treatment has now been mandated for all shipping containers from Italy. The treatment requirements will last until the end of February. They will be reviewed prior to the start of next season in September.

Brown marmorated stink bugs are a significant agricultural pest and household nuisance in the United States. They have recently established in Italy and appear to be spreading through Europe, causing losses for commercial growers.

Order-In has been taken out

Online corporate catering provider Order-In has been acquired by global venture capital company Rocket Internet for an undisclosed figure.

The food-tech and delivery service industry is one of the fastest growing sectors globally, and is a multibillion-dollar business segment in Australia alone. The past two years have seen a significant increase in funds being invested globally from corporations and capital investors into food-tech companies.

Since its launch in 2000, Order-In has grown exponentially in the corporate space, offering high-quality food options from the best caterers, cafes and restaurants across Australia’s major capital cities.

Jonathan Rowley, managing director of Order-In, said, “We are truly excited to announce our new partnership. Australia is a small and consolidated market, making it enticing to global investors, so there was never a doubt that this would happen — the question was more so who it would be and when. We’re delighted that our team’s hard work and dedication has paid off to achieve this great result.

“Despite the news, it’s business as usual at Order-In. Our service and platform will continue to be managed as it is — delivering the consistently high standard that both customers and suppliers have come to expect. This partnership will allow us to further expand our offerings and develop our leading presence in this space. We look forward to benefiting from Rocket Internet’s extensive expertise in building leading digital companies, in particular in the food-tech sector.”

What you can do with pineapples

While Australia’s early season for pineapples has seen fruit rotting in piles while the Golden Circle cannery is closed over the Christmas season, a different sort of pineapple crisis has been going on in Spain and Portugal.

There, police have seized 745 kg of cocaine hidden in wax-covered cylinders inserted into pineapples in a shipment from Latin America. Apparently the Iberian police have arrested nine people and broken a Colombian-led international smuggling ring.
Food made from waste ingredients may be popular

Would you eat rescued relish or recycled brewing grains? According to a study by Drexel University, many consumers may be willing to buy and consume foods made from discarded ingredients.

Over one-third of the food we produce is wasted, often during the manufacturing process due to the fact it does not meet the aesthetic standards to be sold in a grocery store. Three Drexel professors led a study which looked at using value-added surplus products (VASPs) — made from surplus ingredients — to create new foods and help food shortages. But they would only help the environment if researchers could establish whether consumers would accept and embrace them. As a result, they studied how consumers reacted to three different cues: product description, label and benefit (to self or others).

“There is an economic, environmental and cultural argument for keeping food, when possible, as food and not trash,” said Jonathan Deutsch, PhD professor in the Center for Food and Hospitality Management. “Converting surplus foods into value-added products will feed people, create opportunities for employment, entrepreneurship and lower the environmental impact of wasted resources.”

Firstly, the researchers presented the participants with three food categories: conventional, organic and value-added surplus food. VASPs were perceived to be more helpful to the environment than conventional foods, but still ranked below organic foods. Therefore, the scientists found that participants were aware of the fact that VASPs fell into a different category to organic and conventional foods, and they were not discriminated against.

Nine product labels were then used to brand value-added surplus products: upcycled, recycled, upscaled, reprocessed, reclaimed, up-processed, resorted and rescued. Upcycled was deemed to be the most popular way to market the product, followed by reprocessed.

The final study examined whether benefits to self or to others influenced consumers’ perceptions of value-added foods. The results showed that participants were aware that consuming VASPs would create greater benefits to others than themselves, such as the environment.

Overall, the studies suggest there is a potential for VASPs to become a new food category in the future, as long as they are marketed in the correct way. The study found that consumers not only accepted these products, but they may even prefer them. This could benefit retailers creating products in this category and help alleviate the global food crisis.

Meat buffer solution wins at Australian Supply Chain & Logistics Awards

Northern Co-operative Meat Company Ltd (NCMC) recently received the 2017 Information Technology and Management Award which recognised a company’s use of technology to provide significant improvements to its management of information and its supply chain processes.

Held at Luna Park in Sydney, the winners of the 57th Australian Supply Chain & Logistics Awards were announced by the Supply Chain & Logistics Association of Australia, in conjunction with Dematic, LMA, Xtreme Freight and Australian Border Force Programme.

Information is a crucial part of the supply chain, and NCMC was celebrated for its meat processing, buffering, sortation and sequencing solution. It also received two other awards in the Supply Chain Management and International Supply Chain Management categories.

The demand for Australian red meat in Asia motivated the company to develop a more efficient way for Australian meat processors to improve their complex distribution and dispatch processes. The solution — which was developed by Dematic in conjunction with Wiley — involves meat cartons leaving the boning room and being inducted into the Dematic Multishuttle Automated Storage and Retrieval System (ASRS). Integrated conveyors transport cartons through various production processes including lidding, labelling and plate freezing. When frozen, the finished goods are conveyed and inducted into the ASRS, which can accommodate up to 4300 cartons for automated buffering, order building and sortation.

All materials handling is fully automated and driven by smart location control and routing software, which minimises carton processing and retrieval time. The system has resulted in the elimination of manual handling of frozen cases, full track-and-trace capabilities, significantly reduced labour, reduced product damage and a smaller system footprint.

“The many benefits delivered by the new meat buffer solution have made the Northern Co-operative Meat Company Ltd more competitive and responsive to its customers, as well as improved working conditions for its team members,” said Soeren Schauki, business development manager at Dematic. “We congratulate them on this award.”
Four chooks on the back of a ute — stocking density

The Australian Competition and Consumer Commission (ACCC) has released guidance for egg producers on its approach to enforcing the new National Information Standard on free-range eggs, which comes into effect on 26 April.

Under the new standard, egg producers cannot use the words “free-range” on their egg cartons unless the eggs were laid by hens that:
• had meaningful and regular access to an outdoor range during the daylight hours of the laying cycle;
• were able to roam and forage on the outdoor range; and
• were subject to a stocking density of 10,000 hens or less per hectare, with that outdoor stocking density prominently displayed on the packaging or signage.

“Shoppers are willing to pay a premium for free-range eggs, but only if the chickens genuinely have regular access to an outdoor range,” said ACCC Chairman Rod Sims. “From April 26, free-range must only be used by compliant egg producers so consumers can have confidence in the products they are buying.

“If an egg producer’s hens are using the outdoor range on a regular basis and they satisfy the stocking density requirements, then the producer can call their eggs free-range.”

The guidance also explains egg producers’ obligations under the misleading or deceptive conduct provisions of Australian Consumer Law. This includes representations made through marketing activities such as product packaging and advertising.

“If egg producers use images, pictures or words, other than free-range, that imply their eggs are free-range when they are not, this would likely raise concerns under the Australian Consumer Law,” Sims said.

“The ACCC is monitoring the market to ensure that free-range claims are truthful and accurate and will continue to take action against those that don’t.”

Along with the standard, the federal government intends to introduce a ‘safe harbour’ defence for misleading conduct for egg producers that comply with the standard. The ACCC will update the guidance once the safe harbour comes into effect.


---

Distribution agreement for Volpak’s form-fill-seal gear

Heat and Control has entered an exclusive distributor partnership agreement with horizontal form-fill-seal equipment manufacturer Volpak.

Volpak’s wide range of horizontal form-fill-seal pouches and sachets is suitable for use in the food, beverage and dairy industries, and includes flat pouches, stand-up pouches, single and twin, strings and cooking bags. They can be used for both solid and liquid applications such as sauces, tomato, salad, dressings, bakery and confectionery.

The horizontal form filling seal machines for pouching come in a range of models to suit any size business, like the SL110, which can produce up to 160 pouches/min.

Volpak’s latest machine, the SI-440 horizontal pouching machine, incorporates multiple innovations across both electronics and controls, making it one of the most flexible and versatile horizontal machines in the packaging market today. The SI-440 adapts to various situations, from projects requiring a large production of small and medium-sized formats, (from ¼ litre with production up to 200 sachets/min) to projects that require large-format packaging (up to 2 litres, liquid or solid products).

Known for their reliability and robustness, the Volpak range of solutions has been designed for safety, functionality, hygiene and accessibility, and would particularly suit a start-up company looking for an economical form fill solution.

The range of horizontal form-fill-seal solutions from Volpak adds to Heat and Control’s already large portfolio of packaging equipment for the food industry, further enabling Heat and Control to be a sole provider of turnkey integrated machinery solutions. The focus is to provide a partnership that supports the customer’s business model with total cost of ownership solutions, giving a return on investment that allows for those non-tangible costs that are often forgotten.
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Sulfites are a common ingredient in wine, whether it is naturally occurring during the winemaking process or purposefully added by producers to preserve freshness or enhance the flavour in a vintage wine. They are a class of compounds including sulfur dioxide and sulfite salts and, although they act as antioxidants and antibacterial compounds, they may also cause negative health effects for those who are intolerant to them.

The US Department of Agriculture suggested that symptoms may include chest tightness, hives, stomach cramps, diarrhoea and breathing problems, but the reason for intolerances has not been wholly understood.

“For some individuals, though, the sensitivity to sulfites may be an allergic type of response. People with asthma appear to be at an increased risk of having asthma symptoms following exposure to sulfites,” the Department noted.

To prevent these symptoms from occurring, any wine containing over 10 parts per million (10 ppm) of sulfites that is sold in the US must have a label that states ‘contains sulfites’. But researchers from the University of Kansas (KU) School of Engineering are hoping to stop people with intolerances from being restricted to buying and consuming certain wines. They are working on developing a low-cost, easy-to-use device that attaches to the bottle and can filter up to 99% of sulfites from any wine as it is being poured.

“Our idea is that you’d have a device like an aerator,” explained Professor Mark Shiflett, leader of the investigation. “And it would be inexpensive. When you’re at the cash register you’d have these devices for sale. They’d be a dollar or less. You’d buy a handful. With every one sold, KU would get a fee back.”

Shiflett suggested that while there are other commercially available products which claim to remove sulfites, they are not always effective and are expensive to buy. According to Maddie Lyda, an undergraduate senior in chemical engineering, tests on samples on the market have revealed they only remove only about half of sulfites.

Currently, possible processes to remove sulfites involve putting drops of a chemical in the glass of wine, pouring wine through a filter on top of the glass or stirring a filter through the wine.

“We’re doing a chemical separation — where the wine passes through a material that acts like a magnet for the sulfites,” said William Gilbert, a postdoctoral researcher in Shiflett’s lab. “These are materials that if you were to look at the atomic scale you would find chemical sites that specifically bind sulfites so they don’t pass into the wine glass.”

But Shiflett specified that it would selectively bind to the sulfite alone, leaving other components of the wine, like the sugars and the tannins, unaffected. This should ensure the quality of the wine is maintained and, when attached to the bottle, make it an easier method of sulfite removal that would appeal to consumers.

The aim is to develop a product that has a strong business model; it should spark an ‘entrepreneurial spirit’ in the KU researchers and enable them to invent something that could market and sell, but it should also be inexpensive for consumers.

“You need it at a price point where it will sell and it will be really effective,” said Shiflett. “We want something that takes out 99% of sulfites and doesn’t put anything into the wine. A year from now, maybe we could go onto Shark Tank or go to a big wine producer like E & J Gallo Winery and say, ‘Look — a box of wine could come with one of these sulfites filters on the end of it.’”
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Gastroporn: we eat first with our eyes

“We eat first with our eyes.” This is a saying with various origin stories. However, it doesn’t really matter who said it first, because modern science has proven that it is true. Here, Miguel Campos, Export Sales Manager of food packaging manufacturer Advanta, explains how important it is for food manufacturers to engage consumers with the right packaging.

Various studies have shown that humans rely heavily on their eyes when consuming food. An academic paper in the Elsevier journal *Brain and Cognition*, which is titled ‘Eating with our eyes: From visual hunger to digital satiation’, cites a range of evidence and explores what this means in the modern world, where we’re not foraging for the next meal in the wilderness.

We are currently in an environment saturated with smart devices, social media and hundreds of TV channels. The paper, which is jointly authored by representatives from Oxford University, UK; Yokohoma National University, Japan; and the Imagineering Institute, Malaysia, highlights how this has sparked new trends in how we respond to food.

The paper argues that the rise of ‘food porn’ or ‘gastroporn’, alongside the success of celebrity chefs and cooking programs, “has led to an inevitable exposure to visually succulent cooking procedures and beautifully portrayed dishes, often making use of foods that are less than healthy.”

Most people reading this will have been to dinner and either taken a snap of their meal before tucking in or waited...
for their dining companion to do the same. Social media sites like Instagram have created an environment in which we’re bombarded with images of the perfect meal.

This results in a large proportion of the global population seeking to replicate the effect and create a visually perfect meal. This is why it’s so important that packaging is able to entice consumers with the promise of an Instagrammable dinner.

**Snap and it’s done**

However, the fact is that, while we may want a gorgeous snap to get those all-important likes, we do not have the time to spend preparing, cooking and plating in the busy modern world.

According to an article in *The Balance* by Steve Johnson, the average home-cooked meal took 150 minutes to prepare in the 1940s. Today, ‘home cooked’ takes less than 30. Demand for easy-to-cook, pre-prepared or even pre-cooked meals is high, so the pressure is on for packaging to show the product will deliver high quality without mess or fuss — and it must do it quickly, because the need for speed starts long before we get to the kitchen.

According to research by WebpageFX into the psychology of colour, people make a subconscious judgement about a product within 90 seconds of an initial investigation. On top of this, 93% of people will chose a product based solely on its visual appearance.

Oh, and if all of this wasn’t enough pressure, demand is growing for ready meals that are more nutritious and provide a feeling of being authentic and home cooked while also being sustainable. A special report by FoodIngredientsFirst found that the growing trend for packaging these products with individual components of the meal stored in separate compartments has arisen from this consumer request, allowing for customisation.

The same report cites the zero-waste movement as one that has created consumer awareness around sustainability. This incorporates an awareness of the sustainability of the process of sourcing ingredients through to the choice of packaging material.

**All wrapped up**

Food manufacturers cannot underestimate the importance of selecting the right material to package their new product lines. If customers are making a judgement in just 90 seconds based on visual appearance, you can’t afford to get it wrong.

Selecting plastic results in a product that looks cheap and will most likely be associated with salt and fat-heavy microwave meals. Electing for something out of the ordinary, like glass or ceramic, will look unique — but it will also look expensive.

Aluminium, on the other hand, is a product that looks high quality, easily facilitates fuss-free preparation and cooking, is highly recyclable and reduces food waste.

According to the European Aluminium Foil Association, Alufoil, the material not only provides an absolute barrier against moisture, light and oxygen to keep food fresh for longer, it also saves far more resources than are consumed in its production throughout the supply and value chain. In addition, 75% of all aluminium ever produced is still in use thanks to its repeatable recyclability.

By working with a flexible manufacturer, such as Advanta, bespoke packaging designs can be created that suit product requirements while looking fantastic. This includes creating foil trays that are uniquely shaped and designed to ensure the perfect cooked result as well as trays in a variety of eye-catching colours.

Humans evolved to rely on their eyesight to spot food on the horizon while hunting or foraging. Today, we’re not so different. Eating starts with the eyes, the only thing that has changed is the evolution of the supermarket. Make sure you catch people’s attention with packaging that will make them salivate.
TempPro can run hot and cold with the new Proveno.

The Proveno range of combi kettles is the premium choice, offering an unique cook/chill solution in a commercial kettle. This allows chefs to hold food in the kettles overnight and at a chilled set temperature. Rethermalise in the morning for first service, all without needing to remove the product from the kettle.

The TempPro temperature control helps you to prepare even the most demanding dishes effortlessly. You can set the temperature of the dish as well as the kettle jacket, or both. Delta-T cooking function helps to reduce loss and makes even the stringiest ingredients juicy by simmering them slowly for a long period of time. The real-time temperature of the food and the kettle jacket is constantly displayed while cooking and cooling.

Metos Kettles have made making large volumes of sauce, soups and stews the most relaxing job in the world due to the integrated mixing arm that stirs your product automatically, the flow on effects are more accurate quantities, significant savings and less manual handling. Metos kettles are available from 40 to 400 litre stainless steel, self contained, steam jacketed units. Operating from an electric steam source contained within the unit and complete with electric or hydraulic tilting bowl.

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Natural chicken flavouring range

Synergy Flavours has launched a range of natural chicken flavours to add authentic taste to a wide variety of applications, including meat-free products. The range is also suitable for gravies, white sauces, soups, ready meals and snacks. It consists of six key profiles, including chicken breast, country-style chicken, pan seared, flame grilled, sweet fried and dark roasted chicken.

To develop the range, the company employed sensory and analytical science to identify the unique flavour characteristics of chicken. By studying the flavour profiles of different parts of the chicken, as well as the impact of specific cooking styles, the company identified six key profiles for creation. These profiles, which are vegetarian, Kosher and Halal, offer manufacturers the ability to confer authentic chicken flavours, such as the creamy, white meat flavour of chicken breast or the ‘country style’ — chicken’s herbal and roasted vegetable notes — into their products. They can add depth of flavour in complex bases (such as in vegetarian products) and deliver product differentiation and enhanced consumer appeal.

The range of chicken profiles is available in liquid and powder formats and as compound flavours for fuller flavour impact.

Synergy Flavours
www.synergytaste.com

Continuous cutting of fruits and vegetables

Foodlogistik has developed a machine specifically intended for the continuous cutting of fruits and vegetables into cubes, slices or strips. Available in three models, the ShreddR is capable of processing between 850 and 2000 kg/h and can cut down to 3 mm thick.

The design emphasises compactness and hygiene, is constructed almost entirely from stainless steel and features an external electrical casing. Contributing to hygiene but primarily intended to improve the cutting of fruits and vegetables, the product includes a water connection so the user can rinse while cutting.

The cutting system is designed to facilitate versatility in cutting applications. The product consists of three removable cutting sets: a vertical block knife for slicing, a vertical circular knife set for stripping and a horizontal cross-cut knife set for dicing. For example, it is possible to use the machine for slicing using only the block knife, then fit the vertical and/or horizontal circular sets for stripping and/or dicing.

Operating the product could not be simpler, operated by ‘on’ and ‘pause’ buttons and a dial for infinite variability in speed control. The unit is mobile on wheels and it passes all international safety regulations.

Barnco Sales Pty Ltd
www.barncosales.com.au

Plant-based protein nuggets

DuPont Nutrition & Health’s SUPRO 90% protein nuggets have a high level of protein and are label friendly. Nutritionally robust with a neutral flavour and crispy texture, these plant-based nuggets are suitable for use in snacks, cereals and nutrition bars.

The nuggets can help formulators achieve desired protein levels while using liberal amounts of nuts, seeds and fruit to add visual appeal. They are available in a range of textures, shapes and sizes.

Three new protein nuggets have been added to the product range, each featuring a unique shape, size and texture.

The firmer texture of the oval-shaped SUPRO NUGGETS 580 delivers a crunchier texture and better piece integrity during processing.

The unstructured shape of the SUPRO NUGGETS 583 creates visual appeal in clustered cereals, yoghurt topping, muesli and bars, while adding crispy, crunchy texture.

The larger, round-shaped SUPRO NUGGETS 585 offers a unique appearance and crunchy texture, making it suitable for novel snack formats, nutrition bars and cereals.

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Value through expertise
PhD candidate finds potential alternative to milk pasteurisation

A PhD candidate at Deakin University has found a way to preserve milk for more than six weeks while also increasing its nutritional value.

Sri Balaji Ponraj found that shooting microscopic plasma bubbles through milk could be an alternative to pasteurisation, the traditional preservation method used for over 150 years.

Ponraj, alongside Institute for Frontier Materials researchers Dr Jane Dai and Dr Julie Sharp, believed that this non-thermal method is “less aggressive” than pasteurisation, but still prevents bacteria growing as fast. This extends the shelf life of milk for a much longer period of time while also maintaining more of its nutritional value.

“We use a needle to send tiny gas bubbles through the milk, which can then be converted into plasma that provides an environmentally friendly, non-thermal approach to decontamination,” he said. “Using this method, the shelf life of milk can be pushed out to six weeks minimum, which could absolutely change the landscape of the bovine dairy industry.”

While research is still yet to be done using human participants, Ponraj said the method could have the potential to help the supply of human breast milk. Hospital wards and nurseries could stockpile milk without fearing it would spoil, and expressed milk — rich in important nutrients — could retain its nutritional benefits.

Ponraj recently celebrated his graduation from Deakin among 850 other students from the School of Medicine, Arts and Education, Business and Law, and Health across three ceremonies at Geelong’s Waterfront campus.

Deakin University Vice-Chancellor Professor Jane den Hollander praised the graduands who strive to innovate, such as Ponraj.

“Ideas, knowledge and know-how are the critical currency for success in the 21st century, and discoveries like the one Sri Balaji Ponraj has already made show just what a difference we can make when we combine ideas, technology and drive,” Hollander said.
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Natural preservative formulation for vegetable oils

Arjuna Naturals Extracts has launched its natural preservative formulation for combating oxidation, thermal degradation and hydrolytic rancidity, and extending the frying cycle of vegetable oils. The all-natural preservative formulation contains a few simple ingredients and enables a clean label. It is GMO-free, oil-soluble and vegan.

The formulation also helps manufacturers use oil for frying a greater quantity by slowing down the oxidative degradation due to re-use, thus keeping the oil safe.

It is a natural preservative that can help maintain vegetable oil colour, taste and functionality, even in high temperatures, and does not negatively affect the fried product. It helps food processors fry an increased number of product batches per litre of oil, with delayed TPC development and decreased time to rancidity. The preservative formulation helps food manufacturers meet the FSSAI’s standards and keep frying oil consumption economical.

Arjuna Natural Extracts Ltd
www.arjunanatural.com

English hospitals given 250-calorie limit on confectionery

Rising obesity rates are increasing awareness about preventative measures, especially in hospital environments. NHS England Chief Executive Simon Stevens has announced a 250-calorie limit will be imposed on confectionery sold in hospital canteens, stores, vending machines and other outlets.

With shops and canteens often selling convenient, sugary and unhealthy food such as prepackaged sandwiches, patients, visitors and even staff are at higher risk of health issues such as obesity, diabetes and tooth decay. Hospitals have been ordered to remove super-sized ‘grab bags’ of unhealthy snacks and chocolate bars off the shelves, over fears that these larger portions encourage individuals to consume more than their recommended daily allowance of sugar.

Instead, Stevens suggested they aim to promote healthier alternatives, stating: “In place of calorie-laden, sugary snacks, we want to make healthier food an easy option for hospital staff, patients and visitors.”

The new restriction dictates that at least 80% of stocked items in hospitals should not exceed the 250-calorie limit. The focus also extends to sugary drinks, which consumers are less likely to associate with poor nutrition and obesity. Therefore, 80% of drinks lines must contain less than 5 g of added sugar per 100 mL. Health services that implement these restrictions in 2018/19 will receive financial incentives.

“Hospitals have an important role in addressing obesity — not just treating those suffering the consequences, but helping to prevent it in the first place. Any plans to offer healthier food are a positive step towards tackling the country’s obesity problem,” explained Dr Alison Tedstone, chief nutritionist at Public Health England.

While many stores used to capitalise on ‘impulse buys’ at the checkouts, action has already been taken to remove these unhealthy foods and drinks to prevent temptation. Price promotions have also been slashed, and unhealthy foods are no longer advertised on NHS premises.

One particular group of people at risk of falling victim to these sugary food promotions is NHS staff working night shifts — they often struggle to find healthy food and opt for convenience. As a result, it is predicted that about 700,000 NHS employees out of 1.3 million are overweight or obese.

In April, NHS England announced that leading retailers such as WH Smith, Marks & Spencer, Greggs, SUBWAY, Medirest, ISS and the Royal Voluntary Service have agreed to decrease their sales of sugary drinks to 10% or less of their total drinks sales within hospitals over the next year.

Andrew Roberts, business enterprise manager for Royal Voluntary Service, said: “Our shops, cafes and on-ward trolley services in England and Wales meet the current CQUIN requirements and we welcome the decision of NHS England to put these new measurements in place.

“We took an early lead on the NHS workforce healthy agenda by introducing our Healthier Choices program and it is already having a significant effect on consumer behaviour. In the first quarter of 2017, year-on-year sales of fruit increased by 25%, healthier chilled snacks like salad and sushi by 55% and healthier sweet and savoury snacks like popcorn and dried fruit by 109%.

“We will be implementing these new guidelines and are hopeful that they will result in healthier food being a more consistent feature in all hospital retailers.”
Five natural flavour collections
Sensient Flavors presents its All Natural Flavour Collections which help food and beverage manufacturers to respond successfully to upcoming market trends and reflect current consumer preferences. They are split into five key botanical areas: Florals, Herbs, Spices, Tea and Ginger.

The Floral Collection is suitable for a multitude of applications, from cocktails and gin to confectionery and dairy. It includes Jasmine, Chrysanthemum, Desert Wildflowers, Elderflower, Geranium, Rose, Lavender, Orange Blossom, Cherry Blossom and Hibiscus.

The Spice Collection places Black Pepper, Pink Peppercorn, Star Anise, Clove Bud and Saffron in the beverage arena, while Cinnamon, Capsicum, Cardamom and Liquorice can add warmth to bakery and dairy. Juniper Berry is suitable for meat-based savouries and in beer.

The Herb Collection comprises Garden Mint, Coriander Leaves, Sage, Rosemary, Hops, Oregano, Basil, Thyme, Lemongrass and Aloe Vera.

The Tea Collection brings together eight different tastes: Green Tea, Matcha Tea, White Tea, Cascara Tea, Rooibos, Chai Tea, Black Tea and Earl Grey.

The Ginger Collection comprises six distinctive flavour profiles: Classic Ginger Beer, Ginger Ale, Ginger Root (gari), Spicy Ginger, Nigerian Ginger and Chinese Ginger (galangal). It can be used in all sorts of applications, from beverages and confectionery to bakery and dairy desserts.

The collections are based on Sensient Natural Origins, a range of true to nature extracts derived from the named source (FTNS) botanical and other organic-based ingredients, which capture the true flavour and aroma profile of the original source.

Sensient Technologies
www.sensient.com
Family hospitalised after suspected botulism poisoning from wild boar

Does your Christmas menu feature wild boar? If so, you might want to rethink. Three members of the same family are on life support suffering from what doctors believe to be botulism poisoning after eating wild boar.

Waikato Hospital spokeswoman said that although the exact cause and source remains unknown, the three patients are responding to botulism antitoxin and are recovering in hospital.

“We have sent samples off to a specialist centre in Queensland for testing but it may take several weeks before we get the results. We have no evidence to believe there is any public health issue,” she told the NZ Herald.

Shibu Kochummen, 35, his wife Subi Babu, 32, and his 62-year-old mother Alekutty Daniel were found unconscious in their home by paramedics on Friday, 10 November after eating meat from a boar shot by Kochummen.

Foodborne botulism is a rare but potentially fatal condition caused by a toxin produced by the bacteria Clostridium botulinum. Botulinum toxins can be deactivated by temperatures above 85°C for a minimum of five minutes. The bacteria cannot survive acidic conditions below pH4.6.

Symptoms such as vomiting, muscle weakness and paralysis usually occur within 12–36 hours, but if the toxin is particularly potent or in large quantities these can appear much sooner, as seen with the three patients who were affected within 30 minutes of eating the meat and began vomiting every 15 minutes afterwards.

After receiving the botulism antitoxin, Babu has joined her husband and mother-in-law in the acute ward, down from the high-dependency unit. All three could face up to four to six months recovery and they have the possibility of being left with disabilities as a result. So far, friend Joji Varghes reported that they had opened their eyes but could not communicate or swallow.

Bill O’Leary, president of the NZ Deerstalkers’ Association, said he had never heard of anyone being poisoned from game meat, leaving him to question how quickly the meat was gutted and in what conditions and temperatures it was kept in before and after cooking. The Ministry of Health also believes botulism is “rare” in New Zealand, with only one case reported since 1985 prior to this incident.

A spokesperson from the Ministry for Primary Industries (MPI) told the NZ Herald: “MPI has been notified of this incident by the Waikato District Health Board’s Population Health Services, and we are working with them to investigate.”

So with the holiday season approaching and game hot on the menu, maybe it’s best to consider skipping the boar.

Electric forklift trucks

Mitsubishi’s FB-TCB series 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 compact design and manoeuvrability, the FB13-20TCB series is suitable for confined working areas such as narrow warehouse aisles and containers. It is equipped with a 48 V battery, efficient AC Power traction and hydraulic motors and regenerative systems.

All forklift trucks in the series are installed with the AC Power control system which integrates travel, hydraulic and electric power steering functions.

These trucks are suitable for indoor applications where noise, pollutants or particulate contamination are undesirable. They also 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.

A forklift’s most important component is its operator. The series features electric power steering, visibility, ergonomic controls, and comfortable seat and leg room for operator comfort; and its integrated speed control on slopes improves safety. 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.

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

MLA Holdings Pty Ltd
www.mlaholdings.com.au
Orange and yellow beverage colour range

Extending its existing range of CapColors and ColorFruit, Chr. Hansen is launching four more colour solutions for beverages. With these colours, the company wants to give beverage manufacturers more choices when it comes to colour and performance on the journey to naturality.

The yellow colour range is suitable for multiple applications: carbonated or still, with or without juice. The orange colours are suitable for a range of applications containing juice, including concentrates, carbonates, stills and energy drinks.

The two orange solutions utilise Chr. Hansen’s encapsulation technique to improve the functionality of the natural colour in the final application. They require that the final application contains a small amount of juice to stabilise the colour and ensure that the full strength of the colour is obtained.

The two robust, transparent yellow emulsions are suitable for both juice and non-juice based applications. The clear, transparent colour offers a strong natural alternative to dyes such as Tartrazine or Sunset Yellow.

The four colours are in liquid form and are easy for manufacturers to use. The colours are high strength, versatile and robust, offering multiple shade nuances from deep orange to transparent yellow. All products are stable towards heat treatment and light exposure, and they do not create any neck ring in the final application.

CHR Hansen Pty Ltd
www.chr-hansen.com

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Karaya gum
Karaya gum is a natural gum exudation obtained by the incision of the stems and branches of *Sterculia* trees. It can be used for many food and pharmaceutical applications.

Alland & Robert has developed a method of physical treatment that reduces the total plate count of hydrocolloids while preserving all their functional properties. This is based on a unique concept of flash heating.

This process assures a homogeneity of the temperature within the treated gums. The gum may now be used alone or in association with other hydrocolloids. For the formulation of coatings, fillings, dressings, desserts and emulsified sauces, Karaya gum can answer to new needs regarding texture improvement.

Karaya gum can be found in a wide variety of products such as dietary products, desserts, medication, donuts, savoury sauces, ready-to-eat meals, ice-creams and biscuits. It offers many functional properties: texturing and bulking agent, dietary fibre, adhesive compound, viscosity control agent, water retention and suspending properties. Karaya gum affects textures even at low concentrations.

It is 100% natural and vegetarian, free from pesticides and GMOs. It contains no gluten and is high in fibre.

*Savannah Bio Systems Pty Ltd*
www.savannah.com.au

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Label-friendly stabiliser for dairy-free drinks
DuPont Nutrition & Health has made it easier for beverage manufacturers to produce stable soy, almond and other plant-based drinks with a refreshing texture and a clean label. The latest gelling ingredient in the DuPont Danisco range enables manufacturers to obtain the functionality they need without mixing in other additives.

GRINDSTED GELLAN MAS 100 — otherwise known as gellan gum — is a label-friendly stabiliser for non-dairy beverages made with pulses, grains, nuts and plant-derived protein. Previously produced by DuPont for ingredient systems, it is now available as a single ingredient that enables manufacturers to stabilise the particles in plant-based beverages and create a smooth texture.

The product provides good stabilising functionality regardless of raw material fluctuations. No other additives are required, supporting the consumer preference for clean-label, plant-based drinks that are free of artificial ingredients.

*DuPont (Aust) Limited*
www.dupont.com.au

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All-natural red colour range
In response to the growing demands for vegan eating, Frutarom Natural Colors Business Unit launches Bright’n Free Red Rosy, a clean-label, all-natural red colour range for plant-based meat analogues.

Food manufacturers of vegan/vegetarian meat strive to mimic not only the flavour and texture of meat products, but also the colour. They thus add red colour to get an exact ‘look and feel’ of meat. The company’s line of red colours is plant-sourced, allergen-free and E number-free.

The colour line is specifically optimised for vegan/vegetarian meat analogue applications. It is highly heat stable and thus suitable for items such as grilled, raw cured and par cooked vegetarian sausages, as well as other foods undergoing a long cooking process.

The red colour line is derived from simple, natural vegetable sources, allowing for transparent labelling. It is kosher-certified and available in a palm-free form. There is no selective extraction; the ingredient is a simple concentration of squeezed plant juices rich in the natural antioxidant pigment anthocyanin.

*Trans Chem Pty Ltd*
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Vegans call for better labelling on wine

Veganism is becoming more common, with consumers motivated by a number of issues including allergies, environmental concerns and animal welfare. However, this may pose a problem for wine-lovers as wine bottles rarely display the ingredients label.

Australia is one of the fastest growing vegan markets in the world, and the packaged vegan food market is expected to reach $215 million by 2020, according to Euromonitor International.

As a result, the food and beverage industry is trying to accommodate this growing demand by producing goods that do not contain animal products. While winemakers are also expanding their product range, many still fail to disclose the ingredients.

Wine producers in Australia are allowed to include a number of different additives to enhance wines, such as sulfites, tannins and different types of acids as well as processing aids including egg whites, gelatin and milk products.

Listing the presence of these products only became mandatory in 2002 with the introduction of the Food Standards Code. Previously, wine manufacturers were not required to disclose information about allergens on the label. Therefore, the Food Standards Code warns that vintage wine dating back to before 2003 should not be consumed by allergy sufferers or vegans. One ingredient that also remains exempt from labelling is isinglass, which is a kind of gelatin made from fish.

During the winemaking process, most substances are removed or transformed, but vegans may still run into problems choosing wines. Only allergy-causing substances are declared, not necessarily the individual additives and processing aids and whether they come from animals.

However, the Department of Health implied further labelling may not be helpful.

“Alcoholic beverages are exempt from ingredient labelling because the ingredients used in the manufacture of alcoholic beverages are ‘substantially transformed’ during fermentation. Therefore, providing a list of ingredients is unlikely to provide useful information for consumers.”

Consumers are increasingly demanding more transparency on food and drinks labels, especially for those following a vegan diet. More retailers are recognising this growing trend in the UK, with Co-op planning to expand its vegan wine range to 100 labels this year and suggesting other wine manufacturers follow suit.

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Inaugural Aged Care Catering Summit 2018

Australia’s aged-care sector has gone through significant changes, and this is set to continue in regards to catering. Alongside the Foodservice Australia trade show, the first Aged Care Catering Summit will take place on 29 May 2018 at the ICC Sydney.

The summit will explore how delegates can improve their business, provide nutritious meals and adapt to the shifting demographic and demands of the aged-care sector.

“The baby boomers now entering aged care in all its forms are largely educated and sophisticated; many are avid diners and connoisseurs who will not tolerate a foodservice offering that is seen as institutional,” said Tim Collett, Foodservice Australia’s event director. “At this unique event, you’ll hear from leaders in the industry on innovation, trends, nutrition and how to stay ahead of this changing demographic.”

Aimed towards those involved in catering for the elderly — such as general managers, catering managers, chefs, facility managers, nutritionists, commercial caterers, consultants and suppliers — attendees can network with industry leaders, listen to advice from speakers and share their thoughts on current issues.

The conference will cover a range of topics, including central kitchens versus cook fresh, the changing face of the dining room, on-site cafes, nutrition, risk, trends and innovation in equipment and technology.

One speaker will be John Casey, national food services manager for aged-care provider AVEO. He said: “This is an important conference for all who wish to ensure healthy, nutritional dining options that meet the demands for our fast-growing ageing population.

“I look forward to sharing insights from my experience catering for 13,000 residents at 80 retirement communities, as well as gaining new ideas from a great line-up of specialists.”

Other speakers will also include: Cherie Hugo, founder for The Lantern Project; Lynn James, CEO for Maggie Beer Foundation; Peter Morgan-Jones, executive chef for Hammond Care; and Anne Schnyder, director for Nutrition Professionals Australia.

For further information, visit www.foodserviceaustralia.com.au/Content/Aged-Care-Catering-Summit/4_71/.
FSIS suggests HACCP could help egg product safety

In an attempt to improve the safety of egg products, the US Department of Agriculture’s (USDA) Food Safety and Inspection Service (FSIS) has suggested amending egg product inspection regulations. Under this new proposal, official plants that process egg products will be required to develop Hazard Analysis and Critical Control Points (HACCP) systems and Sanitation Standard Operating Procedures (Sanitation SOPs).

The proposed rule would make sanitation requirements consistent with meat and poultry regulations. FSIS aims to ensure that finished egg products are free of detectable pathogens.

Other key changes include: safe-handling instructions on certain egg products; labelling requirements for shell eggs inspected by FSIS to be consistent with those in Food and Drug Administration (FDA’s) regulations; and inspections would take place at least once per shift as opposed to during all processing operations.

The amendments aim to use agency resources more wisely and remove unnecessary regulatory obstacles for egg products plants. By removing the red tape, plants will have the freedom to tailor their own food safety system and are encouraged to innovate new ways to increase food safety. For example, the proposed rule suggests eliminating the requirements for prior approval of egg products plant drawings, specifications and equipment.

FDA currently regulates some egg products not covered by FSIS, such as freeze-dried egg products and egg substitutes. However, FSIS has acknowledged the potential risks of these products and therefore the need for them to be assessed in the same way. It proposes assuming jurisdiction over them in order to expose them to the same scrutiny and care as regular egg products.

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Packaging conference includes international awards

2018 Australian Institute of Packaging National Conference

Designed for packaging designers, technologists, engineers, sales and marketing people, the biennial AIP National Conference is the largest packaging and processing conference of its kind in Australia and New Zealand.

Run by industry for industry, the AIP National Conference has been leading the way in professional and personal development for decades and is a part of the annual Packaging & Processing Week. In 2018, Member Countries from the World Packaging Organisation will be heading to Australia to speak and participate in the week.

The AIP will be hosting the 100th World Packaging Organisation Board meetings alongside the 2018 AIP National Conference 2018 and WorldStar Packaging Awards. These events will bring all of the key packaging associations from across the world to Queensland in May.

Packaging and processing innovation and design awards

The AIP will be hosting the WorldStar Packaging Awards and The PIDA Awards alongside its National Conference. The global awards dinner will see over 25 countries travel to Queensland to attend the night.

The WorldStar Packaging Awards is the annual flagship event for the World Packaging Organisation (WPO) and is the pre-eminent international award in packaging. The WorldStar Packaging Awards illustrate the continual advancement of the state of packaging design and technology, and create a living standard of international packaging excellence from which others may learn.

The PIDA (Packaging & Processing Innovation & Design Awards) are designed to recognise companies and individuals who are making a significant difference in their field. The PIDAs are designed to recognise materials/packaging and also machinery/equipment.

When: 2–3 May 2018
Where: Marriott Hotel, Surfers Paradise
Organiser: Australian Institute of Packaging
Registration: http://aipack.com.au/event-registration/?ee=130

Australian Institute of Packaging
www.aipack.com.au
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Question time …

What is vision inspection? And what problems can it address?

Vision inspection can be an important QA/QC tool on production lines. This quick Q&A outlines how it can help you.

Q. Firstly, what is vision inspection?
A. “Vision inspection” or “machine inspection” is an automated system inspecting product quality, rather than doing it manually, resulting in objective QA.

Q. What problems can it address?
A. A wide variety of checks: code validation, item count, label inspection and validation, line monitoring, closure and seal validation, pick and place, packaging QA, matching components, empty container inspection and metal detection.

Let’s look at the top 5…

Q. What’s basic flaw detection?
A. Detecting flaws is vital to QC because manufacturers of food and beverages — from bottled water to wine — dairy products, snack foods, meat and smallgoods, baked goods, frozen food and so on can find blemishes, scratches, cracks, discoloration, pitting, etc., through empty container inspection and packaging QA.

Q. How does pick and place and robotic guidance work?
A. The vision system detects a part using shape-based object identification, then sends that part’s position and angle to the robot. The robot picks the part then places it in the correct orientation. This process can include quality assessment.

Q. And identification and validation?
A. Vision inspection can verify a code (such as a barcode, date or batch code, or 2D code) is present, properly positioned and formed correctly. It automatically identifies and rejects items with missing, incorrect or unreadable codes. Via system integration, codes can be validated to check they are correct for that product. Machine vision ID can be used in production-part traceability, WIP inventory management, verifying product lots and grading print codes.

Q. What about verifying parts, assemblies and packaged goods?
A. Verification can be combined with measuring part dimensions or reading product barcodes, to give a full product inspection, inline; e.g.: for blister packs, moulded parts, bottle cap and safety seals, print, and features such as threads, holes and notches. Packaging components (lids, containers, bases, shrink labels, outer packaging) can also be verified as correct for that product.

Q. And highly precise dimension and tolerance measurements?
A. Vision inspection is also very well used to accurately check dimensions and tolerances that need to be highly precise e.g. fill-level measurement.

Vision inspection provides precise, repeatable QC to ensure manufacturing accuracy.

IoT technology for can and bottle collection machines

TOMRA Collection Solutions has launched TOMRA Connect for returns machines collecting cans and bottles for re-use and recycling. The technology will bring new insights and engagement opportunities for the locales providing the machines and the users.

The returns machines provide a deposit refund when consumers return their used beverage containers. The machines identify the can or bottle, give the appropriate refund and can compact the containers for easier transportation.

The technology offers benefits including the points program TOMRA ReAct, where consumers earn points to redeem rewards or make donations, and share their recycling activity to social media. This can complement deposit refunds or act as an incentive in markets without deposit legislation.

The machine’s touchscreen also turns the system into a donation and marketing touchpoint, where consumers can donate their recycling refund to a local charity and retailers can promote daily specials or show seasonal campaigns — all administered remotely. Retailers can also print discount coupons on refund receipts.

The smartphone app Notify + Assist pushes real-time notifications to personnel when machines require attention (like full bins, stops or low printer paper) and gives step-by-step guidance on how to remedy it.

An analytics program pulls business intelligence from big data. It shows machine queuing time, how well the machine was cleaned, recycling volumes for different times of day (so sites providing the machines can plan ahead for busy periods) and more.

The technology also combats fraud attempts, like someone trying to redeem the same deposit amount twice, through real-time validation and devaluation of refund receipts.

TOMRA Sorting Solutions Pty Ltd
www.tomra.com
**Biodegradable paper**

FreshPaper by Fenugreen is a small piece of bio-degradable paper infused with a combination of organic spices, which is designed to keep fruit and vegetables fresh for up to two to four times longer.

The paper is infused with organic spices that inhibit bacterial and fungal growth as well as enzymes that cause over-ripening. It has no zeolite, sodium permanganate or charcoal, and no plastic.

A piece of the paper can be placed into any existing packaging, fridge drawer or fruit bowl filled with produce. The product needs air circulation to be effective, but once in use, the sheet will stay active for up to 3 weeks, or until its scent fades, according to the company.

**Fenugreen**

www.fenugreen.com/freshpaper

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**Packaging inspection machine**

Bizerba’s ThermoSecure L offers full packaging inspection by vision and checks 100% of products. Seal contamination, mislabelling or bad information on any side of the pack can be detected and defective packs can be rejected. All these tasks are efficiently fulfilled by one compact machine for an easy end-of-line integration.

The machine inspects seal seams, labels and information on the top and bottom of packs. Before case packing, the stand-alone inspection machine detects defective packs and is able to reject them.

In the event of a drift in production, an alarm alerts the operators so that the problem can be corrected immediately. It prevents rework operations on defective packaging, complaints or product recalls due to package integrity problems.

The machine automatically contributes to the total traceability of the product by archiving all images captured during production and by monitoring the packaging line with a regular output of production reports.

It is compatible with a wide range of products and addresses a number of inspection needs. The machine comes in IP65.

**MULTIVAC Australia Pty Ltd**

www.multivac.com.au
Amcor is the first global packaging company to pledge to develop all its packaging to be recyclable or re-usable by 2025. Simultaneously, the company is committed to increasing its use of recycled materials.

The action joins Amcor with 10 leading brands and retail companies making the same 2025 commitment, in collaboration with the Ellen MacArthur Foundation (EMF). EMF estimates that the companies, which include Coca-Cola, Unilever, Tetra Pak and Danone, together influence more than six million metric tons of plastic packaging each year.

According to Ron Delia, Amcor’s chief executive officer, most of Amcor’s packaging today is developed to be recyclable and re-usable, and is being designed to use less material in the first place.

“Our aspiration is to be the leading global packaging company,” said Delia. “That means winning on behalf of the environment, customers, consumers, shareholders and our people at the same time, in ways that differentiate Amcor and generate growth.”

Some of the biggest challenges to recyclable and re-usable packaging remain and will be overcome through leadership and innovation, in partnership with customers, suppliers, government agencies, NGOs and others according to Delia.

Speaking from the World Economic Forum in Davos, Rob Opsomer of EMF said that Amcor’s pledge is notable.

“Amcor being the first global packaging company to commit to working toward 100% recyclable or re-usable packaging by 2025 is an important milestone towards creating a circular economy for plastics,” said Opsomer.

“The company’s commitment and expertise will be instrumental in supporting the growing group of brands and retailers that have set similar targets for themselves.”

Opsomer called on other companies “to follow Amcor’s lead.”

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**Black sushi trays**

Black sushi trays have been designed by Coveris Rigid Polska for Sushi To Go.

The sushi trays are made of PET/PE foil to provide protection of the product against tampering. The lid keeps the contents still and prevents movement. There is a special cavity where chopsticks are stored. With these features, the tray can be safely and conveniently carried away, the contents are protected against crushing or disintegrating, and flavour and visual value are retained.

The trays are manufactured in six different sizes (in cm): 230 × 100 × 35; 230 × 145 × 25; 230 × 145 × 40; 285 × 205 × 40; 229 × 180 × 25; 229 × 180 × 40.

The sushi is packed in the tray in a modified atmosphere, which helps keep the food fresh and to extend its shelf life, while also retaining its full moisture and flavour up until the expiry date.

**Coveris Australasia**

www.coveris.com

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**Horizontal flow wrapper**

The Fuji Alpha 8 Horizontal Flow Wrapper features a stronger, simpler and more accessible end seal system, which is quieter and more reliable and has a higher sealing pressure.

Designed to increase productivity times and reduce running costs, the Alpha 8 adopts induction heating in centre seals providing heat stability with less energy usage.

The Fuji Vision System has been enhanced with ‘auto-teaching’ which includes automatic detection of film registration and the detection of correct print for the product, thus avoiding the incorrect film.

The high-specification HMI features a 15.6” screen which is customisable to allow for immediate access to main and most commonly used functions.

The centre fin seal unit can tilt down without tools providing easy access for sanitation and maintenance and the film rollers are constructed of stainless steel for improved hygiene.

The open-close film feed roller frame provides an easier and quicker film change and the 500 mm shorter film route saves film wastage substantially.

With this flow wrapper Fuji has attained a 20% energy saving, a reduction in setup and changeover times and a reduction in film waste.

**Walls Machinery Pty Ltd**

www.wallsmachinery.com.au

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**All its packaging to be recyclable or re-usable by 2025: Amcor pledge**

Amcor is the first global packaging company to pledge to develop all its packaging to be recyclable or re-usable by 2025. Simultaneously, the company is committed to increasing its use of recycled materials.

The action joins Amcor with 10 leading brands and retail companies making the same 2025 commitment, in collaboration with the Ellen MacArthur Foundation (EMF). EMF estimates that the companies, which include Coca-Cola, Unilever, Tetra Pak and Danone, together influence more than six million metric tons of plastic packaging each year.

According to Ron Delia, Amcor’s chief executive officer, most of Amcor’s packaging today is developed to be recyclable and re-usable, and is being designed to use less material in the first place.

“Our aspiration is to be the leading global packaging company,” said Delia. “That means winning on behalf of the environment, customers, consumers, shareholders and our people at the same time, in ways that differentiate Amcor and generate growth.”

Some of the biggest challenges to recyclable and re-usable packaging remain and will be overcome through leadership and innovation, in partnership with customers, suppliers, government agencies, NGOs and others according to Delia.

Speaking from the World Economic Forum in Davos, Rob Opsomer of EMF said that Amcor’s pledge is notable.

“Amcor being the first global packaging company to commit to working toward 100% recyclable or re-usable packaging by 2025 is an important milestone towards creating a circular economy for plastics,” said Opsomer.

“The company’s commitment and expertise will be instrumental in supporting the growing group of brands and retailers that have set similar targets for themselves.”

Opsomer called on other companies “to follow Amcor’s lead.”
Four ways perforated labels can increase efficiency

Easy-tear backing paper is an economical and efficient solution that offers the flexibility to store and use labels in multiple ways.

Die cutting is performed to make this type of label by creating perforations on the backing liner after the printing process. The matrix waste material is removed all in one press pass.

Perforated labels can increase efficiency and enrich the value of supply chains in the following four ways:

1. Labels on easy-tear backing paper are easier and tidier to pull apart. This is beneficial when printing batchers of one type of label, as they can be efficiency grouped together. Additionally, if employees are working in multiple packing stations, labels can be easily separated from the roll without the use of scissors or a knife and used in different locations.

2. This type of label makes it easier to tear off labels directly from a printer, especially printers with blunt tear bars, preventing exposed adhesive from catching on the platen roller and having labels wrap around it.

3. Labels on easy-tear backing paper provide the flexibility to separate and use them in multiple ways. These labels can be used as tags if you don’t want to stick them onto anything, as the backing paper is still attached. This is a cost-efficient way to use the product in multiple ways and saves changing back and forth from labels to tags.

4. Perforated label rolls provide the flexibility to easily fold and store labels into flat stacks rather than rolls after printing, eliminating the risk of your labels getting crushed or damaged.

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**Fast changeovers on stretch blow moulders**

KHS has reduced changeover times on its InnoPET Blomax stretch blow moulders. The active mandrel enables format changeover times to be reduced by more than half for all standard neck designs. This feature is of interest to all beverage producers who bottle products with different types of neck.

During a format changeover operators not only switch over the blow moulds but other components as well. The conveying mandrel in particular is of special significance in this process as a full changeover of these format parts was extremely time consuming. When a product is changed over during beverage production and requires a change in the type of bottle neck, to date each individual mandrel had to be exchanged in its entirety.

The company has developed a variant that is much quicker to replace, making changeovers ergonomic and tool-free without any great force being required. Besides the conveying mandrels, the shields, grippers and other parts can now also be easily switched over using quick-change mechanisms; in some cases these can be adjusted without any installation work being required by simply rotating the part. Formats can be changed over in less than half of the time operators used to need.

A mandrel can now be replaced in about 5 s, according to the company.

The new procedure can be retrofitted on any of the company’s series IV stretch blow moulders, as following one-time adjustment of the conveying mandrels, no further mechanical or electrical conversion of the machine is required.

**X-ray inspection systems for vent tube detection**

Peco InsPX Corporation has announced a robust vent tube detection capability in sealed beverage containers using its side-view full container X-ray inspection systems.

It is designed to detect extremely small pieces of a vent tube thereby ensuring that each individual beverage container is free of foreign material. Furthermore, the latest software algorithms allow accurate detection at a false low reject rate, according to the company.

In beverage can applications, the false reject rate is less than 1 per million inspected containers. In addition to vent tube detection, the X-ray systems can perform fill level monitoring and container integrity inspections on cans at full line speeds (up to 4000 containers/min).

**Pick and place crate packer**

The HMPS 7000 is a pick and place crate packer designed to receive, collate, and pick and place 2 and 3 L bottles into two crates per cycle, then move completed crates onto a transfer conveyor. HMPS designed and built the first prototype, and now has a blueprint.

The crate packer can pack 200 x 2 L bottles/min, which equates to 22.2 crates/min. It allows for a variety of bottle sizes and weight, as well as packaging formations and crate sizes.

Product is conveyed from upstream processes in single file, and immediately enters a diverter on the infeed conveyor. At the end of each lane, the product is held by an end stop until a sufficient number of products have been collated. The collated product will be pushed into a nest that will retract once the correct number has been allowed through.

The transfer and loading of the product from collation to the crate is performed by a programmed robot arm and product-specific tooling. The robot will move to the fully loaded collation station once it has the signal that the station is full.

The tooling will then engage the product, lift the product from the collation station and transfer it to the crate. It lowers the product into the crate and releases. The robot will then return to the home position.

The main electrical enclosure contains the PLC, servo controllers, VF drives and control hardware.
Sigrid Tusek, Packaging Development Officer for Simplot Australia, recently attained the Certified Packaging Professional in Training (CPIT) designation. Tusek is not only the newest and youngest member of the Simplot packaging team, she is also the first person in Australasia to receive the title.

After working as a design engineer with the Bayly Group and completing a Bachelor of Engineering (Product Design Engineering) with the Swinburne University of Technology, Tusek moved into the packaging industry.

“I have noticed many similarities between product design and packaging with an overlap of materials and manufacturing,” she said.

After starting at Caps and Closures and getting exposure to injection moulding for six months in a part-time role, she began her full time role at Simplot. Tusek was new to the industry and she said this motivated her to achieve the CPIT designation.

She compared the packaging industry to learning a new language, and said it “offered a framework for learning, provided valuable insights and further developed my knowledge about that world”.

“The packaging team at Simplot have also been a huge influence as they are an inspiring group of packaging professionals, supporting and encouraged me to undertake this goal,” she continued.

The designation is aimed towards either individuals who are beginning a career in the industry or those looking to expand their understanding of non-technical packaging. Tusek highlighted that being able to “develop an overall, fundamental knowledge of packaging” was a “valuable developmental step”.

Internationally recognised by both IoPP and AIP, Tusek praised the opportunities provided by the CPIT designation.

“It recognises professionals who are both academically qualified and have extensive industry experience. It inspires new people to be committed to the industry, to build their knowledge and to contribute to the packaging industry. Being an internationally recognised qualification the CPIT Designation provides a great professional goal.”


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It has long been known that popular foods such as frozen pizza, hamburgers and potato chips are unhealthy for you, but many consumers do not take into account sodium levels.

A diet that is high in sodium can lead to negative health effects including high blood pressure and heart disease. According to the Food and Drug Administration, no more than 2300 mg of sodium should be consumed per day, but 90% of Americans are already exceeding this limit.

While stricter regulations on food labels have been introduced to inform consumers about their nutritional choices, researchers from the University of Georgia (UGA) have suggested that these are not effective in lowering the consumption of sodium.

"Currently we don’t know which interventions are most effective to reduce sodium intake in the US population, and the Nutrition Labeling and Education Act is the only policy in the US focusing on informing consumers about sodium content on most packaged foods," said Donglan “Stacy” Zhang, assistant professor of health policy and management at UGA’s College of Public Health and lead author on the study.

Food labels present a range of information including calorie intake, carbohydrates, proteins and fats, but this can overwhelm consumers and distract them from important nutritional information such as sodium.

Published in the American Journal of Preventive Medicine, Zhang used two consumer behaviour datasets from the National Health and Nutrition Examination Survey to examine the link between regularly reading nutrition labels and consumption of high-sodium foods.

They found that individuals who regularly read nutrition labels consumed 92 mg less sodium per day than infrequent nutrition label users. But taking into consideration that, even with the reduction, they were still consuming far more sodium than is recommended (around 3300 milligrams), this suggests that the labels only had a small impact on consumer behaviour.

Zhang also found that the results were dependent on factors such as age, gender and socioeconomic groups. While older adults and women were more likely to use nutrition labels, consumers with a low income were less likely to use them. However, their choices may be motivated by monetary value as opposed to nutrition.

“We suspect that low-income people are more concerned about other variables such as food prices or convenience,” she said. “Those other competing variables may be more important to them than nutrition values in their food products.”

Therefore, Zhang suggested that perhaps making labels more accessible for those who are less educated or non-English speakers could help reduce sodium intake. For example, visual or colour-coded designs, like the traffic light model used on food packaging in the UK, may overcome low literacy.

“We need more research in this area, how to better design the label and how to best get this information to consumers to guide their decision-making,” she said.

Zhang noted there were a number of limitations in the study, including dietary attitudes and other health factors that may have influenced the results. But since the study found that sodium levels were at least slightly decreased for those who read nutrition labels, she suggested that labelling could be paired with other interventions to produce better results. For example, interventions that increase nutritious food choices for low-income consumers may help reduce their sodium intake.
Crown feeder

Gebo Cermex’s durable OptiFeed crown feeder delivers high-speed performance in a compact space. The crown feeder platform is designed to ensure quality and compliance of crowns. Even at speeds as high as 81,000 crowns/h, its integrated vision device allows unsuitable crowns to be spotted and seamlessly ejected, without stopping the flow.

The product removes the need for air and thereby eliminates the risk of contamination that can sometimes occur when it is used.

Instead, mechanical discharge moves the crowns, keeping electrical power consumption to under 1 kW. This creates a smooth handling process as well as improving hygiene and reducing the environmental impact of the process.

The crown feeder features a smart design with the option of right or left discharge at variable heights from 2.0 up to 6.2 m to give manufacturers full flexibility. The small footprint and modular design allow for fast and easy integration, with optimum ergonomics ensured by a user-friendly human machine interface (HMI) and full accessibility from ground level. In addition, to help meet health and safety at work requirements, the noise level is lower than the 80 dB threshold at which hearing protection is required.

Gebo Cermex at Tetra Pak Marketing Pty Ltd
www.gebocermex.com
**Internet-enabled smart glasses**

Romaco Service’s Internet enabled smart glasses allow the manufacturer’s machines to be monitored from a distance. These glasses connect the technician to the machine operator at the user via a Wi-Fi interface. Customers requiring urgent assistance to operate their equipment can now opt for virtual support.

A camera integrated in the glasses transfers its perspective of the machine directly to the company’s hotline employee’s monitor. The support team can form their own picture of the situation in the field by live stream and take action accordingly. Machine operators anywhere in the world can be issued with targeted instructions, eg, during the ramp-up phase, format changes or repairs. Thanks to the resolution of 800 x 600 pixels or more, they can also show the operator important information on the system’s transparent screen. Each pair of smart glasses is provided with a microphone and headphones for audio communication.

The use of smart glasses in customer service saves time and money because minor faults or error messages can be dealt with quickly and easily. This means less downtime and significantly better OEE (overall equipment effectiveness).

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**Shrink-wrapping system**

The Gebo Cermex EvoFilm is a robust, flexible, highly compact and energy-efficient shrink-wrapping system.

Developed for the demanding high-speed production segment, it integrates a gentle product infeed and optimised transfer zones, key features when reaching production speeds of up to 150 cycles/min in three lanes. Its primary and secondary packaging capability, precise film-handling process and fully automatic changeovers that only take five minutes make it possible to produce multiple configurations of SKU (stock keeping unit) while reducing downtime.

In order to ensure fast access for cleaning and maintenance, the film vacuum table is fully extractible while the greasing system and the lubrication of chains are both automatic. To make them easy to replace without the need for reprogramming, all motion components are ‘plug and play’.

To help producers minimise their environmental footprint, the shrink-wrapping system is equipped with a lightweight version of the shrink-tunnel belt. Via its tunnel energy mode and infeed/outfeed tunnel flaps, it can reduce energy consumption in cases of longer stoppages, and in certain regions the shrink tunnel is powered by gas. This technology has a far shorter warm-up time than its electrical counterpart and the savings possible can be estimated in advance using the company’s energy consumption simulation tool.

The product offers a number of new technologies and smart tools to enable connectivity, data management and analysis. Via tutorials and interactive content, its user-friendly and intuitive HMI makes troubleshooting easy. For rapid and reliable recovery, it also features remote video access with augmented reality and, to optimise equipment performance over time, an Equipment Smart Monitoring (ESM) program. This all results in better machine operability, minimal downtime and high levels of profitability.

**Gebo Cermex at Tetra Pak Marketing Pty Ltd**

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Metal can coatings

CANVERA Polyolefin Dispersions from Dow Coating Materials is an effective, drop-in alternative to epoxy-based metal can coatings. The dispersions offer food and beverage brand owners, can makers and coatings formulators a metal can packaging solution that addresses growing consumer interest in can coatings that exclude Bisphenol-A (BPA) and other materials of concern.

The dispersions are enabled through BLUEWAVE Technology, a proprietary process that mechanically disperses polymers into water to form emulsions with performance attributes typically reserved for solvent-based systems.

As water-based emulsions, the dispersions offer coatings formulators the flexibility to meet direct food contact requirements and can makers the flexibility to spray-apply the coatings. The post-spray bake step melts the polyolefin coatings, providing good adhesion and corrosion protection.

By leveraging existing infrastructure and application equipment, manufacturers do not require production downtime during conversion. The dispersions may also increase productivity by contributing to lighter coating weights and increased line speeds through controlled spray application.

Dow Chemical Pacific (Singapore) Pte Ltd
www.dow.com

Liquid-tight containers

ILLIG’s thermoformed liquid-tight containers with lid are manufactured on an automatic pressure forming machine, type IC-RDK 80, with a 12-up container mould out of transparent PP. The company developed the ‘take away container’, which can be tightly closed by a lid based on requirements by customers from the Asian market.

With the series, the company developed a forming and punching technology suitable to achieve part quality and reproducibility of packs. The machines feature high availability and easy operation. Heated materials are formed by means of pre-stretcher and compressed air; the part is punched out of the material in the same cycle. Parts can be manufactured without punching mismatch in the rim area and thus automatic pack processing is improved.

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www.foodprocessing.com.au March/April 2018
Even after steering clear of trigger foods and reading labels carefully, allergy sufferers in Australia may still be at risk of an anaphylaxis attack when consuming some pre-packaged foods. A study from the Murdoch Children’s Research Institute (MCRI) revealed that 14 people suffered severe allergic reactions to packaged foods over a period of just three months. None of the products listed the suspected allergen as an ingredient and, surprisingly, 50% also failed to have a precautionary allergen labelling (PAL) statement.

This suggests that food labelling is not a sufficient safety precaution for allergy sufferers since they fail to highlight all the potential risks of packaged foods. “Our study showed that anaphylaxis to undeclared allergens is not rare and it did not appear to depend on whether the product was labelled with precautionary advice,” explained senior author Professor Katie Allen.

According to Dr Giovanni Zurzolo, lead author and Postdoctoral Fellow from MCRI and Victoria University, this could be because PAL practices are currently voluntary. As a result, advisory warnings are only on some packaged foods.

“Therefore, there is no effective way to currently determine whether or not an unlabelled product (foods without PAL) is safe for consumption by the food allergic community.”

While statements such as “may contain traces” are the food industry’s attempt to help consumers navigate their way through the supermarket shelves and steer clear of potentially dangerous products, PAL may be a more effective method. However, since neither are legally enforced, they both fail to help eliminate the risk of anaphylaxis. Allen argues stricter regulations would address this issue.

“Current PAL practices do not assist consumers in selecting foods which are safe for consumption. Improvements in the regulation of food labelling are required to give consumers the...
What’s the difference between “Use by”, “Display until” and “Best before”? 

Confusion around date labels on food products is causing an estimated 1.3 billion tonnes of food to be lost or wasted worldwide, and costing US consumers up to US$29 billion annually. This is a result of labels such as “Sell by”, “Use by,” “Display until” and “Best before” that are causing a misunderstanding about the expiration date and shelf life of products.

As a result, the Consumer Goods Forum (CGF) — a network of 400 consumer goods companies across 70 countries — and Champions 12.3 are attempting to standardise food date labels worldwide by 2020.

Champions 12.3 is a coalition of more than three dozen leaders across government, business and public organisations that are trying to achieve Target 12.3 of the United Nations’ Sustainable Development Goals of halving global food waste at the retail and consumer levels by 2030.

The CGF Board of Directors — along with companies such as Tesco, Kellogg, Walmart, Campbell Soup, Bimbo, Pick n Pay, Nestlé, Carrefour and Unilever — have signed a Call to Action to simplify date labels. This states that retailers and food producers should adopt three steps to reduce food waste by 2020:

1. Only one label at a time.
2. Choice of two labels: one expiration date for perishable items (eg, “Use by”) and one food quality indicator for non-perishable items (eg, “Best if used by”). The exact wording will be tailored to regional context.
3. Consumer education to better understand what date labels mean.

The third point on the Call to Action suggests companies partner with non-profit organisations and government agencies to educate consumers about how to understand date labels. This could be in the form of using web materials and public service announcements in order to combat their confusion.

CGF Managing Director Peter Freedman explained the importance of collaboration in addressing food waste: “Now more than ever is the time for business to play a leading role in tackling food waste. This is an issue that can only truly be tackled by collaboration across the value chain.”

With the average UK household with children spending £700 a year on food that’s thrown away — US$1500 for US households — standardising food date labels can help reduce the amount of edible food thrown out by households. This will not only save consumers money, but it will also reduce their environmental footprint and prevent further contributions to climate change.

“Four years ago, Tesco was one of the first retailers to roll out single date coding across our fresh food and meat produce,” said Tesco Group Chief Executive and Champions 12.3 Chair Dave Lewis. “All the evidence has shown that streamlining date codes helps customers waste less food and it also reduces waste in our own operations. That’s why it’s so important we extend this practice to more companies in every country. Streamlining date labels worldwide by 2020 could be game changing in the fight against global food waste.”

The announcement was made at a Champions 12.3 event during the 72nd United Nations General Assembly, where the company also launched the SDG Target 12.3 on Food Loss and Waste: 2017 Progress Report. The report records global progress towards achieving Target 12.3.

It found that countries and companies are setting reduction targets aligned with SDG Target 12.3 — today, 28% of the world’s population live in a country or region with a target to reduce food loss and waste, and nearly 60% of the world’s 50 largest food companies have set reduction targets.

“It is good to see clear signs of momentum building behind the movement to tackle food loss and waste and the leadership being demonstrated by individual Champions and others,” said Liz Goodwin, Senior Fellow and Director, Food Loss and Waste at World Resources Institute. “However, 2030 is only 13 years away, and more is needed. We now have a roadmap for how to cut in half the more than 1 billion tonnes of food that goes uneaten each year, and it’s vital that governments and the private sector everywhere put it to use.”
**Smoothwall aluminium trays**

Having formed a joint venture, Nicholl Australia, DFC Packaging and Nicholl Food Packaging UK have available an extensive range of smoothwall aluminium trays and tray lidding films.

Smoothwall aluminium trays are particularly suited to the fast-growing, ready-to-cook segment of the market that is meeting the needs of time-poor consumers.

Nicholl Australia’s range of smoothwall aluminium trays is ovenable, grillable and suitable for the barbecue. The trays can also be used safely in microwave ovens. Constructed from food-grade aluminium, they offer a higher barrier than plastic-constructed trays and also tolerate higher temperatures. Aluminium trays are environmentally friendly, being fully recyclable unlike some other packaging options.

Smoothwall trays are suitable for ready-to-cook meals such as meat, poultry, fish and vegetables. Nicholl Australia also offers a range of coated smoothwall trays that are suitable high-pH foods such as tomato-based foods. The trays are available in sizes ranging from individual portion to family size.

*DFC Packaging Group*


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**Glass inspiration book**

Owens-Illinois has launched a Global Design Book to provide inspiration for brand owners and design agencies looking for fresh ideas in glass for their foods and beverages. The company has drawn together more than 100 glass designs from around the world and the collection illustrates the beauty, versatility, brand differentiation, colour, shape and decoration variations available in glass.

Glass provides an emotional reach into consumers’ deepest needs. Its unique values — purity, quality, premiumness, sustainability, health — and its design versatility come together to create a tight bond between a unique consumption experience and the product and brand promise.

The entries are new product designs developed over the last few years by the company’s design teams either from a received brief or with customers’ design agencies across each of the five continents on which the company operates. They illustrate the different cultural norms which provide design cues for brands in each location.

The book relates a narrative of brand image and consumer trends over recent years. It tells of the growth of craft, of premiumisation or of healthy hydration.

*O-I Asia Pacific*

[www.o-i.com](http://www.o-i.com)
Botting company invests in Sidel’s Super Combi

In the US, the PET bottled water segment is projected to grow by a compound annual growth rate of 3% every year between 2016 and 2020. Niagara Bottling LLC delivers one in three of all water bottles sold, making it the largest US bottler in water production by volume.

It decided to utilise the growing bottled water market by installing a new high-speed PET line. The Super Combi from Sidel aims to help the company continue to deliver water to major retailers from 25 plants in the US and Mexico in a cost-efficient way.

“The Super Combi concept is going to allow us to enhance our performance in a very smart way. In the past, we’d need a blower, filler, buffer conveyors and then maybe a couple of bottle aligners and labellers,” said Bill Hall, executive vice president of manufacturing at Niagara Bottling LLC. “With the Super Combi, we can have a blower, labeller and filler in one compact machine. This reduces inefficiencies, meaning we have fewer machines to maintain and a smaller working space to be controlled by less skilled operators. In this way, we can clearly drive down costs.”

With lean production methods at the heart of their operations, Niagara Bottling recognised the Super Combi’s ability to further reduce waste through its compact footprint and optimised raw material management.

“Our focus is always going to be on reducing total cost of ownership (TCO). Our goal is to deliver a case of water to our customers, while removing any component and process which is not bringing added value to them. The Super Combi will let us take the next step in that evolution,” Hall continued.

Currently, the company has installed more than 15 complete PET lines from Sidel and recently, two Super Combis. As a result, Niagara Bottling can increase efficiency through high-speed manufacturing and data management that can be used to guide information assessment and decision-making across all levels.

After working with Sidel for almost 20 years, Niagara Bottling trusted Sidel to provide the technology and expertise to help maintain its position in the low-cost bottled water market. Hall praises the packaging provider for its technology: “Sidel puts us in the most competitive position to produce a bottle and fill it with water. We believe that Sidel is one of the top players in the marketplace.”

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Women working together in packaging

The Australian Institute of Packaging (AIP) has devised a mentoring program especially for women involved in the Australian, New Zealand and Asian packaging industries. Registrations are now open for the 2018 AIP Influential Women Mentoring Program for Australasia.

This is a new and improved program that will use Gallup Strengths to discover each individual’s talents and how best to increase performance, productivity and passion at work.

The AIP Influential Women Mentoring Program is suitable for all women wanting to increase their conviction, make an impact and unlock their leadership potential.

This program isn’t about being perfect — it’s about making progress and growing everyone in their careers. It is about knowing which levers to adjust to be influential and learning along the way.

The program uses the latest technology so no matter where you are located you will be connected to women in the packaging industry.

Learning outcomes — each participant will:
• develop their talents and find a leadership style that is authentic to them;
• surround themselves with a tribe of like-minded people wanting to amplify influence;
• have the right mindset for amplifying influence and regulating limiting self-talk;
• get clear on their values and how they impact decision-making, relationships and the ability to get things done;
• position themselves as a leader in the industry that has influence and impact;
• improve their presence and ability to gain the buy-in of peers, leaders and stakeholders;
• diversify their networks and secure their ability to ‘futureproof’ their career;
• have the confidence to speak up at the table and be heard.

How can packaging reduce food waste?

The relationship between the packaging industry and the environment is a challenging one, but a new report has revealed the ways in which packaging can help reduce food waste. With more consumers voicing their concerns for the environment, AMERIPEN’s report ‘Quantifying the Value of Packaging as a Strategy to Prevent Food Waste in America’ highlights the importance of integrating investment, research and policy in order to change the way packaging is viewed.

According to AMERIPEN, landfills across the US consist primarily of food waste, which is a significant contributor to global greenhouse gases. This is because the amount of food waste has doubled in America over the last 50 years, with the country wasting about 30% more food than other developed nations and a staggering 10 times more than less developed nations.

Although packaging has been cited as a huge environmental challenge by consumers, the data revealed that food waste is actually a bigger concern. By looking at both global and national data, AMERIPEN found that foods with the least amount of packaging tend to be responsible for the most amount of waste.

The study identified that a more broad adoption of packaging optimisation strategies is crucial in the fight against food waste. It is also important to educate consumers about the possibility of packaging as a means of preventing food waste, as opposed to their perception that it is a source of waste itself. For example, packaging maintains the freshness of the food and extends shelf life; provides nutritional, storage and usage information; and can control portion sizes.

AMERIPEN concludes that bringing together feedback from consumers, industry leaders and policymakers is the key to creating more cost-effective packaging solutions to food waste.

“Packaging can offer significant value in the fight against food waste but to achieve it we must start to understand the consumers’ needs, use and perceptions of packaging. The AMERIPEN study points out a number of areas where disconnects between the packaging industry, consumer perceptions and governmental policy exist,” said Kyla Fisher, program manager for AMERIPEN and project lead for the study. “To achieve success, we need to find ways to better collaborate and integrate data across the sectors. This means more research into consumers’ use of packaging in the home and integrated policy approaches linking food waste with packaging recovery efforts.

“Packaging’s potential for reducing food waste is overlooked both in the investment and policy communities. This needs to be addressed in order to leverage a key strategy in the fight against food waste,” Fisher explained.
As part of its $200 million Food Agility Cooperative Research Centre, Queensland University of Technology (QUT) has launched a new research project called BeefLedger that aims to fight food fraud. It is designed to track beef from the paddock to the plate in an attempt to reassure international consumers about the origins of their Australian meat.

Digital cryptocurrency BeefLedger Token (BLT) will be used to allow people to contribute to and participate in the project. Marcus Foth, Professor of Urban Informatics at the QUT Design Lab, said BLT is the first time blockchain technology has been applied to the entire beef supply chain and praises its future prospects.

“It has the potential to revolutionise the industry by limiting price fluctuations, supporting food provenance and preventing food fraud, which is a growing problem in international export markets,” he said.

Users will be provided with access to credentialed provenance data, sale history, consumer feedback insights, disease prevention, streamlining payments and heightened food security.

“So whether you are a farmer, a supermarket, a butcher, a restaurateur, a consumer or another interested party, you will be able to access the entire history of the meat electronically by scanning a barcode or QR code,” Foth explained.

With access to this data, the technology aims to drive value growth for the supply chain as a whole and deliver additional income to producers in recognition of product provenance excellence.

“Our aim is to empower producers to serve the growing middle-class markets of Asia, in particular China, and meet the market’s increasing expectations around food provenance and safety,” said Warwick Powell, CEO of BeefLedger Limited.

Foth highlighted recent food scandals involving meat being passed off as Australian in countries such as China and Japan. Powell continued by suggesting that since beef is a particularly high-risk industry, brand reliability is even more important. The project will help Australia maintain its strong reputation of safe, clean and green suppliers of beef and prevent incidents of food fraud.

“Our research in China demonstrates consumers will pay premiums for high levels of security and the value that food provenance can add to the consumer experience.

“Chinese consumers also increasingly shop with their smartphone, where scanning QR codes for product information and payments is now commonplace. The paddock-to-plate nature of BeefLedger meets this market expectation so that Australian beef remains at the forefront of Chinese consumer experiences,” said Powell.
AGVS DELIVER THE GOODS FOR BICKFORD’S GROUP

Bickford’s Group Warehouse Manager, Rhett Givanville, says he would be lost without his AGVs. For the past five years, the Adelaide-based manufacturer has been using a fleet of AGVs to distribute its iconic beverages. Working around the clock, the AGVs collect finished goods from production and then transport, store and stage loads for despatch in the DC. The AGVs communicate with each other to optimise efficiency, charge themselves when batteries run low, facilitate a rolling stocktake, have virtually eliminated damage to stock and storage systems, provide a safe working environment, and delivered an ROI of just 2.5 years.

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We Optimise Your Supply Chain

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After strong regional market growth, food ingredient supplier DuPont Nutrition & Health has relocated its production site to Erskine Park, NSW. Compared to its old plant in Botany, the new 1000 m² facility provides the company with double the capacity with the potential to scale up.

The Erskine facility is a specialty food ingredient blending plant and houses both production and warehousing facilities. Not only does it feature equipment with enhanced capabilities in food safety and quality and process safety control, but there are also management systems which reduce manual handling activities during the manufacturing process.

DuPont Nutrition & Health Manufacturing and Supply Chain Manager for Asia Pacific Jack Hung commented on the relocation and expansion of the company’s facilities, and the increasing demand for certain food products.

“The expansion and new capabilities underscore our commitment to drive and support strong business growth across the dairy, beverage and bakery industries in Asia Pacific,” he said. “As we transition production from Botany to Erskine Park, we will ensure that our business partners continue to receive the service excellence expected from us.”

Low level order picker

The Mitsubishi VELIA ES low level order picker delivers safety, comfort and efficiency. The unit’s ergonomics, energy efficiency, electric steering system and manoeuvrability all play a part in delivering picking productivity gains, which are claimed to be up to 20%.

The VELIA ES features a spacious walk-through operator compartment. The large platform has a low 105 mm entry step, reducing the risk of tripping while also easing strain on the knee joints of operators who may be constantly stepping on and off during their shift.

The platform has in-built driver sensors, enabling operators to drive in several comfortable positions as well as instant take-off when back on board.

The multifunction Maxius steering wheel can be height adjusted to personal comfort while drivers can access speed, direction and safety controls using either the left or right hand. And the steering self-centres, so drivers can align the machine along a stacking row and let the machine do the rest.

The speed can be set to either walking pace on ‘walk beside’ mode or up to 12 km/h when the operator is riding.

The Mitsubishi VELIA ES series includes a choice of three models. Other highlights include: programmable to the user’s load and warehouse; good manoeuvrability in confined spaces; padded back rest; practical carry bins and tray for extras such as documents, clipboards; drink holder; easy access for battery replacement; quiet AC traction motor; cushion platform to improve shock absorption; and precision, millimetre control of tynes.

MLA Holdings Pty Ltd
www.mlaholdings.com.au
**Explosion-proof bag dump station**

The Flexicon Bag Dump Station with explosion-proof electrical system contains dust emitted from manual dumping activities, compacts empty bags and conveys the material to an elevated destination.

Bags are staged on the bag tray and transferred through a plastic strip curtain into a hooded glove box and onto a grate, which supports the bag and prevents unintended operator contact with moving parts.

The hood is equipped with a polycarbonate skylight that illuminates the interior of the enclosure for improved bag slitting, dumping and disposal.

A bag infeed chute through the sidewall of the glove box permits the operator to pass empty bags directly into an integral bag compactor, causing dust generated from compaction as well as dumping activities to be drawn onto the system’s two filter cartridges.

The automatic reverse-pulse filter cleaning system employs timer-activated solenoid valves to release short blasts of compressed plant air inside the cartridges, causing dust build-up on the outer filter surfaces to fall into the hopper, conserving usable product. Filters are readily accessed by removing the interior baffle and replaced rapidly using quick-disconnect fittings.

The compactor employs a pneumatic air cylinder that compresses bags into a removable polybag-lined bin that accommodates 50 to 80 bags. The main waste access door and a flapper door within the bag infeed chute are safety interlocked to prevent operation of the compactor unless both doors are closed.

The hopper discharges into an enclosed flexible screw conveyor for dust-free transfer of free- and non-free-flowing materials to an elevated destination with no separation of blended products.

*Flexicon Corporation (Aust) Pty Ltd
www.flexicon.com.au*
Automated storage buffer for cold chain

Proper handling of refrigerated and frozen goods is one of the most challenging tasks in order fulfilment. The Dematic Multishuttle 2 freezer offers a high-density, low-energy solution designed to meet cold chain challenges.

The freezer is said to provide reduced energy use; decreased labour requirements; improved product handling and FIFO rotation; and increased inventory accuracy and full shipment traceability.

The Multishuttle is an automated storage buffer for cartons, totes, trays, containers and individual bundles. All variations (static and flex) can now operate at temperatures as low as -30°C.

Dematic Pty Ltd
www.dematic.com.au

RFID interface modules

To simplify RFID integration across industrial environments, Turck has released two interface modules: the TBEN-S-RFID and TBEN-L-RFID. These devices can be used outside the cabinet thanks to IP67 ratings, making them suitable solutions for retrofitting RFID applications.

Both modules allow actuators and sensors to be connected with RFID read/write heads simultaneously. These features reduce the installation and wiring efforts that are required for industrial identification solutions.

The TBEN-S-RFID is an ultracompact module that measures 32 mm wide and eliminates complex PLC integration with its conventionally mapped RFID data. In addition to two RFID ports, the module offers four configurable digital I/O points for external devices. It also offers highly efficient performance and can easily read and write 8 KB HF tags.

The power supply and network connection are implemented via M8 connectors.

The TBEN-L-RFID expands the TBEN-S-RFID module’s functionality with PLC capabilities via CODESYS. This compact module’s controller function can filter and pre-process RFID data and link to broader control operations, enabling high-speed dynamic or multitag RFID applications. The device includes four RFID ports for readers and eight universal DXP I/Os for sensors or actuators. It offers 256 MB of flash memory and runs on an 800 MHz CPU, which accesses a 128 MB DDR3-RAM. They connect via an M12 connector to the Ethernet layer, and power is supplied via a 7/8” connector.

Both devices feature multiprotocol Ethernet technology. Users can set the protocol used for the TBEN-L-RFID — either PROFINET, EtherNet/IP or Modbus TCP — via the CODESYS environment, while the TBEN-S-RFID module recognises the protocol used on start-up.

Turck Australia Pty Ltd
www.turck.com.au
A dip manufacturer needed 23 conveyors to carry dips and spreads from a production area into a packing area and then into an HMPS Case Packer.

While hygiene was a priority for the company, the cost of all 23 conveyors in full stainless steel was prohibitive so Smalte Conveying Solutions Sales Manager Rob Winterbottom came up with a more affordable alternative that did not compromise hygiene.

Significant cost benefits to the client were achieved by splitting the system into stainless steel in the production area and aluminium conveyors in the packing area.

Smalte also liaised with NORD Drivesystems, which advised them on an alternative drive solution.

NORD’s nsd tupH drive ticked all the boxes for the client’s production area such as a cleaner design with the added benefit of using standard flanges in case of urgent breakdowns and availability of parts, and its suitability to harsh washdowns.

“We met with our client and suggested the use of NORD’s drives for their application. The client could immediately see the benefits and awarded us with the contract on the same day!” said Rob.

Thirteen conveyors have been provided in the first stage with a second order received for an additional 11 conveyors.

“All new Smalte Conveyors will now be supplied with NORD geared motors with the nsd tupH surface protection throughout the facility for standardisation purposes. We have a happy client and we are also very happy with the performance of these drives thus far,” concluded Rob.

NORD DRIVESYSTEMS (Aust) Pty Ltd
www.nord.com

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Keeping compressed air dry

Some applications and environmental conditions impose particularly stringent requirements on the quality and production of compressed air. An innovative full-stream rotation dryer combined with a dry-running rotary screw compressor delivers both exceptional drying quality and maximum efficiency — even under the most challenging conditions.

Ambient air contains water vapour. When the air is compressed, numerous key parameters increase, such as the air temperature, proportion of water vapour per volumetric unit of air and consequently, the air’s dewpoint temperature — or pressure dewpoint. Measured in °C, it indicates the lowest temperature at which water will not condense out of compressed air — in other words, condensation will result if the air is chilled below the pressure dewpoint. The lower the pressure dewpoint, the drier the compressed air. If the compressed air is not dried following the compression process, water can condense when the compressed air cools. It can then accumulate in the downstream compressed distribution air network or even within the realms of the production process itself — which can have even more serious consequences, as water can then damage not only the compressed air system, but also downstream equipment that uses compressed air and the products being produced. So it’s extremely important to exercise due care in selecting the appropriate degree of compressed air drying for the specific process in mind.

Ultimately, it’s the degree of compressed air drying that determines the drying method, and the cost of drying the compressed air. Refrigeration drying generally provides the most efficient and cost-effective method for most applications, usually ensuring a pressure dewpoint of +3°C. If a lower pressure dewpoint is required due to the nature of the processes in question, more complex desiccant dryers or combination dryers can be used. However, these types of dryers involve higher costs as a result of the additionally required materials and increased energy consumption. In these types of dryers, the compressed air is treated using desiccants, such as silica gel or activated aluminium. During the drying phase, water vapour contained in the compressed air binds to the desiccants. Once the adsorption capacity of the desiccant is exhausted, it must itself be dried out — either continuously or at intervals, depending on its saturation. This process is called regeneration and is responsible for the greater part of desiccant dryer operating costs.

In technical terms, regeneration processes are differentiated into chamber and drum processes. In chamber regeneration, the desiccant is usually in granulate form and is contained in two separate pressure receivers. Desiccant regeneration takes place non-continuously and, depending on the type of unit, may employ cold compressed air that has already been dried. In the case of dryers that have been specially adapted to the compressor, hot compressed air supplied directly from the second compressor stage is used for regeneration.

Compact and energy saving

One type of drying process involves dryers with significantly more compact dimensions capable of superior adaption to the compressor; these are known as ‘heat of compression’ (HOC) dryers. In this design, the desiccant is contained in a drum through which the compressed air flows in an axial direction. Desiccant regeneration and compressed air drying take place continuously, within a single pressure receiver. The drying and regeneration sectors are separated, however, both structurally and in terms of process. Slight pressurisation of the drying sector ensures that once dried, the compressed air does not reabsorb moisture from the regeneration air flowing by in the adjacent sector.

The dryers are integrated in dry-running compressors, which — in contrast to oil-injected compressors — feature two compression stages and generate significantly higher temperatures during the compression process.

Drying without additional energy consumption

In these integrated rotation dryers, desiccant regeneration takes place continuously, using the heat that already exists in the hot compressed air. Following regeneration, this heat is not lost, but rather the hot air is cooled down by the second
compressor stage’s cooler and the heat is fed into the drying sector by a radial blower. This means that the heat arising as a result of compression of the air is also used for desiccant regeneration. Consequently, this heat is freely available without cost, since no additional energy is required for the drying process. This translates into maximum efficiency and outstanding drying reliability. This perfect interplay between the compressor and dryer also avoids additional energy costs, which are unavoidably incurred in the case of conventional desiccant dryers that use additional, external energy for desiccant regeneration. Furthermore, the energy cost savings from integrated rotation dryers continue to apply even with variable free air deliveries.

**Reliable pressure dewpoint**

Modern integrated rotation dryers such as i.HOC units also guarantee reliable and stable maintenance of low pressure dewpoints to -20°C and, under special conditions, even to -40°C — regardless of the operational conditions or free air deliveries needed.

In integrated rotation dryers, the attainable pressure dewpoint is determined by the compressed air inlet temperature in the drying sector and the available regeneration potential. This, in turn, depends on the mass flow of regeneration air and its temperature.

The i.HOC integrated rotation dryer therefore uses the entire mass flow of hot compressed air available at the end of the second compression stage for regeneration purposes. This is why it is referred to as a ‘full stream’ rotation dryer. Conversely, partial-stream rotation dryers use only part of the hot compressed air for desiccant regeneration. All other conditions being equal, they therefore have lower potential available for removal of moisture from the desiccant.

The higher regeneration potential of full-stream rotation dryers is especially advantageous when it comes to high cooling medium temperatures at the regeneration air cooler, low compression ratios in the compressor and — in partial-load operation — more consistent and significantly lower pressure dewpoints.

The second important factor affecting the pressure dewpoint is the inlet temperature in the drying sector. A general rule of thumb dictates that the lower the inlet temperature, the better the drying performance, all other conditions being equal. In practice, this means that the lower the temperature of the available cooling medium (air or water), the better the
Intelligent regeneration management

The attainable pressure dewpoint therefore fluctuates with the temperature of the ambient air (insofar as it acts as a cooling medium) — and this effect is especially pronounced in air-cooled compressors with integrated rotation dryers. For instance, if temperatures temporarily peak around 40 °C in the inlet area during summer months, it may be necessary to enhance the rotation dryer’s regeneration potential during this time in order to avoid exceeding a required pressure dewpoint of -20°C.

Far from posing an obstacle, in the i.HOC full-stream rotation dryer, the discharge temperature following the second stage (the regeneration air temperature) can be increased by a controlled bypass around the first compression stage cooler. The regeneration air temperature (and consequently, the regeneration potential) increase in order to ensure maintenance of the target pressure dewpoint. From an energy perspective, it makes sense to use the bypass to increase the regeneration air temperature to meet process requirements — especially since the conventional technology available on the market for electrically heating the regeneration air consumes significantly more energy. Pressure dewpoint management can also be beneficial for compressors with a low discharge pressure (less than 5 bar) in which the discharge temperature — and consequently, the regeneration potential — is limited due to the nature of the compression process. Intelligent dewpoint management is easily put in place when the compressor and dryer each share a common controller capable of perfectly harmonising the performance of both components.

Double heat exploitation

The extensive benefits of integrated rotation dryers don’t end there. Aside from drying compressed air, they can also be used for heat recovery purposes. This means that the heat generated during the compression process is then used for other purposes; in the case of water-cooled compressors, it can be used for heating process water or heating adjacent rooms — delivering major cost savings in other areas.

This is possible because the i.HOC integrated rotation dryer does not need an additional regeneration air cooler; rather, it simply uses the compressed air cooler of the second compressor stage — which is already optimised for heat recovery purposes. All in all, an efficient way to avoid unnecessary heat wastage.

Because of their relatively compact design, compressors with integrated rotation dryers require significantly less space than two separate units — while also cutting installation and maintenance costs accordingly.

A dry-running compressor with an integrated rotation dryer is therefore an excellent choice for users with a certain usage profile: demanding requirements in terms of compressed air quality and pressure dewpoint consistency; relatively little installation space; and a desire to take advantage of heat recovery, not to mention those facing challenging environmental conditions. For all the reasons outlined, in such cases these machines often deliver the most reliable and efficient supply of compressed air while also cutting energy costs across the board.
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Mobile flexible screw conveyor
The Flexicon Mobile Flexible Screw Conveyor with multipurpose hood transfers material discharged from bulk bags and/or manually dumped from handheld sacks into elevated process equipment or storage vessels dust-free.

Mounted on a frame with locking castors for in-plant mobility, the system improves mobility and reduces cost by eliminating heavy frame components typically employed to support bulk bags, relying on the user’s forklift or plant hoist to suspend the bag above the unit during operation.

An iris valve positioned atop the dust hood allows variable control of flow through the bulk bag spout. A bag support tray and hinged door allow the manual addition of minor ingredients from handheld sacks.

The screw conveyor transports both free- and non-free-flowing bulk materials including products that pack, cake, smear, seize or fluidise with no separation of blends. Mounting flanges at the discharge end of the conveyor support boom permit the addition of a metal detector below the conveyor outlet.

All material contact surfaces are of stainless steel finished to sanitary or industrial standards with the exception of the conveyor’s polymer outer tube. The mobile frame is constructed of carbon steel with a durable industrial coating and is also available in stainless steel.

Flexicon Corporation (Aust) Pty Ltd
www.flexicon.com.au
Radar level transmitter for bulk solids

Emerson has launched a dedicated version of its Rosemount 5408 non-contacting radar level transmitter to meet the specific demands of bulk solids level measurement.

The inclining or sloping nature of the material surface and the peaks and troughs of uneven surfaces deflect energy away from a radar signal and can generate false signal reflections which affect measurement accuracy. By using a signal processing algorithm that merges surface peaks, the Rosemount 5408 is designed to provide a high level of accuracy. The device’s two-wire frequency modulated continuous wave (FMCW) technology also produces a continuous echo to maximise radar signal strength and produce a more robust and reliable measurement.

The considerable amount of dust created during the fill cycle in solids applications creates a further challenge for measurement technology, so the Rosemount 5408 includes an integrated air purging system for cleaning the antenna.

Features include: advanced surface tracking and a condensation-resistant cone or parabolic antenna for measurements in demanding applications; radar-on-chip technology replaces a circuit board, removing sources of EMC noise which cause signal disturbance and leading to improved measurement accuracy. To further enhance device reliability, an embedded power backup removes vulnerability to intermittent power losses.

Two-wire technology enables simple installation, while still providing the same high amount of data and diagnostics that would normally require four-wire connections. ATEX and IECEx approvals allow installation in hazardous locations and the device’s SIL 3 capability enables integration into safety instrumented systems, supporting efforts to increase plant safety.

Emerson Automation Solutions
www.emersonprocess.com.au

Magnetic bearing centrifugal chiller

Johnson Controls has introduced the YORK YZ Magnetic Bearing Centrifugal Chiller, optimised for performance with a next-generation low-global warming potential (GWP) refrigerant — R-1233zd(E). Chosen for its efficiency, safety, availability, low environmental impact and cost, non-flammable R-1233zd(E) has an ultra-low GWP of 1.

The chiller uses an integral, variable speed drive and advanced magnetic bearing technology that features a single moving assembly suspended in a magnetic field that does not require lubrication. This technology requires 80% less moving parts than traditional oil- or refrigerant-lubricated drivelines. The result is enhanced reliability, reduced maintenance and improved efficiency. Compared to traditional fixed-speed oil-bearing chillers, the company claims it delivers up to 35% annual energy savings.

The chiller can deliver energy savings and lower operating costs by taking advantage of the off-design conditions where chillers operate 99% of the time. The product operates with entering condenser water temperature as low as 4.5°C. The chiller can also operate with condenser temperatures below the evaporator temperatures, eliminating the need for a water-side economiser, which simplifies the system, requires less mechanical room space and saves money on components, piping, controls and maintenance.

Johnson Controls Australia Pty Ltd
www.johnsoncontrols.com.au
Marking system developed to prevent counterfeit goods

Ensuring your product is patented does not necessarily protect it from being pirated. Counterfeit products not only result in economic losses, but can also cause severe health concerns in the case of medication or food.

In an attempt to prevent products such as pharmaceuticals, foodstuffs, designer merchandise and artwork being pirated, researchers at the University of Copenhagen’s Nano-Science Center have engineered a secure marking system.

Dubbed the “safest in the world” by Head of Research and Associate Professor Thomas Just Sørensen, the markings are entirely random meaning the system is secure from hackers.

“The system, which deploys three rare earths among other things, is based on randomness, which makes it unable to be hacked or tampered with,” explained Sørensen.

“As soon as a customer asks that an authorised dealer checks up on a piece of merchandise that was meant to be marked using the system, an expensive wrist watch for example, the dealer can access a manufacturer database to check its authenticity.”

The random pattern creates a digital fingerprint that can identify the particular product. If the image scanned on the product does not correspond 100% with the database image, then it can be identified as a counterfeit.

“The probability of two products having the same ‘fingerprints’ — the same digital key — is so minuscule that, in practice, it can only be described as non-existent,” he said. “It corresponds to a one out of an enormous number composed of a 6 followed by 104 zeros.”

The pattern only measures a few millimetres and can be attached to a range of products, including being impregnated into leather, embedded into glass or milled into metal. The gains of sand that make up the digital fingerprint are also so small that it is not possible for them to be removed or rearranged.

According to Sørensen, it could be commercially available in about a year. The University of Copenhagen has taken out a patent on the marking system and the researchers are refining scanning solutions in preparation for manufacturers.

The costs of marking products are also expected to be reasonable, at around one Danish krone (21 c); however, the additional expenses from the data systems are not yet confirmed.

The study was published in Science Advances.

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Smart glasses speed up food warehouse operations

With perishable food products, speed is crucial in every part of the supply chain, but this is often hindered through slow and complicated warehouse operations. Wearable technology and intralogistics company Picavi has sped up this process using smart glasses in order picking, and Weerts Supply Chain has utilised their technology.

Belgian third-party logistics provider Weerts is using 15 pairs of glasses to pick orders for American food giant Mondel’z in its 22,000 m² warehouse near Liège.

For employees wearing the mobile WLAN-enabled smart glasses, an integrated display guides them through the work process by only displaying relevant information to them. They merely have to look at a barcode for it to be scanned and the process to be verified. The order status is then transmitted in real time to the warehouse management system.

For more complex scanning needs, such as difficult-to-reach areas like the foot of a pallet, Weerts is also using small ring scanners attached to the index finger. Both the smart glasses and ring scanner are connected via Bluetooth to ensure continuous communication.

Picavi’s order picking system provides users with visual guidance through the picking process, providing them with optimised routes for greater time savings. It also allows them to work hands-free. This helps maximise their productivity and minimise errors; compared to the previously used PDC handhelds, Weerts has achieved a time saving of 8–12% by using the smart glasses.

The pick by vision system was easily integrated in the work process at Weerts due to the simple connection to the existing warehouse management system JDA Red Prairie.

“The system’s scalability allowed us to deploy it flexibly and expand it to other processes,” explained Roger Kusters, director of the Weerts distribution centre.

Using the smart glasses allows a smooth material flow from goods receipt and picking, to dispatch and inventory. Further advantages of the smart glasses are that they are lightweight, always connected and are a convenient tool in intralogistics. The technology can be easily incorporated into existing IT systems, leading to employees at the Belgian warehouse to praise its clear user interface.

“Our warehouse employees like the way the information is presented in their upper field of vision. It’s practical and guides them to where they need to be,” Kusters stated.

For Weerts, the new system — used since the end of 2016 — has improved usability for employees and ensured that Mondel’z products such as Milka chocolate bars were delivered on time.

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**Photoelectric sensors**

Leuze electronic has introduced the latest member of its Global Beam family, with the compact sensors of the 15 series in an IP67 housing. The series is suitable for the detection of objects in industrial environments — particularly when dealing with standard automation tasks in the areas of conveyor systems, material flow or secondary packaging in which large operating ranges are required.

The sensors are available with a cubic design. A bright light spot and an easily accessible potentiometer make installation quick and simple, even in tight installation situations. The series is available with different operating principles and can therefore be used in a flexible way — it is even suitable for special requirements such as detecting glossy objects and reflective surfaces. The high function reserve makes detection possible even in extreme situations, therefore reducing the risk of a system standstill.

*Leuze electronic Pty Ltd*

www.leuze.com.au

**Gear motor series for washdown food applications**

Kollmorgen’s Gear Motor series AKM41E-BF06 and AKM62K-BK17 in their washdown food version are suitable for most transport and rotation applications in the food, beverage and packaging industries.

It combines an AKM servomotor with efficient gearheads and the AKD servo drive with Ethercat. The main advantages of the ready-to-install drive units include: reduced cleaning times due to smooth and water-repellent surfaces, low energy costs thanks to the efficient motor/gearhead combinations, as well as simplified design options for machines implemented by means of space-saving assembly without additional stainless steel casings.

Thanks to the use of FDA-compliant materials and the specially rounded housing design, motor/gearhead combinations have high hygiene standards and reduce the risk of product contaminations and recall campaigns.

*Motion Technologies Pty Ltd*

www.motiontech.com.au
Standardised drive systems
NORD DRIVESYSTEMS has established three preferred sizes for efficient variable-frequency drives in materials handling and conveyor applications. The standardised drive systems simplify purchasing, engineering, commissioning and spare parts stocking, as well as being easy to install, operate and maintain. Limiting the number of variants can yield greater total cost of ownership (TCO) savings than any other measure except for lowering energy consumption, according to the company.

The LogiDrive line of three preferred drive variants is optimised for intralogistics applications and can be used for conveyor systems spanning many hundred metres. The VFDs allow for simple daisy-chaining as short power lines can be connected from one drive to the next. Three geared motor variants meet all typical performance requirements: IE4 permanent-magnet synchronous motors with power ratings of 1.1, 1.5 or 2.2 kW are combined with efficient two-stage helical-bevel gearboxes in two sizes for torques up to 260 Nm. Robust frequency inverters from the NORDAC LINK series enable a wide range of speeds. The systems feature a high overload capacity and offer a versatile range of functions. Interfaces for all commercially available communication protocols are available, including Profinet, Ethernet POWERLINK, EtherCAT and EtherNet/IP.

The systems are easy, quick and safe to install due to coded plug-in connectors. Maintenance switches, key switches and direction switches on the devices allow for flexible direct access to individual drive axes for set-up or service. Sensors and actuators can be connected via M12 plugs. Plug-and-play, pre-parameterised inverters simplify maintenance, and drive components can be individually replaced.

NORD DRIVESYSTEMS (Aust) Pty Ltd
www.nord.com
Electric forklift truck

Combilift has launched Combi-CBE4t, an all-wheel drive, electric, multi-directional counterbalance forklift truck, with a lift capacity of 4000 kg. The all-wheel drive, coupled with large rubber tyres, allows the truck to work effortlessly indoors and out, and to work on all types of terrains. Its versatility enables it to offload from HGVs, bring product directly to racking or free stacking areas, as well as to feed production lines. Combined with load sensing steering and no fumes, this means that this forklift is suitable for indoor warehouse operations.

Side shift comes as standard and an integrated hydraulic fork positioner is an option to facilitate the handling of various sized loads, without operators having to leave the cab to manually adjust the forks. Hydraulic steering and synchronised front wheel positions allow for ease of control while driving in all directions.

By opting for the electric model, there is no longer a need to allocate space for fuel storage.

Ease of access to all components allows for greater serviceability and also allows all maintenance checks to be completed quickly.

Combilift
www.combilift.com/en

Wireless cold storage monitoring system

The Thermo Scientific InSight wireless cold storage monitoring system features advanced analytics and remote diagnostics to protect valuable samples and avoid repairs and equipment failures by proactively identifying issues. By moving from a ‘fail and fix’ method of equipment maintenance to a ‘predict and prevent’ method, users can gain insight into the overall health of a unit over time instead of having to wait for an issue to arise.

The monitoring system is designed to allow laboratories to proactively monitor the operation of cold storage equipment, anticipating system failure and maintenance needs and triggering necessary corrective actions. Using Wi-Fi or proprietary wireless protocols, the system continuously collects and analyses data for parameters such as cabinet temperature, energy consumption, door openings and ambient temperature. It automatically issues alerts to users’ email and mobile devices when set point breaches are detected. In response, laboratory managers can make knowledge-based service and support or service vs buy decisions. System downtime is minimised, according to the company, giving researchers peace of mind that their work is protected at all times.

With sustainability being a top priority for many laboratories, the ability of the system to proactively monitor cold storage equipment’s energy consumption helps researchers make informed maintenance decisions. As such, labs can keep their units running optimally and consuming less energy, thereby minimising their environmental footprint while reducing operating costs.

Thermo Fisher Scientific
www.thermofisher.com.au
Common Despatch Checklist Toolkit aids supply chain

In an attempt to encourage greater efficiencies in the supply chain, the Australian Food and Grocery Council (AFGC) has released a Common Despatch Checklist (CDC) Toolkit.

Consisting of a suite of simple tools, the toolkit aims to support suppliers and ensure that deliveries to retailers have the best chance of being quickly and easily receipted in to distribution centres.

“The toolkit contains a poster which serves as a visual aid for checking product prior to despatch; a one-page reference guide providing more detail in relation to basic requirements associated with pallet quality, utilisation and wrapping, carton integrity and SSCC labelling; and an operational document which despatch staff can utilise prior to despatching goods to a retailer DC to record any issues identified,” said project director John Cawley.

Cawley explained that, rather than creating new standards, it aims to facilitate alignment across Coles, Metcash and Woolworths.

Developed by the AFGC’s Trading Partner Forum (TPF), the toolkit is a product of The Perfect Delivery Project which promotes ‘right first time’ delivery into retail distribution centres. Some of the goals of the project include reducing errors and preventing costly re-work and corrective action.

“This toolkit is the result of the TPF identifying an opportunity to deliver clarity and a common approach to optimising the supplier to retailer delivery process, with a focus on the physical flow of goods, called The Perfect Delivery Project,” he said. “This project will continue to develop ways of improving supply chain efficiencies and will continue to deliver member services by developing toolkits and advice to achieve this objective.”

While it is useful for manual operations, the TPF predicts the toolkit will be increasingly important as automation becomes a bigger part of the industry.
New technology at Birch & Waite’s $13.5 million factory

Family-owned food manufacturer Birch & Waite has launched its new $13.5 million factory featuring cutting-edge technology. Located in the Sydney suburb of Revesby, the factory is expected to create another 45 full-time jobs on top of the over 100 staff employed at their Marrickville factory.

The new facility contains high-speed packaging machines and innovative equipment, including what is said to be the first commercial-sized shaking retort in the Southern Hemisphere. This technology is expected to drive over $20 million in growth for the business, and the company predicts a $4 million turnover for the factory’s first year of operation.

“The new technology allows for a higher vitamin retention and lower salt use, while retaining a superior taste with a longer shelf life and no preservatives,” explained Birch & Waite General Manager David Charles. “High pH sauces that contain fresh ingredients will keep their full flavour, nutritional value and freshness thanks to the quick thermal cooking process it allows. The end results are products that taste as if a chef has just created them.”

Focusing on a specialty health range, the company has developed a new range of Thickened Liquid health products for those suffering from dysphagia — a disorder that causes difficulty or inability to swallow.

“We realised that as well as developing products with good flavours, there is a clear need in the healthcare sector for a new, more palatable product to support the hydration and nutrition requirements of people with dysphagia. The new technology at Revesby has made this possible,” said Charles.

This factory opening will mark another achievement in the company’s history of success. They have had an average growth of over 15% cumulative per annum for the last 16 years, and won the ‘No.1 Choice of Australian Chefs’ award for their Whole Egg Mayonnaise in 2016.

Birch & Waite Foods Pty Ltd
www.birchandwaite.com.au

Stainless steel conveyor belt

Wire Belt’s CompactGrid conveyor belt is used in the food industry for applications such as cooking, cooling, draining, enrobing and freezing. It is designed to handle smaller, delicate products while giving users a lightweight, open mesh belt design.

The conveyor belt can improve efficiencies because of its flow-through capabilities, which reduces the time required to heat up or cool down a product, in turn reducing energy costs. It has a 70% open surface area giving food manufacturers optimal performance in processes where product coating, drainage, and liquid or air circulation are factors.

Made of stainless steel, the no-slip design means the belt will not catch fire on a system like plastic conveyor belts can. Its rugged open design makes it suitable for cooling products in high-volume, high-throughput processes.

It can be used for both food products, such as bakery, poultry, meat, snacks and confectionery, and non-food applications, such as parts washers for corrugated cardboard and circular knives.

The belt has a 10x10 mm nominal square opening designed to handle small and delicate products. The tight mesh of the belt allows for optimal product support and can handle heavy loads.

Compared to plastic modular types, it can increase food conveyor hygiene standards. It has USDA approval and it does not need to be removed from the conveyor system for cleaning; its openness allows visual inspection of drive shafts without the need for dismantling, eliminating the need for clean-out-of-place tanks and reducing maintenance downtime.

Installation on a conveying system is quick and easy. Processors can join or splice the belt on their conveyor by simply hooking the belt ends together and crimping to close.

Richard Foot Machinery
www.rfoot.com.au

Enterprise-ready rugged tablet

Honeywell’s enterprise-ready tablet, the ScanPal EDA70, provides workers with real-time connectivity for business-critical applications and efficient data capture capabilities.

The lightweight, rugged tablet is built on the Android 7 (Nougat) platform and is suitable for scan-intensive workflows such as customer engagement and on-demand delivery. The device keeps mobile workers connected to crucial information to place orders, check stock, look up order status or scan items as they are removed for delivery.

The product was designed for the connected mobile worker who needs to facilitate large file transfers, use video streaming and gain remote access to business applications quickly to manage a wide variety of tasks. The large screen allows workers to view more data, such as inventory stock or schematics, and the rugged casing protects the unit from accidental drops and falls that would damage consumer-grade tablets.

The tablet features: a fast processor; 1D/2D barcode scanning; a built-in camera; vivid 7” Corning Gorilla Glass display readable in bright light; and ample battery life to power through a full shift.

The design also features an all-touch interface for a contemporary appearance in customer-facing applications, as well as multiple input modes to save time and minimise data entry errors.

Honeywell Building Solutions
www.honeywell.com
As the death toll rises to at least 82, the cause of the outbreak remains unknown, meaning there can be no definitive way to avoid infection.

**Spread of the infection**
The average number of reported and treated cases of listeriosis in South Africa every year is between 60 and 80. But Minister of Health Dr Aaron Motsoaledi suggested the unusually high number of infected babies sparked doctors in Chris Hani Baragwanath and Steve Biko Academic hospitals to alert the National Institute for Communicable Diseases (NICD) in July 2017.

In early December 2017, the Department of Health made listeriosis a notifiable disease, which means a diagnosed patient must be reported. This helped track the number of cases and the development of the outbreak.

Of the 557 laboratory-confirmed listeriosis cases reported between 1 January and 29 November 2017, the Gauteng, Western Cape and KwaZulu-Natal provinces were responsible for 82%.

An update from the NICD stated that as of 23 January 2018, the number of reported cases jumped to 820. The Gauteng province had the highest proportion of cases at 59%, followed by 13% in Western Cape and 7% in KwaZulu-Natal.

Both private and public health facilities had diagnosed cases, which led Motsoaledi to infer: “The source of the outbreak is likely to be a food product that is widely distributed and consumed by people across all socioeconomic groups.”

The fatality statistics are not conclusive as outcome data is only available for 238 of the 820 cases. This data revealed that 82 people (34%) have died so far as a result of infection. However, foodborne illnesses are not the usual cause of death in South Africa, with tuberculosis far more likely at 8.8%, and HIV/AIDS 5.1%.

The South African outbreak of listeriosis is the largest ever reported, overtaking the United States outbreak in 2011, and Italy in 1997.

Affecting over 1500 people, the majority of whom were children at two schools, the source of the Italian outbreak was cold corn and tuna salad. The US outbreak, on the other hand, was caused by rockmelons from Jensen Farms in Colorado, which infected 147 people and killed 33.

**Cause remains unknown**
So what is the source of the South African outbreak? The simple answer is, it remains a mystery.

Although there are 17 strains of the organism, not all of them are disease-causing. Authorities are trying to establish which strain (or strains) may be responsible and where it comes from.

The NICD reported that of the 247 clinical isolates that were sequenced by the end of December 2017, 91% were sequence type 6 (ST6) and are very closely related, which indicates it could be a single strain of the bacterium *Listeria monocytogenes*.

“This ST6 strain has been identified in isolates from all nine provinces, and this finding supports the current working
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tna rethink the conventional
hypothesis of a single source of food contamination causing the outbreak, i.e. a single widely consumed food product, or multiple food products produced at a single facility,” the NICD report explained.

A food outlet in the City of Johannesburg was suspected to be a potential source of infection, according to Member of the Mayoral Committee (MMC) for Health and Social Development Dr Mpho Phalatse.

While the outlet was not named, samples were taken to the NICD for testing in mid-January 2018.

“We are awaiting lab confirmation of whether or not this is a disease-causing strain of the organism,” said Phalatse.

Strategic Advisor in the office of the MMC Dominic Mahlangu explained: “Steps are being taken to sterilise the area. We do not want the business to suffer serious damage and we do not want to spread panic.”

However, the numbers of infected have continued to rise and the NICD have not yet provided confirmation, which suggests this was not the source.

What is listeriosis?

With cases of listeriosis have been flooding headlines recently, and the outbreak in South Africa escalating, it is more important than ever to understand what it is, who is at risk and how you can get it.

Listeriosis is a disease caused by the bacterium *Listeria monocytogenes*, which is transmitted to people through contaminated food. It is often found in soil, water and vegetation, meaning it can contaminate animal products such as raw meat, seafood and dairy products, as well as unwashed vegetables.

For this reason, potential sources have been identified as farms, food processing plants, retail outlets and food preparation at home.

While anybody can become infected, healthy individuals tend to experience symptoms including diarrhoea, fever, general body pains, vomiting and weakness. In more severe cases, it has been known to cause meningitis, bacteria in the blood and complications in pregnancy, including miscarriages and premature birth.

Christian Lindmeier, spokesperson for the World Health Organization (WHO), explained that pregnant women “are 20 times more likely to get listeriosis than other healthy adults” and “newborns are about 40% of the infected people”.

Others who are particularly at risk include the elderly and those with compromised immune systems.

Since there can be up to a 70-day incubation period between exposure and symptoms, it is particularly difficult to establish the source.

Can you recall exactly what you ate over the last two months? From the garnishes on a plate in a restaurant to where you bought your vegetables, pinpointing the origins of the outbreak can be a monumental task. As Lindmeier noted, “You wouldn’t know what you ate three weeks ago — maybe the one particular food that made you sick three or four weeks later — this is the big challenge we face in this situation.”

Taking into account the incubation period, the number of those infected in South Africa is likely to continue to rise as more people report having symptoms.

Lindmeier suggested a collaborative effort between the health, food and farming sectors is now required to tackle the outbreak. The NICD is working alongside the National Department of Health and the Department of Agriculture, Forestry and Fisheries to investigate the source.

In a statement, the NICD said:

“The National Department of Health is co-ordinating a multi-sectoral response with all agencies within government. We are firstly interviewing all persons who have been diagnosed with Listeria to understand what food they have eaten, and identify trends. Secondly, we are working with the food safety and quality industry to obtain quality data from food control and to sample food production facilities. Thirdly, we have worked with infectious diseases physicians to draw up guidelines for diagnosing and treating the disease. Fourthly, we are working with health promotion to increase awareness of how to prevent listeriosis. Presently no food sources that are contaminated with the outbreak strain have been found, including amongst poultry and poultry products.”

While the investigation is ongoing, WHO suggested the best preventative measure is to educate the public and those who supply and handle food on how to maintain food safety. These include: washing your hands before, during and after handling food; separating raw and cooked foods; cooking food thoroughly; keeping food at the correct temperature, such as storing it in the fridge; and using safe, clean water and pasteurised milk products.
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CONTACT
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Warriewood, NSW 2102
info@cbfoodtech.com.au
In today’s marketplace, technology shouldn’t be an afterthought but instead it must be an integral part of a company’s overall strategy.

With system-wide modernisation in place, organisations can embark on building new ideas for products, packaging and reaching consumers. Companies can embrace digital tactics or be left on the sidelines as the competition rushes past.

Digital technology and disruptive innovations like the Internet of Things are transforming the way we do business. Organisations embracing these innovative technologies are using them to optimise their daily operations and hone their profit margins.

Here are seven ways to use digital transformation technologies to add value to your F&B company based in-part on a recent Constellation Research report, “Nine Entry Points to Digital Transformation in Manufacturing,” by R “Ray” Wang.

1. **Embrace value-added services**
   ‘Service’ means so much more than what we typically think of good customer service. It may be eliminating an onerous task, anticipating customers’ needs, managing a process for them from beginning to end, or streamlining your interactions with customers. Software solutions will help manage processes and streamline activities.

   Online portals can be used to interact with consumers, distributors and channel partners. With modernised systems, these added customer-centric features can be relatively simple to provide, yet yield high returns in customer loyalty.

2. **Improve the customer experience**
   It’s becoming increasingly important to build a distinct brand and stand out in your customer’s recognition.

   Customers are looking for more information than can fit on a typical label including origin of each ingredient, GMO and more. Modern technology supports this flexibility. Customer experience suites, e-commerce and product lifecycle management solutions to manage development and labels, and tools for online portals are just some of the ways modern solutions can transform the customer experience into a point of differentiation.

3. **Fine-tune supply and demand forecasting**
   Effectively managing inventory levels is one of the ways companies can optimise cash flow — without risking customer satisfaction. Accurately understanding customer needs, predicting seasonal demand and projecting logistical needs will help procurement managers with necessary resources to fulfil orders.

   Companies which have invested in a modern, integrated ERP system with advanced analytics capabilities, as well as sophisticated supply, demand and inventory tools, will be best positioned to take advantage of these opportunities.

4. **Leverage sensors to protect equipment value**
   Smart sensors can be used to monitor machine performance and identify anomalies, which may predict impending failure or maintenance needs. Acting as an early warning system, sensors can help keep machines running and extend the lifecycle of critical equipment. Sensors can also be used to monitor conditions throughout the supply chain — especially important for fresh ingredients in F&B — which require refrigeration or humidity control.

5. **Optimise the marketing and sales processes**
   In the F&B industry, digital marketing is critical as companies need to align with consumers early and often. Understanding consumers’ taste preferences and desires for clean labels, healthy, non-GMO or organic offerings will shape the R&D process, as well as development of new products. Marketing tailored to niche markets will help build demand for specialised offerings.

6. **Support suppliers and vertically integrated divisions with advanced tools**
   Organisations can benefit from new technologies, which make the technician more productive and well-informed, helping him or her to resolve maintenance and service orders in less time and with fewer trips back to the service centre. With a current shortage of skilled technicians, enhancing the ability of each technician is increasingly important.

7. **Anytime, anywhere business**
   Connectivity helps workers who are always on the move, from purchasing managers to sales staff. Companies can make it easy for personnel to do business remotely, whenever the need arises. Whether it’s a sales rep who needs to update invoices in real time, a customer who wants to learn about calories in a product or a procurement specialist who needs to modify a purchase order on the fly, integrating mobile devices with core software helps organisations work more efficiently.

**7 ways digital transformation can add value to your F&B company**

Mike Edgett, Director of Industry Marketing for Process Manufacturing, Infor
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Footwear sanitising stations

For decades, food processors have been using foot baths (also called shoe baths and foot mats) as a method of reducing cross-contamination from footwear in their processing facilities, but they have many inherent problems.

Best Sanitizers’ HACCP SmartStep and HACCP Defender Footwear Sanitizing Stations use compressed air to deliver an atomised spray of Alpet D2 or Alpet D2 Quat-Free surface sanitiser to footwear soles. Unlike foot baths, each worker receives a fresh application of sanitiser for consistent, measurable results every time.

The HACCP SmartStep sanitising system has a compact footprint and can go practically anywhere in the food processing facility. The unit is foot operated and uses just 0.2 ounces of Alpet D2 sanitiser per foot, which minimises chemical waste and helps control moisture. This makes it suitable for dry processing facilities.

The larger option, the HACCP Defender Low-Moisture, Walk Through, Automatic Footwear sanitising station is suitable for applications where higher throughput is a must. The one-way design also helps manage traffic flow and improves pathogen reduction to critical areas of the facility.

Food processing facilities, nutraceutical plants, pharmaceutical plants, clinical research labs and cleanrooms can use either unit individually or in combination to maximise pathogen protection throughout their facility.

Since these units provide each worker with a fresh dose of sanitiser, there is no need for constant monitoring. Traffic flow can be designed to eliminate the possibility of workers avoiding the units, and the unsightly visual of a messy foot bath is replaced with a clean, effective piece of equipment.

Saraya Australia Pty Ltd
www.saraya.com.au

Pumping sauce, ketchup and mayonnaise hygienically

Hygiene is paramount in food industry applications, where any failures can have a devastating impact on brand reputation. So when a global brand sauce and condiments manufacturer in Russia wanted to replace pumps that were proving difficult to clean and maintain, hygiene was a prime consideration.

The manufacturer chose Bredel CIP (clean-in-place) pumps from Watson-Marlow Fluid Technology Group (WMFTG).

Bredel CIP 50 pumps are available with the option of externally operated retracting shoes that release the hose so that the line is open and unobstructed for cleaning. Pumps featuring this option are used at the Russian plant with a food-approved hose and food grade lubricant, both from WMFTG, while stainless steel sanitary connectors include DIN, ASA and JIS types.

Hygiene and sterility are crucial at the plant where, depending on the production plan, CIP is often scheduled daily. The process takes place at full velocity using food industry standard cleaning agents.

The pumps have been installed on two filling lines to transfer cheese sauce, which is heated to 75°C. Here, the sauce needs to be pumped quickly from the hoppers to the filling line at flow rates of up to 7000 L/h. If the sauce cools in the pump hose or in the transfer lines, it will solidify, which would cause huge cleaning issues because hot water and stronger cleaning agents would be needed to break down the starch and fats.

Elsewhere on-site, Bredel CIP pumps transfer ketchup through 20 m pipework with 7 m delivery. The pumps dose ketchup with a viscosity of 50,000 cP (at 30–40°C) from the hoppers to a line that fills plastic single-serving sachets for fast-food outlets. On the same line, plastic sachets are also filled with mayonnaise (5000 cP), again for fast-food outlets.

Aside from ease of cleaning, there were several important factors to consider before selecting the Bredel pumps, not least the shear thinning of these thixotropic sauces. Further factors included the avoidance of air entrainment, which could lead the sachets to burst on filling, and the need for sterility.

Ultimately, the gentle, low-shear capability of Bredel pumps was put forward by the contractor that supplied the Rossi and Catelli filling system. The recommendation was supported by referencing the use of Bredel pumps at other group plants outside of Russia.

Watson-Marlow Fluid Technology Group
www.wmftg.com.au
**Vibratory chip sizer**

The tna roflo VMCS 3 chip sizer uses vibratory motion to separate large from small chips to maximise packaging efficiencies and speeds. The sizer is suitable for a wide range of fried snack products, such as potato chips, as well as fruit and other root vegetable chips. The system’s pan design ensures that each chip is sized, sorted and gently transported along the line for a continuous product flow with minimum breakage.

Contrary to conventional systems that employ rotary motion to separate the chips, the tna system uses vibratory motion to limit maintenance requirements and gently convey product across a cascading chip-sizing screen, mounted on a shallow conveying pan. Smaller chips pass through the screen to the lower level and larger chips will continue on the higher level, each one continuing on separate conveyors towards their designated bagging station.

The removable screen is designed in such a way that it maintains product quality and ensures no product blockages during sizing. Integrated product-divert gates can act as an effective bypass feature when sorting is not required.

The interchangeable chip-sizing screens can be customised for various sizes to accommodate a wide range of ratios between small and large chips. Each screen can be easily removed within just a couple of minutes. The system’s simple yet effective design further ensures that all parts are easily accessible to facilitate cleaning and maintenance procedures, reducing downtime.

The product is available in standard and larger pan sizes of 600 and 750 mm width, respectively.

**Ecowize**

www.ecowize.com.au

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**Cleaning system**

Ecowize is now distributing Foamico cleaning equipment in Australia and New Zealand.

The Danish equipment is claimed to reduce cleaning time by up to 40%, energy consumption by up to 60% and water usage by up to 25%.

All Foamico units are simple to operate as up to three different chemical cleaning solutions can be delivered through a single handle. This means that cleaning personnel do not have to change the hose from one outlet to another when changing chemicals. This makes the interchange of three different chemicals and rinsing speedier and more accurate.

Safety and security is optimised as all electrical components in the units are internal and there is no external control box for start/stop.

**Ecowize**

www.ecowize.com.au

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**Positive displacement pumps**

SPX FLOW has released a series of positive displacement (PD) pumps, the Universal 3 Series, from its Waukesha Cherry-Burrell brand.

The pumps are 3-A certified and can be cleaned in place as standard. Connection of the rotor and shaft is completely sealed from the product zone to prevent any contamination and reduces the risk of internal corrosion. The front-loaded seals are easy to maintain, reduce maintenance times and are available in a choice of materials and types, including single and double mechanical and O-ring versions to suit a wide variety of process applications. The pumps further provide the versatility of bidirectional flow capability and 3-way mounting for easy integration into process systems.

Designed for operating up to 500 psi (34.5 bar) pressure and 149°C temperature as standard, the pumps offer customers robustness for long-life operation. The values vary depending on the pump size and rating option. Key features include a heavy-duty stainless steel frame, double tapered bearings, positive lubrication of bearings and the use of a wave spring to extend outer seal life. Shorter, large diameter shafts made from 17-4PH stainless steel reduce overhung loads, improve seal life and provide greater torque capacity, which enables the pumps to be used in higher pressure applications.

Close running clearance rotors reduce slippage and add benefit in terms of improved sanitary performance and longevity. Combined with a long sealing path from inlet to outlet, the pump is further designed for low slip operation, high efficiency, good priming capability and effective flow control.

**SPX Flow Inc**

www.spxflow.com/au

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**Foreign matter capturing system**

In the manufacturing environment, forklift tyres, trolley wheels and shoes will transport contaminants into the factory countless times every day. This introduces not only dirt but foreign matter and swarf. To counter this potential hazard, FMCG Industry Solutions has released ProfilGate, a foreign matter capturing system that actively captures metal, glass, sand, dirt and swarf fragments from tyres and shoes every time they travel over it.

It is suitable for use at all entrances with high traffic such as hygiene entrances, warehouse entrances, production areas, processing areas, maintenance departments and other high-risk areas to reduce the risk of product cross-contamination and prevent potential recalls.

Using the latest German Cleaning Technology, the patented brush system is activated by the weight of a forklift/shoes as it travels across the metal grid. It actively removes contaminants (up to 8 mm in diameter) from the tyres and soles of shoes which are then captured inside the stainless steel tray.

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A sugar tax levied on soft drinks might have the unintended consequence of driving up alcohol consumption, but the picture is mixed, finds research published online in the *Journal of Epidemiology & Community Health*.

As many alcoholic drinks contain similar or greater amounts of sugar (43 kcal/100 mL for beer; 85 kcal for wine; 40 kcal for cola) and have other well-known harms, a more nuanced approach across a range of beverages may be more effective than a single tax on sugary drinks, said the researchers.

An industry levy will be imposed on soft drinks with a high sugar content in the UK from April 2018 in a bid to curb the rising tide of obesity and diabetes. Many other countries, including Hungary, Finland, France, Belgium, Portugal, Mexico, Chile, Thailand, Saudi Arabia and the UAE, have already gone down this route.

And certain US cities, India, the Philippines, Indonesia, Israel and South Africa are set to follow suit.

Several financial modelling studies have shown that increasing the price of sugary drinks could make a small but significant dent in purchasing patterns, particularly among poorer households. But little is known about the potential impact of such a hike on alcohol sales.

To try and tease this out, the researchers applied a specialised tool for studying consumer demand to data on household expenditure on food and drink in 2012 and 2013 from a nationally representative sample of around 32,000 UK homes.

The data (from Kantar Worldpanel) provided complete details of each sales transaction, in addition to social and demographic information for each household.

Full data for both years were provided by 31,919 households, adding up to some 6 million drinks purchases, grouped into high (8 g+/100 mL), medium (5–8 g), and low (under 5 g) sugar content drinks; fruit juices; milk-based drinks; water; beer; lager; cider; wines and spirits.

Low-income households spent nearly half (48%) of their total drinks expenditure on all three ‘strengths’ of sugar-sweetened drinks, compared with 44% for medium-income and 39% for high-income households. The trend went in the opposite direction for juice drinks.

Alcohol purchase was more sensitive to price change than soft drinks, the analysis indicated. But increases in the price of sugary drinks were associated with different purchasing patterns for other beverages, depending on sugar content and household income.

When the price of high sugar content drinks rose, so too did purchases of diet drinks, juices and lager. But purchases of medium sugar content drinks and spirits fell.

Price rises in medium sugar content drinks were associated with falls in beer, lager and wine purchases, while price rises in diet/low sugar drinks were associated with increases in all other types of drink, except high and low sugar content beverages.

In high-income households, price hikes in high sugar content drinks were associated with a fall in sales of cider, while in the middle-income group, these hikes were associated with a fall in the purchase of spirits but an increase in those of lager. No declines in alcohol purchases were evident in low-income households.

A price hike for medium sugar content drinks would seem to be most effective, while applying one to diet/low sugar drinks would seem to be the least effective, the findings indicate, suggesting that the threshold of sugar content for any price rise could be crucial, said the researchers.

And price rises may have a greater impact on reducing alcohol consumption than that of soft drinks, they suggested.

But they emphasised: “Although this analysis can highlight significant relationships between beverages purchased, it cannot explain why these relationships arise,” adding: “This mixed picture indicates the complexity of estimating the impact of a single price increase.”

They concluded: “Increasing the price of [sugar-sweetened beverages] has the potential to both increase and decrease the purchase of alcohol, suggesting more nuanced price options across a range of beverages may be more effective than a single tax on high sugar [ones].”
High-alloy mixproof valves
Alfa Laval has announced the High Alloy version of its Unique Mixproof Valves.
Manufacturers of products containing high chloride concentration or low pH levels often face corrosion challenges in their hygienic processes. Such products include soy sauce, lactic acid, whey, isotonic drinks, minerals dosing and hot water systems.
Meeting the demand for higher corrosion resistance, Alfa Laval’s high-alloy mixproof valves secure product safety and longer equipment lifetime. They come in two optional materials: Hastelloy C22 and AL6XN.
Alfa Laval Pty Ltd
www.alfalaval.com.au

Slicing head
Urschel has introduced what it claims is a new concept in slicing — the MicroAdjustable Slicing Head (SL-14).
For use on the Model CC Slicer, the slicing head features 14 cutting stations that maximise slice engagement. This increased cutting station design delivers higher capacities versus the standard, fully adjustable 8-station cutting head. Switching over from the standard 8-station head requires no special adapters. The new slicing design concept does not incorporate shims or shoes, and offers tool-free knife changeovers.
Weighing 16 kg with built-in lifting handles, the slicing head is adeptly removed and replaced. This development allows processors the ability to increase productivity without the expense of purchasing an additional slicer.
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02 8787 1400

www.foodprocessing.com.au March/April 2018
Currently, most root vegetables are washed in cold water and brushed to remove visible dirt and make the produce more attractive to consumers. However, the downside of this procedure is the resulting surface damage to the vegetables makes them more susceptible to bacterial and fungal infection which leads to decay and reduces shelf life.

A group of Danish researchers led by Merete Edelenbos, Associate Professor in Department of Food Science, Aarhus University, is focusing on how the root vegetables are washed before they are packaged and sold. By reducing the wounds and scratches inflicted in the washing and brushing process, they hope to minimise bacterial and fungal access to the vegetables.

The research project, KvaliRad, is aiming to investigate whether hot washing water and essential oils such as thyme or oregano can increase the vegetables’ resistance to microbial infection.

“When root vegetables are rinsed in hot water, their inherent defence mechanisms are activated, making the vegetables more resistant towards infections. Further, we will examine whether adding essential oils with antimicrobial properties to the washing water will help increase shelf life. These may include thyme or oregano oils,” said Edelenbos.

“We expect to reduce the food waste of root crops by 5% in retail and 30% for consumers. It will also reduce CO₂ emissions by 3000 tons annually. So there are big gains to pick up,” said Edelenbos.

Another aim of the project is to open the Chinese organic root vegetable market to Danish exporters.

“The organic market in China, for instance, holds significant potential, but so far, it has been out of our reach because of the reduced shelf life. We hope that the project will allow root crop producers to enter new markets,” said Edelenbos.

The $1.1 million Green Development and Demonstration Programme KvaliRod project is expected to be concluded in 2021 and the participants include the Department of Food Science, Aarhus University, along with Limfjord Danske Rodfrugter, Gl. Estrup Gartneri, Cabinplant, Sobec EMEA, AirVention, Gasa Odense Frugt og Grønt and ISI Food Protection.
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Effluent monitoring
How pH and BODeq monitoring can pay off for your facility

The increased pressure from government to decrease biochemical oxygen demand (BOD) effluent loads and to reduce the risk of spikes in pH in effluent has been quite evident. Ensuring your plant has an accurate and available pH measurement is more important than ever.

Ensuring the accuracy and stability of a pH point has long been a challenge of the industry and something which takes effort and resources to achieve.

Additionally, traditional BOD5 measurements are inherently slow and costly, and never alert you to real-time events that can then be managed.

**The solution**
Endress+Hauser has developed an in-line pH system capable of self-cleaning to ensure continual reliable operation. The system can operate with pH alone or with the addition of CODeq (for correlation to BOD), total suspended solids and product loss detection sensors depending on the nature of the trade waste agreement in place with the local water authority.

**Self-cleaning pH**
The system comprises the digital Memosens technology pH sensor CPS11D, Liquiline CM44x transmitter, a pneumatically retractable pH assembly CPA875 and the Cleanfit Control CYC25 interface.

In order to provide functional feedback and ensure an accurate and consistent measurement, the pH electrode is retracted from the process, cleaned with water and a cleaning chemical and then automatically reinserted into the process without any manual intervention. This ensures that drift associated with electrode fouling is kept to a minimum for the duration that the pH electrode is kept in service. It also reduces the manual maintenance requirement as well as lengthening the calibration interval further reducing operational costs.

The cleaning interval is triggered either externally via the customer’s PLC, or based on a predetermined time interval through the CM44x transmitter. The cleaning regime is fully programmable using the inbuilt Chemoclean Plus program which allows for any number of rinsing and cleaning cycles as well as inverse measurement (where the sensor is normally located out of the process and only inserted when required). This ensures that the cleaning program is entirely built around each and every individual customer process which results in a better clean.
Traceability
All measurements are recorded within the CM44X transmitter and captured by the Endress+Hauser service team and delivered as a report each month. This historic data can be used for analysis, trending and in the case of federal or provincial audit.

This data can also be uploaded to your W@M Endress+Hauser asset management portal so that it may be stored in one central location.

Identifying high loads
Similarly, by using a fast responding UV sensor at 254nm, a correlation can be determined between the CODeq (Chemical Oxygen Demand Equivalent) measurement and the BOD5 load.

The CAS51D UV sensor has been designed for use in effluent plants. Its robust design has no moving parts which ensure a reliable measurement and with a service interval of every two years, it provides for a low cost of ownership.

The sensor measurement occurs multiple times per minute ensuring that any off spec or high loads are captured immediately and are able to be rectified before discharge to the sewer. The raw measurement can be used directly or in many cases correlated to a BOD5 value via comparison and calibration to laboratory determined values.

The benefit is real time monitoring of the organic load going into and also out of the plant, so that any unplanned high loads are captured before they have a chance to enter the waste water system.

With BOD5 charges at roughly $1.20/kg (dependent on load) and fines up to $15,000, the savings can be recouped after only one or two events have been identified and stopped from discharging into the sewer.

As the data captured is readily available, it is possible to trend spikes in CODeq, daily, weekly and monthly to show trends during these periods. Having access to the time and size of these spikes gives a layer of transparency to the possible processes or activities which are run at these times. This helps you to trend and identify key ways in which to reduce the risk of spikes in effluent loads.

Remote monitoring
Using the Endress+Hauser FXA42 FieldGate, your measuring system communicates via SMS and email to both key stakeholders within your organisation, as well as highly trained Endress+Hauser technicians.

Instant notice of spikes in pH or CODeq in your effluent load allows you to take the necessary action when it counts.

Endress+Hauser factory-trained technicians immediately log remotely into your system to see what is happening within the process and ensure the spikes recorded are being addressed.

When a probe measures outside of tolerance due to probe life or maintenance, Endress+Hauser service department schedules a service visit to rectify the issue and ensure the system is functioning as it should. This way, your monitoring system is always accurate and reliable.

More than meets the eye
Due to the modular design of the CM44x transmitter and the digital Memosens protocol, the system may be further equipped with product loss detection and total suspended solids measurement. For compliance to regulatory authority requirements an Endress+Hauser CSF48 Automatic Sampling System can also be supplied to ensure you have more information and insight into your effluent process.

Benefits
Monitoring and trending your plant’s effluent with pH and BOD ensures:
- Your plant meets all federal and provincial legislation in order to avoid fines
- Availability of historical data of your effluent loads for traceability
- Gain transparency of effluent leaving your facility to identify the processes and activities in your facility which lead to product losses
- Trust in your pH measurements and receive immediate email and SMS notifications for pH spikes in effluent load
- Peace of mind, knowing your effluent loads are under control

Figure 1: Schematic representation of the instrumentation.
The World Health Organization and the American Academy of Pediatrics both recommend that toddlers (from age one) drink cow’s milk in combination with eating healthy foods with the WHO deeming toddler drinks “unnecessary” and “unsuitable”.

Even so, the marketing and labelling of toddler drinks implies that they are beneficial for children’s nutrition and growth. Toddler drinks — marketed for young children from 9 months to 3 years old — include two types of products: transition formulas (for infants and toddlers 9–24 months) and toddler milks (for children 12–36 months old). Most toddler drinks are primarily composed of powdered milk, added sweeteners and vegetable oil, and contain more sodium and less protein than cow’s milk.

It is probable that misleading labelling on toddler formulas and milks confuses parents about their healthfulness or necessity according to a recent study by researchers at the NYU College of Global Public Health and the Rudd Center for Food Policy & Obesity at the University of Connecticut.

In order to foster healthy toddler diets, the researchers recommend that the Food and Drug Administration should provide guidance or propose regulations to ensure the appropriate labelling of toddler drinks.

The ethics of toddler drink marketing harks back to the ‘olden days’ when clever marketing promoted formula as preferable to breast milk for babies. Advertising spend on promoting toddler drinks is increasing and public health experts are starting to raise concerns about questionable claims and other labelling practices on toddler drinks. Messages that imply that toddler drinks are necessary for toddlers’ growth and mental performance, and provide a solution for picky eaters are considered particularly concerning.

The NYU study, published in the journal Preventive Medicine, examines how US policies and regulations can support clear and truthful labelling of toddler drinks.

Previous research has highlighted that common marketing and labelling practices for infant formula may mislead parents to believe that these products provide benefits over breastfeeding.

The current study evaluated toddler drink labelling practices and assessed policy strategies to support transparent and truthful labelling, enabling caregivers to make well-informed decisions about feeding their children. In conducting legal research on US food label laws and regulations, the researchers found distinct policies for infant formulas, but nothing specific to toddler drinks.

Are toddler milks just a marketing ploy?

International health experts and paediatricians do not recommend ‘toddler drinks’ claiming that manufacturers’ marketing practices may undermine the diets of very young children — so why are they being so heavily promoted?
The researchers then visited stores to collect and evaluate toddler drink packages, including nutrition labels and claims. They noted that toddler drinks go by a variety of names (“toddler formula”, “toddler drink”, “toddler milk” or “milk drink”), which could be confusing for consumers.

The research team observed that all toddler drink labels they examined made at least one health or nutrition claim, and nearly all made multiple claims.

“All product labels made claims related to nutrition and health, and many made claims about expert recommendations that may lead caregivers to believe these products are necessary and healthy. In fact, they are not recommended by health experts, as there is no evidence that they are nutritionally marketing, and labelling of toddler drinks implies that they are beneficial for children’s nutrition and growth,” said Jennifer L Pomeranz, Assistant Professor of Public Health Policy and Management at NYU College of Global Public Health and the study’s lead author.

The researchers also compared toddler drink labels with the same brand’s infant formula labels and found that most toddler drink labels used similar colours, branding, logos and graphics. These similarities could increase the likelihood of confusion among consumers about the appropriateness of serving toddler drinks and the differences between infant formulas and toddler drinks.

“Toddlers drinks are unnecessary and may undermine a nutritious diet, yet manufacturers have expanded their marketing of these products. Therefore, it is important for labels to be clear, transparent and accurate,” Pomeranz said. “The FDA and manufacturers should work together to end the inappropriate labelling of toddler drinks and ensure caregivers have reliable information to nutritiously feed their children.”

The researchers suggest that the FDA should provide guidance or regulations on toddler drink labelling, which could include:

• requiring statements to consult a physician prior to toddler milk use;
• the use of appropriate health and nutrition claims;
• labelling and packaging should clearly differentiate infant formula, transition formula and toddler milks;
• manufacturers should agree on and consistently use one name for similar products;
• questionable health claims and images of bottles should not be permitted.
The increasing trend in automation of manufacturing and inspection processes has called for the demand for non-contact optical measurement technology. Modern laser sensors offer fast, accurate, and reliable measurements of displacement, surface profile, and are commonly used in industrial automation for process monitoring and quality control. Depending on the characteristics required by the respective applications, these sensors can be operated with a red or a blue laser.

The blue laser diode generates a blue-violet laser beam with a wavelength of 405 nm. The sharper focus enables a sharper projection of the laser beam and therefore increases accuracy. Patented by Micro-Epsilon, this technology offers decisive advantages compared to red-diode laser sensors. The sensors are equipped with high-performance lenses, intelligent-laser control, and innovative evaluation algorithms.

Unlike the conventional red laser, this short-wave, blue-violet laser light hardly penetrates the measurement objects, which offers reliable measurement of organics and semi-transparent objects. The blue laser point or blue laser line is sharply imaged onto the surface and projected onto the sensor element, providing stable and precise measurement results.

The laser profile scanner, scanCONTROL series, equipped with blue laser technology has been previously used for monitoring quality control in chocolate production process. Prior to the invention of this technology, the product quality was manually inspected, resulting in huge loss in time and efficiency. With the fast throughput rate of more than 60 m/min, the laser scanner detects each profile of the finished chocolate bars, transmits this to the software, and the inspection is done based on the pre-defined parameters.

In another application, the scanCONTROL series was also used to inspect the thickness of potato slices during the production process. The optimum thickness is required to maintain consistency and crispiness without under/over-cooking the food. It is important to continuously monitor the thickness during the production process as the thickness can change steadily during the cutting process.

Blue laser technology also has advantages on measuring red-hot glowing objects. The long-wave radiation emitted by red-hot glowing objects interferes the signal received by the receiving elements of laser sensors that operate using red laser light. Blue laser sensors are equipped with optical elements that cannot be influenced by this radiation, which therefore enables stable distance and profile measurements. Measuring the deformation of brake disks under load while braking is an ideal task for the optoNCDT laser triangulation sensor. Due to the short wavelength of the blue-violet laser employed, the light emitted from the thermocouple does not interfere with the sensor, as the intrinsic long-wavelength incandescent radiation is different than the 405 nm wavelength of the blue-violet laser, and it is effectively blocked by the high-quality interference filters used.

Bestech Australia offers laser profile scanners and laser triangulation sensors equipped with a blue laser diode which offer numerous advantages over red-diode lasers. Unlike the red laser, the blue laser does not penetrate the target objects and it projects a sharp line of beam. This measurement technology is ideal for measuring organics, semi-transparent and red-hot glowing objects.
Compressed air gun

The Silvent Pro One air gun is now available from Spray Nozzle Engineering Australia and New Zealand.

The air gun is one of the most used tools in production environments, but it also creates a number of workplace injuries. The product aims to improve the work environment and minimise the number of occupational injuries when blowing with compressed air.

Efficient, quiet and durable, it is a robust hand tool designed for professional industrial use worldwide. The air gun is fitted with a specially designed, patented nozzle in stainless steel. This allows an effective blowing force and a low noise level.

The nozzle creates a concentrated jet of air, which reduces turbulence, thus enabling a more targeted, effective blowing force. The product has a lightweight, slim design. The ergonomic handle allows several different grips to make work easier and reduce the risk of repetitive strain injuries.

The design of the nozzle enables a reduction in sound level of more than 10 dB(A). The ear perceives this as a half of the noise level, which reduces the risk of hearing damage.

Spray Nozzle Engineering
www.sprayingsolutions.com.au

Disposable nitrile glove

The NitraOne glove is a lightweight, comfortable, durable, disposable nitrile glove available in blue (BZ401) and clear/translucent (BZ402) colour. It is suitable for foodservice and handling, and general-purpose use.

The glove is form-fitting and flexible, which reduces hand fatigue. It is packaged efficiently with 300 gloves per inner box, reducing order frequency, packaging waste and freight, and optimising storage space.

It is also strong and durable, with high resistance to punctures, tears, oil and grease, and with textured fingertips to improve grip.

The glove is free from latex proteins reducing risk of allergic reactions not only for the user, but for anyone they are in contact with.

Bunzl Australasia
www.bunzl.com.au

Cooperation for safe and simple automation.

We call that teamwork: The collaboration between Siemens and Bürkert resulted in the Type 8647 AirLINE SP valve island, which is compatible with the Siemens I/O system SIMATIC ET 200SP. It is designed not only for fast installation, but also features numerous safety functions for food and beverage processes, such as the new LCD with real-time status display of diagnosis data, or check valves to prevent mixing of different media. Together with maximum system availability, the result is a solution for outstanding process reliability.

AirLINE SP Type 8647: Better process reliability is hardly possible.

We make ideas flow.
www.burkert.com.au
Ethernet to fibre media converter
The industrial IGMC-111GP Gigabit Ethernet Converter by ORing is a media converter with a wide operating voltage. It supports all copper side speeds and enables user flexibility for a fibre interface via an SFP socket.

The converter addresses local and interfaced device status through user-settable DIP-switches that allow for Link Fault Pass-Through (LFP). LFP allows an interface on either side to shut down the opposing side in the event of a connected device stopping transmission. This feature enables instantaneous user alerts through link loss and/or custom user settings with the connected equipment.

With a temperature range of -40 to 75°C, the converter is suitable for the harshest of environments. There is support for 1 by 10/100/1000Base-T(X) auto-negotiation and auto-MDI/MDI-X copper port as well as well 1 by 100/1000Base-X SFP fibre port. Jumbo Frames (up to 9 KB) LFP function are supported, including fault relay output, rigid IP30 housing design with DIN-rail or wall mounting options.

Control Logic Pty Ltd
www.control-logic.com.au

Checkweigher
OFI Weigh & Inspection Solutions’ C80-CS high-precision, high-speed checkweigher is designed to offer high performance and maximum flexibility for integration into any production line. It can be supplied in combination with X-ray, metal detectors, vision inspection and identification.

Built to last in harsh environments, the checkweigher is fitted with a large 15” multifunction touch-screen display for ease of use. The system is manufactured to the highest engineering standards with inherent longevity for use in tough, hostile environments.

The weigh platform provides weight stability and repeatability, with conveyors driven by virtually maintenance-free motors. The checkweigher offers a range of belt sizes and reject devices to suit the specific application, including air blast, pusher, single or double flipper/divert arm, drop flap etc. There is also a BRC compliant version available to include many more additional functions for fail-safe management.

InControl management software can report on the efficiency of each line in real time and will monitor the OEE. Product changeovers can be carried out remotely and remote access is available to troubleshoot and or to monitor production. Statistical data for QA compliance can also be transmitted directly to a USB or can be transferred automatically to a server in a variety of formats, including Excel, CSV, PDF, etc.

OFI
www.ofiinspection.com.au

Chicken keel harvester
Prime Equipment Group’s CKH-1 Chicken Keel Harvester will help processors in the growing keel market. Fuelling that growth is global demand for glucosamine-chondroitin, the supplement aimed at protecting and rebuilding arthritic joints and cartilage.

Chicken keels are the key ingredient in the production of chondroitin. The harvester automatically cuts keels from carcasses and sends them to a tub or conveyor.

Key features of the harvester include: no added labour; on the fly adjustability to maintain yield and product quality; belt design that ensures maximum yield via positive frame positioning before the blade; fast machine/project payback; suitable for all line speeds.

Smo-King Ovens Pty Ltd
www.smo-kingovens.com.au
The team at Hydroflux have encountered a wide variety of odours across the various municipal and industrial projects we have completed. Those of us left with a sense of smell have a high appreciation for the level of control put in place in Australian dairy manufacturing.

Dairy manufacturers have many challenges to overcome to keep their product pure and untainted because of the speed at which product can go off, given the right (or perhaps wrong) conditions.

Once processed, any residual product and clean-in-place (CIP) waste is sent to the wastewater treatment plant (WWTP), which can become a significant source of odour. Dairy manufacturers have become adept at putting in place controls to ensure these odours are minimised, masked, contained and treated.

Although these traditional odour control methods have been around for a long time, and are proven, these systems have a lot of drawbacks. Activated carbon absorption systems require expensive media replacement and disposal; liquid scrubbers use large volumes of expensive chemicals and produce yet more effluent; and biofiltration systems take months to start working, take up a large area of land and again produce more effluent to treat.

Neutralox photoionisation odour control systems are a modern, compact and robust alternative that addresses the poor and typically unmanageable odour produced at industrial wastewater treatment plants and in their sludge tanks.

Unsurprisingly the older technologies are rapidly being phased out overseas, particularly in Europe — and now this low-energy and sustainable odour control process that is specifically designed to replace the older unsustainable and expensive technologies is available here in Australia.

Photoionisation systems are incredibly compact, they operate without chemicals, they do not produce effluent and they do not work by absorption alone. They also work the moment they are turned on and can be turned on and off as needed.

A pilot study on a Neutralox photoionisation system was recently conducted at a dairy in Western Sydney. The aim of the study was to determine the reduction in odour and reduced sulfur compounds from the air emanating from the raw wastewater pump well and the DAF sludge tank.

The focus of this study was the incoming effluent pit and the sludge tank — two sources of odour notorious for turning heads that provided an excellent opportunity to establish the effectiveness of the Neutralox System on strong dairy odours.

The system was operated for several weeks with a noticeable difference in odours in the area. Samples of air were tested and analysed by Airlabs Environmental. The Neutralox pilot unit is fitted with an internal fan that draws air through the unit from the source at a rate of up to 200 m³ per hour.
Additional tests were conducted on ammonia and reduced sulfur compounds with the following results.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Inlet</th>
<th>Outlet</th>
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</thead>
<tbody>
<tr>
<td>Ammonia (ppm)</td>
<td>1.9</td>
<td>0.24</td>
</tr>
<tr>
<td>Hydrogen sulfide (ppm)</td>
<td>1.7</td>
<td>0.07</td>
</tr>
<tr>
<td>Carbony sulfide (ppm)</td>
<td>&lt;0.02</td>
<td>&lt;0.02</td>
</tr>
<tr>
<td>Carbony disulfide (ppm)</td>
<td>&lt;0.033</td>
<td>&lt;0.02</td>
</tr>
<tr>
<td>Methyl mercaptan (ppm)</td>
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<td>&lt;0.02</td>
</tr>
<tr>
<td>Indole</td>
<td>0.11</td>
<td>0.032</td>
</tr>
<tr>
<td>Skatole</td>
<td>0.067</td>
<td>&lt;0.02</td>
</tr>
</tbody>
</table>

The Neutralox Photoionisation process is a physical-chemical off-gas treatment process for control of odours originating from waste, sewage and sludge treatment processes. The technology is based on the application of UV-light and catalysts.

Neutralox Photoionisation units essentially consist of a stainless-steel housing, dust-filter, UV compartment and catalysts.

The first stage of the process is to remove particulate matter from the air via a fine dust filter. A pressure sensor is installed in the system that monitors the pressure drop through the dust filter. When the pressure drop reaches a set level, an alarm is activated, and the dust filter needs to be cleaned or replaced.

The contaminated air then passes through the UV compartment where UV light initiates catalytic enhanced chemical reactions resulting in a significant reduction of odour as the linkages of odour molecules are broken by the UV light.

The reaction between UV light and naturally occurring constituents within the air also creates additional oxidants which further degrade or otherwise eliminate odours.

The reaction is then enhanced by photocatalysts. The catalyst provides further degradation of odorous compounds and prevents the release of oxidants into the atmosphere.

The downstream fan ensures extracting the polluted air from the odour source by keeping the whole system under negative pressure conditions.

The housing of the Neutralox Photoionisation units is manufactured in stainless steel AISI 304 and consists of an insulated double wall. The units are easily accessible from the front and/or back side through removable maintenance doors.

“I am excited at the opportunity Neutralox Systems will provide our clients to confidently manage their odours with a modern, compact, chemical-free solution,” said Mathew Pugh, Director of Hydroflux Industrial. “The system utilises UV light and catalysts to break down odorous compounds in air in a highly efficient and compact process.

“However, of most appeal is the low power demand. With a compact size and no air restrictions, the system can use smaller fans than are required with bio filters, carbon adsorption filters and scrubbers.

“I am particularly pleased with the results of the trial which have shown the effectiveness of the Neutralox technology on dairy odours, which consist of a variety of odorous substances that can be difficult to manage.”

About the Hydroflux Group

The Hydroflux Group comprises seven companies based in Australia and the UK, providing design and build, equipment, processes and operational services in water and wastewater treatment. Hydroflux Industrial specialises in industrial wastewater treatment including designing and constructing plants and supplying equipment across all sectors. Hydroflux Industrial is a wholly owned subsidiary of the Hydroflux Group.

Hydroflux Industrial Pty Ltd
www.hydrofluxindustrial.com.au
High-pressure hose-down-proof stainless steel display

The ViTAM-124 Series stainless steel touch panels are fully sealed with a 24” wide screen and meet IP66/IP69K requirements. To comply with IP66/IP69K standards the ViTAM-124 Series use M12 sealed connectors for all I/O connections. The result is a display that can withstand high-pressure hose-down cleaning.

The displays are available with projected capacitive touch or no touch glass front bezels. Input connectors are provided for VGA and HDMI video, USB touch control and 9~36 VDC power.

Housed in a Grade 304 or optional Grade 316 stainless steel enclosure with a true flat front bezel design that eliminates the build-up of dust and foreign material, the ViTAM-124 Series will not corrode and are easy to clean. To further assist cleaning, the display includes a touch on/off button that can temporarily disable the touch screen during the cleaning process. This allows the display to be hygienically wiped down with disinfectants without having to shut down any process control applications.

Standard brightness and optional sunlight-readable 1000 nits brightness are also available. The ViTAM-124 Series will operate from 0 to 50°C.

For applications that require smaller screen sizes and wide temperature specifications, the ViTAM displays can be supplied with screen sizes ranging from 10.1” to 24” in both 3:4 ratio and widescreen formats. Wide-range operating temperatures of -20 to 60°C are supported for all models with screen sized less than 19”.

These industrial-grade computer monitors are suitable for food processing, process control and industrial applications where exposure to corrosive chemicals may occur.

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NEW Euro Pumps PRODUCTS

Have it your way

Low pressure, High pressure, Foam, CIP or Drain Cleaning

Your business is different, your products, staff, workflow, all make unique demands of your cleaning system. So why not invest a proven cleaning system that can be tailored to suit your needs and is expandable to meet your future growth or changes?

Euro Pumps FLX System is a mix and match a range of selected cleaning hardware that enables you to build a tailored system to suit your unique requirements and can easily be expanded or changed at a later date as your business grows. Start with your choice of a single phase or three phase or even petrol or diesel pumps at low, medium or high pressure, that can be matched to a range of guns, nozzles, floor cleaners, drain cleaners and a wide range of advanced specialist cleaning tools like ultra fast foaming, sanitising and chemical dosing.

Design a System That’s Right For You

- Single phase, three phase, petrol or even diesel pumps.
- Simple or Adjustable low, medium or high pressure.
- Match with a range of guns, nozzles, drain cleaners, floor and roof cleaners.

There is even the option of adding time saving CIP spray bars and high pressure rotors. If you would like to talk to our engineers about how the Euro Pumps FLX System can be customised to suit your individual needs call Joanne Field, Euro Pumps product development manager, on 0409 123 850 or email jo@europumps.com.au

Euro Pumps U310A Quinlan St, Beerwah Q 4207
Ph 0409 123 850
europumps.com.au

www.foodprocessing.com.au March/April 2018
Sustainability and environmental management play an important role in the food industry. Nevertheless, regardless of how efficiently the machines work and how resource-friendly they are, at the end of the day the manufacturers are still faced with the question: What to do with the waste materials that are left over?

Innovative methods now exist that enable the recovery of materials from industrial by-products. This upcycling is being used by some food manufacturers to turn their waste products into valuable assets.

The upcycling of by-products that arise while processing vegetable- and animal-based raw materials is resource-friendly and ecological, as the biomass contains a multitude of substances that can be implemented as ingredients for new foodstuffs.

From waste material to a superfood
The classic example of upcycling is whey. Once a high-volume waste product from the production of cheese and cheese curd that was only considered as pig food, whey is now a ‘superfood’.

The main ingredient in many fitness products thanks to its protein, vitamin and mineral content, whey is also being added to drinks, puddings and smoothies. It is even being added as a demineralised concentrate in baby food.

Separating methods isolate the valuable components
Membrane separation and ultrafiltration plays a key role in isolating whey from the waste stream. Ultrafiltration allows the whey protein to be concentrated by up to 35%. In protein isolates up to 90%, the whey is freed from the fat by means of microfiltration.

Lactose and minerals like calcium and phosphorus can be recovered from the permeate flow of the protein isolation by means of nanofiltration or reverse osmosis. In this way, by cleverly combining dynamic filtration methods enriched products can be produced that contain the high-quality components in the desired concentration.

In addition to the membrane filtration method, separator technology has also established itself as a further upcycling method.

Lecithin, which occurs as a by-product when soya beans, sunflower seeds and rape seeds are processed, is used in the food industry as a natural alternative to synthetic emulsifiers and stabilisers. Here high-speed separators separate the lecithin and raw oil.

New ingredients from residues
Thanks to upcycling the offer of natural food additives is becoming more comprehensive, as one can see from the example of pectin. Pectin, a by-product generated during the production of apple juice, is used as a gelling agent, which is indispensable within the food industry.

Polyphenols are another by-product that can be recovered from the pressing residues in apple juice production. In future they may be used to add a further brown shade to the palette of natural colourants for food. Currently a project supported by the Federal Ministry for Economic Affairs and Energy aims to develop a large-scale technical process that uses the waste products left over after making juices as an alternative for caramel colouring.

Focus on resource efficiency
Recycling and upcycling are now firmly established in the industrial environment of food production. The latest technology and equipment for this can be seen at Anuga FoodTec in Cologne (20–23 March 2018). The opening conference ‘Resource efficiency — challenges and opportunities’ on 20 March plus the additional expert forum on 22 March will be dedicated to the theme of upcycling and the use of by-products.

Upcycling: how to transform waste products into valuable commodities
Turning waste products into superfoods can be very lucrative for food and beverage manufacturers and be a plus for the environment as well.

Upcycling: how to transform waste products into valuable commodities
Turning waste products into superfoods can be very lucrative for food and beverage manufacturers and be a plus for the environment as well.
Reducing *Salmonella* contamination in mangoes

Fresh produce almost needs to come with a food safety warning. Any foodborne pathogens picked up during growing, picking, packaging and transporting fresh produce cannot easily be eliminated by a traditional kill step such as cooking because the produce is eaten raw.

Contaminated rockmelons, papayas, cucumbers and fenugreek sprouts are just some of the fresh produce that have resulted in fatalities in recent times.

*Salmonella* is one of the pathogens that cause concern when contaminating fresh produce. The US Centers for Disease Control and Prevention estimates that in the US each year, *Salmonella* leads to approximately 1.2 million cases of *Salmonellosis*, around 23,000 hospitalisations and 450 deaths.

Mangos contaminated with *Salmonella* caused a multistate outbreak of disease in the US in 2012. The bacteria can get into the water used to wash the fruit in processing plants and so contaminate the fruit.

In mango processing plants, the wash water is housed in gigantic tanks, and once the water is contaminated, the bacteria are able to attach to the fruit’s skin and then enter the fruit’s pulp. Once bacteria make their way into the fruit, no amount of washing can remove them. With so many mangos washed at once, the number of contaminated mangos can be numerous, potentially causing many cases of *Salmonellosis*.

A University of Connecticut lab recently processed 4000 mangos and water samples to test the efficacy of three disinfectants commonly used by the mango industry to avoid contamination. The results surprised the researchers — chlorine was found to be particularly effective. Not only did chlorine clean the wash water, it also helped prevent cross-contamination by cleaning the mangos themselves.

This result was surprising because chlorine is not usually very effective in the wash step for most produce. For one reason or another, from lettuce, to tomatoes to apples, chlorine simply doesn’t reliably kill *Salmonella*.

“When I saw the results, I didn’t believe it. So we re-ran the test 10 times,” said Mary Anne Amaradjou, assistant professor in the Department of Animal Science.

What is noteworthy is that not all produce responds the same way to the same disinfectant.
Upgraded halogen moisture analyser

Many products require batch-by-batch moisture testing to ensure consistent product quality. The robust and easy-to-use HC103 halogen moisture analyser from METTLER TOLEDO is making this type of routine moisture content determination more convenient to document with ID management, easier shortcut management and simplified reporting of results.

Firmware version 1.40 now includes ID management. Sample and batch ID input can be performed simply, by connecting a USB barcode reader directly to the analyser and scanning IDs. A freely configurable strip printout also speeds up and simplifies results documentation. These improvements help to eliminate the need for error-prone transcription, resulting in time and resource savings.

Testing with SmartCal, the company’s fast and easy tool to monitor moisture analyser performance, has also been simplified and updated. Now, users only see appropriate temperatures for a specific test to reduce error risk. These temperatures are then included in SmartCal results reporting for easier interpretation.

Shortcut management has improved as well. Shortcuts are created from the main menu to enhance ease of use and allow the programming of several shortcuts at once. This saves time and keystrokes to enhance user comfort long term.

Firmware version 1.40 is automatically included with all analysers manufactured since May 2017 and can be easily upgraded.

Test device for valve bags

The BEUMER bag tester is a testing device that is easy to transport and enables users to determine the venting capacity of any type of valve bag — including all paper and plastic layers and glued areas. The determined parameters can be used to optimise the manufacture of bags or check conformity with specifications.

Bags filled with bulk material are stacked flat on pallets after being closed. These stacks are only stable if the air has been removed from the bags lying on top of each other. Therefore, the remaining air needs to escape from the filled bags before they are closed. The quicker this happens, the higher the filling capacity. The device provides users with important information on the filling behaviour of each bag.

A pressure-compensated flow control valve on the device constantly increases the volume flow rate until a steady pressure of 50 mbar is reached. With this pressure, the user can read the current volume flow rate, which indicates the air permeability, from the flow rate meter. A filling spout with inflatable sleeve seals the bag valve during the airflow measurements. The scope of supply includes an additional inflatable sleeve for valve widths of up to 200 mm.

The tester can be easily operated with the digital display unit. It is quick to use and novice users can operate it without much briefing. It is designed for mobile use and weighs 14 kg.

Humidity generator

The 5128A RHapid-Cal Humidity Generator from Fluke is suitable for calibrating a large workload of probes and loggers in the field or in the laboratory. It is suitable for calibration labs where humidity measurement is critical to preventing spoilage of products in food production.

The lightweight and compact device reduces calibration time by at least 33% compared to traditional two-pressure humidity generators, which are slower to respond to humidity and temperature set point changes.

The product features system accuracy of ±1.0% RH for dependable humidity probe calibration. Rapid humidity and temperature stabilisation time delivers high calibration throughput. The rate of change for temperature increase is typically 10°C/min and 1.5°C/min for temperature decrease. Rate of change for humidity increase is typically 10% RH/min and for decrease 5% RH/min.

Six-point calibration can be done in 2 h and the front-loading desiccant cartridge can be easily changed by removing the front cap and sliding in a new one. It is easy to maintain and requires only clean distilled water for operation.

The product comes with ISO 17025 accredited system calibration and is backed by Fluke Calibration’s metrology and support.
Low-cost tool detects bacteria in food in two hours

A sensitive and reliable bacteria-detecting chip that can determine the bacterial load of foods, beverages or water in under two hours is being patented by University of Massachusetts Amherst researchers.

This detection method is claimed to be able to detect as few as 100 bacteria cells per 1 mL of solution, whereas typically other rapid methods claim a sensitivity of 10,000 cells/mL.

The standard method for culturing bacteria from food samples, aerobic plate count (APC), takes two days. Some other methods are faster, but they are not very sensitive or reliable because ingredients in the food can interfere with them.

Food scientists Lili He and Lynne McLandsborough and their students, particularly Brooke Pearson, at the University of Massachusetts Amherst developed the two-step method that has a chemical and then an optical stage.

The first step in the new test for bacteria detection is to collect a sample of water, juice or mashed vegetable leaf and place the chemical-based detection chip in with the sample.

To overcome the food interference problem, the researchers designed the UMass Amherst chip to attract bacteria only, not sugars, fats or proteins in the food or dirt. These food compounds can be washed away with a high-pH buffer, leaving only bacteria for visual counting with a light microscope or a smartphone microscope and app.

The chip, used with a light microscope for optical detection, relies on a ‘capture molecule’, 3-mercaptophenylboronic acid (3-MBPA) that attracts and binds to any bacteria. The chemical detection method, surface-enhanced Raman spectroscopy (SERS), relies on silver nanoparticles.

The optical detection method has also been adapted for possible home use via a smartphone microscope adapter that is widely available online for about $30.
The science behind maintaining edible oil quality

Knowing how edible oils such as canola deteriorate can provide valuable insight into deterioration prevention.

Light irradiation and heat are just two factors that can affect the quality of canola and other edible oils. Understanding the oxidative processes that affect the flavour and taste of oils can assist in the development and implementation of measures like packaging and storage conditions that can control the oil quality.

High performance liquid chromatography (HPLC) combined with tandem mass spectrometry (MS/MS) was used by a team of researchers from Tohoku University to examine canola oil’s oxidation process. HPLC pumps liquid under high pressure through a granular adsorbent material to separate the different components contained in the liquid. MS/MS bombards the compound molecules separated by HPLC with neutral molecules (e.g., nitrogen) to break it apart into smaller components and then measures the mass-to-charge ratio of the pieces.

Triacylglycerol (TG), a major component of edible oil, is known to form different oxidation compounds, or isomers, depending on how TG was oxidised. The researchers developed a new technique to analyse isomers using HPLC-MS/MS. Using the method, they identified the specific oxidation compounds in canola oil resulting from heat (25–180°C) and light (office lighting–direct sunlight).

Moreover, they found that marketed canola oil tends to be oxidised by light around room temperature. This suggests that canola oil should be packaged in dark containers to extend shelf life by reducing light exposure. Another method to reduce oxidation could be to add antioxidants such as carotenoids that trap oxygen before it interacts with the oil.

The new method enables a more detailed quantitative analysis of oxidised edible oil compared to other existing methods. The researchers suggest in their paper recently published in the journal npj Science of Food that this approach would be valuable in understanding oil and food oxidation processes, and the development of preventive methods against food deterioration.

Detailed quantitative analysis of oxidised canola oil was performed using high performance liquid chromatography (HPLC) combined with tandem mass spectrometry (MS/MS), providing valuable insight for preserving the quality of edible oil.
Alkaline phosphatase testing system

Hygiena’s ZymoSnap ALP is an alkaline phosphatase testing system designed to verify pasteurisation efficiency in short shelf life dairy products within just five minutes. The testing system has been specifically developed to offer reliable, definitive and repeatable results, even at low levels (25–100 mU/L), ensuring confidence in results. Featuring an all-in-one design and requiring only minimal equipment, the system is simple to use without specialist knowledge or testing facilities.

The testing system has been designed for ease of use and high performance, as well as time and cost savings compared with conventional ALP testing methods. For many years, the industry has relied on systems that require high capital and running cost, unstable reagents and positive control leading to wastage and the need for glassware. The product overcomes these challenges offering convenient disposable devices with a long shelf life. It enables testing to be performed at limits well below the globally recognised regulatory level of 350 mU/L. Utilising the company’s patented snap-valve technology, the testing system provides sensitive and reproducible results, while allowing users to meet their sustainability objectives by being a 100% recyclable test device. The Positive Control Kit provides a reference point at the regulatory limit of liquid milk and validation of other dairy products.

The system enables tests to be carried out rapidly allowing for an immediate pass/fail assessment and trend analysis.

The product is compatible with the company’s multifunctional EnSURE monitoring system, a high-sensitivity luminometer used to detect various indicators and bacteria such as coliform, *E. coli* and Enterobacteriaceae. SureTrend software enables instruments to be programmed and results to be easily analysed and presented.

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Cloud-based calibration certificate generation software

Beamex has introduced a free-of-charge, cloud-based calibration certificate generation software called LOGiCAL. It was developed to offer easy-to-use, modern, cloud-based software for documenting calibration results.

In the process industry, most calibrations need to be documented in a calibration certificate. Many sites manually document calibrations using paper and pen, making it an inefficient process that is prone to error.

The software reads the calibration results from the company’s documenting calibrators, such as the Beamex MC6 or Beamex MC4, and hence does not store any critical data in the cloud. When the user performs calibrations using these calibrators, they automatically store the calibration results in their memory. The software can read these results and convert them into a PDF calibration certificate that users can either store or print.

The product’s cloud communicates with the calibrators using a web service technology, meaning that the calibration certificate can be generated using any device connected to the internet and a web browser, given that the calibrator is connected to the computer and running the software. It is compatible with most browsers, such as Chrome, Internet Explorer or Safari.

Users will need to have a Beamex MC6 or Beamex MC4 calibrator with the Documenting Calibrator option to utilise the software.

The initial use of the product will be available at no cost while further capabilities will become available as chargeable options.

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Fatty acid visual test strips

Deep frying involves very high temperatures, which causes fats and oils to degrade over time. When sufficient degradation has occurred, the quality of the fried food will be affected. It is therefore necessary to determine when the oil needs to be changed. Changing too early would involve extra costs. Changing too late could result in inferior product.

Free fatty acids are one of the major by-products of oil decomposition. Determining the level of free fatty acids in the oil assists with working out if it needs to be changed or not.

MQuant Free Fatty Acids visual test strips can indicate the quality of frying oil in as little as 30 s. The test strips are simply dipped into the oil, and results are read visually by colour change. No laboratory, equipment, sample preparation or special training is required, which allows food processors of all sizes to accurately and confidently make decisions about their frying oil quality.

MQuant Free Fatty Acid indicator strips are available now from AMSL Scientific.

Australasian Medical & Scientific Ltd
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**Portable thickness gauge**

The Olympus Magna-Mike 8600 portable thickness gauge is suitable for quality control testing of plastic and glass packaging material from as little as 0.001 mm up to 25.4 mm but can be extended to other non-ferrous products such as aluminium, paper, wood and foam containers or detecting air bag tear seams.

Simple to operate, the gauge comprises two main components — a sensor and a test target, which can be a ball or wire. The test target is inserted into the bottle and the sensor emits a small magnetic field that induces a voltage in the target, taking advantage of the Hall effect.

Variations in material thickness influence the induced voltage, which the sensor records in real time. The instrument’s display provides easy-to-read data as the sensor moves along the packaging material giving minimums, maximums and deviations in thickness.

It is available in straight, right-angle and low-profile articulating wear cap tips, and a range of target ball or wire sizes, to accommodate a range of thicknesses and test piece geometries. The sensor tip wear cap is fully replaceable — once worn out it can be interchanged without replacing the entire probe.

The VGA display utilises a data logger to store measurements which can be saved and shared using RS232 or USB outputs or export Excel spreadsheets via a microSD card.

*Olympus Australia Pty Ltd*

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**Temperature data logger**

Cooper-Atkins’ TravAlert Plus Data Logger Kit 23900 is a temperature recording device. It includes two rugged, high-precision, high-temperature data loggers that are built for use within autoclaves and harsh environments. The data logger is simple to operate and provides accurate records for generating custom reports for HACCP compliance.

The data loggers are designed for a wide range of food and meat processing applications. Loggers are made from food-grade stainless steel, can withstand temperatures of up to 140°C and are completely submersible, making them suitable to validate cooking, smoking or pasteurisation processes.

Applications include: cooking and smoking, pasteurisation processes, roasting ovens, lobster boiling and equipment validation/profiling.

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How to detect fake liquors

High-quality products are what builds consumer trust and differentiates brands from the competition, but what happens when quality assurance is compromised?

Liquors in particular have been a popular product to alter, water down and sell on for a profit. Not only does this cause a financial loss for consumers, the added contaminants can also lead to health problems. According to ACS Sensors, scientists may have engineered a solution in the form of a portable, disposable sensor that can detect fake or altered liquors.

Contaminated alcohol has been reported as the cause of hundreds of deaths in countries such as Indonesia, Mexico and Russia. For example, a report by the Centre for Indonesian Policy Studies (CIPS) showed there were 487 deaths from illegal alcohol poisoning in Indonesia in 2013–2016 alone, which marks a 226% increase from 2008–2012.

Some of the methods used to make a profit include diluting down liquor with harmful chemicals such as antifreeze, or home brewing liquor and masquerading it as official brands using packaging. However, altered or contaminated alcohol is often difficult to detect, meaning it can affect any person at any point.

Kenneth S Suslick and Zheng Li from the University of Illinois at Urbana-Champaign aimed to tackle this problem and allow consumers to ensure they were not exposed to dangerous or tainted products. They created a device with 36 different dyes that, when exposed to particular components in liquor, would change colour.

The liquor vapours are partially oxidised as they are pumped over the sensor, and the handheld image analyser detects the different colours. The device can successfully identify liquor products based on vapour analysis within two minutes.

Scientists identified 14 liquor brands — including scotch, bourbon and rye whiskies, brandy and vodka — as well as their alcoholic content, with over 99% accuracy. They also established which alcohol had been diluted, even by a small margin (1%).

The scientists concluded that the sensor is a promising development towards ensuring the quality of liquor and other alcoholic drinks, and the safety of consumers.
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