

November/December 2018
Vol.26 No.4

what's new in **Food** technology & manufacturing

IS FISH FARMING THE FUTURE?

PP100007395

Fast information for food and beverage processors



Tsubaki is a pioneer in industry, being the first to develop a patented roller chain that uses special oil impregnated bushes.

Since first being introduced in 1988, Lambda Chain has gained an outstanding reputation in the Food and Beverage industry. Lambda is capable of meeting a wide range of customer needs for long life in lubrication free environments. This results in reduced overall long term costs. Lambda chain uses NSF-H1 lubricant so its safe to use on food equipment.



Tsubaki Solutions for the Food and Beverage Industry



100th Anniversary Model

TSUBAKI G8 SERIES



The rebirth of the drive chain,
with improved quality and performance.



NEPTUNE™ CHAIN

SURFACE TREATED CORROSION RESISTANT CHAIN

The Tsubaki Neptune™ Series is a superior carbon steel chain that is ideal to use in food and beverage applications that are subject to alkaline cleaning and wet environments.

A special treatment process is used that does not affect chain strength (part hardness). Neptune™ chains have the same tensile strength and allowable load as standard roller chains.

Neptune™ chains use no harmful hexavalent chromium in their corrosion resistant surface treatment. Neptune™ chains are RoHS compliant.

Manufacturing chain with a substantially longer wear-life serves the environment: less frequent chain replacement results in reduced consumption of raw materials and energy and reduced CO₂ emission. Neptune™ chain is a true eco-friendly product.



tsubaki.com.au

T: +61 (0) 2 9704 2500 • E: sales@tsubaki.com.au

"Lambda" is a registered trade mark of U.S. Tsubaki Holdings, Inc in the United States.





6

food for thought

- 4 Whackos, the disgruntled, copycats and extortionists



11

meat, poultry, seafood

- 13 Aquafarming and food security
- 16 Costco to process 100 million chickens a year
- 20 The US's 'clean meat' regulation war
- 26 Adding value to your meat, seafood and poultry production
- 28 What's going on in the Australian seafood industry



29

prepared food

- 34 Well, there goes that theory — plate diameter and portion size perception
- 36 Let's get personal
- 38 Robotic kitchen working in Boston restaurant



READ ONLINE!

This issue is available to read and download at www.foodprocessing.com.au/magazine



39

packaging & labelling

- 42 The re-emergence of the self-heating can
- 44 5 characteristics of a highly effective label



57

bulk handling

- 58 Winery increased productivity with bottling line upgrade
- 61 The secret life of boilers



67

processing

- 72 The benefits of saving energy for manufacturers
- 76 The real energy consumption of vacuum pumps
- 78 If you are using polymer in your wastewater treatment process, you may want to read this
- 81 Going frozen — good for retailers and potential for bakers
- 82 How craft brewers can scale up
- 84 Honey fraud creates a sticky situation
- 86 Picking pecks of peppers by robot
- 90 Technology for healthier hot chips

Whackos, the disgruntled, copycats and extortionists

Janette Woodhouse



The 'needles in fruit' crisis shows exactly how vulnerable we all are to whackos, the disgruntled, copycats and extortionists.

It is well-nigh impossible to buy a metal detector or X-ray inspection equipment at the moment as every produce company has scrambled to ensure that it is doing everything possible to protect its products. But how successful will this be? Sadly, most of the incidents seem to be carried out by copycats fixated on enjoying vicarious notoriety, who perpetrate their nefarious acts at the retail level. No amount of vigilance at the grower/packer level will prevent whackos in supermarkets or their own homes pushing a needle into a piece of fruit.

The media isn't innocent

If these crimes weren't covered so sensationally and extensively by the media the copycats would be less likely to go into action. But equally, fear of seeing consumers hurt or of contravening their insurance forces everyone to want to use the media to alert the community of the issue.

Back in the 1970s, in a more innocent time, bank robberies were rampant and the news media regularly included the sum of money stolen in their reporting. This became almost like advertising for potential bank robbers as it showed just how much money could be reaped in a single offence. The banks and the media came to an agreement that the sum stolen would not be reported and the bank robberies decreased in frequency.

Sabotaged food is actually pretty rare. Some examples include:

- Girl Scout Cookies (1984): Needles and other foreign objects were found in boxes of Girl Scout Cookies cookies in at least 17 states in the US, resulting in reports of pierced gums and injured lips.
- Jell-o pudding (2010): A US couple made and ate the pudding then replaced pudding powder with a mixture of sand and salt and returned the package to the grocery store for a refund.
- Minced meat (2003): A supermarket in Grand Rapids, Michigan, recalled 1700 pounds of ground beef after 111 people fell ill. Randy Jay Bertram, an employee at the store, had mixed insecticide into the meat in an attempt to get his supervisor into trouble.

Baby food is particularly popular:

- In 1989, slivers of glass, razor blades, pins and caustic soda were found in H.J. Heinz, and Cow & Gate baby foods. The scare began with a blackmailer trying to extort \$1.7 million from Heinz, and then escalated as copycats capitalised on the initial report.
- In 2004, two jars of baby food were found to be contaminated with ground castor beans, which contain trace amounts of the poison ricin.

Australia has not been immune

- In 1985, Masterfoods recalled tens of thousands of Mars and Snickers bars following extortion threats.
- In 1997, a number of poisoned Arnott's biscuits were sent to the company in an extortion bid. The total cost of the product recall has been estimated at \$22 million.
- Sizzler restaurants (2006): A diner at a Queensland Sizzler restaurant discovered pellets of rat poison in her soup, and at another location, the same pellets were found in some pasta sauce. Shortly thereafter, all Sizzler locations across Australia suspended salad bar service. The culprit, who issued no demands or threats of extortion, turned out to be a mentally unstable woman from Brisbane. The case prompted Queensland lawmakers to draft a law requiring that all food establishments report suspected tampering immediately, or face a fine of \$15,000.

Do we have to go 'tamper evident'?

In a world vehemently against excessive packaging for environmental reasons it would be hard to sell the need for all produce to be packed in tamper-evident packaging. OK, the packaging equipment manufacturers and packaging consumable manufacturers would be overjoyed but consumers would be against the amount of packaging and resent having to pay for it as well.

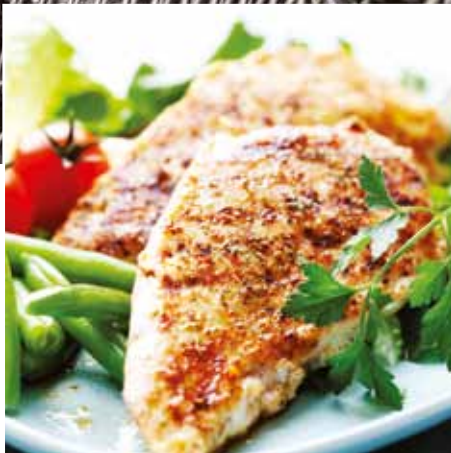
I guess we just have to let everything settle down, maintain vigilance, ensure that produce leaving your facility has not been tampered with, beware of disgruntled staff, be especially cautious if your business has organised crime connections either now or in its past, keep excellent records in the event of a recall, keep communication lines open with the relevant authorities...



HEAT AND CONTROL

Innovation **In Action**

Complete turnkey solutions for Prepared Food Systems



Heat and Control offers the latest value added technology to cook, coat, brand and sear a wide range of meat, seafood and poultry products. Our fryers, ovens, branders, searers and breading/batter applications can produce, prepare and cook the highest quality chicken, beef, pork, and fish products, using the most efficient processing and packing technology.

With manufacturing facilities and sales offices worldwide, Heat and Control supports manufacturers with experience, expertise and resources to develop the most value driven and efficient solutions for any food production challenge.

Put our innovation to action in your plant today!

**Preparation | Cooking | Coating + Conveying | Inspection | Weighing + Packaging |
Controls + Information**

www.heatandcontrol.com | info@heatandcontrol.com



Food FOR thought



Innovia Films has new branding

Innovia Films, a BOPP film manufacturer, has undergone a rebrand to make it align more closely to CCL Industries' corporate styling.

After CCL acquired Treofan Americas in 2017, the company announced it would trade under the name of Innovia Films and rebrand to unify the new larger company.


Günther Birkner, President of CCL Food & Beverage and Healthcare & Specialty, and Innovia Films, stated: "We are very happy with the new design. Working together with the agency they have managed to capture the essence of what Innovia Films does (flexible films) while transitioning the brand closer to CCL's. This achieves the stated objectives and gives the larger films segment the opportunity to harmonise its global identity under a refreshed contemporary brand."

Innovia Films will begin the transition to the new logo with immediate effect with its launch at Labelexpo Americas later this month.

How to find a needle in a strawberry

Needles were first reported in strawberries in Queensland in the second week of September, but they've since been found in all Australian states, New Zealand and Singapore, in a variety of different brands. There are also isolated cases of needles found in bananas and apples.

This crisis is resulting in Eriez experiencing a rise in demand for its metal detection product line. The Xtreme MD is capable of detecting a sewing needle inserted into a strawberry and alerts users when a metal contaminant is found.



In its base package, the metal detector offers a 175 mm, easy-to-use touchscreen interface, multiple pre-programmed languages, easy set-up and reporting, multiple USB and interface ports, remote access and the standard high-pressure washdown design.

The company has units of various heights and widths available for shipment and even offers 'try and buys' on existing stock or quick shipments of detectors from its global headquarters.



JBT increases presence in fresh-cut equipment market

Increased consumer demand for ready-to-eat fresh produce has resulted in a rapid expansion in the fresh-cut equipment market.

Not to be left behind, JBT Corporation has purchased Netherlands-based FTNON, a leading equipment specialist for the fresh produce, ready meal and pet food sectors, for \$50.5 million (before customary post-closing adjustments).

With a presence in more than 60 countries, FTNON provides a range of state-of-the-art technology for food processors including pre-cleaning, produce preparation and mixing systems.

Tom Giacomini, JBT's Chairman, President and Chief Executive Officer, said: "FTNON provides us entry into the fresh-cut equipment market, tapping the rapidly expanding demand for ready-to-eat fresh produce."

"It also brings robotic technology for cutting, coring and peeling fruits and vegetables — a valuable capability that reduces customers' labour requirements. As part of JBT, we foresee opportunities to expand FTNON's global penetration, grow its aftermarket business and enhance profitability."



Plant-based innovation flourishing

Between 2013 and 2017 there was a 62% increase in plant-based new product claims.

This popularity of plant-derived ingredients and products is likely being driven by growing consumer interest in health, sustainability and ethics according to Innova Market Insights. Plant proteins, active botanicals, sweeteners, herbs, seasonings and colouring foodstuffs are all showing growth.

“The dairy alternatives market has been a particular beneficiary of this trend with the growing availability and promotion of plant-based options to traditional dairy lines, specifically milk beverages and cultured products such as yoghurt, frozen desserts and ice-cream,” said Director of Innovation at Innova Market Insights, Lu Ann Williams.

The dairy alternatives category was largely pioneered by and continues to be led by beverages. Global sales of dairy alternative drinks are set to reach US\$16.3bn in 2018 and they accounted for over 8% of global dairy launches recorded by Innova Market Insights in 2017, up from 7% over 2016. Actual global launches have more than doubled over a five-year period.

Spoonable non-dairy yoghurt has also seen strongly rising levels of interest, but from a smaller base, with a 48% CAGR for the 2013–2017 period taking its share of dairy launches from less than 0.5% in 2012 to 1.5% in 2017. Consumer research is showing one in three US consumers have increased their consumption of plant-based milk/ yoghurt in the two years to the end of 2017.

The dairy alternatives have extended beyond the traditional soy plant-based ingredients to include products based on rice, oats, barley, almonds, hazelnuts, cashews, walnuts, macadamias, coconut lupin, hemp and flaxseed.

In the meat substitutes market, global sales are set to grow to US\$4.2bn by 2022. The range of ingredients used for meat substitutes includes vegetables and grains, as well as traditional sources such as soy and specialist manufactured brands such as Quorn and Vales.

Gravitation towards plant-based diets in general, along with interest in vegan, vegetarian and flexitarian lifestyles and concerns over animal welfare, have together served to increase interest and new product development has subsequently seen an 11% CAGR for the 2013–2017 period. Research also indicates that four in ten US consumers increased their consumption of meat substitutes/ alternatives during 2017.

Fonterra takes big slice of pizza market

Fonterra’s Clandeboyne site has ramped up its cheese production with its third mozzarella line. This makes the Timaru region the Southern Hemisphere’s largest producer of natural mozzarella cheese, and will enable it to make enough cheese for over half a billion pizzas a year.

The dairy cooperative already tops around 50% of the pizzas in China, but the plant will help the company further expand its market presence. An increasing demand for Western food doubled pizza sales in China 2010–15, and it is expected that Asia’s cheese consumption will reach 1.67 billion tonnes by 2020.

Fonterra GM Marketing Global Foodservice Susan Cassidy said, “The new plant will double the site’s production of mozzarella — the world’s most popular variety of cheese, topping more than 80% of pizzas in Australia, China, South East Asia and the Middle East. We’re excited to have a slice of this market and are looking forward to that slice growing.”

The \$240 million plant was built in under two years, and helps the company reduce the time it takes to produce cheese from months down to hours.

“We’re focused on getting more value from every drop of our farmers’ milk. With the opening of this new mozzarella plant and recent expansion of our Darfield site, we’re able to produce even more higher returning products. That’s good news for our farmers and the communities they live in,” said Robert Spurway, Fonterra Chief Operating Officer Global Operations.

It promotes the Timaru district as a major food hub in New Zealand and a growing exporter to the rest of the world, according to Mayor Damon Odey. The plant has also opened up a number of new job opportunities, with Fonterra announcing in February that 111 workers will work on the site’s third mozzarella plant.

“More and more people are seeing the appeal of provincial New Zealand, and investments like this underline that people can move to Timaru District and get unmatched job, housing and lifestyle options,” said Odey.



Food FOR thought

Start-ups to tackle food loss in Asia

Rabobank is launching the Food Loss Challenge Asia, which encourages start-ups to present their tech-based solutions to reduce food loss.

The world population is expected to reach 9 billion people by 2050, but there is a growing concern that global food production will not be able to meet this demand. More than a third of all food that is produced for human consumption is lost before it reaches the consumer, resulting in 1.3 billion tonnes of food every year.

The Food Loss Challenge Asia initiative aims to address these issues and facilitate discussions between solutions providers, food and agriculture corporates, and smallholder farmers.

Rabobank Asia CEO Diane Boogaard said, "One of our priorities is to leverage on our food and agri knowledge and expertise, and advise our clients to adopt more sustainable food production. This will enable a more efficient use of raw materials and will improve the stability of food supply and efficiency of the food value chain."

The challenge focuses particularly on reducing food loss from farm to market in Asia, so they are looking for ag-tech solutions for the pre-consumption phase. This includes improving agricultural production and farm management, quality control, market access, logistics, packaging and preservation, and processing. Rabobank Foundation Head of Innovations Albert Boogaard pinpointed potential opportunities at the farmer's level.

"While productivity is increasing, the supporting post-harvest infrastructure has not kept pace and a substantial part of produce is lost even before the harvest takes place. Since the vast majority of farmers in Asia are smallholders, we are excited to be involved in this challenge as the impact for our target group can be huge."

Diane Boogaard said the challenge provides an exciting platform for product-ready start-ups to access mentorship and connections to grow their businesses.

The deadline for submissions is Wednesday, 19 September 2018, 23:59 hours Singapore time. The top 20 shortlisted teams will be invited to attend the Pitch Day in Singapore on 26 October 2018, and the final five will go to the Finale at Rabobank Asia's Food & Agribusiness Advisory Board meeting.



Boost for specialty ingredients in Asia-Pacific

Ingredion has announced US\$60 million of planned investments to grow its specialty food ingredients business in Asia-Pacific.

The company's specialty capital investment projects include:

- a 20% expansion of its tapioca modified food starch capacity in Thailand along with state-of-the-art upgrades to its wastewater treatment facilities;
- more than doubling the capacity and increasing the regulatory standards of its specialty rice starch and rice flour business in Thailand, which it acquired in 2017;
- completing a 30% expansion of its modified food starch capacity and further improving its corn wet milling capacity in China.

"These strategic investments are designed to accelerate our growth and strengthen our manufacturing network in Asia to meet increased consumer demand," said Jim Zallie, Ingredion President and Chief Executive Officer. "Growing our global specialties business to \$2 billion in annual sales by 2022 is an integral part of our strategy to deliver long-term profitable growth and enhance shareholder value."

"We see growing demand for both clean label ingredients and specialty starch-based texturisers throughout the region," said Valdirene Licht, Ingredion Senior Vice President and President, Asia-Pacific.

"The investments will allow us to continue to evolve with our customers to provide innovative, on-trend solutions. Our local team has extensive applications and formulating expertise combined with the broadest and deepest portfolio of waxy corn and tapioca based specialty starches and a successful track record of supporting customers in the region for more than three decades. We're now excited to be building our on-trend rice ingredient business and we will continue to make further investments in Asia that benefit our customers globally."

"The actions being taken in Asia are consistent with our global strategy to invest in our specialty starch franchise around the world and expand our capabilities to innovate and offer more customised solutions for our customers around the world," Zallie added.

Ingredion operates four manufacturing facilities in Thailand and three manufacturing facilities in China.

The new ZR VSD+ is setting the standard in energy efficiency

Building on 50+ years experience in oil-free air compressors, we integrated new technology to improve efficiency by a further 15%. We then went a step further and introduced an option for integrated dryer that will deliver -40 C PDP with just 0.2 kW input energy.

Atlas Copco Compressors Australia
1800 023 469
www.atlascopco.com.au

Sustainable Productivity

Atlas Copco



Food FOR thought

Floating dairy farm in Rotterdam

The Dutch city of Rotterdam will soon be home to a floating farm that will supply the city with milk and educate consumers about the value of agriculture. The offshore dairy farm, built by Beladon BV, will house 40 cows producing 800 litres of milk a day.

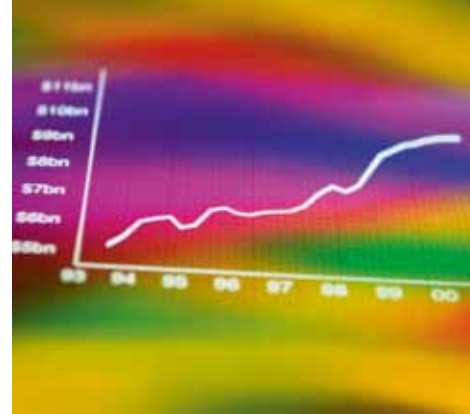
With less arable land and a growing population, which is expected to reach 2–3 billion by 2050, Beladon recognised it is difficult to keep up with the demand for dairy products. The logistics train is also getting longer, with food travelling further to get to its destination driving up transport costs and pollution. The transparent farm aims to reduce the gap between growing cities and agriculture, helping cities produce more sustainable food in closer proximity.

Animal welfare remains a top concern for the company. It explained the farm is secured in Rotterdam's Merwe4Haven and supposedly has no effect on the cows, with a maximum swing of only a few millimetres.

"Even in extreme weather conditions, the cows will not feel any instability on the platform. Seasickness will therefore not be in question," the Floating Farm website explained.

Food distribution, milking and manure collection is done via a robot, and the cows can graze on the mainland. The farm contributes to a circular food program, in which spent grain from local breweries may be used as fodder, urine is used to fertilise plants, manure generates energy, and milk and yoghurt are sold to local businesses and consumers.

Production is expected to begin this year, and there is a possibility a chicken farm may be developed in the future.



7% growth forecast for food processing equipment market

A compound annual growth rate of around 7.0% between 2017 and 2024 for the food processing equipment market is good news for food processors as it indicates growing demand for processed foods.

The Zion Market Research Global Food Processing Equipment report states that this market, worth around AU\$72 billion in 2017, will increase in value to roughly AU\$113 billion by 2024. The report covers the food processing equipment market by equipment type (mixers, depositors, refrigeration, slicers and dicers, thermal equipment, extruding machines and others) as well as by application (dairy sector, fisheries, meat and poultry, fruits and vegetables, bakery and confectionery) and by regions (North America, Europe, Asia Pacific and rest of world). The increase in demand for dairy, meat and poultry and seafood will fuel the increased demand for equipment.

The report also includes detailed profiles of key players such as A&B Process Systems, Scherjon, SPX, Maschinenbau Rud Baader, Marlen International, Anko Food Machine Company, Paul Mueller and Bettcher Industries.



2018's best new products revealed

Fine Food Australia, held 10–13 September in Melbourne, revealed the best new products released in the food industry over the past 12 months. Over 400 entries were judged in the 2018 Best New Product Awards, ranging from an Acai bowl mix to a slow release system designed to control airborne bacteria, mould and pathogens.

Minnie Constan, host of the awards and Event Director, said, "This year we've seen key trends such as health, sustainability and technology — including robotics — reflected in the new products that were entered. Although there can only be a handful of winners, these awards are a great showcase of all that is groundbreaking and innovative in our industry."

Five products were singled out as the winners:

- Best New Retail Product: Vegetarian Shiitake Dumpling & Prawn Hargow by Tasman Foods
- Best New Hospitality Equipment Product: batch freezer ShowLab by Florentia
- Best New Bakery Product: Nuovair Professional Blast Chillers by La Nuovagel
- Best New Australian Made Product: Hum Honey Cold Fusion by Hum Honey
- Best New Foodservice Product: Native Fruit Extracts by Australian Superfood Co

Runners up across all categories included: AmazeBalls cheese by Ashgrove Tasmanian Farm, Anchor UHT Whipping Cream 12 x 1 L by Fonterra Foodservice, UC-M I Excellence glasswasher by Winterhalter, Salva Iverpan FCX20 Retarder by Vanrooy Machinery and fermented milk Good Seed Coconut Kefir by The Good Seed.

what's new in
Food
technology & manufacturing

meat, poultry, seafood



SKINFRESH by MECAPACK

vacuum skin packaging for premium
product presentation and optimum shelf life


LINCO[®]
F O O D S Y S T E M S

Visit our new website
www.linco.com.au



Find out how we can help you process
and package your products



Vacuum skin packaging

SKINFRESH packs made on MECAPACK thermoformers and tray sealers are suitable for premium products in the meat, poultry, fish, seafood, ready meals and dairy sectors. The packs envelop the product like an outer skin with the top film forming around the whole product and gently but firmly holding it in place on the tray. The film is sealed over the whole tray area, not just on the sealing edges. When the tray is vacuum packed, the film sits tightly against the product.

It offers: better presentation of the product; products can be presented vertically on shelves; longer shelf life; products retain moisture and no liquid is in the packs, removing the need for soaker pads; maturation in packs or red meats; easy-peel corner opening tabs can be included in the pack design; and microwave reheating is possible without holes or valves in the pack.

It can be used on standard thermoformers and tray sealers which can also work with standard sealing and MAP operation, there is no need for a specialised machine, and there is a quick-change format on all machines between sealing processes with MECAPACK ERGONOMICS kits.

Your Products Our Expertise

Red Meat ~ Seafood ~ Produce ~ Smallgoods ~ Ready Meals ~ Pet Food
Poultry ~ Dairy ~ Bakery ~ Wet Wipes ~ Confectionery ~ Non-Food



Australia wide sales and service support:

Tel: 1300 4 LINCO or +61 2 9624 2055 (outside Australia)

Web: www.linco.com.au Email: sales@linco.com.au

Aquafarming and food security

Jenny Seifert

MEAT, POULTRY, SEAFOOD

More seafood comes from aquaculture than is wild caught, but the industry has to address the effects of climate change if it is to continue to grow and contribute to global food security.

Many of the world's future farmers will likely be farming oceans, as aquaculture — the cultivation of fish and other aquatic species — continues its expansion as the fastest growing food sector. New research shows that in order for this next generation of farmers to thrive, there is an urgent need to prepare them for climate change.

Researchers from the National Center for Ecological Analysis and Synthesis (NCEAS) at UC Santa Barbara have published the first comprehensive analysis of how climate change could affect marine aquaculture production, specifically of finfish and bivalves (such as oysters), around the world. Published in the journal *Nature Ecology and Evolution*, their study, 'Global change in marine aquaculture production potential under climate change', reveals that climate change is not only a threat to global production in the future, but also is affecting producers today.

"Climate change is impacting marine aquatic farmers now, and it's likely to get worse for most of the world if we don't take mitigating measures," said lead author Halley Froehlich, a postdoctoral researcher at NCEAS.

Their analysis reveals an important and previously missing piece of the puzzle in understanding how climate change will affect the future of global food security. It provides an essential first step towards helping ocean farmers and coastal countries prepare for the coming changes and to ensure sustainable seafood production worldwide.

According to the newest State of World Fisheries and Aquaculture report by the United Nations' Food and Agriculture Organization (FAO), aquaculture's contribution to global seafood production now surpasses that of wild-caught fisheries. The sector is gaining increasing attention globally as important for achieving not just food security but also Sustainable Development Goals.

"There's a lot of push for 'blue growth' in aquaculture in both developing and developed regions, but less effort has gone into how to develop adaptive measures under climate change, mostly because we do not have a good sense of the level or location of impacts," said Froehlich. "Our study begins to shed light on these unknowns."

The authors found that coastal countries should expect their overall potential for aquaculture production to decline



over time, as water temperatures rise and oceans undergo other shifts due to a changing climate.

What is more, the region that currently accounts for 90% of the world's total production — Indo-Pacific countries such as China, Bangladesh and Indonesia — will likely feel the biggest impacts. Without intervention, by mid-century declines in finfish could be as high as 30% in some areas, and there is even the risk of a complete loss of suitable waters for bivalves.

Such declines would harm not only the global availability of farmed seafood but also the lives of Indo-Pacific people, who depend more heavily on seafood for sustenance and farming for livelihoods than the rest of the world.

"The issue is less about whether or not we will be able to grow enough fish in the ocean under a changing climate globally — we can — and instead about who wins and who loses, and by how much," said co-author Ben Halpern, Director of NCEAS and a professor at UCSB. "Climate change will likely have highly inequitable consequences among ocean farmers."

There will be some 'winning' patches of ocean, however, where aquaculture production could fare well or better under climate change. For example, rising water temperatures will make sub-polar waters, such as those near Norway, hospitable for finfish farming.

Even so, the study indicates there are no absolute winners or losers among countries that are farming or could farm the

“Aquatic farmers are on the frontlines of climate change. Some are already seeing the effects and know they need to be prepared for what's to come.”

”

ocean. Rather, production levels worldwide will be patchy due to variable ocean conditions, even within the same country.

The authors looked specifically at three shifting ocean conditions that are among the most important for supporting aquaculture production, as well as with sufficient scientific information available to analyse: warming sea surface temperatures, ocean acidification and changes in algae, a primary food source for oysters and other bivalves.

The patchiness in future production potential will matter when it comes to preparing ocean farmers for climate change or mitigating its impacts — and is part of what gives Froehlich hope.

One strategy to help ocean farmers adapt will be to move or place farms in more favourable ocean patches, a measure the FAO also highlighted in another recent report. According to Froehlich, good planning now could help marine aquaculture adapt to the changing conditions while enabling ocean planners to balance aquatic farming with the many other uses of oceans, such as wind energy and conservation.

"The industry is still in its growing phase, and that allows some flexibility," said Froehlich.

This flexibility is particularly advantageous for countries with large Exclusive Economic Zones (EEZs), such as the United States or Australia, since having more ocean space to move farms could alleviate much of the threat. Already, Froehlich said, there are reports of salmon farmers in Australia relocating their pens because waters are getting too warm, and US oyster farmers are moving their hatcheries away from the acidified waters of the Pacific Northwest.

"Aquatic farmers are on the frontlines of climate change. Some are already seeing the effects and know they need to be prepared for what's to come. But that's going to take planning by not only the farmers, but governments too," emphasised Froehlich.

While countries with more winning patches may be able to pick up the slack where others fall short, local planning will be essential to support small-scale farmers, the current majority of producers, who lease ocean plots or specialise in a particular species, as it may be harder for them to move their farms or switch species.

According to Halpern, their results offer a blueprint for long-term planning for ocean farming.

"Governments provide permits and leases for growing different species, and setting those locations now with the future in mind will help avoid putting things in riskier places," he said. "If you were a land farmer, would you want to buy property that will be plagued by drought in 15 years? I doubt it. The same thinking should be applied to ocean farming."





BACKSAVER

Tel no: +61 (02) 9969 0370

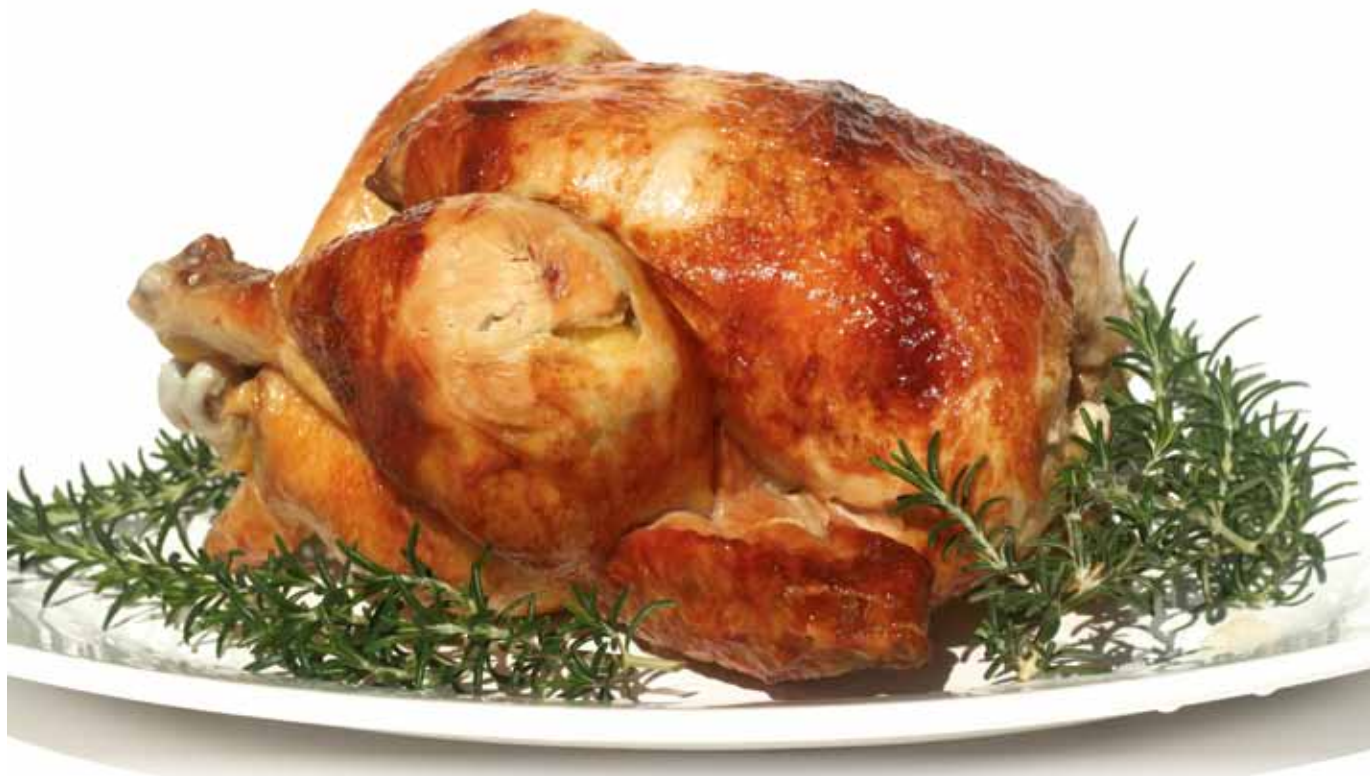
Mike Jackson: jacko@globalms.com.au



See the VIDEO @

www.backsaver.com.au

Costco to process 100 million chooks a year



©stock.adobe.com/au/JAVA

Costco is an interesting beast where shoppers have to pay \$60 per year for the privilege of shopping in their wholesale stores. It is vital for the business that people choose to become members and regularly shop in their stores.

Enter the inducement — the rotisserie chicken.

Since 2010, Costco in the US has maintained the price on its rotisserie chickens at US\$4.99, even though it loses money on every chicken bought. The rationale is that shoppers come in for a chicken and leave with a trolley full of groceries and miscellanea.

Since 2010, Costco's rotisserie chicken sales have grown by more than 8% annually — three times the growth rate of total US poultry consumption. Reportedly, Costco averages 157,000 rotisserie chickens sales every day. It sold 87 million last year, which is significantly higher than the 60 million it sold in 2013 and a lot of trolley loads of sales.

Costco has minimised its losses on the chickens through the energy savings generated by using bigger ovens and by using less expensive packaging. Now the company is hoping to generate \$0.10 to \$0.35 savings per bird by processing its own chickens. In September 2019, Costco is slated to open a new chicken complex in Dodge County, Nebraska.

Three primary drivers have led Costco to bring its poultry supply in-house:

- surety of supply,
- visibility up the chain and
- cost control.

The Nebraska complex will be able to process 100 million birds per year with one-third of the rotisserie program being produced in-house. The facility will also process chicken parts.

The factory would create roughly 1100 new jobs and invest \$180 million in the region, according to a press release from the Greater Fremont Development Council, a local public/private partnership.

Costco's move marks the first time a US retailer has integrated its meat supply to the farm level and taken on the risks associated with animal husbandry, including feeding, animal welfare, disease prevention and harvesting.

If Costco's foray into production and processing is successful, it could be the model for other food retailers and foodservice companies to vertically integrate in other protein sectors. However, Will Sawyer, lead animal protein economist at CoBank, has suggested this approach presents significant risks and challenges to other US meat sectors, particularly beef and pork.

"Food retailers will need to evaluate a number of risks in order to justify the investment of time and capital required to build their own production capacity," said Sawyer. "Beef packers have historically yielded very tight margins, and with declining per capita beef consumption the sector would be unlikely to meet its return objectives. Pork processing brings the risk of very large exposure to export market risks. Additionally, retailers will need to consider food safety risks, negative profitability in production and whole animal utilisation to justify such investments."

Of the three major proteins, poultry is the most appealing for retailer integration. Opportunities for further integration in poultry will likely be focused in secondary and further processing rather than primary processing, Sawyer said.

If Costco's chicken production is successful, it will undoubtedly prompt questions across the agricultural supply chains and lead other food retailers and foodservice companies to re-examine their business models.



PREPARED FOR ANYTHING



**FILLING
PORTIONING
LINKING**



**SMOKING
STEAMING
BAKING
DRYING
RIPENING**



**INJECTING
TENDERIZING**



**MINCING
MIXING**



**SLICING
PORTIONING
SHAVING**



**DICING
STRIP CUTTING
SHREDDING**



**SAWING
PORTIONING**



CBS is a specialist supplier of innovative products from around the world. We strive to supply only the highest quality products to our customers ensuring the backup services to maintain the level of quality through the supply chain.

Our aim is to be your partner and understand your business, so together we can meet the ever growing challenge within the food processing business.

Our in depth knowledge of the food processing environment gives us the edge and is our real point of difference. Starting with processing techniques, through raw material/ingredients, machinery selection/installation, project management, product development, implementation and training.

Our core strength is within the meat processing industry - red meat, small goods and poultry, as well as the convenience foods, ready meals, fish and cheese industries.



MAJA derinding, defatting, membrane skinning, flake ice machines
ASTECH automatic bandsaw, portion cutting
KOLBE bandsaw, mixing/grinding, grinding
TREIF slicing, dicing, portion cutting
SCHRÖDER injecting, brine mixing, massaging
REX vacuum filling, auto linkers, mince lines, forming attachments
STEPHAN cutting, mixing, emulsifying
LORENZO BARROSO clippers
VAKONA vacuum, massaging, tumbling, mixing, marinating
REICH smoke houses, ovens, fermentation rooms, water cookers
BOSS vacuum packing, dip tanks, auto packing lines

CONTACT

CBS foodtech
 2/7 Jubilee Avenue
 Warriewood, NSW 2102
info@cbsfoodtech.com.au



The value of Australia's red meat industry

MEAT, POULTRY, SEAFOOD



Global red meat demand is projected to grow between 1–2%, and as the world's leading exporter of lamb, Australia is well positioned to capitalise on this growth.

The State of the Industry 2018 report, developed by Meat & Livestock Australia (MLA), looked at Australia's meat and livestock industry, including consumption, production, imports and exports. It highlighted the key economic and community significance of the industry, and its potential to grow in the future.

Australia is a key player in the global export market, with the report revealing it was the third-largest exporter of beef in 2017, the largest exporter of sheepmeat in 2017 and the largest exporter of goatmeat in 2016. Its sheepmeat exports are particularly positive considering it only represented 6% of the global sheep flock.

Australia also exported 867,056 live cattle, 1.9 million live sheep and 12,245 goats, which Independent Chair of the Red Meat Advisory Council Don Mackay said "represents around \$13.3 billion in export earnings".

Mackay noted the importance of the red meat industry in terms of the nation's workforce, employing 438,100 Australians directly and indirectly, supporting 82,500 businesses and generating \$65 billion in turnover.

"90% of these jobs are regionally and rurally based; and our combined workforce accounts for 4% of total industry employment in this country," he said.

The report stated that over the last two decades, total global consumption increased at an average rate of 2% per year for sheepmeat, 1% for beef, 4% for poultry and 2% for pork. There is a high demand both nationally and internationally, and Mackay explained, "What we don't export, we eat. Australians are eating three times as much beef and five times the global average of sheepmeat."

While all of these figures suggest the red meat industry remains strong in Australia, good policy that supports growth is needed in order for this success to continue. Investing in the nation's people and land, and opening up markets would be an important step, according to Mackay.

"Our industry requires \$600 billion in additional investment by 2050 according to ANZ; yet we are the fourth most limited country globally in terms of impediments to attracting foreign investment.

"National impediments to foreign investment in Australian agriculture have doubled since 2010.

"The industry is continuing to benefit from free trade agreements in major markets of Korea, Japan and China, but our annual negative impact value of technical barriers to trade remains at a gigantic \$3.4 billion per annum.

"Our industry has reduced emissions over a 10-year period by 45% and our industry has set a clear sustainability agenda through the Australian Beef Sustainability Framework, but we need state and federal government policy that rewards our farmers, feedlotters, retailers and manufacturers for their sustainability contributions to Australia," he explained.

With a chronic shortage of people, it is trying to encourage more workers by promoting the industry as an attractive place to work, investing in training and sponsoring overseas workers to fill local labour gaps.

"We call on both the Coalition Government and the Opposition to consider how they can help our industry be the most economically, ethically and environmentally robust industry so that we can continue to sustain and nourish Australia," Mackay concluded.

The annual report was launched by Minister for Agriculture and Water Resources David Littleproud at Australian Parliament House. 

Welcome
to the Future.

Product
Information



& Stock Availability

Create Lists



Manage
Inventory



View Order
History



Country of
Origin



& Product Specification

Manage
Budgets



Pay Invoices



Save Time



THE NEW ONLINE STORE
SHOP.BUNZL.COM.AU/BFPS



food processor supplies

Sydney: (02) 9737 2100 | Melbourne: (03) 8787 6800 | Brisbane: (07) 3906 5500 | Perth: (08) 9456 5656
Townsville: (07) 4729 3799 | Adelaide: (08) 8349 2800 | Hobart: (03) 6263 0850



The US's 'clean meat' regulation war

In the US, the US Food and Drug Administration (FDA) and the US Department of Agriculture (USDA) are preparing for war.

The war isn't with a hostile outside force but with each other as both federal agencies believe they should be the one to regulate high-tech, cell-cultured meat companies producing 'clean meat'.

This clean meat is meat grown in vitro from cell cultures instead of from slaughtered animals. It is a form of cellular agriculture that utilises many of the same tissue engineering techniques traditionally used in regenerative medicine. The lab-grown meat is made by extracting cells from an animal and prompting them to mature into muscle fibres and grow in a bioreactor. No products are commercially available yet, though several companies have indicated that their first generation of cultured meat will be available in the next 5 years.

As the products are so far unavailable their safety, composition, functionality and sensory properties are unknown to all but the creators. How comparable will the products be to conventionally slaughtered meat products?

Though production methods will vary by company, Paul Mozdziak, an expert in animal cell culture at North Carolina State University, expects many will isolate cells from a tissue biopsy of a living animal to establish cell banks — vials of starting material that can be thawed and multiplied in batches. Bacteria or viruses could sneak into the initial tissue sample, or into the cultured cells as they're transferred to successively larger quantities of culture medium, or when medium is added to prompt them to grow, he noted. And large-scale bioreactors must also be carefully sanitised. The materials used in cellular scaffolds — structures that support the muscle cells as they grow — must also be evaluated for safety.

Rhonda Miller, a meat scientist at Texas A&M University and often associated with the American Meat Science Association,


has pointed to several unanswered questions: Does cultured meat spoil at the same rate as conventional meat? Does it allow the same growth of potentially harmful microbes? Is its shelf life the same? Does it have the same nutritional qualities?

FDA or USDA?

Currently the FDA regulates some 80% of the food supply in the US, including most fish, produce and some specialty meats, while the USDA regulates most meat products and catfish.

The FDA already has expertise in judging the safety of foods that involve cultured cells including extracts of the algae spirulina and a fermented fungus used in Quorn. It seems that cell-cultured-meat start-ups generally favour having the FDA regulating policies and rules for food safety product labelling mainly because they fear the USDA's relationships with established meat groups could disadvantage the clean meat industry. There is already a strong push from the US Cattle-men's Association to prevent the clean meat industry even using the word meat.

However, many in the meat industry argue that clean meat should be held to the same safety and labelling standards applied to conventional meat — standards enforced by USDA. "If these companies wish their products to be marketed as meat ... production of these items should be regulated by the agency Congress chose when it enacted the Federal Meat Inspection Act," said Tiffany Lee, Director of Regulatory and Scientific Affairs at the North American Meat Institute in Washington, DC.

Which agency will end up being responsible for regulating the nascent clean meat industry? Only time will tell, but one thing is certain, improvements in transparency around methods of production, ingredients and consumer safety are needed. 

Seafood consumers don't trust sustainability claims

With sustainability becoming increasingly important in the food industry, the Marine Stewardship Council (MSC) has found consumers are confused about which claims they can trust and many have begun to prioritise price instead.

The MSC commissioned GlobeScan to carry out a survey, the second of its kind, of over 25,000 consumers in 22 countries to gauge global attitudes to seafood. It found that seafood consumers still place a high importance on sustainability, with 83% agreeing that we need to protect seafood for future generations.

While the study in 2016 found consumers were willing to pay more for sustainable food, this study reported their seafood purchase decisions were motivated more by price than sustainability, particularly men.

However, this global shift was not the case in countries such as Germany, Austria, China, Spain, the UK, Switzerland, Italy and Sweden, where consumers continued to place sustainability above price.

72% of seafood consumers agreed that in order to save the oceans we need to consume seafood from sustainable sources, and there was a 2% increase in people believing we should switch to another type of fish if it is more sustainable.

"This survey shows that consumers really do care about the oceans, but with so much confusion about how consumers can

help, it's more important than ever to cut through the clutter and deliver an easy way for people to choose sustainable seafood. With a rising consumer focus on price, and the finding that worldwide more than half of consumers report eating seafood weekly, it is critically important that they have a range of clearly labelled sustainable options at the right price point," said MSC Head of Marketing Richard Stobart.

One of the main issues is gaining consumer trust. Certification bodies such as the MSC are more trusted than government and large companies, according to the survey. Global trust in the MSC label remained high (69%) and awareness of the MSC label increased from 32% in 2016 to 37%.

The survey found 72% want independent verification of sustainability claims in supermarkets, up from 68% in 2016. 70% also reported they wanted to hear more from companies about the sustainability of their seafood.

"In a world of increasing consumer pessimism, people are looking for messages of hope and reassurance," said GlobeScan Associate Director Abbie Curtis. "We are happy to see that the theme of protecting seafood for future generations resonates strongly with consumers in all 22 countries surveyed. We're also seeing that, in a low trust environment, consumers are increasingly looking to third parties to verify sustainability claims."



The Classic series for Butchers:
IT'S ABOUT TIME YOU
SAVED SOME TIME.

1300 652 558

sales@barnco.com.au | www.barnco.com.au

CE approved

High throughput potential
No compromises on safety
Quality German construction



Available at:
BARNCO
Quality Food Processing Equipment



NEWS

Microwave technology may increase safety of red meat

Scientists are testing microwave technology which may help eradicate consumer fears over the food safety of rare meat in the future.

Independent trials of this technology, funded by Meat & Livestock Australia (MLA), are being carried out in response to the rising popularity of eating undercooked red meat.

Originally developed in the US as an industrial heating process for non-organic materials, the technology has now been extended to the food industry. The microwave process takes less than one second and can significantly decrease the amount of bacteria in meat, such as *E. coli*.

According to MLA Program Manager – Market Access Science and Technology Dr Ian Jenson, consumers expect and trust restaurants to deliver safe food products.

“Government regulations also require meat to be completely free of harmful microorganisms. We have been working towards these outcomes for a number of years and these latest trial results are positive in that we now have a technology that is capable of achieving both of these,” he explained.

“The results are equivalent to the pasteurisation process for milk, which makes it a better technology than everything except irradiation, which is not acceptable to most consumers.”

Food irradiation is the process of exposing food to ionising radiation to reduce or eliminate microorganisms and therefore improve the safety and extend shelf life. While research has proven this is a safe food processing method, it has negative connotations among consumers who assume this makes the food radioactive.

The initial results of the trials for the microwave technology have been positive, but Dr Jenson suggested more research needs to be done before it can be applied to the meat processing sector.

“This is a significant milestone in our efforts to improve the efficiency of processing, and ensuring acceptability and premium pricing for our product in all markets,” said Dr Jenson.

“Further research and development work will now occur through MLA’s subsidiary company — MLA Donor Company (MDC) — and will utilise funds from technology developers rather than red meat industry levies.”

©stock.adobe.com/au/lycon01

Flowcrete

for the world at your feet

INTRODUCING...

HACCP INTERNATIONAL CERTIFIED

ANTIMICROBIAL FLOORING

Flowfresh, Flowcrete’s range of cementitious polyurethane flooring systems, contains antimicrobial additive Polygiene®, meeting ISO 22196 standards and contributing to manufacturers’ HACCP food safety strategies.

+61 7 3205 7115 (QLD)

+61 2 4648 0397 (NSW)

+61 3 9578 5959 (VIC)

@flowcrete_aust

WHY NOT EMAIL
YOUR ENQUIRY?

australia@flowcrete.com



Part of
The Euclid Group

www.flowcreteaustralia.com.au/future



Sausage hanging machine

The AH 212 hanging machine is a device for automatically hanging strings of sausages. The hung strings of sausages need to be removed with the smoke stick. The control unit is operated directly using Vemag fillers and it has an intuitively operated graphical interface.

It is easily integrated into the company's sausage line and allows all types of hanging. Other features include: flexible hook distances; formation of hook groups; fold-up trough; ergonomic fatigue-free working; and short changeover times.

Vemag Australia Pty Ltd

www.vemag.com.au



X-ray inspection system

Food manufacturers will be able to identify small contaminants quickly with the X34 X-ray inspection system from Mettler-Toledo.

The system provides detection of metal, glass, high-density plastic, mineral stone and calcified bone fragments across a range of small and medium-sized packaged foods, preventing product recalls and protecting brand reputations. The system also comes with software that enables automated product set-up, decreasing the chance of human error and reducing the number of false rejects.

It is a single-lane X-ray system featuring a 100 W Optimum Power generator, which automatically maximises detection sensitivity. This is complemented by a 0.4 mm detector for the detection of very small contaminants. These technologies ensure that power and contrast levels are optimised for every product and mean the system does not always have to run at its full 100 W output to achieve results, delivering power savings to the end user.

The software also allows for automated product set-up without the need for manual adjustment from the operator.

The product comes with the company's ContamPlus inspection software which enhances detection capabilities, helping food manufacturers achieve a false rejection rate (FRR) of 0. This reduces product waste and ensures product safety.

Mettler-Toledo Ltd

www.mt.com

What you need. Where you need it. When you need it.

Creating automated warehousing takes skills that you don't find in a construction company. Process engineering, refrigeration and food safety represent just a few of the in-house skill sets that make Wiley more than just a building contractor.

To find out what we do visit
www.wiley.com.au

To find out who we are visit
www.culture.wiley.com.au

connect@wiley.com.au • 1300 385 988

/company/wiley
 @wileytalk
 /wileytalk

Eating meat and social status

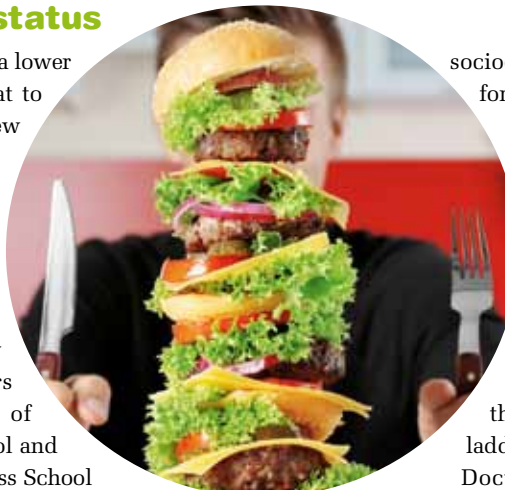
Those who perceive themselves as having a lower socioeconomic status may eat more meat to make up for their status, according to new research.

This evolutionary connection between meat and social status has continued into the current day. Those low on subjective socioeconomic status should have a greater preference for meat, as it may be substitutable for the status they lack. Marketing psychology researchers Dr Natalina Zlatevska from University of Technology Sydney (UTS) Business School and Dr Eugene Chan from Monash Business School looked at the psychological drivers of meat consumption.

"There is a symbolic association between eating meat and strength, power and masculinity. It is traditionally a high-status food, brought out for guests or as the centrepiece of festive occasions, so we wanted to better understand this link to status," said Zlatevska.

From their three experiments, the researchers found that a preference for meat was driven by the desire for status as opposed to other variables such as hunger or perceived nutritional benefits.

In one experiment, a 'beast burger' was described as either meat-based or vegetarian, but with the same nutritional profile and packaging. Only those who rated themselves lower in



socioeconomic status had an increased desire for the meat-based burger.

Understanding and influencing attitudes towards meat consumption may be important to consumer psychologists, the meat industry and those trying to reduce meat consumption.

Chan warned, "Our research reveals that while eating meat appears to confer feelings of power and status, this may have health implications for those who see themselves as lower on the socioeconomic ladder."

Doctors and nutritionists generally advise individuals to try to limit their consumption of processed meats, such as sausage and salami, due to concerns they are linked to cancer.

OECD data states that Australians have a significantly higher consumption of meat than the global average, with each person eating around 92.5 kg a year. However, 11% of the population describe themselves as vegetarian and this number is increasing.

The researchers said encouraging people to feel either higher or lower in socioeconomic status, such as through social comparison or marketing messages, could influence levels of meat consumption.

The research was published in the journal *Appetite*.

Easily insert fillings inside food casings

RHEON®

With Rheon machinery you can create your designer fillings – sauces, vegetables, condiments, pizza, cheese and insert them into meat, chicken, seafood, bread products, cookies, arancini and lots more.

**MODELS TO
SUIT ALL
MANUFACTURERS,
BOTH LARGE
& SMALL**



Solar-powered abattoir for Gladstone

Construction is set to start in May next year on a solar-powered abattoir in Gladstone. This will create 308 jobs during the construction phase and 335 jobs after the abattoir becomes operational in 2021.

Asia Pacific Agri-Corp's \$308 million project, the first of its kind in Australia, will be capable of processing 2400 head of cattle per day.

The plant will include 95 hectares of solar panels, which will be capable of generating 78 MW of electricity or almost one-third of the site's total electricity needs. An on-site 33 MW hydrogen plant will service the abattoir's boiler and further increase energy efficiency.

Asia Pacific Agri-corp intends to adopt paddock-to-market supply chain arrangements, sourcing cattle directly from farmers and tracing product to the market. The high-tech facility will include the latest in meat processing technologies including robotics.

Member for Gladstone Glenn Butcher said the facility will make its way through the Port of Gladstone to international markets enhancing Gladstone's reputation as a place to do business.

Queensland's independent Coordinator-General has placed 29 strict conditions on the project ensuring adverse emissions, such as noise, dust and odour, will not affect residents.

Asia Pacific Agri-Corp will next undertake detailed design prior to starting construction.

Forming & Portioning machinery

**COOKIES,
MEATS,
& MORE**

- ▶ Auto forming & traying machines
- ▶ Auto stacking formers
- ▶ Auto buttering machines
- ▶ Continuous coating & fry lines

Cookies, Meat, Chicken, Seafood, Snackfoods, Protein Balls, Cheese, Pet Foods
and much more... **throughputs from 1,000 – 36,000 pieces per hour**





Adding value

to your meat, seafood and poultry production

Specialised meat, poultry and seafood preparation equipment can help foodservice operators meet changing consumer demands and preferences.

Australia is one of the largest and most diverse food regions in the world, making it a popular market for foodservice operators. A booming agricultural industry, with some of the highest quality livestock of sheep, cattle, chicken and fish in the world, means that Australians have long had a love affair with meat, poultry and seafood products. The growing diversity of the local population, the popularity of reality TV cooking shows and technological advances in production automation have seen demand for meat, poultry and seafood increase in recent years.

As consumer tastes and preferences change, this provides a challenge to foodservice providers, as they need to be more proactive in their response to growing trends within their markets.

Convenience foods — ready-to-eat meals

Value-adding to meat products has and will continue to be a much sought-after meat commodity, and one area that has shown growth is the area of prepackaged, fully cooked product primals or large meat cuts. Examples are bone-in beef products that have been marinated, slow-cooked, packaged and frozen so the customer only needs to heat the product for serving.

An important part of RTE meal production is in the finish of the product. Consumers would like the products they purchase from the supermarket to have the same grilled finish and visual enhancement as something they would cook at home. Many meat, seafood and poultry producers

use branding and searing technology to give their products a finished look. They can give meat brown surfaces, apply grill marks and enhance foods with a just-grilled flavour and appearance.

Heat and Control's Rotary Brander or combined Searer/Rotary Brander is suitable for applying an appetising, just-grilled finish to products such as meat, poultry, seafood, vegetables and bread. The gas-fired, open-flame Brander continuously imparts grill marks on the top, bottom or sides of meats, poultry, seafood and vegetables, and independent direct flame searing burners brown surfaces and add fresh-off-the-grill accents; they are actually grilled for authenticity, and no imitation caramel branding strips are applied. The Rotary Brander has a variable speed branding wheel, which adjusts to accommodate different product thicknesses and can be raised clear when branding is not required.

The Rotary Brander can be used in combination with a Direct Flame Searer, also available through Heat and Control. The searing section uses multiple height-adjustable burners to provide a variety of surface finishes, from chargrilled accents to overall browning.

Value-added processing technology in meat, seafood and poultry production

All processors are challenged to ensure their products are fully and safely cooked while maximising their yields and product quality. Equally challenging is the fact that the processor must identify what differentiates processing equipment and manufacturers that supply the further-processing industry.

For example, there are many 'impingement ovens' on the market, but the term 'impingement' is used rather loosely at times. A true impingement oven will have high-velocity airflow from both above and below the belt that is evenly distributed across the width of the belt and down the length of the oven. Achieving even or uniform temperature across the belt is where many impingement ovens fall short.

Heat and Control's AirForce impingement oven cooks faster than comparable ovens because it quickly and evenly transfers heat across the full width of the product conveyor. Yields are also higher thanks to AirForce's moisture-controlled heating system, the uniform cooking across the width and not overcooking product on one side of the oven.

A major poultry processor uses the AirForce oven to cook breaded breast fillets in just 1.8 minutes, compared to 4.5 minutes in a competitive impingement oven. Another processor's AirForce oven cooks breast chunks in almost half the time required by another impingement oven.

AirForce also sets speed records for cleaning. With no inaccessible ductwork that harbours bacteria, thoroughly cleaning AirForce takes less time than other impingement ovens. Automated cleaning of individual oven zones is also available to further reduce clean-up time and the amount of cleaning chemicals used.

Processors can help themselves immensely if they take the time to look at competitive options and listen to and verify the performance claims and characteristics manufacturers present. Cost is always a major component in a purchase decision, but more often than not you will come out ahead if you first ensure the equipment you are considering can meet all process requirements, provide maximum versatility,

Value-adding to meat products has and will continue to be a much sought-after meat commodity.

ensure uniform cook of product regardless of where it is located on the belt, and is properly sized. Sometimes this will mean you pay more, but in the long run you will easily recoup the investment.

Using reliable and uniform breading and coating applications is another way meat, poultry and seafood processors can add value to their production lines. Customised or standard, breading application can accelerate productivity and trim the costs of maintenance and sanitation. The breading is the final finish of many prepared food products and visually can also be the largest coating component of the product, so the breading must have the appropriate textural, taste, mouthfeel and quality so as to align this product with desired consumer market.

The Heat and Control SureCoat Breading Applicator can uniformly apply predest, breading and flake coatings to meat, poultry and seafood products. The breading is quickly transferred by large-diameter, adjustable-speed augers. The top and bottom coating can be adjusted independently for good coverage of all product surfaces using flour or batter predest, granular and non-free-flowing breadings — even delicate Japanese crumb and flake coatings.

Product integrity

Inline continuous checking equipment has been further developed to ensure the integrity of the raw and finished product. Inspection equipment such as X-ray machines and metal detectors can be an invaluable tool for food processors to ensure their products are contaminant free and consistent in quality. These forms of inspection are growing in popularity with meat, poultry and seafood operators as they can guarantee product safety and integrity, while enhancing and improving methods and operations and ultimately helping the bottom line.

The Ishida X-ray (IX) series analyses the absorption of X-rays to detect foreign objects by density and type of material. This process improves detection of low-density objects, such as thin pieces of metal, glass, shell, bone and rubber, in overlapping products and those with irregular surfaces.

There are many ways in which meat, poultry and seafood processors can add value to their products. Keeping their production lines lean and using the most efficient processing and packaging technology will reduce downtime, boost speed of product output and increase yield. For more information on how Heat and Control can assist you with adding value to your meat, seafood and poultry operations, please contact Heat and Control at info@heatandcontrol.com or www.heatandcontrol.com.



Heat and Control Pty Ltd
www.heatandcontrol.com

What's going on in the Australian seafood industry

Monica Jain, Fish 2.0

When people talk about seafood industry powerhouses, no-one brings up Australia. But after learning about these innovators and researching the island continent's potential, I really wonder, why not?

A Tasmanian company has invented acoustics technology that feeds farmed shrimp and fish through sound. Other Australian ventures are working on turning abalone waste into bioactive pharmaceuticals, developing low-cost processes that clean fish-farming waters while nourishing commercial algae production and more original solutions to seafood challenges.

That Tasmanian company is already the world's leading supplier of sensor-based feeding control technology for aquaculture. Australian universities are full of exciting seafood technology advances the rest of the world (and often even the rest of the country) has never heard of. And Australia's advantages as a seafood producer — a comparatively pristine environment, premium wild and aquaculture species, and trusted quality — line up perfectly with what global consumer markets want right now.

Floating on the high end

Australia's proximity to fast-growing Asian markets and favourable trade agreements with them position the country well for growth. In China especially, an expanding, seafood-loving middle-class values the safety, quality and sustainability of Australian seafood, and perceives it as a higher-status choice. Plus, Chinese import tariffs on Australian seafood will drop to zero by 2019.

The value of Western Australia's Marine Stewardship Council-certified Rock Lobster fishery rose 131% in real terms from 2006 to 2016 — entirely through price increases at its main markets in Japan, Hong Kong and mainland China, rather than through increased catches. And Tasmanian Atlantic-farmed salmon — worth AU\$718 million in 2016 — fetches a higher price in Asian markets than Norwegian farmed salmon, trading on Tasmania's clean and green reputation and great year-round conditions. In fact, Australia is an aquaculture pioneer: the country invented tuna ranching and is now working to improve the method's sustainability, as well as to successfully and sustainably farm other high-value species, such as Cobia (rich in omega-3), Queensland Giant Grouper and Yellowtail Kingfish.

Solving the mass-luxury conundrum

The Australian seafood sector is poised at a delicate point. The country's Fisheries Research and Development Corporation


(FRDC) would like to see "innovation so audacious that it helps double the value and volume of sustainable seafood in Australia in the coming decade". To do that while maintaining the assets that support Australian seafood's price premium — high quality, clean conditions and sustainable production — is going to require technological and marketing leaps forward, along with stronger connections between innovative seafood ventures and investors.

I believe that the country's seafood sector is well positioned to master the challenges of responsible growth. A lot of innovation is happening here — in aquaculture disease control, waste management, feeds, production systems and other areas. Australia also has abundant opportunities for value growth in underused species that could be sustainably harvested, like Australian Salmon, sardines and mackerel. Many of these species are in demand, but the industry needs to develop supply chains and creative marketing strategies for both domestic and Asian markets.

The missing piece is connections for Australian seafood entrepreneurs with investors and international partners that can help them expand their reach to premium markets. FRDC is sponsoring an Australia track in the 2018–2019 Fish 2.0 competition for sustainable seafood businesses in a bid to give up-and-coming ventures the opportunity to form those essential relationships.

Building the right connections

The other good news is that there's plenty of capital in Australia to support a breakout sustainable seafood sector. The impact investment movement is growing fast here: Australian impact investment products more than quadrupled from AU\$1.2 billion in June 2015 to AU\$5.8 billion by December 2017, according to Australia's Impact Investment Group. We just have to connect these investors with the exciting ventures and ideas currently siloed in university departments and narrow supply chains. The Fish 2.0 Australia track is all about bringing these people together and introducing them to a global community.

Australia is primed to take a huge role in driving the global sustainable seafood sector forward, and the opportunities are clear. When investors, entrepreneurs and industry leaders connect to support supply chain, technology and market innovations, the nation will burst onto the world seafood stage. 

**The performance
of butter for a
fraction of the cost**

prepared food



The performance of butter for a fraction of the cost



No matter the application, if it uses butter
Pura Shef-pro is the solution.

- ✓ Same fat content and melting point as butter
- ✓ Same recipes weight / measures as butter
- ✓ Characteristic buttery flavour, aroma and yellow colour
- ✓ Smooth texture at ambient temperatures
- ✓ Use as a partial or total butter replacement
- ✓ Tested by professional chefs, bakers and commercial kitchens

For further information, pricing and a Product Data sheet contact our National Food Service Business Manager: **Geoff Cooke** on **0417 867 447** or contact him via email at: **gcooke@peerlessfoods.com.au**

peerlessfoodservice.com.au **f** / **[peerlessfoodservice](https://www.facebook.com/peerlessfoodservice)**

 **Peerless
foodservice**
Making it happen

Sweet chicory root powder

Frutalose SFP (sweet fibre powder), manufactured by Sensus, is made from chicory root and suitable for use in sugar-reduced applications.

It is a versatile sweet fibre that can be used in a variety of applications where sugar is reduced and sweetness is required to be added. The product is suitable for applications where liquids cannot be used and other sweet fibre powders do not provide the necessary levels of sweetness required.

Frutalose SFP is 85% dietary fibre with 50% the sweetness of sucrose. The material has high solubility, and is clean label with a low glycaemic response. It masks high-intensity sweeteners and improves the taste profile of stevia, and being in powder form lends itself to easy sugar replacement.

IMCD Australia Limited
www.imcd.com.au



Natural extracts and concentrates

Opalis is Sensient's range of natural extracts and concentrates derived from edible vegetables, fruits and plants that deliver colour to enhance the user's products.

By selecting high-quality raw material and applying advanced processing technology, Opalis by Sensient provides a wide range of special formulations with stability and colouring efficiency, and advantages for various applications, responding to the consumer's expectations and manufacturer's needs.

As the food and drink industry continues to shift away from artificial colour, natural colour sources will continue to provide clean-label value and visual delight to many brands' products.

Due to the specialised processing, the Opalis products are natural ingredients that maintain essential characteristics of the source material, which strengthens the consumer's connection to nature and perception of authenticity.

Opalis is creative, bright, versatile and diverse. It is suitable for water- and oil-based systems that include solutions (clear), dispersions (cloudy), emulsions (clear and cloudy), powder and agglomerates.

Sensient Technologies
www.sensient.com

Omelette bites

Sunny Queen Meal Solutions' Omelette Bites offer a simple-to-prepare menu item that creates a new breakfast offering for on-the-go consumption. They offer a 12-month shelf life when frozen and five-day shelf life once thawed, and are prepackaged in single serves to accommodate the busy commuter. They are quick to heat and serve.

The range comes in a variety of flavours and they are made from real, farm fresh Sunny Queen eggs. They have been developed to help foodservice businesses provide a modern twist on a breakfast food.

Sunny Queen Meal Solutions
www.sunnyqueenmealsolutions.com.au





©stock.adobe.com/au/ExQuisine

Collaboration sweetens the path to low-GI sugar production

The path to industrial-scale production of low GI sugar has been made simpler through a collaboration between Nutrition Innovation Group, the company that developed the manufacturing process, Foss and Schneider Electric.

In the collaboration:

- Nutrition Innovation, which holds the IP, will bring the nutrition science behind healthier sugars and know-how concerning the production of Nucane.
- Foss will supply NIR (near infrared) instruments to support the understanding of the sugar composition required during the manufacture of Nucane.
- Schneider Electric will bring expertise in industrial manufacturing to scale the intricate process, and utilise automation technologies and industrial software. This technology tracks data to ensure the precision required across the whole manufacturing process is efficient, accurate and consistent.
- Sunshine Sugar, a joint partnership between Manildra and sugar growers in NSW that operate in the NSW Sugar Co-operative, is already preparing its Condong food-grade sugar mill for the industrial-scale production of Nucane low-GI sugar.

About Nucane

Nucane is 100% cane sugar and has the same taste and texture as regular white sugar, but a significantly lower GI. The sugar has been certified as low-GI to the World Health Organisation's standards and can be used in many beverages, fruit juices, canned products, flavoured milks, soy milks, yoghurts, breads, baked goods, ice-cream, confectionery, chocolates and sauces.

Currently most sugar mills are fairly low-tech and produce sugar within a broad specification. In the process developed by Nutrition Innovation real-time production monitoring is used to produce sugar within a very closely defined specification. Nucane is naturally high in antioxidants, low in GI and retains the naturally occurring minerals found in cane sugar such as calcium, magnesium and potassium. Nucane is a dry product so it will flow in food manufacturing processes like white refined sugar. Because it is still 100% sugar but enhanced by a sophisticated milling process, Nucane retains its sugar taste and that important binding ability when used in cooking. These factors are important for replacing sugar in food or beverages.

The Nucane production process can be applied to most sugar mills worldwide where the digitisation of the operations combined with software to analyse production data in real time will enable a new-found production accuracy. Other positive outcomes include less use of power and water, saving costs and reducing waste.

The ideal way to serve children's food

Some children are particularly fussy with food, not only in terms of what they eat but how it's presented. Preferences tend to change over time, but there may be an ideal way to serve food.

Researchers from the University of Copenhagen analysed whether gender and age influenced how children like their food to be arranged, and the results could help parents and schools improve children's diets.

"As a researcher, I have anecdotally heard parents say that their children prefer to have their food served in a particular way, including in a specific order. But we do not have much evidence-based knowledge about how children sort and eat their food, which is very relevant when, for example, we want our children to eat more vegetables — or eat their food in general," said Annemarie Olsen, Associate Professor at the Department of Food Science.

Foods presented in small portions that are easy to grab — such as grapes and carrot sticks — are known to encourage children to eat more fruits and vegetables. But are there specific plate arrangements that can affect consumption as well? The simple answer is yes.

The researchers asked 100 school children, aged 7–8 and 12–14 years, to prioritise photos of six different dishes served in three different ways. The three options were: all food served separately; a combination of separate ingredients and ingredients that were mixed together; and all the food mixed together.

While younger girls preferred their food to be served separately, boys of the same age did not have a preference. Age was also an important factor, as older children (12–14) prioritised food that was partially or entirely mixed.

Olsen said there were a number of reasons that younger girls may prefer to have their food served as separate ingredients.

"One suggestion could be that they believe that the different ingredients could contaminate each other. But it could also be that they prefer to eat the different elements in a certain order or that the clear delineation just provides a better overview."

If in doubt, Olsen suggested food should be separated on the plate, especially for younger children. She explained: "The child can mix the food when the various elements of the food are separated on the plate, while the reverse is not possible."



©stock.adobe.com/au/leonid

Want to limit the risk of food contamination?



Orbel is a new personal hand hygiene device that helps improve hand hygiene compliance.

LIMITED TIME OFFER!

We're offering Orbels from \$2.95 each, a saving of 25%

Contact Us:

www.teammed.com.au

tom.vriens@teammed.com.au





©stock.adobe.com/au/Joel Luis Stephens

Well, there goes that theory

Plate diameter and portion size perception

Hungry people identify portion size accurately regardless of the size of the serving plate. This overturns that long-held assumption that if you use smaller diameter plates you will eat less.

With plates and bowls about 23% larger than they were in 1900, it has been tempting to blame the 'obesity epidemic' in part on the Delbouef illusion. The Delbouef illusion predicts people will identify sizes differently when they are placed within a larger or smaller object. The classic experiment shows that people perceive a similar black circle is smaller when it is embedded in a larger circle than when it is embedded in a smaller one.

Translating this into a food analogy: if you put the same size portion onto a smaller diameter plate it will trick the consumer into believing the portion is larger than it actually is.

However, in a new study by Ben-Gurion University of the Negev (BGU), researchers found that when people are food-deprived, they're more likely to identify a portion size accurately, no matter how it is served.

The study, published in *Appetite*, debunks the popular diet trick based on the Delbouef illusion.

"Plate size doesn't matter as much as we think it does," said Dr Tzvi Ganel, head of the Laboratory for Visual Percep-


tion and Action in BGU's Department of Psychology. "Even if you're hungry and haven't eaten, or are trying to cut back on portions, a serving looks similar whether it fills a smaller plate or is surrounded by empty space on a larger one."

The hungrier you are the more accurate you are

In the first study to examine the way food deprivation affects perception of food in different contexts, Dr Ganel and BGU PhD student Noa Zitron-Emanuel found that people who hadn't eaten for at least three hours were more likely to identify the proportions of pizza placed on larger and smaller trays correctly than people who had eaten recently.

Interestingly, this only worked when it applied to food. Both groups were similarly inaccurate when asked to compare the size of black circles and hubcaps placed within different sized circles.

According to the researchers, this indicates that hunger stimulates stronger analytic processing that is not as easily fooled by the illusion.

"Over the last decade, restaurants and other food businesses have been using progressively smaller dishes to conform to the perceptual bias that it will reduce food consumption," said Dr Ganel. "This study debunks that notion. When people are hungry, especially when dieting, they are less likely to be fooled by the plate size, more likely to realise they are eating less and more prone to overeating later." 



Improving the quality of fresh-cut fruit

Cutting up fruit into smaller portions is a more portable and convenient option for both children's lunchboxes and on-the-go adults. But fruits such as watermelons are not always easy to cut, which is why 'fresh cut' portions can be more appealing.

Michelle Louise Mendoza-Enano, a PhD candidate of the ARC Training Centre for Innovative Horticultural Product and University of Tasmania, is analysing how to improve the sensory experiences of cubed watermelon.

Consumer surveys of 410 people aged 18–67 conducted in Woolworths stores in Sydney looked at people's perceptions of fresh-cut watermelon sold in supermarkets and found that maintaining freshness was most important to consumers. But how do you keep it fresh and juicy during handling and distribution?

Mendoza-Enano is looking into packaging conditions with Perfection Fresh that will help improve the quality and shelf life of fresh-cut fruit.

She is using proton transfer reaction-mass spectrometry (PTR-MS), which can sample the volatile flavours and measure changes between freshly cut fruits and stored fruits in seconds.

Working with Dr Damian Frank of CSIRO Agriculture and Food, Mendoza-Enano is using this technology to cross-check the fruit's chemical composition with perceived freshness.

Another Training Centre PhD candidate, Yan Lee, is conducting similar research with industry partner Perfection Fresh to extend the shelf life of fresh-cut fruit using low concentrations of ethylene.



Michelle Mendoza-Enano tests packaging for fresh-cut watermelon at Perfection Fresh.

Source: ARC Training Centre for Innovative Horticultural Products.

SENSIENT

We bring life to products

Opalis
The colour of nature



SweetEase™ 3G
Enhancing sweetness naturally

DairyBoost 
Turn delicious into delectable

Sensient Australia ph: +61 3 9798 3011

email: salesaus@sensient.com

Sensient New Zealand ph: +64 9 270 8510

email: nzinfo@sensient.com

www.sensientfoodcolors.com/en-ap/
www.sensientflavorsandfragrances.com



Let's get personal

The trend towards personalised food is already in full swing and is set to transform food production.

Digitisation' and 'networking' are everywhere — even revolutionising nutrition and fitness. Smart fitness devices, such as smart watches that track health data such as mileage, number of steps, heart rate or blood pressure, have infiltrated our society. Data is collected via an app on a smartphone and offers the user individual fitness or health recommendations. Such personalised recommendations give every user the opportunity to go his own way in terms of health.

Food production is also affected by our health-conscious way of life, as part of the personal lifestyle, because eating habits are closely related to the fitness hype. It is not without reason that even fast-food chains change their offers and add, for example, super foods to their ranges. Gone are the days when discounters almost exclusively offered mass-produced food. The food choices have been, and are being, supplemented by numerous individual and healthy foods.

A trend that is increasing in popularity is personalised food. In this sector, new technologies are opening up completely new possibilities. In the future, for example, tracking systems will increasingly be used to allow us to understand the exact journey of our food: from the farmer's field to the consumer's plate.

The focus of nutrition in the future will be on these personalised foods. Consumer behaviour will change radically; for example, consumers will want to buy specially tailored foods that are adapted to their needs and preferences. Here, the combination of the respective preferences, tastes and the substances necessary for the body (such as the exclusion of allergens) will form the basis for the perfect individual food. Apps and health data will help to 'design' personalised foods.

In the future, there will be no boundary between treating illnesses with medication and eating habits. By adding active ingredients like vitamins or minerals, the medication can already be taken by ingesting food; or by making preventive dietary adjustments, 'disease-makers' such as certain fats, sugars or cholesterol will be removed from food.

In the food industry this means Batch Size 1

The biggest challenge that the food industry needs to address is the conversion and adaptation of food production and related processes. In the future, manufacturers will need to be able to produce batch size 1 food while still being competitive. The challenge is based on achieving the combination of characteristics of the 'manufactured creation' and mass production at the same time.

Extreme flexibility and intelligent systems and machines are needed. Linked to this, the degree of automation and the use of robotic systems in the food industry will increase significantly. Smart software and networking can meet this challenge. Systems and concepts that are already being used in other, fully automated industries will also be used in food production.

Intelligent hardware and software makes it possible to start the production of a certain food with basic raw materials for a relatively long time. The individual touch is added in one of the last production steps, as required, in the form of flavours or colours.

Food production plants must be designed and networked in such a way that basic systems such as mixers and packaging systems will work without problems. To ensure the flexibility of the production, the complexity of longer changeover or cleaning times must be avoided.

Filling and dosing in a Batch Size 1 world

In the field of filling and dosing technology, the principle of the progressive cavity pump is used in a completely new field of application. The advantages of this technology are of benefit to the food producers and therefore enable highly flexible and individual production with a theoretical batch size 1.

ViscoTec offers solutions with its DLG (German Agricultural Society) awarded hygienic dispensers and the barrel emptying

continued on page 38 >

TARGETED POTATO CUTTING SOLUTIONS

DIVERSACUT 2110A® DICER

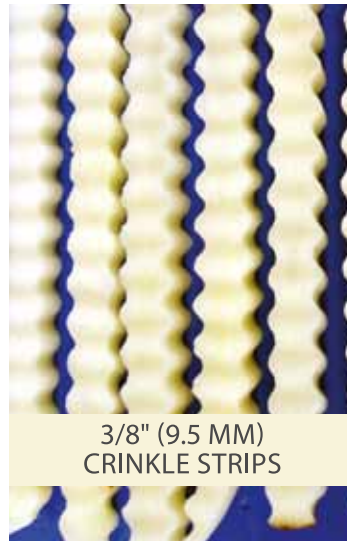
EXCELS AT CRINKLE STRIPS



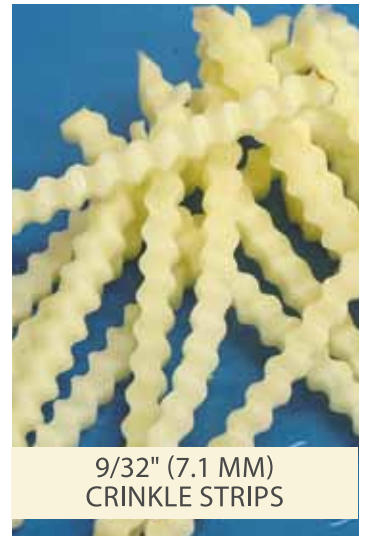
1/2" (12.7 MM) DEEP
CRINKLE STRIPS



7/16" (11.1 MM)
CRINKLE STRIPS



3/8" (9.5 MM)
CRINKLE STRIPS



9/32" (7.1 MM)
CRINKLE STRIPS

Rely on Urschel cutting technology like the DiversaCut 2110A® Dicer (MDCA) to deliver ideal crinkle shapes at high capacity outputs.

Large infeed and impeller case facilitate the cutting of large potatoes. With a streamlined product pathway, product travels succinctly through each cutting station.

Urschel-engineered knife edges provide the optimal cutting action. Optimal cutting action translates into meeting your targeted specifications and increased cost-savings.

This cutting edge solution brought to you by Urschel.



Heat and Control Australia
Tel: +61 7 3877 6333
info@heatandcontrol.com
www.heatandcontrol.com

DELIVERING TARGETED CUTTING SOLUTIONS



® Affinity Integra, Urschel, Urschel logo symbol, and The Global Leader in Food Cutting Technology are registered trademarks of Urschel Laboratories, Inc. U.S.A.

Robotic kitchen

working in Boston
restaurant

Spyce is a recently opened, fast-casual eatery in Boston that is using automation to provide wholesome, high-quality, delicious and affordable meals.

The restaurant's menu is based on six different 'bowls' at the push of a button. Customers enter the restaurant and are greeted by a human guide who takes them to a touchscreen kiosk where they place their order, one of the six bowls and any extras they want. Once the order is sent to the kitchen, containers dispense the ingredients into one of seven cooking woks.

The woks are tilted so customers can watch their food rotate and cook behind the counter. The bowls are taken from the kitchen counter by a 'garde manger', a person who finishes the meal with various cold garnishes like pumpkin seeds, cilantro and crumbled goat cheese. The customer is then handed their bowl.


The woks are all heated using induction because it is efficient, accurate and uses less energy than other heating methods. The induction heating element is located adjacent to each cooking wok, not below, and doesn't touch the wok.

The robotic kitchen is certified by the NSF (National Sanitation Foundation), and cleans and sanitises the cooking

woks after every meal. It's programmed to monitor cooking, refrigeration and water temperatures, and all components in the refrigerator that touch food are removed and cleaned by humans regularly.

Food preparation is handled by people who feed the prepared ingredients into refrigerated hoppers. The team had to build a technology that handled food carefully, so vegetables wouldn't get bruised and grains wouldn't end up mushy, and hoppers fed the meal ingredients to the cooking woks.

The Spyce team hired Sam Benson, of Café Boulud, as the executive chef. Benson had learned about Spyce from Michelin-starred chef Daniel Boulud, who joined Spyce as an advisor after seeing a demonstration of the robot.

The whole concept started when four friends decided to build a robot that could cook meals. With engineering backgrounds, the group applied to MIT's 2015 Global Founders' Skills Accelerator, now known as MIT delta v, for start-up funding. 

continued from page 36

systems. This ensures a high-precision and clean filling directly in the dispensers. Due to the miniature progressive cavity pump technology, the dosing quantity can be variably changed. A servo drive controls the hygienic dispenser and the output quantity is modified by merely changing the speed. This flexibility and precision is used, for example, in filling machines in which individual additives and flavourings (for example, vitamin C and strawberry flavour) are only added at the end of the filling process. This allows the production batches to be individually controlled as required.

Product and material changes are also very easy to control with the ViscoTec hygienic dispensers. Thanks to their hygienic design, the dispensers can be disassembled or cleaned in just a few minutes without tools, or alternatively, they can be completely sterilised inline through the CIP/SIP sequence. The changeover times are accordingly low, and time and expense are saved while profiting from a more flexible production.

The ViscoTec drum emptying system complements and completes the material and product supply. The feeding systems




© stockadobe.com/au/tashka2000

can feed the material of the filling station into the hygienic dispensers, even in small batches, and offer a perfect symbiosis for a modular and flexible filling and dosing station. In combination with robotics, this technology can provide a foundation for future food production.

Robotics applications, which until now have only been implemented in the high-tech areas of electronics

or automobile manufacturing, will soon find their place, for example, in large-scale bakeries or in the beverage and dairy industries. An example of this is the individual design of baked goods or biscuits with personal logos or decorative motifs. To do this, the hygienic dispensers can be mounted on robot stations. Individual labels or embellishments, which are ordered in advance by customers via online shops, can then be implemented immediately and produced as personalised food.

The demand for personalised food is only going to increase so it is time to start thinking about how you can incorporate modern technologies, robotics and automation into your systems. 

UV Pacific
www.uvpacific.com.au



THE QUEEN'S AWARDS
FOR ENTERPRISE
2018

what's new in
Food
technology & manufacturing

packaging & labelling



Tray Sealing Solutions

Thank you Australia

Proseal celebrates winning Queen's Award for Enterprise

PROSEAL AUSTRALIA CELEBRATES TEN YEARS OF QUALITY SERVICE

Tray sealing specialist Proseal Australia is celebrating its 10th anniversary, during which time the company has become one of the country's leading suppliers of tray sealing solutions for a wide variety of food sectors including protein, ready meals, prepared salads and fresh produce.

Established in 2008 as a wholly-owned subsidiary of Proseal UK, Proseal Australia has enjoyed year-on-year growth — most recently of 40% between 2016 and 2017 — in the supply of tray sealing machinery, tooling, spares, and servicing to the Australian market. Now anticipating further double-digit growth on last year's figures, the company recently celebrated the sale of its 250th tray sealer.

One of the major factors in Proseal Australia's continuing success has been its reliable and responsive service, which ensures that customers receive their equipment on time, and benefit from first-class after-sales support.

"From the very start we were wholly focused on providing the best possible service," confirms Scott Templeton, General Manager at Proseal Australia. "In this way we have built a loyal network of customers over the last ten years and been able to firmly establish ourselves in the Australian market. We now have a dedicated Proseal service presence in Melbourne and Sydney and have established a network of contracted service technicians in all other major centres."

The wide range of tray sealing machinery offered by Proseal Australia allows the company to cater to businesses of every size — from fledgling start-ups to multi-national corporations. As Scott explains, "Our knowledge of the food industry and the technical and service support we offer help form long-lasting partnerships with all our customers."

Equally important has been the decision of Proseal to take the direct route to market rather than through distributors. This ensures that all staff at Proseal Australia are completely focused and knowledgeable about Proseal machinery. As a result, there is no need to wait for OEM suppliers to respond to issues, or for staff to understand different suppliers' machines. It also means that the company is able to provide a fast-response service in line with customer requirements.

"A crucial part of our success is our ability to make decisions locally," explains Scott. "For example, we recently supplied a brand-new tool assembly for a ready meal manufacturer over a weekend, as they needed a solution to meet their customers' needs. We retain all parts in stock and this highlights the way in which our autonomy allows us to go the extra mile for our customers."

Proseal Australia's 10-year milestone comes as Proseal UK celebrates 20 years of business. The company has grown to become a world leader in tray sealing technology, offering an extensive range of manual, semi-automatic and fully-automatic tray sealing machines together with ancillary equipment, to meet the needs of a wide variety of customers and applications. Proseal's continuing global growth resulted in 52% of sales in export markets in 2017 and the company now has a presence on every continent except Antarctica.

Such an outstanding performance was recently recognised with the Queen's Award for International Trade 2018 — an honour in which the growth of Proseal Australia clearly played an important role.

Steve Malone, Director of Proseal UK, who co-founded the business with Robbie Hargreaves in 1998, comments: "The talent and dedication of the Proseal Australia team has been a huge factor in our international growth. The Queen's Award honour was the perfect birthday present — and fires us up to keep innovating and meeting the needs of the Australian market."



Clear codes on gin and whisky bottles

Bruichladdich Distillery has reduced downtime on its whisky and gin lines with two laser coders from Linx Printing Technologies.

Based on the Isle of Islay, Bruichladdich installed the first Linx CSL30 laser coder on its Botanist gin production line last year, and following positive results, another has been installed on its malt whisky line.

"We installed our first Linx CSL30 during a period which saw a 47% growth in our Botanist sales in the previous year," explained Jonathan Carmichael, Bottling Hall Manager at Bruichladdich. "In order to adapt and keep up with this unprecedented demand, we took the opportunity to reconfigure our line in another warehouse, adding some new machinery — and the Linx CSL30 was an extremely important addition to our line."

Installed in the bottle labeller, the CSL30 codes two lines, 5 mm in height, onto the bottom of the glass gin bottles. The codes comprise a line number and a batch code, including a unique bottle number and the bottle's production date and time. Running at 2100 bottles/hour for nine hours per day, the line produces 1.2 million bottles per year.

The laser coder can apply codes from a wide range of distances and on a variety of colours. Despite the fact the laser head sits further away from its gin bottles and many of its whisky bottles are black, it produces a visible code for Bruichladdich.



The codes are clear and always appear in the same position on the bottle, which is key due to the premium nature of Bruichladdich's products.

Another benefit of using laser coders is that it removes the need for printhead cleaning and maintenance, which ensures minimal downtime.

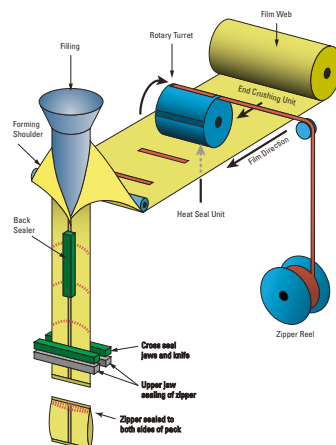
"As a producer of premium spirits, it's vitally important that the codes on our bottles are clear and sharp and in keeping with the brand's expectations," said Carmichael. "Another key factor in the decision to install a laser coder was the low maintenance required, meaning less downtime in production. For these reasons we've not hesitated to install a CSL30 on our whisky line as well."

Bruichladdich was founded in 1881 and reopened as a progressive distiller in 2001. Its whisky is distilled using much of the original Victorian machinery, and it has recently expanded into gin under the brand name The Botanist.

Linx Printing Technologies
www.linxglobal.com/en

***Want to add zip
to the package
on your FFS or
Flow Wrapper?***

***Zip-Pak is doing this with
cost-effective retrofits.***



ZIP-PAK®

We're Uniquely Flexible.

For more information
call AUS: 03 8795 8299
or NZ: 09 838 5747

Email: salesausnz@zippak.com
www.zippak.com

Carlsberg swaps plastic packaging for glue



The Carlsberg Group is making its multipacks more sustainable by gluing cans together, helping it save over 1200 tonnes of plastic per year.

The company is launching the Nature MultiPack packaging solution from KHS subsidiary NMP Systems for its cans under the name Snap Pack. Three years in the making, it bonds cans together during transportation with a few dots of adhesive that can be easily separated by consumers.

"We have succeeded in developing an adhesive that works without damaging the printing ink and lacquer on the can," said Christoph Georg von Aichinger, Senior Sales Director at NMP Systems.

By replacing shrink-wrapping, hi-cone rings and other secondary packaging with glue, Snap Pack is expected to help Carlsberg save up to 76% of plastic.

"One of our company goals is to strive for improvements, and with the launch we clearly show that we continue to live according to our founders' mentality. Carlsberg's Snap Pack will significantly reduce the amount of plastic waste, and we look forward to offering consumers a better beer experience with less environmental impact," explained Cees 't Hart, CEO of the Carlsberg Group.

Market research revealed sustainability is one of the most important purchasing criteria for consumers. Snap Pack aligns with Carlsberg's sustainability program 'Together Towards ZERO', which aims to reduce carbon emissions by reducing waste and increasing recycling and re-use of materials.

It also includes a carrying handle for convenience, generates less waste for consumers and makes cans easy to identify on the shelf.

"Aligning the layout of each single can in the Nature MultiPack creates a so-called billboard effect. This effect brings a larger visual communication area for the brand displayed on the shelf," said von Aichinger.

The four- and six-pack cans will be initially sold in the UK and Norway, followed by Denmark in early 2019.

*KHS Pacific Pty Ltd
www.khs.com*

The re-emergence of the self-heating can


Hot drinks anywhere, anytime is the motto of Spanish company 42 Degrees.

4 2 Degrees acquired the patent and technology for self-heating cans and production facilities in Valladolid, Spain, capable of producing up to 10 million self-heating cans of beverages and liquid foods annually, in 2017. The recyclable cans take just three minutes to produce hot beverages.

Initially wanting to provide solutions and relief during emergencies in places without access to heating facilities the intention is now to provide hot drinks, anywhere, anytime.

42 Degrees Company worked with Monomer Tech (MT), plastic packaging manufacturer, part of M&A Packaging Group, to produce an inner activation device to heat the liquid in the cans. The system consists of a thermo-sealed capsule full of water, which comes into contact with a reagent and heats up the beverage once the capsule is activated. Monomer Tech also produces the lip protector for the whole product range.

From a starting temperature of around 42°C it takes just three minutes to get a hot drink.

The self-heating cans now include assorted beverages including coffee, chocolate, chai latte, with soup and liquid foods on demand. Commercial sales will commence during September with a suggested retail price of approximately \$5 depending on the distribution chain. 



When it comes to
consumer taste,
looks really do matter.



Product labels are a cohesive part of your brand identity and DNA.

More importantly, they help drive the impulse purchase when good label design meets brand differentiation, and when an emotional connection is created through effective colour choice.

Discover how insignia's unique labelling solutions can bring your brand to life and help your products stand out -
www.insignia.com.au/labelling



www.insignia.com.au



1300 467 446



sales@insignia.com.au

5 characteristics of a highly effective label



Labels are a key component to virtually all industries and can be essential to day-to-day processes. They suit a variety of applications, but for the most part their purpose is to provide information, whether it relates to a product, carton or pallet.

In the context of product labelling, the label can be the difference between someone buying your product or your competitor's that's next on the shelf. Research shows that more than 60% of brand decisions are made after the shopper has entered the store. What's more, it then only takes two and a half seconds to make a purchasing decision — so understanding the key characteristics of highly effective labels is essential.

As manufacturers of tried and true labelling solutions for 50 years, we reveal 5 key characteristics of highly effective labels, and share how they can engage your customer and trigger a buying decision.

1. Clear

The key purpose of a product label is to communicate information with the goal of motivating a consumer to purchase your product. If this information is not readable or communicated clearly, or cluttered, the content on your label is going to waste and the potential for a sale lost. By using a readable font, appropriate language for your target consumer and a clear layout, the information conveyed on the label will be quickly and easily understood.

2. Attractive

When there are 20 different brands of the same product clustered onto one shelf at the supermarket, it can be hard to pick one brand from the next. An effective label needs to attract the customer's attention and be memorable. Consider the colour, font, graphics and even shape of the label. Another factor that can add an extra point of difference to your label is embellishments such as foiling or embossing. These embellishment techniques can help highlight particular parts of your label (like

your logo), attracting attention and leaving a lasting impression with the consumer. It's also important to design the label with the container and product in mind — whether the container is squared, tapered, rounded or squeezable, the label will need to be applied smoothly and complement its shape.

3. Informative

As previously mentioned, a label is used to inform. So, to be an effective label it needs to be able to appropriately inform the consumer with the necessary information, including nutritional information, warnings and instructions. However, being informative can go beyond what is required by law. It can include extra nutritional advice, accreditations or recommendations on how to use or serve the product (for example, incorporating the product into a recipe), which can surprise and delight your customer, turning them into advocates for your brand.

4. Right material and label finish

It can be an informative, clear and attractive label — but without the correct material, adhesive or finish (coating), it may not last to be able to communicate that information. Considering the application and expected life of the product in the selection of the label material and finish will ensure the label is fit for purpose and will perform in the conditions expected during the life of the product; for example, a product labelled and stored in a cold room or freezer environment, or a product exposed to an ambient to high temperature range. Additionally, adding a laminate or coating to the label not only adds an attractive matte or gloss finish, it also offers protection for the label against moisture (condensation) or scuffing.

5. On brand

An effective label can tick every other box; however, it still needs to remain true to your brand. Labelling that is on brand will allow consumers to easily associate brands to products and vice versa. Think of how distinctive products from major brands like Coca-Cola and Cadbury are, and how they stand out against rival brands in the supermarket. It also makes any new products from the same brand familiar to existing loyal consumers.

In a retail space it can only take a few seconds for a customer to make their purchase decision, so you need to invest in a label that will effectively capture their attention. The way to ensure this is by making sure you address the above characteristics and ensure they're cohesive with one another. By carefully considering each element of a label you can also avoid the risk of it being 'over-spec'd' and ensure it will be cost-efficient for its application. Ultimately, having a highly effective label can provide you with the potential to improve sales and create brand loyalty with your customers.

insignia has a long history of making labels. We work collaboratively with our customers to understand their needs and develop labelling solutions tailored to add genuine value to their operations and build their market competitiveness. Discover how our labelling solutions can bring your brand to life and help your product stand out by visiting our website at www.insignia.com.au/labelling.

insignia Pty Ltd
www.insignia.com.au



The label can be the difference between someone buying your product or your competitor's that's next on the shelf.



© stock.adobe.com/au/viperagp

DFC Packaging Suppliers of Shrink Films, Shrink Sleeves, Packaging Films.
Smoothwall Aluminium trays,
Printed Delight Trays, Lidding Films, and Associated Machinery.



Tray Lidding



Smoothwall Trays & Lidding Films



Shrink Wrapping



Shrink Sleeving



Check Weighing &
Metal Detecting



Flow Wrapping

Vic. Office
22 Summit Rd
Noble Park, 3174
03 9701 2000
sales@dfc.com.au
www.dfc.com.au



dfcpackaging
group of companies
03 9701 2000
www.dfc.com.au

NSW. Office
5 Healey Circuit
Huntingwood, 2148
02 8886 2450
salesnsw@dfc.com.au
www.dfc.com.au

Start planning for AUSPACK 2019



AUSPACK, Australia's largest bi-annual exhibition for the processing and packaging sectors, is coming to Melbourne in March next year.

Thousands of leading professionals and key players in the global processing and packaging arena will congregate at the Melbourne Convention Centre from the 26th to the 29th of March 2019, and this is just a sampler of what they will see.

Fast and flexible machinery

At AUSPACK 2019, outstanding packaging and processing machinery will set benchmarks for speed, flexibility and fast changeover capability designed to optimise production efficiency and increase overall equipment effectiveness.

Track and trace

Being able to authenticate a product, trace its origin, track its journey in the supply chain and provide complete transparency regarding the provenance of ingredients has never been more important. Track-and-trace capability also provides access to data that can drive production and supply chain efficiency. The coding and marking sector has risen to the challenge, providing a range of solutions in the form of QR codes, serialisation and other unique identification tagging options.

Smart packaging

Using smart device-enabled visual recognition technology linked to augmented reality (AR) and virtual reality (VR) applications, brands can deliver experience-rich marketing campaigns via their packaging. Intelligent packaging can also serve to provide vital information on nutritional content, shelf life and cold chain integrity. AUSPACK 2019 will provide a view of how far smart packaging has come.

Digital printing

Aligning with two major market drivers in the packaging space — the demand for flexibility in the face of increasing SKUs and the need to create meaningful brand experiences through the packaging interface — digital printing for packaging and labels is coming into its own. AUSPACK 2019 will showcase the significant benefits of being able to respond to market demands rapidly and customise printed packaging to create meaningful consumer experiences.

Accessibility and convenience

When it comes to packaging formats and closures, a strong focus for converters is to supply products that meet the call for convenience and accessibility: packs in convenient sizes and formats, that are easy to handle, open and reseal, while also providing child resistance and tamper evidence. From pouches to cans, zip locks to CRC caps and everything in between, AUSPACK 2019 will present a colourful array of the latest packaging containers and closures.

E-commerce explosion

Amazon's imminent arrival in the Australian market is a driving force for e-commerce to take off in Australia, as retailers large and small are under pressure to improve their online shopping platforms. Catering to this channel, innovation is emerging in the area of custom bagging and on-demand carton making fulfilment systems for secondary packaging, as well as packaging delivery via drones. AUSPACK 2019 will provide a window on packaging solutions for the exploding e-commerce sector.

Entry level

The proliferation of craft/artisan brands in the food and beverage sector has prompted equipment manufacturers to address a growing need for small batch brewing/processing systems and packaging lines that can offer flexible, short run solutions. AUSPACK 2019 will give start-ups and SMEs a wide selection of entry-level and customised systems.

Robots on the rise

While most robotics employed in Australian food, beverage and pharma manufacturing are in the end-of-line zone, there's growing interest in the upstream use of robots and cobots. You won't go far at AUSPACK 2019 without bumping into a cobot or robot.

Factory of the future

What will the factory and warehouse of the future look like? It's predicted manufacturing facilities will witness an unprecedented rate of change over the next decade, as emerging technologies like AR, VR and AI take hold and smart glasses, goggles and headsets become ubiquitous workwear. Highlighting materials handling innovation, AUSPACK 2019 will showcase the latest in production and warehousing improvement, including the role of robots, integrated and automated palletising and wrapping, and automated guided vehicles in engineering the factory of the future.

AUSPACK is owned and presented by the Australian Packaging and Processing Machinery Association (APPPMA).



APPPMA
www.appma.com

Dairy company boosts speed with wraparound packer

FrieslandCampina is one of the world's largest dairy companies, offering products such as dairy-based drinks, infant nutrition and cheese in Europe, Asia and Africa. The company's regional branch in Thailand handles 300 million tonnes of milk per year, and it turned to Gebo Cermex to install an efficient and cost-effective end-of-line solution for its new Foremost plastic bottles, which feature a complex shape. The 360° approach applied to wraparound mechanisation helped the company achieved speeds of up to 500+ containers per minute.

For their newly shaped Foremost PEHD bottle, running on a dedicated production line in Samrong, the company was looking for a secondary packaging solution able to deliver on speed and reliability, to keep their total cost of ownership (TCO) as low as possible.

FrieslandCampina Thailand decided to install a wraparound case packer machine, together with a bottle line divider at packer infeed — flexible enough to divide the flow



from one lane up to eight lanes, depending on the bottle format — and the conveyors connecting the solution to the production line — both upstream and downstream. This helped it achieve speeds of more than 500+ shaped bottles per minute.

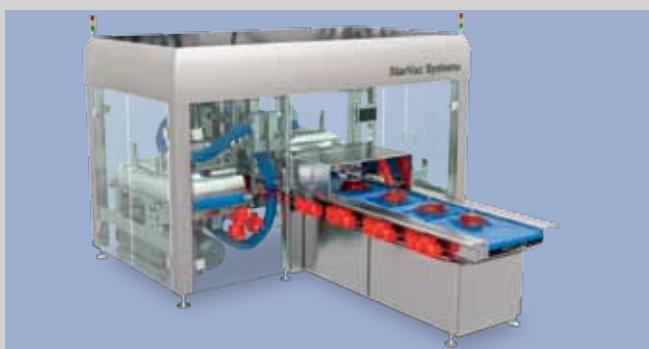
“They helped us in validating different formats in-house first, so that we could guarantee that by the time we received the equipment in our production

facility in Samrong we just ‘plug & play’ and then we can get the result we wanted. It's like a vertical start-up. We chose Gebo Cermex because it is the only manufacturer that can deliver the expected performance within a week,” said FrieslandCampina Thailand.

This built on their existing business relationship, in which the company installed a wraparound packer as part of a can line at the same plant 10 years ago.

Gebo Cermex at Tetra Pak Marketing Pty Ltd
www.gebocermex.com

NEW, INNOVATIVE & INTELLIGENT VACUUM PACKAGING TECHNOLOGY



STARVAC PACKAGING MACHINES

- High Packaging Speed
- Minimal Footprint
- Low Energy Consumption
- Environmentally Friendly
- All Meat and Cheese Products

STARVAC SHRINK BAGS

- High EVOH-Barrier Bags
- Meat and Cheese
- Bone and Boneless
- Great Product Presentation
- Printable up to 10 Colours

CONTACT US FOR PRODUCT DEMONSTRATION AND SAMPLE BAGS:

E: info@starvac-systems.com
P: +61 (0) 411 175 159
W: www.starvac-systems.com

StarVac Systems Pty Ltd
1/47 Eucumbene Dr
Ravenhall, VIC 3023, Australia





Automated capping machine

Jet Technologies' Smart Capper is a fully automated capping machine designed for production lines. The compact capping machine is suited to smaller manufacturing spaces, while capping at high speeds to meet production demands. For food manufacturers that use jars for products such as sauces, spreads, olives and vegetables, the machine helps improve productivity and minimise wastage through a reduction of reject rates on jar lids.

The capping machine is designed for ease of use and low maintenance, both in terms of time and cost, making it an efficient machine that reduces chances of bottlenecks in the production line. Constructed of stainless steel, it is easy to access and its hygienic design allows for optimal cleaning.

Jet Technologies

www.jet-technologies.com.au



GIVE CONTAMINATION THE BOOT!

For more information:

Email: sales@fmcgis.com.au

Phone: 1300 628 104 or (02) 9540 2288

www.fmcgis.com.au | www.bootwasher.com.au

A solution for all budgets

Compact colour label printer

The VIP Color VP600 is a compact and low-cost Memjet colour label printer. With the same ink technology and printhead as the VP700, it offers the same print quality at a slightly slower speed (152.4 mm) and in a more compact footprint.

It comes with a label unwinder and option label roll rewinders. It can be paired with digital label laminating and cutting machinery that enable users to laminate the printed material (if desired) and diecut to any required shape or size before slitting and rewinding into small, manageable rolls.

Label Power Pty Ltd

www.labelpower.com.au



Integrated encoder and measuring wheel

Available from Control Logic is the Tru-Trac encoder by CL encoder. It features an adjustable spring-tensioned mounting with the option of either a rubber or aluminium wheel and can be used for tracking velocity, position and distance over a variety of surfaces.

Composite housing makes it durable to eliminate static build-up and can be mounted in almost any orientation and operate at speeds of over 15 m/s. The pre-assembled encoder can be fitted to new or existing machinery in minimal time while its simple-to-adjust torsion load ensures a firm grasp onto moving product without causing excess wear.

Suitable for OEMs, integrators, electricians and maintenance specialists, the encoder is suitable for applications such as web tension control, paper monitoring, glue dispensing, material length counting, printing, conveyors, labelling and material handling.

Control Logic Pty Ltd

www.controllogic.com.au



Resealable alternatives to zipper packaging

Result Group provides an easy and proven method to deliver a more sustainable packaging via the Sealstrip FreshPak and Peel&Seal retrofit applicators and pressure-sensitive tapes. The applicators run at the user's line speed on vertical baggers or horizontal flow wrappers, maintain package barrier properties and require no additional packaging film.

FreshPak is an easy-open, tamper-evident resealable packaging system. It runs as part of a zipper bag when the package is formed; however, there are no tracks to line up. The package is easily opened full width by simply pulling the convenient grip area of the FreshPak tape. Once the product is removed from the bag, the user can simply press the tape to reseal the package, keeping the product fresh for longer.

Peel&Seal is a simple resealable tape that acts as an easy fold-over sealing method. After opening the package, the user reseals it by peeling the Peel&Seal tape away from the top of the bag, rolling the bag closed and sealing it down with the tape. As the product is used, the package rolls down further, resulting in a bag with less air, resealing with fresh tape and keeping the product fresh for longer in a more compact bag for storage.

FreshPak and Peel&Seal are used by household brands around the world with applications including shelf-stable foods, refrigerated and frozen foods as well as fresh produce such as salad bags.

Result Group

www.resultgroup.com.au



EXPERTS IN YOUR INDUSTRY

- › LABOUR HIRE
- › ENGINEERING
- › ELECTRICAL
- › EQUIPMENT HIRE
- › MAINTENANCE
- › RECRUITMENT

EFi Group provide highly qualified, professional electricians, electrical engineers and mechanical trades personnel who work as an integral part of your team to maximise the efficiency of your facility.

Whether we are providing programmed maintenance, responding to a breakdown or installing new equipment, our goals are always to keep downtime to a minimum, improve operational efficiency and deliver bottom line savings.



admin@efinow.com.au

1300 EFi NOW (334 669) | WWW.EFINOW.COM.AU

Coveris invests £1m in UK linerless label capacity

Coveris has announced it is investing £1m (about AU\$1.75m) at its linerless labels facility in Spalding in the UK to increase its production capacity.

The manufacturer produces over one billion labels each year, and the investment will see it increase capacity by over 20% through the installation of new coating systems and upgrades to existing machine infrastructure.

Work is expected to be completed by January 2019, helping Coveris meet growing demand in the UK for the sustainable pack format, and support future growth and increased seasonal demand.

The company said the sustainable format provides a lightweight, wraparound solution that offers a 40% weight saving, no waste and full recyclability, as well as efficiency gains through faster application speeds, automation and improved consistency on pack.

Craig Bevan, Coveris's Linerless Sales Director, said, "Given the continued growth of linerless in the UK protein sector and the increased demand from other food categories and geographical markets, we are very pleased to welcome further investment in capacity which will allow us to better meet the needs of new and existing customers. Additional technical capabilities also mean that we will be able to offer more functional and decorative solutions such as shaped labels and apertures to deliver improved shelf impact across a variety of FMCG categories."

This investment follows the company's Pack Positive sustainability strategy, which works to reduce the environmental impact for packaging and product.



ProMach expands its flexible packaging line

Packaging machinery provider ProMach plans to strengthen its global position in the stand-up pouch market with the acquisition of Spain-based FLtècnics.

ProMach's Flexibles business line provides flexible packaging machinery solutions, including bags, pouches, sachets and stickpacks, for a wide range of industries. FLtècnics manufactures servo-controlled carousel and walking-beam horizontal form-fill-seal machines capable of packaging 400 pouches/min. Acquiring the company is expected to help ProMach continue to expand its global footprint and flexible packaging product line.

Mark Anderson, ProMach President and CEO, said, "Five years ago, we

saw a growing need in the North American marketplace for a single source provider of a full range of flexible packaging solutions.

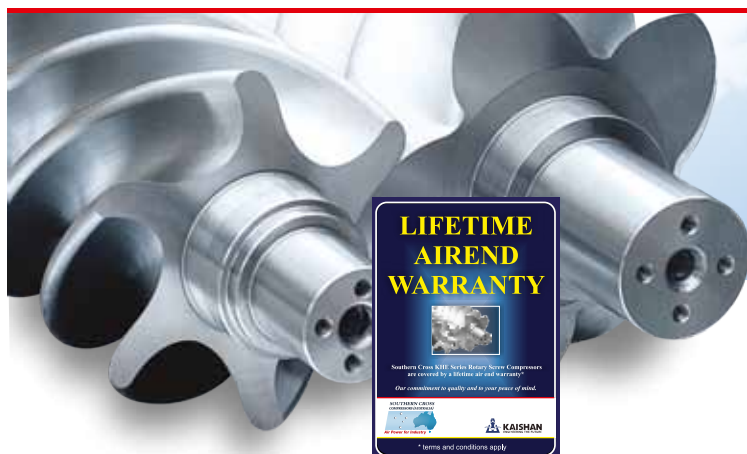
"We have invested in this space through product development, acquisitions and strategic partnerships with companies like FLtècnics. They are a technology leader in the horizontal form-fill-seal pouch space and we are excited to invest in their continued product development to bring new innovations and new technology into the global marketplace."

ProMach began working with FLtècnics in 2014, selling and supporting its products in the North American market. The company has recently expanded into the Latin American and European marketplace, which it said has resulted in an increase in international sales.

While the FLtècnics leadership, sales, engineering and customer service staff will join the ProMach Flexibles team, the product brand will continue to be led by current FLtècnics CEO Mateo Lara, who will take the position of Vice President & General Manager, and COO Pablo Pizarro, who will become Vice President of Operations.



©stock.adobe.com/au/Sergiy Nivens



DON'T WASTE

Upgrading to Southern Cross rotary screw, compressed air technology can provide huge energy bill savings. The latest in global compressed air engineering delivers more air power while reducing total energy input.

**SOUTHERN CROSS
COMPRESSORS (AUSTRALIA)**

**Air Power
for Industry**



Predicting which packaging sucks up flavour

Packaging can cause food and beverages to lose their flavour by absorbing aroma molecules, but scientists have developed a new mathematical method to help minimise this. The method can quickly predict aroma molecule absorption by different packaging polymers.

Jianwei Zheng from the A*STAR Institute of High Performance Computing said it can be difficult and slow to measure the loss of flavour molecules into their polymer packaging because the concentration of organic compounds in a beverage is very dilute and the absorption can take a few months to reach equilibrium.

Working with researchers from the Coca-Cola Company in Atlanta, USA, Zheng and his colleagues developed a faster method in the form of a mathematical calculation, which can predict the extent to which the packaging would absorb organic molecules from the beverages they contain.

The team worked on the Flory-Higgins theory, a well-known model of polymer properties developed in the 1940s. While it was originally developed to describe the mixing behaviour of a polymer with a solvent, the researchers combined it with group contribution methods (GCM) so that it could describe the mixing behaviour of polymers with organic compounds, such as aroma molecules.

“Group contribution methods assume the properties of a substance are the sum of contributions from all constituent chemical groups,” Zheng explained. “The data of each group is usually estimated from experimental data.”

In the case of food packaging, the calculation sums up the mixing of each chemical component of the polymer with each chemical component of the aroma molecule. This predicts the extent to which a given aroma molecule will dissolve into a given polymer.

Tests using aroma molecules such as limonene and eugenol, and polymers such as PET and PVC proved to be successful. Zheng said, “The calculation is very fast, and the results were consistent with available experimental data.”

According to Zheng, the researchers are “fine-tuning group contribution parameters and building up the database for more groups”.

Coca-Cola Amatil's Aussie manufacturing success story



Coca-Cola Amatil has launched a new Australian-made closure for Powerade bottles. The SyLon Sports closure was designed, tested and prototyped by Amatil's packaging services division in Eastern Creek, Sydney.

All three components of the closure are made of the same high-density polyethylene material, making it more recyclable. This will help the company reduce the volume and variety of plastic content in its bottles.

Coca-Cola Amatil said it is the first of its kind to be approved by The Coca-Cola Company. It plans to manufacture more than 120 million SyLon Sports closures every year for use in Australia, New Zealand, Fiji and Papua New Guinea.

“We believe the SyLon Sports closure is an Aussie-manufacturing success story,” said Coca-Cola Amatil's Group Managing Director, Alison Watkins. “Until now, we have imported closures from Europe and faced challenges with global supply. Our Packaging Services

Division team at Eastern Creek took initiative and designed, tested and prototyped a closure cap which is more cost-effective, better for the environment and will be made in Western Sydney.”



YOUR ENERGY!

You could save
in excess of 50%* on
the cost of generating
compressed air



AUSTRALIA WIDE SALES AND SUPPORT **1300 098 901** www.southerncrossaircompressors.com.au

Slippery packaging to reduce food waste

Foods like condiments, dairy products, beverages and some meat products often get stuck inside their packaging, contributing to the millions of pounds of edible food American consumers discard every year. Slippery packaging may be the answer to reducing food waste, according to researchers from Virginia Tech.

They created slippery packaging by wicking vegetable oils into the surfaces of common extruded plastics and said the technique could be applied to inexpensive and readily available plastics such as polyethylene and polypropylene. These make up 55% of the total demand for plastics in the world today, and they are one of the easiest plastics to recycle.

Ranit Mukherjeesaid, engineering mechanics doctoral student at Virginia Tech and lead author, said, "Previous SLIPS, or slippery liquid-infused porous surfaces, have been made using silicon- or fluorine-based polymers, which are very expensive. But we can make our SLIPS out of these hydrocarbon-based polymers, which are widely applicable to everyday packaged products."

SLIPS were first developed at Harvard in 2011 and are porous surfaces that can hold a chemically compatible oil within their surfaces through wicking. To keep the oil in place, the surfaces must have some sort of nano- or micro-roughness which can be achieved by either roughening the surface material with a type of applied coating, or ensuring the surface material consists of an absorbent polymer. This can also increase costs, but the researchers did not have to add any surface roughness to these hydrocarbon-based polymers.

"We actually found oils that are naturally compatible with the plastics, so these oils are wicking into the plastic itself, not into a roughness we have to apply," said Jonathan Boreyko, an Assistant Professor of Biomedical Engineering and Mechanics and a study co-author.

The method has obvious implications for industrial food and product packaging, but it can also be used to reduce bacterial contamination in the food and pharmaceutical industries.

The research, which received a provisional patent, was funded through an industrial collaboration with Bemis North America. It has been published in *Scientific Reports*.



Ranit Mukherjee, engineering mechanics doctoral student at Virginia Tech and lead author.

Support for tax on plastic food packaging



©stock.adobe.com/au/ArpadNagy-Bagoly



Research has revealed that US and UK consumers remain very concerned about plastic packaging, with many in favour of a tax on all plastic food packaging.

A survey of 1000 consumers, commissioned by Ingredient Communications and conducted by Surveygoo, found that a plastic tax received more support from UK consumers (52%) than US consumers (33%).

Ingredients Communities explained that there is already a crackdown on plastic packaging in the UK. Companies creating packaging waste are obliged to buy a 'packaging recovery note' (PRN), which effectively constitutes a tax, and the UK government is considering increasing the cost of PRNs for those using unrecyclable plastic.

UK support for a plastic tax may be due to increasing consumer awareness of the issue of plastic waste. There has been a charge for single-use plastic bags since 2015 which has reduced their use by over 80%, and BBC documentary *Blue Planet* highlighted the negative impact of plastic packaging on marine life.

"Our research definitely reflects the 'Blue Planet effect' in the UK. Viewers were left in no doubt about the harmful and often heart-breaking impact of plastic waste, and many were inspired to make a change. In the US, while there is still significant support for a plastic tax, the figures are much lower. This probably reflects greater public opposition to taxation generally, as well as greater scepticism about government measures to protect the environment," said Neil Cary, Managing Director of Surveygoo.

Support for action against plastic waste varies among states in the US. While California is the only state to ban plastic bags, Michigan prohibits local governments from banning, regulating or imposing fees on the use of plastic bags or other plastic containers.

The survey also revealed that packaging influenced where consumers chose to shop. 41% of UK consumers and 38% of US consumers said they would be more likely to buy produce from supermarkets that sold fruit and vegetables without plastic packaging.

Richard Clarke, Founder & Managing Director of Ingredient Communications, said: "Our research makes clear that there is high demand for food manufacturers to use more plastic-free packaging, and for supermarkets to introduce plastic-free features into their stores. However, the benefits of plastic packaging for food and beverage products are often overlooked. It helps protect goods from damage, extends shelf life and creates a brand identity, which undoubtedly influences consumers' purchasing decisions. A key challenge for both manufacturers and retailers of food products is to find alternatives to plastic packaging that maintain these benefits for the supply chain and consumers."



2019 | 26-29 MARCH

MELBOURNE CONVENTION

AND EXHIBITION CENTRE

REGISTER NOW
THE MAIN EVENT FOR
PROCESSING & PACKAGING

WHY ATTEND AUSPACK?

- ❖ **DISCOVER INNOVATIONS** from over 350 suppliers representing 1,200 global brands
- ❖ **A SHOWCASE OF GLOBAL TRENDS**, including sustainable solutions, smart packaging, digital printing and Industry 4.0 and robotics
- ❖ **NETWORK** with the industry's key players spread across the food, beverage, pharmaceutical markets
- ❖ **FIND SOLUTIONS** for increasing line productivity, versatility and efficiency
- ❖ **EXPERIENCE PRODUCT LAUNCHES** offering new heights in safety, security, automation and cost-savings

Europe gets behind 3-second TVC for raw meat

As part of its Horizon 2020 research and innovation program, the European Union is supporting German company FreshDetect as it tweaks its BFD-100. This handheld device can be used to determine the total viable count in fresh meat in 3–5 seconds with laboratory quality reliability and accuracy. The system is a viable alternative to laboratory testing, which can take several days to complete.

The device determines the bacterial burden in meat non-invasively by means of fluorescence spectroscopy. Individual datasets are required for the various types and cuts of meats. These datasets are generated from the measured fluorescence spectrum, as well as from conventional laboratory tests, using statistical methods. The resulting forecast model makes it possible to detect the total viable count directly on site.

It takes three to five seconds to perform a measurement and obtain the total viable count on raw meat. Results are immediately displayed and stored in the device along with the temperature, date and time of the measurement and a sequential test number.

The device can handle up to 2000 measurements before the data has to be transferred to a PC.

Horizon 2020 is Europe's largest ever research and innovation program with nearly €80 billion of funding available over 7 years (2014 to 2020). Its grant to FreshDetect is intended to help the company expand its BFD-100, across Europe. The project will also support enhancements designed to fully exploit the potential of the technology in food manufacturing.

The support will come from phase 2 of the EU's Horizon 2020 SME financial instruments program and will specifically target enhancements to and expansion of the FreshDetect technology within Europe.

"Each year, 88 million tons of food valued at €43 billion are wasted in the EU alone," explained Oliver Dietrich, Managing Director of FreshDetect GmbH.

"With the BFD-100, the first portable measurement device for rapidly determining the microbiological quality of food, our aim is to help address this issue. The BFD-100 is the first device that enables hygiene quality control across the entire production process and creates a new dimension in food safety. It furthermore lays an important foundation for optimising the manufacturing process and minimising food waste."



ISO standards for infant formula ingredients

ISO is developing a series of standards for verifying many of the ingredients in infant formula. Serving a vulnerable population group, infant formulae are highly regulated and manufacturers must demonstrate the product is safe for consumption and that the contents match the nutritional labelling. To this end ISO has just released ISO 21422 | IDF 242 for the determination of chloride content.

ISO, in cooperation with a number of international industry bodies, is developing a series of international standards on validated methods of analysis for infant formula so manufacturers can demonstrate their compliance to Codex Alimentarius standards.

The experts involved in developing the standards include those from industry, regulatory bodies, commercial laboratories and academia, ensuring harmonised standards that can be used to meet labelling regulations all over the world.

Most of ISO's standards have been adopted by Codex Alimentarius as reference and dispute resolution methods. One such standard is the recently published ISO 21422 | IDF 242, *Milk, milk products, infant formula and adult nutritionals – Determination of chloride – Potentiometric titration method*, which specifies a method for determining chloride in infant formula, milk and milk products.

Published jointly by ISO and the International Dairy Federation (IDF), ISO 21422 | IDF 242 is the result of close collaboration between ISO, the IDF and the independent standards developing organisation AOAC INTERNATIONAL.

Other standards in the series, currently in development, include:

- ISO 21424 | IDF 243, *Milk, milk products, infant formula and adult nutritionals – Determination of minerals and trace elements – Inductively coupled plasma mass spectrometry (ICP-MS) method*; and
- ISO 15151 | IDF 229, *Milk, milk products, infant formula and adult nutritionals – Determination of minerals and trace elements – Inductively coupled plasma atomic emission spectrometry (ICP-AES) method*.



Food authenticity testing using stable isotopes

Using element isotope fingerprints, food and beverage origin, authenticity and product label claims can be verified in a unique way. Isotope Ratio Mass Spectrometry (IRMS) works by detecting the 'isotope fingerprint' of a sample, a unique chemical signature that changes from sample to sample.

The LC IsoLink LC-IRMS is the first high-sensitivity interface connecting high-performance liquid chromatography (HPLC) with Isotope Ratio MS for the reproducible and accurate online determination of carbon isotope ratios ($^{13}\text{C}/^{12}\text{C}$) in individual compounds separated by HPLC.

Isotope ratio monitoring-LC/MS (LC-IRMS) with the Thermo Scientific LC IsoLink LC-IRMS is a technique that can analyse individual sugars in a mixture, like honey.

It is one method to test for adulteration in honey — the combination of HPLC and isotope ratio MS facilitates fast, sensitive analysis of complex sugar substrates. Each individual sugar in honey can be analysed to provide an isotopic fingerprint with more resolution.

It also offers the fast analysis of bulk samples using its direct loop injector positioned immediately after the HPLC column.

Recent scandals about food adulteration in Australia have highlighted the need for fast, efficient, sensitive technologies to screen products and protect brands from litigation and public backlash. LC IsoLink LC-IRMS provides isotopic analysis of complex sugars in honey.

Thermo Fisher Scientific

www.thermofisher.com.au



Molecular detection system for *E. coli*, *Salmonella* and *Listeria*

The 3M Molecular Detection System combines two technologies — isothermal DNA amplification and bioluminescence detection — resulting in a fast, accurate, easy-to-use application that overcomes some limitations of PCR (polymerase chain reaction) pathogen testing methods.

It simultaneously accommodates individual, pathogen-specific assays, enabling users in meat, poultry and other food and beverage categories to run up to 96 different tests concurrently for a range of organisms and across various food and environmental samples. The molecular detection assays have been validated by leading scientific validation organisations throughout the world (AOAC International, AFNOR) for a comprehensive variety of sample types.

The 3M Molecular Detection System is the primary method to be used by USDA FSIS for the detection of *Salmonella*, *Listeria monocytogenes* and *E. coli* O157 (including H7) — three major pathogenic organisms threatening the safety of meat, poultry and egg-related products. The 3M system was chosen after performance evaluation against other commercially available methods.

3M Food Safety

www.3m.com.au





**YOUR ONE ANSWER TO ON-SITE
FOOD AND BEVERAGE TESTING**





Food analysis for bakery products, egg products, fish oil, dairy products, nuts, oils and fats, and more.



Beverage analysis for beer and wort, wine and must, and more.



For more information, contact us on
(02) 9882 3666 or at orders@amsl.com.au

amsl.com.au



Oxygen laser gas analyser

Witt-Gasetechnik's Oxybeam gas analyser uses a laser beam to determine the oxygen content without damaging the packaging.

The sole requirement is to have a small viewing window into the interior of the packaging, which is the case with most shells, deep-drawn forms or tubular bags.

The product is laid under the sensor and the measurements are commenced via the touch screen. The result is available after about 4 s. The compact tabletop analyser shows the measured residual oxygen content to an accuracy of 0.1% absolute.

The analyser measures precisely how much laser light is absorbed in the packaging and so determines the oxygen content. In contrast to other light-based systems, it requires no separate reflecting surface that has to be glued inside the package or printed on the inside of the film.

As the laser leaves the packaging undamaged and does not consume any protective gas during its use, repeated tests on a package as part of a long-term observation are possible.

Oxybeam works with a class 1 infrared laser that does not require eye protection, due to its 760 nm wavelength. The product in the packaging as a whole does not even get warm as the laser power is less than 0.5 mW. The sensor measures the oxygen content over the full range from 0.1 to 100%. The headspace of the packaging should be around 16 to 80 mm. All measurements by the device can naturally be stored and exported for evaluation and archiving. Calibration is performed once per year.

Niche Gas Products

www.nichegas.com.au



Remote temperature, humidity and dewpoint data logger

The DL-100-E and DL-101-E data logger devices can be used to remotely record temperature, humidity and dewpoint information, including date and time stamps, and are able to store up to 600,000 downloadable records. Real-time data on the loggers can be accessed from anywhere and at any time by using the free Windows software, the iOS App or the Android App, as long as it is connected to the same local network the data logger is connected too.

The data loggers support Modbus TCP, as well as the emerging machine-to-machine (M2M)/IoT (Internet of Things) connectivity protocol — MQTT. They can be connected using a range of communication interfaces including Ethernet and PoE, meaning they can be easily integrated into existing HMI or SCADA systems and ensure easy maintenance in a distributed control system.

The IP66 version of the series is designed for industrial applications in harsh environments with an IP66 grade protection approval rating. The rugged RJ45 ensures tight, robust connections and ensures continuous operation, even for applications that are subject to high vibration and shock.

The product's LCD display shows temperature, humidity, relative humidity, date and time. The unit has a measurement range of -20 to +60°C and 0 to 100% RH. It can be DIN-rail or wall mounted.

ICP Electronics Australia Pty Ltd

www.icp-australia.com.au

Filter blender bag with dehydrated media



instaBAG, a filter bag with integrated dehydrated pre-dosed media by Interscience, allows a two-in-one process to skip the time-consuming media preparation.

Just add water and blend. The dehydrated media dissolves in the bag during the blending of the sample. The sample is then ready to be pipetted in minutes.

The filter bag is integrated in a classic sample prep workflow with debris blocked by the filter during blending.

Available in BPW 90 mL and BPW 225 mL, the bag is space-saving, diminishes waste and transportation, and has a long shelf life with a light- and humidity-proof aluminium pouch.

Features include increased flexibility, no need to prepare the diluent, no risk to break the analytical chain and no stock management.

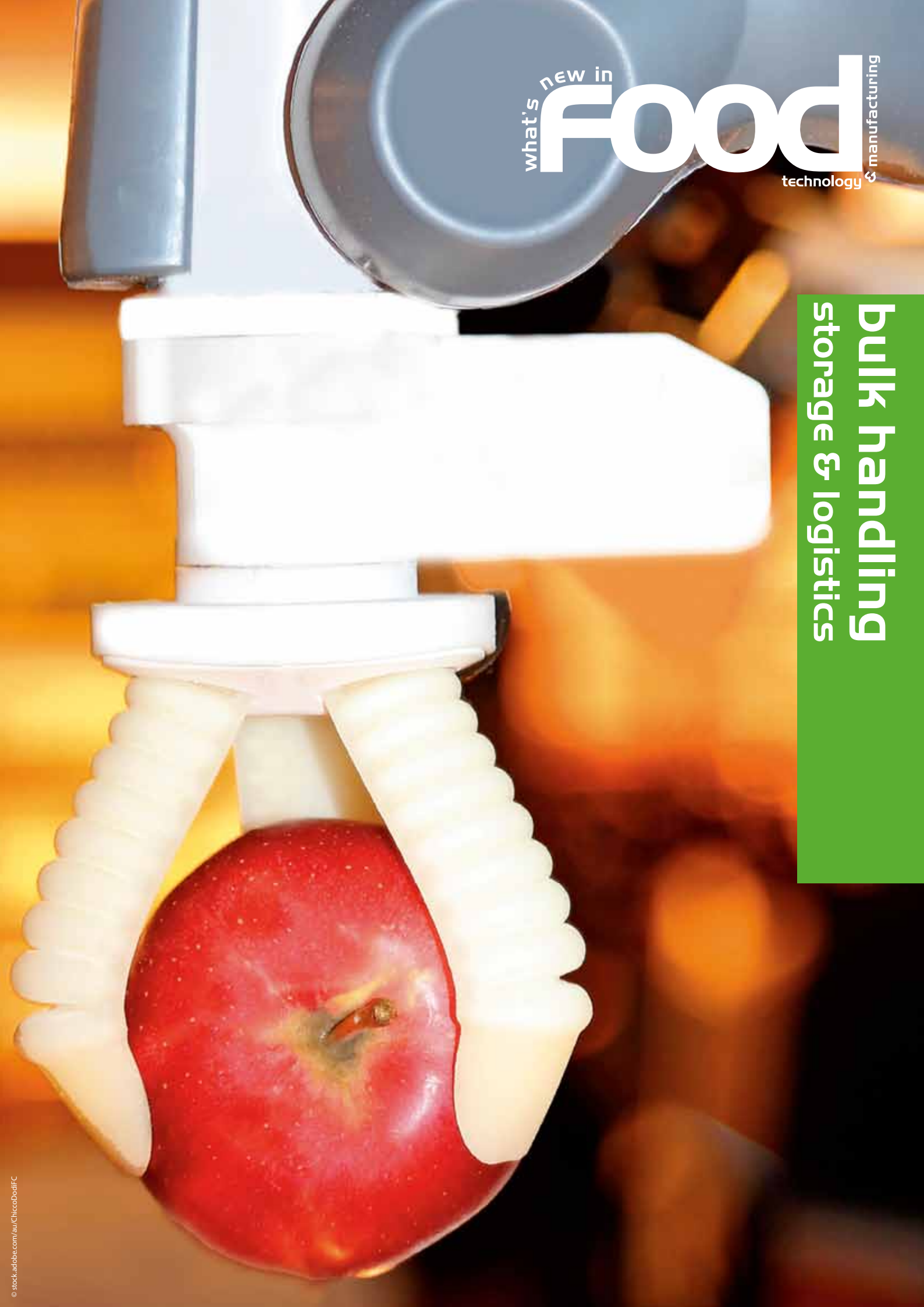
It meets the needs of the QC of food safety laboratories and is in compliance with ISO 11133 on culture media.

INTERSCIENCE

www.interscience.com/en

what's new in
Food
technology & manufacturing

bulk handling storage & logistics





Winery increased productivity with bottling line upgrades

Yalumba winery redesigned its bottling plant to include new drives for the bottle-conveyor system, air conditioning and hospital-grade air filtration. After three years, this has increased productivity by 50%, reduced energy consumption and created a safer work environment.

Jesse Auricht, Engineering Manager at Yalumba, said that typically half the cost of energy is based on network charges, so it is important to avoid any spikes in consumption as the wine bottles are filled, capped, labelled and packed in the bottling plant. "In the energy market, 50% of your cost can be dictated by a half-hour event," he said. "If you hit that peak once, depending on the time of day, you'll see an ongoing energy cost increase."

SEW-EURODRIVE MOVIGEAR mechatronic drive units were used in the upgrade to keep the conveyor lines and bottles moving. The MOVIGEAR units are designed to minimise the use of electrical power and can reduce energy costs by up to 50%, due to the efficiency of all its components. Auricht said this contributed to energy savings, which was beneficial for both the environment and the commercial bottom line.

Starting with their own design concepts, Yalumba issued a tender for detailed design and implementation of the project and awarded it to Foodmach, an Australian provider of machinery design, manufacturing and control services.

Foodmach designed and installed the new conveyor and line control system that combines old and new equipment. Line 1 had the original bottling line with new controls, a new conveyor and new palletisers, and Line 2 was a new line with a new depalletiser, filler and packer.

SEW-EURODRIVE's engineering and customer service, MOVIGEAR mechatronic drive system and high-precision servo motors, and MOVIDRIVE controllers helped obtain the desired result.

The upgrade not only saved costs by reducing energy consumption but also created a safer work environment as forklifts no longer entered the bottling operator area, solved a labelling challenge and reduced noise.

One of the problems for wine bottlers is condensation build-up in the labelling area due to the prevailing dewpoint temperature. If the wine temperature is lower than the dewpoint, it is likely that the labels won't adhere properly. Auricht and his team introduced an enclosed air-conditioned room around the bottling area set to the correct dewpoint, and a positively pressured, hospital-grade filtration system to maintain clean conditions.

However, the fully enclosed air-conditioned room caused additional noise. Auricht explained: "By effectively putting it in a big esky, all the noise in the bottling area was amplified."

Line 2 runs at 12,000 bph, and glass bottles banging into each other at that rate can be noisy and dangerous. To address these issues, Trevor Burgemeister, Process Control Technician at Yalumba, said the system detects when bottles are about to collide and sets a maximum collision speed. Auricht also said the MOVIGEAR is quiet in comparison to the rest of the system, which contributed to the company's decision to work with SEW-EURODRIVE.

Noise can be reduced by creating a pressureless line, in terms of the accumulation of bottles at any point on the conveyor system. It occurs when the conveyor is transporting more bot-

ties than the individual machine process rate. If a processing machine for filling, capping or labelling is operating at a slower speed than bottles are being delivered, the bottles bump into each other causing noise. Auricht said that if the conveyor keeps running when this happens, the pressure continues to build causing energy wastage, inefficiency and noise, along with wear and tear on all the conveyors.

On Line 1, the flow is between 5000 and 9000 bph. While the aim is zero pressure on the conveyors, the processing machines require a degree of pressure to function correctly. To achieve this, the conveyors on this line run at set speeds, while the line's process machines vary their speed as necessary to maintain head pressure of between five and eight bottles.

In the Foodmach line control system, speeds are controlled by software programmed according to a 'recipe' that varies for each production variety. The recipe specifies which processing machines are required for the product and also their operating parameters. Recipe data — speed, diameter of bottle, gap between bottles — is communicated from the programmable logic controller (PLC) to the SEW-EURODRIVE gears and units. These are calibrated so that the speed of the conveyor is set correctly. Burgemeister said that connecting the motion-detecting sensors to the motors and gear units, in order to manage the flow of bottles, was a simple operation. "It was just a matter of plugging the photoelectric in," he said.


If further calibration is required during production or if pressure build-up does begin to occur at one of the process machines, the conveyors are progressively halted to correct the

situation. At the same time, the machine will be instructed to operate faster, so that the flow evens out again.

Gavin Alder, Foodmach's Controls Manager, explained: "An added benefit of such fine line control is the ability to run reverse taper bottles (bottles wider at the shoulder than the base) which traditionally are difficult to run at speed, as bottle collisions result in fallen bottles."

Correct flow is set up at the start of the operation on the Foodmach depalletisers, where thousands of bph are fed into the two bottling conveyor lines. At this point, several 'mini' conveyor lines, running side by side and at different speeds, cause bunched-up groups of bottles to be fed into a single line. Complex programming, communicated to each MOVIGEAR drive in the system, makes the operation look easy.

According to John Gattellari, National Industry Specialist — Food & Beverage with SEW-EURODRIVE, said the compact design of the MOVIGEAR is optimised for horizontal conveyor systems like these. "The motor, gear units and electronics are combined in a single mechatronic drive system," he said. "It caters for a range of communication systems, single line network installation (SNI), SEW system bus controller (DSC), binary (DBC) or AS-interface (DAC)."

Auricht concluded it was the right decision to use the high-efficiency, low-energy drives, stating, "This was probably one of our most successful projects undertaken — both in time frames and outcomes." 

SEW-Eurodrive Pty Ltd
www.sew-eurodrive.com.au

SWIFT, VERSATILE AND MANOEUVRABLE. VELIA ES



Every detail of the Mitsubishi VELIA ES low level order picker is designed to make picking easier, safer and faster.



The Mitsubishi Velia provides:

- Comfortable and responsive Maxius Steering Wheel
- Uncluttered walk-through operator compartment
- Maximum drive speed of 12 km/h

www.mlaholdings.com.au OR CALL

131 **MLA**
6 5 2



Recyclable stand-up pouch

RPC bpi protec's X-EnviroPouch is a stand-up, fully recyclable pouch that is an environmentally friendly alternative to laminate. The incorporation of the moisture and oxygen barrier into the pouch provides an extended shelf life for a wide variety of ambient products such as cereals and pet food.

This helps to minimise food waste, while the reclosability of the pack provides effective portion control.

Available in white or natural film from 60–140 microns, the pouch's stand-up properties create greater display flexibility for retailers. There is a wide choice of pouch sizes and a gloss or matt print finish to allow aesthetically pleasing designs that maximise brand image and on-shelf impact. For consumer convenience, the bag can also be reclosable with a prestoclose seal or supplied as film on the reel for the packer or filler to form themselves.

RPC bpi protec

www.bpicconsumerpackaging.com



The Trusted Metal Conveyor Belt Manufacturer™

Hygienic Conveyor Solutions



Flex-Turn® Conveyor



Ladder-Flex™ Conveyor



Straight Conveyor

The hygienic way to convey around corners

Spreading, converging and diverging

Custom designed for your application

- NEW open leg frame
- NEW simplified wash through design
- Easy to clean & maintain
- High density blue plastic components

Wire Belt represented in Australia by:
Richard Foot Machinery Pty Ltd,
14/2 Apollo Street, Warriewood NSW Australia 2102
Tel: +61 2 9979 8311
Email: sales@rfoot.com.au

www.rfoot.com.au



Compact electromagnetic feeders

Eriez's Hi-Vi magnetic drive circuit provides a simple yet powerful solution to difficult material feeding applications.

These feeders, with their enclosed magnetic drive, can feed practically any bulk material from micron size to bulky chunks. Solid-state controls operate the feeders with 'watch-like' precision.

The company has standard models for the majority of feeding applications. Special units such as multiple drives, enclosed trays or screens can be designed for the user's application. In addition, a wide variety of standard and special trays are available.

Eriez Hi-Vi compact electromagnetic feeders help increase the efficiency of the user's process, from when ingredients enter the plant to when the end product ships from the dock.

Eriez Magnetics Pty Ltd

www.eriez.com.au

Low level order picker

Mitsubishi's VELIA ES low level order picker is programmable to fit the customer's load and warehouse as well as the driver's requirements.

Featuring a Maxius steering wheel, spacious walk-through operator compartment and large platform, the chassis is suitable for navigation in limited and confined spaces, with intelligent features boosting the flow of picking and productivity up to 20%, according to the company.

In the second level picking models, the steering wheel rises with the rising platform for extended operator comfort and safety. Platform and forks can both be raised while driving, minimising cycle times.

The ergonomically designed 105 mm low entry step reduces the risk of tripping, while driver presence sensing on the whole operator platform enables driving in several comfortable positions and instant take-off when safely on board. The multifunction steering wheel has an ergonomic design to ensure suitability for drivers of all sizes.

Each model offers a maximum drive speed of 12 km/h when the operator is riding, but sets a safe pedestrian speed in optional walk-beside mode. The series includes a choice of three models.

MLA Holdings Pty Ltd

www.mlaholdings.com.au



The secret life of boilers



The boiler at Young Henrys brewery.

The importance of steam boilers, the unsung heroes of the food and beverage processing industries, is not always understood.

Hidden away in the back corners of factory floors and in hospital basements, you will find the unassuming workhorses of the modern world. If you asked most workers to name the most important piece of machinery in their operation, few of them would mention the boiler. Many of them would have little idea of what the boiler did, or perhaps even that there was one at their site! Take that boiler out of commission, however, and it will soon become apparent how much everything else depends on it.

Perhaps because 'steam boiler' sounds like something you would find on a Victorian-era locomotive, it can be difficult for people to understand the vital place that steam technology still occupies. Steam boilers are used in a dizzying array of processes. Pressurised steam is still used in heavy industry to power turbines and machinery but there are countless other applications. Steam boilers help to bake our bread, brew our beer, pasteurise our milk, distil our spirits and even collect our honey. They are used to shape and treat the wood and other materials that make the furniture in our homes and offices. They are used in the manufacture of cloth, for our garments and then they are used to clean and press those same garments. When you write a letter, the paper you write on will almost certainly have been made using steam, as will the cardboard that crops up everywhere in modern life.

Hygienic Protect against contaminants
Store Nesting, stacking or freezing
Despatch Air land or sea
Recycle With confidence

One hugely important application for steam is, of course, sterilisation. Our hospitals depend on steam boilers to ensure that surgical equipment, scrubs, bedding and many other items are hygienically clean and safe. Similarly, the food and pharmaceutical industries must ensure that anything intended for human consumption is produced in a safe and sterile environment. In the agricultural sector, steam boilers are used in soil sterilisation and, of course, our wine industry depends on steam sterilisation to ensure the production of world-beating Australian wines.

What, actually, IS a steam boiler?

Put simply, a boiler is a pressure vessel, containing water, with a heat source to convert that water into steam, which is then piped off for use. The heat source for modern steam boilers is usually either electricity or gas. The boiler might be a 'closed' system, in which 100% of the steam is recaptured in the form of water, to be reconverted back into steam and re-used, or it might be an 'open' system, in which the steam is allowed to escape, requiring the boiler to be continually fed with water.

Different processes will call for different types of boilers. Different boiler styles also take different approaches to the question of how to introduce the water to the heat source... or vice versa. Go back to that Victorian-era locomotive, mentioned above, and you'll have something that's recognisably the ancestor of the modern 'fire-tube' boiler. This is a boiler in which the tubes through which the heated air or gas pass are positioned within the water tank, thus transferring the heat directly from the tube to the water.

By contrast, a 'water-tube' boiler will circulate the water along tubes passing through the heat source. These can either be vertical or horizontal in their design — a vertical boiler having the advantage of a smaller footprint, where space is at a premium.

When you're investing in steam boiler technology, it's important to choose the right boiler for your needs, so do get specialist advice if you are unsure. You'll need to consider what fuel you will be using, what pressure you need from your boiler and what the operational loads will be — not just your current peak loads but what your likely future requirements might be, so as to minimise future disruption. Make sure that the boiler you choose meets Australian Standard AS 1228 and comes via a reputable supplier.



Your boiler supplier/fitter must have all the skills required to help you design a system that meets your needs, taking into account your existing site and equipment as necessary. You'll need to consider the available power supply, fuel storage/supply facilities, the water supply and drainage — including hot water drainage.

Your new boiler will need a suitable home — steam boilers are not designed to operate outdoors, so you'll need a weatherproof building with capacity for flue(s), pipes of an adequate size and ancillaries such as a feed water tank, blow down tank, steam accumulator and steam control systems.

Your supplier should also be able to advise on any building works that might be necessary, in order to accommodate the new boiler system. Australian Standard AS 3892 deals with the requirements for the installation of pressure equipment, including the space required for the dissipation of latent heat but also cautions that the regulations cannot hope to cover "all aspects of installation for the great variety of pressure equipment". All employers have a duty of care to ensure that the equipment they install is as safe as can be anticipated, so make sure that your supplier has the necessary experience to help you fulfil this requirement.

Once in place, your steam boiler will need proper care and attention to keep it in top condition for a long and productive life. Preventive maintenance is always better than unplanned outages and expensive emergency fixes, so make sure you hire service engineers you can trust.

Simons Boiler
www.simonsboiler.com.au



Roxset™

HEALTH AND SAFETY FLOORING
 SLIP RESISTANT • ULTRA CLEAN • IMPERVIOUS



1800 ROXSET
 1800 769 738
www.roxset.com.au



Do you need **flooring** for your **Food** Facility?

Food Factories, Meat Processing Facilities, Bakeries,
 Hotels, Nursing Homes, Hospitals, Restaurants, Retail
 Outlets, Seafood and all other Safety Surfaces.



PFD's monster new distribution centre

PFD Food Services engaged Vaughan Constructions under a Design & Construct contract to deliver a new facility that allows them to significantly expand operations, cementing PFD's position within Australia's \$21.6 billion wholesale grocery market.

The 25,484 m² distribution centre is located adjacent to PFD's existing site in Knoxville, East Melbourne, and has a dedicated seafood processing space, refrigerated food storage and dry food stores.

The 14 m-high facility boasts:

- refrigerated warehouse distribution space and food manufacturing areas
- 8500 m² of freezer space
- 5500 m² cool room
- 25 loading docks
- a 1.5 million-litre capacity recycled rainwater system
- a dedicated truck wash and maintenance area
- staff amenities including generous breakout spaces, a wellness room and landscaped outdoor areas
- a premium grade office.

Vaughan Constructions, asked Askin Performance Panels to manufacture and install 38,500 m² of XFLAM panel throughout



the 25,500 m² office, refrigerated warehouse and distribution space which included multiple cool rooms and freezers.

Askin also supplied hinged chiller and freezer doors, sliding chiller and freezer doors, insulated sectional doors and vertical lift insulated panel doors.

Over 20 weeks, Askin installed, on average, 2000 m² of XFLAM Panel each week. A minimum of four dedicated installation crews (30 plus installers) were used, resulting in multiple areas being built simultaneously. XFLAM's span lengths meant that less steelwork was required so installation was faster and more efficient.

PFD Food Services distribution centre complies with all relevant building codes.

Vaughan Constructions Pty Ltd
www.vaughans.com.au

THE INTELLIGENT DRIVESYSTEM Made by NORD DRIVESYSTEMS



The Gear Unit

- Strong bearings
- Low noise
- High power density

The Motor

- High efficiency
- Global Standards
- All operating conditions

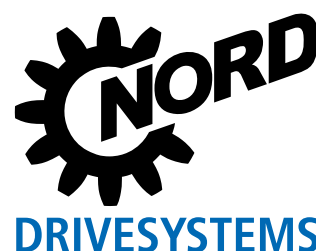
The Drive Electronic

- Compact design
- Easy commissioning
- Scalable functionality

Wide power range – Versatile system solutions – High overall efficiency

NORD Drivesystems (AU) Pty Ltd
18 Stoney Way, Derrimut, Victoria
3030 Australia
Phone: +61 3 9394 0500
Fax: +61 3 9394 1525
www.nord.com.au
National Customer Service
1300 00 NORD (6673)
au-sales@nord.com

Member of the
NORD DRIVESYSTEMS Group



NZ grocery distributor improves supply chain efficiency



New Zealand's biggest grocery distributor, Foodstuffs North Island, has a growing network of almost 350 PAK'nSAVE, New World, Four Square, Fresh Collective and Gilmours stores. This means transporting products efficiently is important to ensure it can meet the demands of its millions of customers.

Foodstuffs has deployed JDA Transportation Management by JDA Software to help it improve operational efficiencies, plan transportation and provide visibility across its network.

Having a common system and standard processes across their transportation business will help the grocery organisation optimise costs via route consolidation, load optimisation and by adopting leading practices in logistics management.

"JDA is a valuable partner in our supply chain transformation journey," said Gareth McFarlane, Acting Supply Chain General Manager for Foodstuffs North Island. "With over 4000 deliveries per week, the JDA platform will enable us to improve efficiency and utilisation of time and space to deliver on our customer promise."

The company expects to see an increase in transit visibility for freight movements, carrier metrics and support data to aid in carrier management discussions, and a reduction in manual processes. The ability to make real-time decisions will also help drive greater agility and responsiveness in meeting customer needs.

"We are very pleased to see the results delivered by JDA's experts in technology, education, cloud and other areas together with Foodstuffs," said Stuart Rees, JDA's Vice President of Sales in Australia and New Zealand. "We look forward to being part of Foodstuffs' supply chain journey."

JDA Software Australia Pty Ltd
www.jda.com

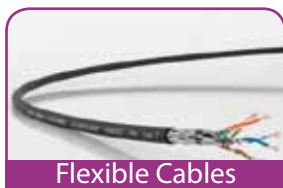
Treotham LEADERS IN INDUSTRIAL AUTOMATION SUPPLY



Energy Chain



Bearings



Flexible Cables



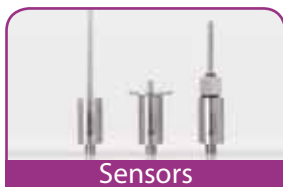
Cable Glands



Flexible Conduit



Connectors



Sensors



Gearheads

Treotham Automation
Phone: 1300 65 75 64

www.treotham.com.au
info@treotham.com.au



Inline freezer control system

The freezing process control system CALLIFREEZE continuously measures the level of product frozenness at freezer outfeed and adjusts freezing time, air temperature and fan speed to achieve the exact freezing quality with minimum energy consumption.

The system reduces power consumption and improves efficiency. The control unit can be configured for GEA S-Tec and A-Tec freezers handling a wide range of food products including bakery.

GEA Australia
www.gea.com

Sorting Brussels sprouts

UK vegetable processor T H Clements installed a VERYX digital sorter from Key Technology on its new Brussels sprouts grading line in 2017 to help improve production efficiency.

T H Clements grows 20 varieties of Brussels sprouts, which are cleaned, sorted, size graded and bulk packed in cold storage during the August-to-March harvest. They are then either loose packed into 14-kilogram bulk trays for foodservice and wholesale customers or sent to vertical-form-fill-seal machines to produce between 200–500 g retail packs.

Richard Mowbray, Commercial Director at T H Clements, highlighted the importance of ensuring fresh, high-quality products are delivered to retailers in the shortest possible time to maintain customer satisfaction. To achieve this, the company invests in technology such as Key's belt-fed VERYX B175 sorter, which replaced three old sorters.

It can inspect up to 12.5 tonnes/h of Brussels sprouts and helps eliminate blind spots, which T H Clements Factory Manager Graham Neal said was previously a challenge.

"Brussels sprouts are difficult for most sorters — they cast shadows with their deep shape and open leaves when illuminated. VERYX, with its all-sided surface inspection, gives us a 360-degree view of each Brussels sprout," he said. "Our new sorter has doubled our throughput without increasing our labour at the same time we're exceeding our high expectations for defect removal accuracy."

Brussels sprouts are launched off the end of the belt, illuminated by LED lights and inspected entirely in-air with top- and bottom-mounted cameras positioned in a 'tilted-x' configuration. Next-generation 4-channel cameras combine visible colour and infrared inspection at twice the resolution of previous generation cameras. These sensors detect extremely subtle colour differences and submillimetre characteristics to identify a wide range of product defects, foreign material (FM) and extraneous vegetative matter (EVM).

Before digital sorting, mechanical graders remove Brussels sprouts that are smaller than 20 mm and larger than 40 mm, as well as some FM and EVM. A Key Iso-Flo vibratory conveyor with a customised bar screen at VERYX's infeed also removes FM, EVM, loose leaves and small pieces, and spreads the product for optimal presentation to the sorter's inspection zone.



"About 90% of all FM and EVM is removed before the digital sorting system, and then the vibratory infeed shaker that's integrated with our VERYX removes even more. That means about 98% of the product going into the sorter is sprouts, which helps maximise its capacity and yield," explained Neal. "Since most FM and EVM is removed with mechanical processes upstream, we've programmed our VERYX to focus on rejecting sprouts with disease and rot as well as pest damage, yellow leaf and other defects, although it's capable of finding and ejecting much more."

Featuring auto-learning, self-adjusting algorithms, predictive system diagnostics and smart alarms, it is designed to maximise automation and can adapt to normal fluctuations in the product and environment without manual intervention. Recipe-driven operation enables settings to be stored in memory to speed product changeovers and ensure consistent sorting results.

"VERYX is so simple to use, one operator is able to run the entire processing line. The intuitive user interface presents different views to users of various levels, depending on their needs, and it's password protected. The engineering manager, the main operator and I are the only ones who have a deep level of access, which prevents inadvertent changes by unqualified personnel," said Neal. "If we need any support, Key's engineers can access the sorter remotely to take control and make changes to resolve an issue very quickly. Every point of contact we've had with Key has been excellent, starting with our trials in Belgium through to installation, start-up and beyond."

Key Technology Australia Pty Ltd
www.key.net

Protect your product, brand & customers from foreign metal contamination with certified

RE80™ MAGNETIC SEPARATION SYSTEMS

Now with **NEW DURA-SLIK™** Abrasion-Reduction Technology

- ✓ RISK REDUCTION
- ✓ PRODUCT PURITY
- ✓ PRODUCT SECURITY
- ✓ CUSTOMER SATISFACTION
- ✓ BRAND NAME PROTECTION



CONTACT US TODAY!

+61 2 4272 5527
magnets@magnattackglobal.com

MAGNATTACK™
GLOBAL
WHEN RELIABILITY MATTERS





Compact electric pallet trucks

Crown Equipment's WP 3010 Series of pallet trucks feature an AC drive motor combined with the e-GEN regenerative braking system for performance, reliability, long battery life and maintenance-free braking.

The series' short (500 mm) head length, fork length of up to 1150 mm, built-in charger and low weight (279 kg without battery) make it nimble and convenient, suitable for back-of-truck work.

Its load capacity of 1600 kg, heavy-duty gearbox, robust helical gear set, optimised steel structure and high-tensile steel forks mean it is just as rugged.

The WP 3010 also features the same cast aluminium Crown X-10 handle with easy-to-use ergonomic controls.

It has compact dimensions so it's suitable for moving and positioning loads quickly and safely in confined storage spaces.

It is suitable for kerbside deliveries, transport on truck beds, retail applications and manufacturing environments.

Crown Equipment Pty Ltd

www.crown.com

Let the flow begin!

Use a star performer from the VSS cast of thousands of industrial vibrators to keep your product flowing, smoothly and consistently. We can also help with vibrating feeders, conveyors and compaction tables.



Call us on 1800 300 VSS (1800 300 877) or email sales@vibrationsystems.com.au



BRANCHES AND DISTRIBUTORS IN ALL STATES AND NEW ZEALAND

Oil-free compressor

Gardner Denver's CompAir Ultima oil-free compressor has two high-efficiency, permanent magnetic motors that replace the traditional gearbox design. These two variable-speed motors are capable of achieving speeds of up to 22,000 RPM and directly drive the airend without the need for a gearbox.

The compressor uses water in a closed-loop circuit to cool a system's motors and airends, which allows greater heat transfer and cooling efficiencies and ensures as little oil as possible is used in the system for assured air purity. Water-cooling also places less stress on these components, limiting the opportunity for any maintenance issues and reducing servicing costs.

The compressor is offered as standard from 75 to 160 kW, with each unit fully upgradeable between this kilowatt range. This means that if a site's energy demands increase in the future, users can choose the optimal variant based on the increased capacity. There is no need to purchase a new compressor, eliminating the associated downtime or delivery wait that comes with upgrading to a new system.

It emits a noise level of 69 db(A), has a small footprint and can be installed easily at the point of use, rather than in a separate compressor room. Its efficient internal cooling also means adjacent compressors can be sited close to one another, optimising the space available.

It offers assured air quality and purity for those operating in production sensitive environments, such as the food and beverage industry, electronics manufacturing and pharmaceuticals sector.

Gardner Denver Industries Pty Ltd

www.compair.com



what's new in
Food
technology & manufacturing

processing

Who knows their bugs?



Outbreaks of food poisoning have resulted in product recalls, illnesses and even deaths. So are we educated enough about food poisoning and do we truly understand the importance of food safety? Research from the UK and New Zealand suggests there is still more to be done in this area.

The seriousness of food safety is made apparent by the number of foodborne outbreaks worldwide. 21 people became ill with *Salmonella Havana* linked to alfalfa sprouts in South Australia, at least 183 South Africans have died after eating *Listeria*-contaminated polony and nine deaths have been caused by an outbreak of *Listeria* from frozen vegetables in Europe.

The Food Standard Agency's (FSA) recent biannual public attitudes tracker surveyed 2000 consumers in England, Wales and Northern Ireland to understand attitudes towards food-related issues and the FSA.

Surprisingly, food poisoning was not the highest food safety concern (28%). Instead, the survey found 33% of consumers were concerned about food hygiene when eating out, 30% about chemicals from the environment such as lead in food and 29% about food additives.

It found that *Salmonella* and *E. coli* are the most known types of food poisoning, capturing the awareness of 91% and 85% of consumers respectively. Norovirus (56%), *Listeria* (51%) and botulism (46%) also featured near the top of the list, but despite being the most common cause of food poisoning in the UK, only 24% of respondents were aware of *Campylobacter*.

Respondents perceived raw chicken or turkey to be the most likely source of food poisoning (79%), followed by shellfish (55%), reheated takeaway food (46%) and eggs (37%).

Bacteria doesn't change the appearance or smell of food, but there are a number of ways to reduce the risk of food poisoning. Consumers believed that the best way was cooking food thoroughly, but the survey found that awareness of hygiene standards when eating outside the home is 82%, which is a 4% decrease since May 2017. Just under half of respondents were concerned about food safety in UK restaurants, pubs, cafes, takeaways, shops and supermarkets.

According to the survey, consumers trust accurate food labels, food producers and the FDA to uphold safety standards. Of the 79% of respondents aware of the FSA, 69% trusted it to do its job and 72% trusted it to provide truthful information.

Similar research was also recently conducted in New Zealand, focusing on food safety from the business's perspective.

Research commissioned by the Food Safety Assurance and Advisory Council (FSAAC) and the Ministry for Primary Industries (MPI) analysed how New Zealand food businesses were implementing and maintaining food safety cultures.

Drawing on a telephone survey with 900 business decision-makers, an online survey with 193 food safety staff and 20 qualitative interviews with business decision-makers, the research looked at six dimensions of food safety culture. These were: leadership; managers demonstrating visible commitment; accountability; sharing practice and knowledge; following best practice and understanding; and confidence.

"Food safety must be treated as a way of doing business and not just something that is discussed at a weekly meeting," said the Chair of the FSAAC, Michael Ahie. "This initial research provides a baseline that will be valuable for tracking improvements over time."

The research revealed that 95% of businesses said they had policies in place to identify and deal with food safety risks, but only 69% had specific food safety goals and key performance indicators.

Customer safety was also a top priority, and three quarters of employees said there was good leadership which visibly showed support for food safety.

However, the research found that there needs to be more shared responsibility across the supply chain, better communication from managers and more reward programs. Only 3% of food businesses reported data on their food safety performance back to their employees and 13% had a formal reward system for staff who identified problems.

New Zealand Food Safety's Director of Food Regulation, Paul Dansted, said most food businesses "have an inherent sense of pride in what they are doing and are motivated to build and maintain a good reputation for their business".

While there is an overall strong commitment to food safety, he said the research helps identify potential areas for improvement. New Zealand Food Safety plans to release a food safety guide this month aimed at boards, directors, chief executives and business owners.

Whether the responsibility falls on the business or the consumer, these pieces of research highlight there is room for improvement in regard to upholding food safety and minimising the risk of illnesses.



Extra savings... We'll drink to that

Regardless of the liquid you move, SEW-EURODRIVE's Mechatronic Drive Systems guarantee cost savings through lower electricity usage, simple system integration, minimised spares inventory, decreased cleaning efforts and increased system durability.

Your Benefits:

Energy Savings Up to 50%: Achievable with MOVIGEAR®, which includes a IE4 (Super Premium Efficiency) motor, highly efficient gearing and on-board drive electronics mounted in a common housing.

Minimised Spares Inventory: Vast speed range capabilities of MOVIGEAR® mean differing rotational speed requirements can be solved with a reduced number of unit variants.

Hygienic System Design: Reduced debris entrapment and increased surface durability in corrosion prone environments due to smooth housing design, HP200 surface finish and stainless steel components.

Decentralised Technology: Geared motor, drive electronics and fieldbus system mounted in the field resulting in a diminished control cabinet, reduced wiring effort and easy integration with industrial Ethernet control systems.

Want to know more?

Melbourne (Head Office)

Sydney | Brisbane

Mackay | Townsville

Perth | Adelaide

www.sew-eurodrive.com.au

1300 SEW AUS (1300 739 287)

SEW
EURODRIVE

Bread scoring system

A bakery's bread scoring operations can be improved with the help of the advanced AutoJet Bread Scoring System to ensure high-quality, consistent results.

Utilising Spraying Systems Co. technology, the bread scoring system features a AutoJet Model 2008+ Control Panel and PulaJet automatic spray nozzles, in order to produce the best results possible for the bakery.

Using traditional bread scoring methods, often equipment can become stuck and residue accrues, which can impact its effectiveness. By automating the process, users can eliminate this issue while ensuring that high-quality bread scoring is achieved.

The automated system is designed to be safe and easy to use, and can save the user money on regularly replacing manual equipment.

Spraying Systems Co Pty Ltd

www.spray.com.au



Low-pressure oil-free rotary screw compressor

The Atlas Copco ZE 3 low-pressure oil-free rotary screw compressor is suitable for the harshest industrial environments.

The product is manufactured to operate in a broad spectrum of pneumatic conveying industrial applications while ensuring a continuous 100% oil-free air supply at the lowest possible life cycle cost.

It is capable of running consistently at 2.5 bar, and is targeted at the cement, gypsum, food and beverage, power, pharma and glass industries for applications such as conveying, bulk handling, material handling and processing systems. It is also suitable for truck unloading, for example of cement or flour.

All the ZE 3 compressors are ISO 8573-1 Class 0 TUV certified to ensure 100% oil-free air supply for critical applications.

Atlas Copco Compressors Australia

www.atlascopco.com.au

Air nozzle range

EXAIR's Super Air Nozzles offer a highly efficient way to blowoff, cool, dry and clean. Many designs are available to suit a range of applications. In most cases, Super Air Nozzles pay for themselves in just a few weeks. Air savings compared to typical blowoffs can be as high as 80%. The noise level is a fraction that of ordinary air nozzles (typical noise reduction is 10 dBA).

Applications include: part cleaning, chip removal, part drying after wash, liquid blowoff, part cooling, material conveying, part ejection, fibre conveying, air assist, bag opening/filling operations and scrap removal.

Many Super Air Nozzle designs are available in zinc aluminium alloy construction, suitable for general-purpose applications. EXAIR Super Air Nozzles are also available in Type 303 or Type 316 Stainless Steel construction, which is suitable for food and pharmaceutical applications where resistance to high temperatures and corrosion is required. High-force models are available for applications where additional reach and extreme force are needed. Swivel Fittings and Stay Set Hoses to aim the nozzles and an electronic control to minimise air usage are also available. EXAIR Safety Air Guns incorporate Super Air Nozzles for improved safety and blowoff performance.

Super Air Nozzles help reduce compressed air cost and allow users to meet OSHA noise level and dead-end pressure requirements. They are CE compliant and provide an average noise reduction of 10 dBA.

The compact nozzles can improve production, conserve compressed air, improve blowoff performance and improve safety.

Compressed Air Australia Pty Ltd

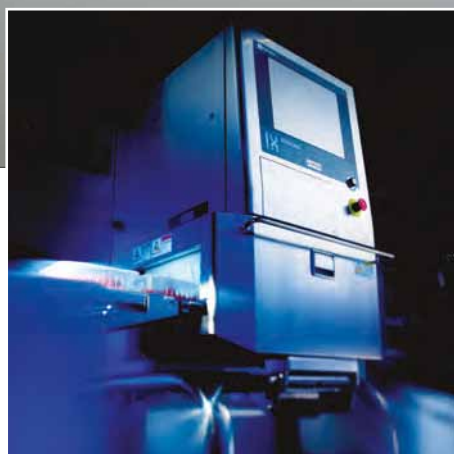
www.caasafety.com.au



HEAT AND CONTROL[®]

Hit all your inspection + **packaging** targets

Technologies that deliver superior inspection performance



As a world leading single source supplier, HEAT AND CONTROL can provide complete solutions for efficient and reliable packaging lines, including conveyors, weighers, checkweighers, bagmakers, metal detectors and X-ray systems.

Ishida and CEIA inspection systems from Heat and Control assure precise, consistent detection and rejection of product containing foreign objects, missing or damaged pieces or packaging defects.

Put our innovation to action in your plant today!



EXCLUSIVE DISTRIBUTOR FOR ISHIDA + CEIA
AUS +61 7 3877 6333 NZ +64 9 274 4182
info@heatandcontrol.com
www.heatandcontrol.com



The benefits of saving energy for manufacturers

John Rieusset, ABB Food and Beverage



Food and drink manufacturers alone account for over 5% of industrial energy use globally and around 14% of energy consumption within the Australian manufacturing industry. So how can plant manufacturers improve energy efficiency in their plant, while saving costs and improving overall equipment effectiveness (OEE) at the same time?

It will come as no surprise that large companies are under pressure to reduce their energy usage. The Australian Government Department of the Environment and Energy (DoEE) gives tips on energy management and demonstrates best practice for Australian companies through its site Energy EXchange. The Australasian Emissions Reduction Summit 2018, run by the DoEE, recently engaged many high-profile businesses, highlighting that Australia needs to improve its performance with regards to reducing its carbon emissions.

While many plant managers will no doubt be happy to play their part in such initiatives, they are often under pressure from their management to reduce costs and increase output. The good news is that energy efficiency improvements often pay for themselves while helping increase output and reduce operating costs.

Look at your motors

During an energy assessment of a particular plant, ABB discovered that the plant's motor maintenance program involved rewinding motors in order to help extend the life of those assets. Some motors were rewound up to five times and as a consequence, the energy efficiency of the rewound motors had fallen. As a result, there was additional loading placed on the transformer. This amounted to a significant amount of wasted energy.

By replacing these motors with higher efficiency IE3 motors, the plant immediately started to save energy. The payback period for the investment in higher efficiency motors was less than two years, which was a vital factor in the plant manager's decision to invest in the IE3 motors.

The plant has since adjusted its motor maintenance policy to look at replacing older IE2, with higher efficiency IE3 motors, rather than rewinding the old motors.

When considering the purchase of higher efficiency motors, there are various online tools and calculators available that help you understand the payback time for the investment.

Look at your refrigeration

Cooling is a critical function in many food and beverage processes and also one of the largest consumers of energy, as compressors, pumps and fans are often in use extensively throughout the plant. Plant managers can assess how this equipment is performing versus the actual demand, which can help them to home in on potential energy saving opportunities. Refrigeration processes use some of the largest motors found in a food and beverage plant, where ammonia compressors use, on average,

a 300-450 kW motor and pumps averaging between 35-55 kW.

Many of our customers often have their own energy efficiency goals to meet. In one plant, by applying variable speed drives on two compressors (450 hp and the other at 350 hp) and improving compressor control, saved up to 30% energy use between the compressors, resulting in an overall plant energy reduction of 4%.

Looking at power quality

With a wide range of motors, drives, compressors and other equipment which is inductive, the overall power factor of the plant may be reduced. The lower the power factor, the less efficiently electricity is used throughout the plant. Utilities may impose extra charges or penalties for poor power quality, so this is an area that plant engineers should take into consideration.

At a bottling plant for one of ABB's customers in India, we installed a step less reactive power compensation system to provide dynamic reactive power, thereby compensating for unbalanced electrical loading. This improved the power factor from 0.94 to close to unity (1). It also translated to a 10% reduction in their annual electricity spend, with the investment delivering a payback of less than two years.

Plant engineers may also wish to consider using low harmonic variable speed drives as well, which help improve the power quality within the plant.

Plant assessments offer insights

Being able to identify energy saving opportunities across a manufacturing plant can be a complex task. At ABB, we've developed a plant assessment service that takes a comprehensive look across a plant, working in conjunction with the plant engineers. Together, conducting walk-throughs and focused workshops, the output is a comprehensive report and improvement plan tailored for that plant.

There are certainly many ways to look for energy savings, and each improvement makes a difference. By having a better awareness of the plant's energy usage, plant managers can identify key areas where energy is being wasted. Not only will investing in newer, more energy efficient equipment help them to meet government emissions targets, it will also reduce costs in the long term and help them to reduce the cost of downtime.



ABB Australia Pty Ltd
www.abbaustralia.com.au



SPECIALIST SYSTEMS FOR WASTEWATER TREATMENT

Hydroflux has extensive experience in wastewater treatment from all types of food processing industries.

1300 417 697
www.hydroflux.com.au

HYDROFLUX
WATER | SCIENCE | TECHNOLOGY



Mini-ITX motherboard

Backplane Systems Technology has released iBASE Technology's MI988 industrial Mini-ITX motherboard powered by the AMD Ryzen V1000 APU with onboard Vega graphics.

The MI988 is the latest in motherboard technology from iBASE, with the AMD Ryzen V1000 APU with its four CPU cores and eight threads making it suitable for multicore workloads. It also features integrated Vega graphics with up to 11 Vega GPU compute units, which can be harnessed to achieve high processing throughput for demanding graphics and compute workloads.

Not only does the MI988 support the latest in embedded processors from AMD, but it also supports new technology like M.2 devices. It comes equipped with 1 x M.2 M-Key for super fast storage, 1 x Mini-PCIe Socket and 1 x PCIe(x8) slot for all the user's expansion needs.

In the industrial environment a systems I/O is important, and the motherboard has plenty even for its Mini-ITX form factor. This includes 2 x GbE ports, 4 x RS232 ports, 2 x internal RS232/422/485 ports, 2 x USB 3.1 Gen 1 ports and 2 x USB 3.1 Gen 2 ports. For display outputs the MI988 has a 1 x HDMI 2.0a port, 1 x display port 1.4, 1 x eDP port and a 24-bit dual channel LVDS port.

The MI988 is suitable for applications in the digital signage, industrial control, automation or the gaming machine markets because of its small size and powerful processor.

Backplane Systems Technology Pty Ltd

www.backplane.com.au



Alginate sausage line

The CC215 is an attachment to produce sausage in an alginate casing. The sausages can either be discharged on a hanging unit or individually on a belt.

It has a high production speed with efficient, continuous production processes. It is also flexible, hygienic and requires low maintenance.

Other features include: consistent quality; reduced costs as time is no longer required for casing changes; and the possibility of 'pure' halal, poultry, vegetarian and kosher products.

Vemag Australia Pty Ltd

www.vemag.com.au

Stainless steel HMI panel PC

The ViTAM-921A 21.5" Stainless Steel HMI Panel PC is a fully sealed IP66/IP69K all-in-one computer. To comply with these standards, it uses M12 sealed connectors for all I/O connections. The result is a panel PC that can withstand high-pressure hose-down cleaning.

The PC is based on sixth-generation Intel Core i3-6100U or Core i5-6300U processors with up to 16 GB of DDR4 memory to provide a high-performance industrial control solution. Standard I/O connections provided include 2x USB 2.0, 1x LAN, 1x RS232/422/485 and 9~36 VDC power. Two optional I/O connections can also be installed. An internal 2.5" HDD/SSD drive bay and mSATA slot are provided for storage. A Mini-PCIe slot is provided for WiFi/BT cards and an RFID front panel module is also available. The 21.5" 1920x1080 flat panel LCD screen touch panel options include resistive touch, projected capacitive touch or a no-touch glass front bezel.

Housed in a grade 304 or optional grade 316 stainless steel enclosure, the ViTAM-921A will not corrode and is easy to clean. To assist the cleaning of the display it includes a touch on/off button that allows the touch screen to be temporarily disabled during the cleaning process. This allows the display to be hygienically wiped down without having to shut down any process control applications.

Standard 300 nits and optional sunlight-readable 1000 nits display brightness is available. VESA 100 mounting holes allow the ViTAM Series to be arm or wall mounted. Optional ergonomic yoke mounting is also available.

Interworld Electronics and Computer Industries

www.ieci.com.au



A perfect view – even with condensation!

The future is 80 GHz: a new generation of radar level sensors

For the latest generation of radars, condensate on the sensor is not an issue. Totally unaffected by condensation or buildup on the antenna, VEGAPULS 64 accurately detects the liquid level. With the smallest antenna of its kind and exceptional focusing, it delivers outstanding performance every time. Simply world-class!

www.vega.com/radar



® Wireless adjustment via Bluetooth with smartphone, tablet or PC. Compatible retrofit to all plics® sensors manufactured since 2002.





The real energy consumption of vacuum pumps

Zsolt Pekker

In order to save power and costs, plant designers often choose the lowest possible rated power for drive motors. But the kilowatt specification on the nameplate can be deceptive when it comes to real energy consumption. The motor's rated power is only one of several factors influencing overall efficiency. The 'service factor' (SF), to be found on some nameplates, adds to the confusion by disguising the real maximum rated power. A systemic view is needed to achieve the optimal energy efficiency in a vacuum system.

Ultimate pressure and pumping speed are the essential variables for the selection of a vacuum pump. Actual 'vacuum performance' is determined by these factors, ie, the vacuum level achieved in a certain period and available in the application. Vacuum pumps with completely different technologies can reach the same given performance level. Motor speeds, for instance, can differ dramatically. The rotary vane vacuum pump is currently the most widely used vacuum technology. At 1000 rpm, it achieves a similar vacuum performance as an oil-lubricated screw vacuum pump does with up to 7000 rpm.

Rated power vs real consumption

This difference in motor speed — but not in performance — can also be reflected on the nameplate: on the screw vacuum pump, it possibly indicates a lower electrical rated power than on the rotary vane vacuum pump. But selecting a device only by looking at this figure would be a mistake. In the process,

power consumption regularly and largely departs from the rated power. The motor with the smaller number in front of the kW specification does not necessarily use less power than the 'larger' drive. In fact, very often the exact opposite is the case, especially when the actual rated power is also disguised by the service factor on an American nameplate.

In electric motors there is no linear relation between power consumption and the provided performance (shaft power). Optimal performance is usually achieved somewhere between 50 and 100% of the motor's rated power. It is quite safe to assume that it delivers ideal performance at highest efficiency in a more or less wide range around 75% of the rated power. Below this range, the motor needs more power in relation to the actual performance, thus increasing the relative power consumption.

Confounding service factor

Of course, this is also the case when the optimal range is exceeded. When this happens, it can even go above 100% of the rated power — making use of the so-called service factor. The US American National Electrical Manufacturers Association has defined the service factor as a standard in the NEMA MG1-2011 handbook. It is indicated on the nameplate (Figure 1), specifying the degree to which a motor can be loaded beyond the rated power. The rated power is multiplied by the SF value to calculate the allowed degree of overloading: eg, with a SF of 1.25, the real maximum rated power is 25% higher than indicated. Combined

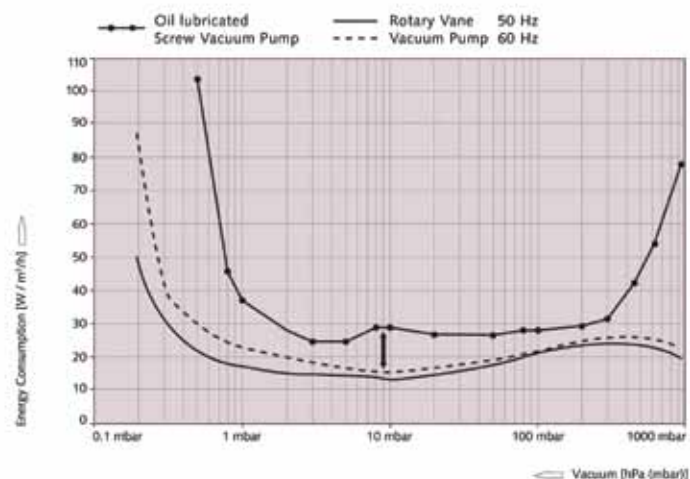


Figure 2: Parallel testing of 1) a speed-controlled oil-lubricated screw vacuum pump with rated power of 15 kW/SF 1.25 and 2) a rotary vane vacuum pump with rated power of 18.5 kW: in the main operational range around 10 mbar, the pump motor with the lower rated power consumes more significantly power than the larger motor of the rotary vane vacuum pump.



Figure 1: With a service factor of 1.25 the rated power can be temporarily exceeded by up to 25%.

with a rated power of 15.0 kW, the maximum permissible, thus real rated power is $15 \times 1.25 = 18.75$ kW.

The SF range should only be used temporarily, as NEMA also points out. However, in everyday practice, it is often already implied in process calculations, as vacuum generation rarely stays on a continuous level. Instantly starting the vacuum pump from standby mode or short peak loads, even if they are regularly targeted in short cycles, can be recorded as 'temporary' overloading. While the relatively low rated power, not calculating the service factor, suggests low power consumption, the actual pumping performance used is clearly above the nominal figure. Periodically running in the top gear of the SF range, the motor also works significantly outside of its efficiency optimum for much of the time. This kind of regular overloading can shorten its life cycle, too.

Testing actual power consumption

In order to compare the actual energy efficiency of different vacuum pumps realistically, power consumption and performance have to be measured in practice. German vacuum pump manufacturer Busch ran such parallel tests with two vacuum pumps:

1. A speed-controlled and oil-lubricated screw vacuum pump from another manufacturer with a specified rated power of 15 kW plus a service factor of SF 25.
2. A rotary vane vacuum pump from its own product range with a rated power of 18.5 kW on the nameplate.

The test showed that in the range of the main load the power consumption of the smaller motor according to nameplate-rated power was nearly twice as high as that of the reference device. This latter rotary vane vacuum pump, running at significantly lower speed, worked significantly more efficient despite its larger motor (Figure 2).

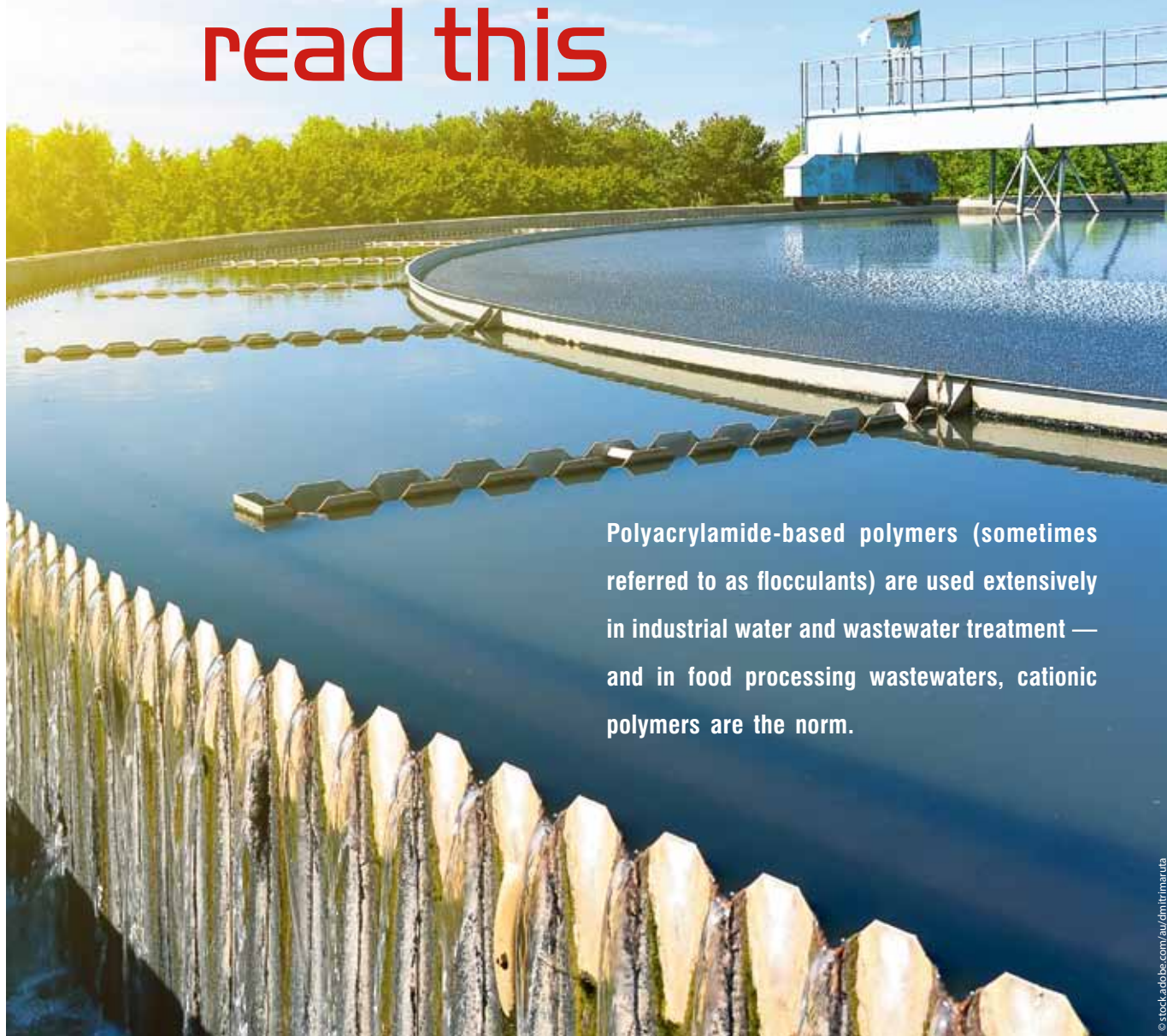
Conclusion

Comparing nominal energy consumption is definitely not enough to judge the overall efficiency of a vacuum supply system. A realistic assessment requires a complex and systemic approach. Besides ultimate pressure and pumping speed of the vacuum pump or the vacuum system, operating principle and lubrication have to be considered; their compatibility with the process has to be ensured. Further factors like the place of installation, the control or the connection between process and vacuum generation, the placement of the machines, process cycles and the option of a vacuum buffer can also have major influence on the energy and economic efficiency of the vacuum supply. A qualified vacuum specialist can be needed to assess all aspects and to select the optimal solution. To calculate the actual energy consumption, realistic process parameters have to be taken into account.



Busch Australia Pty Ltd
www.busch.com.au

If you are using polymer in your wastewater treatment process, you may want to read this



Polyacrylamide-based polymers (sometimes referred to as flocculants) are used extensively in industrial water and wastewater treatment — and in food processing wastewaters, cationic polymers are the norm.

Choosing a suitable polymer for your wastewater plant is only half the battle. Assuming you have a suitable water treatment plant (DAF, for instance), and assuming the myriad of important operational parameters are well managed (flow rate, pH, coagulant type and dose rate, dose locations, etc), your plant may still not be performing as expected. The reason for this may be as simple as having a poor polymer make-up system that is providing poor-quality polymer solution.

Of all the chemicals used on a water treatment plant, the polymer can be the trickiest one to manage properly. Polymers are usually supplied as a product that needs further ‘manufacturing’ before use. For instance, granular polymers (sometimes called powder polymers) need to be added to water, that is, they need to be wetted, hydrated and uncoiled before use — a process that may take up to an hour to complete — while emulsion polymers need to be inverted first, then hydrated

and uncoiled before use — and this may take as little as 5–10 minutes if appropriately managed.

Getting this ‘manufacturing’ step right requires a highly evolved understanding of the physico-chemical processes taking place at this initial step where the granular or emulsion polymer is added to the water. This understanding allows the correct and suitable choice of equipment to help initially wet or invert the polymer before hydration so that uncoiling can occur.

As an example, for granular polymers poor wetting can lead to polymer clumping where the dry polymer is surrounded by a wet polymer sheath created when only the outside of the clump of polymer is wetted. The gel-like sheath protects the dry polymer inside so it will never get wetted and uncoil; hence it won’t become a useful part of the polymer solution. No amount of mixing will undo this initial clumping, so the polymer solution is now weaker than expected. Not only is this a costly

continued on page 80 >



DRIVING YOUR INDUSTRY 4WARD.

THIS IS **SICK**

Sensor Intelligence.

Industrial automation is changing at an extremely rapid pace. As an innovation leader, developing cutting-edge sensor technology, SICK offers solutions today that are ready for the challenges of the future. With intelligent sensors that collect data, evaluate them in real time, adapt to their environment and communicate in the network. Enabling a new quality of flexibility, networked intelligence for efficient processes and reliable cooperation of humans and machines. We think that's intelligent. www.sick.com.au



Fully automated HyBLEND powder and emulsion polymer blending and dosing system.

waste of polymer, but these lumps and clumps can be caught in and block pumps and pipework and this just compounds the problem of low plant performance.

For emulsion polymers, the initial 'flip' or inversion is critical. If the polymer is not inverted correctly at the correct polymer to water ratio, whilst using a suitable amount of energy, then the polymer may either be unavailable for use (wastage) or it may be degraded by over-shear, that is, the long polymer chain is broken up or sheared into smaller, less useful polymer lengths.

The next part of the 'manufacturing' process is the hydration step where at the molecular level the water molecules start to adsorb to the polymer chain. This process happens almost in

tandem with the third step of uncoiling, where the polymer chain itself starts to unwind (uncoil) and extend out in length. Depending on:

- the polymer form (granular or emulsion),
- the polymer type (cationic, non-ionic or anionic),
- the degree of polymer branching,
- the polymer mol-charge (low, medium, high),
- the polymer chain length (molecular weight) and
- the strength of make-up (polymer to water ratio),

the most suitable equipment and operating method for hydrating and uncoiling your particular polymer will vary. Design engineers and operators must play close attention to the type of mixing energy (stirrer or pump for instance), the amount of mixing energy and applied shear, and the mixing time.

Furthermore, make-up water quality will also play a role in determining the final polymer solution quality — parameters such as pH, salt level (TDS), iron content, chlorine levels, temperature, etc.

So next time your plant is not performing as expected, have a look at your polymer make-up and dosing system and then ask Hydroflux to come along and provide simple solutions to complex problems.



Hydroflux Industrial Pty Ltd
www.hydrofluxindustrial.com.au

Alternative Engineering's Date Coder Stand can be used anywhere there is a print head, sensor, or reader being used on a conveyor system.

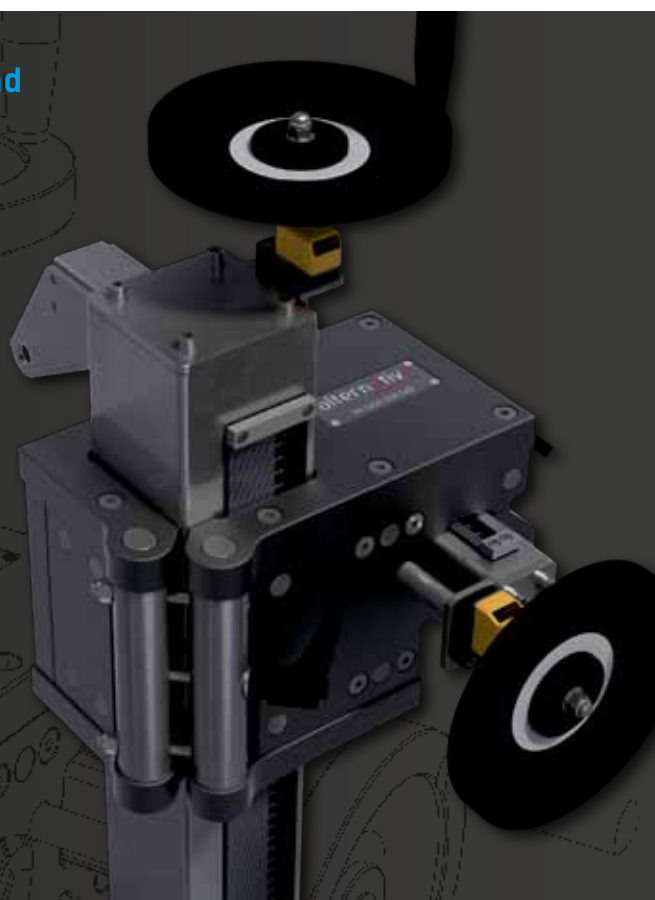
Features

- To suit date coding, batch coding, vision inspection, barcode scanning and laser printing
- 100% food grade made out of stainless steel and engineering plastics
- Mounting for display units is designed for ergonomic use of the display.
- Digital indicators allow for quick and consistent set up for accurate repeatability.

alternative
ENGINEERING

Expertise and service you can rely on

1300 558 220 | alternativeengineering.com.au



Going frozen

— good for retailers and potential for bakers

Ah — the enticing smell of freshly baked breads and pastries. Always a great way to attract customers.

Knowing this, many restaurants, cafes and caterers are moving away from multiple deliveries of fresh bakery items. Instead they are purchasing par-baked and fully baked frozen breads, pastries and sweets.

The environmental benefits of going frozen

Environmentally there can be no denying the benefits of receiving frozen goods. Frozen products remain fresher for longer and therefore negate the need for more frequent deliveries, which means fewer delivery vehicles making frequent trips. It also makes sense economically, as there are fewer deliveries to pay for.


“People care about where their food has come from and what kind of footprint it is leaving behind, and business owners are increasingly tuned into this as well,” said Bakers Maison Managing Director Pascal Chaneliere.

In an age of phenomenal food wastage, it is beneficial to be able to manage what is used and what is saved for another day. Frozen items can be used as required, with the excess stock retained in the freezer. It also means that there is no

such thing as ‘yesterday’s bread’, which eliminates the need for disposal and the threat of serving products that are less than fresh. Products can be quickly cooked and served to customers as required.

Which gives way to the wafting smell of baking bread or pastries that is absolutely irresistible. Frozen items are baked in the oven and served straight to customers as needed. There is no sacrifice in quality either, as items have been snap frozen to retain their flavour, quality and goodness.

While it might be acceptable to run out of the daily special, there is no forgiving running out of bread or pastries. The flexibility of frozen means that running out is never a threat, ensuring customers remain satisfied and there is one less concern for business owners.

The growing trend towards par-baked and fully baked frozen breads, pastries and sweets is a reflection of a changing society that understands the need to reduce environmental footprints. It also illustrates how food manufacturers can use the improvements in the frozen sector to grow their businesses. 



Oxygen Analysers, Relative Humidity Sensors and Meters, Dewpoint Measurement



U.V Absorption Conductivity pH / ORP Colour

AMS Instrumentation & Calibration Pty Ltd Analytical Process Division



Oxygen Analysers, Thermal Conductivity Analysers, NDIR Analysers, Multigas Analysers, OEM Analysers



ELECTRO-CHEMICAL DEVICES

Industrial Water Analysers and Liquid Analytical Products (pH, Conductivity, ORP, Dissolved Oxygen, etc)

AMS

Head Office:
Unit 20, 51 Kalma Drv
Boronia VIC 3155

Ph: 03 9017 8225
Fax: 03 9729 9604

NSW Ph: 02 8197 2825
WA Ph: 08 6364 0205
QLD Ph: 07 3333 2825
SA Ph: 08 7221 2205

www.ams-ic.com.au
sales@ams-ic.com.au



How craft brewers can scale up

© stock.adobe.com/au/PhotoSpirit

The craft beer industry is currently growing at 10% pa, with 6.5% pa forecast until 2021 with consumer hunger for the 'new' and ever-evolving tastes driving this growth. To survive in the sector, it has become apparent that brands need to expand and align their offerings with these changing habits.

"Our market learnings show that consumers are no longer wanting the norm or the most convenient option. They want products tailored to their taste palate and lifestyle, as well as flavour blends that you simply can't find on any major supermarket shelf," said Anton Szpitalak, CEO and co-founder of Tribe Breweries.

"Many producers are beginning to realise that consumers are demanding products that don't fit the standard mould, but they struggle with how to start the journey and often don't have the capability to do so. From my experience, one of the key focus points of a brand owner needs to be the 'how'. As the first point of call, brands or artisans should look at engaging in partners that can help with their needs in this department to help scale their ideas into a commercial reality. We recognised this exponentially growing need at Tribe, which is why we allow brewers everywhere to access our people, process and equipment through our Partner Brewing program."

To help craft brands facilitate growth and scale up, Szpitalak shares his top tips on how to achieve this.

Partner with breweries that have those production capabilities

While the craft trend is undoubtedly gaining traction and a small number of Australian craft brewers have been able to build scale to meet this demand, the vast majority are capacity constrained and can't afford the necessary infrastructure. By partnering with breweries that have these capabilities and are flexible with formats, brands will be able to scale up production as needed. Partnering with a reliable brewery can provide successful brand owners with alternative growth options, and will ultimately lead to a stronger craft beer industry in Australia. It can also reduce the occurrence of errors that may arise during the manufacturing process. We are strong believers in helping smaller brewers, which is why we embarked on building Australia's most ambitious \$35 million brewing project, set to launch in September 2018.

Need to produce personalised and non-traditional offerings

Today's diverging beverage market is a strong indication that brands need to produce more personalised and non-

traditional offerings which speak to more than the general public. To succeed in this increasingly saturated market, brands need to look at offering innovative flavours, packaging options, collaborations and limited editions. For example, we have used our new capability set to put products into different packaging options — such as coffee in cans and kombucha in kegs — and we've found it works extremely well. Millennials are a strong driving force behind this need for this differentiation and personalisation. Research by Nielsen revealed recently that millennials in particular have an "appetite for new and exciting products" and almost one-in-two millennials like to try new or different beers.

Brand extensions

Brand extensions are an effective way to leverage an already positive brand reputation, with loyalty and trust being a core part of why this is a particularly useful method of scaling up. Within the craft industry, we have found that consumers are becoming more health conscious and are becoming increasingly drawn to trendy ingredients. A recent report revealed that kombucha drinks have grown seven times in the last two years in the Australian market. Capitalising on trends and getting first to market with extensions that are unique yet within a similar market can facilitate long-term growth.

Need to ensure you have high quality standards

Brands need to ensure that their products have the integrity to keep up with evolving distribution. Small brands often suffer when moving from short supply chains to long supply chains; however, a good partner can reduce some of these growing pains. Artisans value partners that focus on the integrity of their brand and have experience in quality assurance and key manufacturing certifications. Recognising this importance, at Tribe, we set out to create the most well evolved quality control and assurance program in the Australian craft beer industry.

Szpitalak concluded, "As brewers, we have witnessed well-known large brands encounter problems when trying to scale at a rapid pace and ultimately fail in accommodating increasingly complex consumer demands. In a time of rapid growth, artisans looking for opportunities to share their creations should not be discouraged by the daunting task of production.

"Partnerships with reliable breweries can assist in scaling up and keeping up with demand, and can do so without stretching existing resources."





Pasteuriser/steriliser and aseptic filler

HRS AsepticBlock Mini Series is a skid-mounted system combining a pasteuriser or steriliser with a bag-in-box/bag-in-drum aseptic filler for food manufacturers requiring a high-quality, yet compact and cost-effective solution. The system is suited to small to medium companies that are new to aseptic processing or who have expanded to require an in-house capability for processing highly viscous products, including those containing particulates such as purées, sauces and soups.

The AsepticBlock Mini Series combines all process elements for safe, auditable process capacities from 250 to 1000 kg of product per hour. Including a high level of product recovery, the system is suitable for batch processes with high-value products, and is well suited for small commercial production and/or product development.

Utilising HRS heat exchanger technology means that efficient pasteurisation or sterilisation can be achieved while any undesired side effects from the thermal treatment on the organoleptic or nutritional properties of the product are minimised. Depending on the product to be treated, corrugated tube heat exchangers with multitube, double-tube or annular space configurations can be specified, with other options such as scraped surface and de-aeration also available.

The bulk aseptic filling head is based on the HRS AF Series of aseptic fillers and is designed to provide a reliable and safe process. Full automatic monitoring and traceability systems are included as standard and the entire system benefits from an automatic cleaning in place (CIP) option. Furthermore, no chemicals are required for product sterilisation.

HRS Heat Exchangers Australia New Zealand

www.hrs-heatexchangers.com/au/



Safety and Savings

Protect Your Staff – Decrease Your Costs

Retrofit your hot melt adhesive system now with an automatic filling system and **benefit from a 20 % discount!**

RobaFeed 3 with a granulate container GlueFill not only ensures a safe filling. It also guarantees an **increased line efficiency and reduces costs.**

robatech.com/safe-filling

Promotion terms and conditions, see website

Robatech
Gluing Technology

Honey fraud

creates a sticky situation

Nichola Murphy



Recent allegations about potential honey fraud have caused controversy, with some blaming the validity of tests and supermarkets unsure about whether to stop selling products. So can you trust that what you're spreading on your toast in the mornings is definitely honey, or is there a chance it is an adulterated version?

Australia's biggest honey company, Capilano, has come under fire after tests at an international science lab specialising in detecting honey fraud — obtained by Fairfax Media and the ABC's 7.30 — found almost half of supermarket honey samples were adulterated.

Law firm King & Wood Mallesons commissioned Germany's Quality Services International (QSI) lab on behalf of horticulturalist Robert Costa to conduct two tests on the honey samples: Nuclear Magnetic Resonance (NMR) screening and the C4 sugar test.

28 blended and imported honey samples from Coles, Woolworths, ALDI and IGA stores around Australia were collected and tested, including samples from Allowrie, IGA's Black & Gold private label and ALDI's Bramwell's private label brand.

While all samples passed the C4 test, which is the official one used in Australia, the NMR test found 12 of the 28 samples were not 100% pure honey. Adulteration was found in four of the six IGA Black and Gold private label products, two of six ALDI Bramwell's private label brands and six out of eight Capilano's Allowrie budget branded bottles.

Testing controversy

Fraudsters are mixing honey with other syrups like rice and beet that can't be detected by adulteration tests, and selling it on for a higher price.

Capilano's Allowrie Mixed Blossom Honey is made using up to 70% imported honey and marketed as 100% honey. Despite tests suggesting this was not the case, the company maintained the authenticity of its honey.

Dr Ben McKee, Managing Director of Capilano Honey, said, "We stand by our Allowrie honey as being 100% pure honey and the testing we employ on every batch."

The company reassured that it uses validated internationally recognised testing and criticised the reliability of the NMR test, saying it produces inconsistent results among different batches and laboratories.

"We call on the industry to work to prove up the NMR test so that it matches the robustness of results from other testing currently relied on internationally," said McKee. "NMR tests are conducted at European laboratories and the method's essential flaw is the reliance on a database of reference honeys, and the database is underrepresented for honeys from our region."

Dr Nural Cokcetin, a microbiologist who specialises in the medicinal properties of honey, explained, "NMR can give us a 'fingerprint' of what is in a sample — and this fingerprint is matched back to a reference database to identify the components within that sample. If different testing labs use different databases, there can be instances where the same sample can have different results depending on the lab. With an extensive and universally used database, the NMR method can be extremely sensitive and powerful in detecting food adulteration."

QSI maintains that the NMR test is accurate and the database is quite extensive. QSI's Managing Director Gudrun Beckh, who has been testing honey for almost 30 years, told 7.30 that NMR screening could pinpoint country of origin and botanical origin, and said the recent results found the adulteration came from the Chinese aspect of the honey.

Despite potential limitations of the NMR test, many argue that it remains a more accurate option than the traditional C4 test. This detects the presence of C4 sugars from plants like sugar cane and corn, but it can have some difficulties.

"When sugar syrup is used from a C3 plant, or a mixture of C3 and C4 plants, the C4 sugar test cannot be used. The new sugar syrups using the C4 test pass undetected when added to honey. This has left the industry in a difficult situation as, worldwide, there is no accepted system by which adulterated honey can be detected," explained Dr Liz Barbour, CEO of the Cooperative Research Centre (CRC) for Honey Bee Products.

This has led to the industry considering the NMR test as its standard testing method.

Preventing food fraud

King & Wood Mallesons said they would send the results of the tests to the Australian Competition and Consumer Commission (ACCC). In the meantime, supermarkets have been left unsure about what to do with the products in question.

ALDI told Fairfax and 7.30 that if investigations conclude products are adulterated, it would stop selling them and take further actions with the supplier. Woolworths similarly said it



would work with its supplier to review the claims, while Coles had already removed Allowrie products from its shelves in July for unrelated reasons.

Accurate labelling and food testing is intended to protect consumers from adulterated products. Honey is supposedly one of the most commonly mislabelled foods, and even the presence of better labelling would not necessarily stop fraudsters.

Professor Christine Parker from the Melbourne Law School said, "Even though we have a strict law about what honey should mean, it isn't always well monitored and enforced, and some falsely labelled honey may well end up on our super-market shelves."

Only about 5% of imported honey is tested, and food produced in Australia is rarely tested to ensure it complies with descriptions. Dr Nadine Chapman, Post-Doctoral Research Associate at the University of Sydney and an expert on the Australian honey bee industry, said there should be a higher focus on testing food, and suggested mislabelled products should be sent back to prevent the honey fraud industry remaining profitable.

Costa, who bankrolled the honey sample tests, said he was concerned about the impact of cheap imported honey on the industry as it makes it difficult for local producers to compete. The best way to ensure you are eating pure, unadulterated honey and support the local industry is to buy 100% Australian honey.



© iStockphoto.com/zera93



On-site chemical analysis of beer

Chemical analysis during all phases of the brewing process is required to help ensure the quality of the finished product. Brewers will consider a variety of parameters including fermentable sugars, bitterness, alcohol by volume and colour.

Now CDR Beerlab enables on-site testing with results available in just minutes, allowing faster decisions to be made during the brewing process. It is suitable for breweries of any size, and can be run even without previous laboratory experience.

Performing chemical analyses on beer and wort is simple and fast, with minimal sample prep. The equipment includes a photometric analyser which is capable of testing up to 16 samples at a time. Reagents are provided in ready-to-use format and also have the added benefits of avoiding toxic chemicals, fume hoods and washing up of glassware.

CDR Beerlab is available in Australia from AMSL Scientific.

Australasian Medical & Scientific Ltd

www.amsl.com.au



**LET ENMIN KEEP
YOUR BUSINESS MOVING
IN THE RIGHT DIRECTION**

ENMIN Elevating Spiral Conveyors

The Australian made conveying solution designed for when space is a premium. Conveys dry food products & ingredients vertically, up or down. Easy clean, minimal maintenance operation.

The days of bulky conveying equipment are gone with
Enmin Elevating Spiral Conveyors

Call us today to discuss your needs on **(03) 9800 6777** or visit **www.enmin.com.au**

ACCUMULATION HOPPER & CROSS FEEDERS
FINES REMOVAL FEEDERS

METERING & STORAGE HOPPER FEEDERS
PRESENTATION/ALIGNMENT ORIENTATION FEEDERS



Picking pecks

by robot

A boxy yellow robot rolls through rows of yellow pepper plants... it pauses when it detects a ripe pepper and then with a quick move of a blade, it cuts the stem and grabs the fruit with a palm-like catcher. The harvesting arm, called a gripper or manipulator, went through many integrations, including pulling, cutting and dropping the fruit into a bag, as well as other harvesting variations, to devise the most efficient and safest model.

SWEEPER, a result of a collaboration between Israeli, Dutch, Swedish and Belgian scientists, is a complex piece of equipment aimed to help farmers and agricultural workers in the harvesting process. With some modifications, robots similar to SWEEPER can be taught to gather apples or tomatoes and the like.

You would think it straightforward to have a robot harvest peppers wouldn't you? After all Peter Piper could pick pecks of pickled peppers quite easily. But teaching a robot to pick peppers isn't for the faint-hearted.

To teach SWEEPER to identify peppers and harvest them gently without damaging them or the plant they grew on required

artificial intelligence and machine learning. Unlike humans, who can discern the colourful fruit among the green foliage quite easily, even in somewhat dim lighting, robots have a much more difficult time doing so. SWEEPER was shown thousands of pictures of peppers just to be able to identify the vegetables. It took the team about three and a half years to arrive at the current SWEEPER model, which has just passed its greenhouse test.

Some argue that these robots may cause job losses for agricultural workers, but the reality is more complex. As the climate changes, heat waves intensify and humidity increases, working long hours in the field is becoming more unhealthy, and in some cases dangerous, for humans. Even greenhouse



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.

We make ideas flow.
www.burkert.com.au




of peppers



conditions, tailored to the plants' needs, may in some cases be too hot or humid for people.

According to reported data from 1992 to 2006, 68 crop workers in the US died from exposure to environmental heat.

In essence, toiling in the fields is a hard job that will become even more difficult as climate change progresses, so humans will likely have to rely on robots to do some farming. "We don't expect these robots to replace people," said Prof Yael Edan, head of BGU's ABC Robotics Initiative, whose team worked on the SWEEPER robot. "We think they would help with tasks that are difficult for people to do."

The BGU team is developing other agricultural innovations too. One of them is a smart pesticide sprayer that would calculate the exact amount of chemicals needed to keep plants healthy. Rather than spraying abundantly, the machine would target the chemicals, thereby reducing people's exposure to them. 



Clamp-on flowmeters for the grocery manufacturing sector

Katronic flowmeters are hygienic, quick to install, and easy to operate and maintain. A major investment for companies in the food, drink and agricultural industries is the high level of water consumption and wastewater discharge. For this

reason, they face significant costs for water supply and trade effluent disposal, as well as charges for pumping, water and effluent treatment. Monitoring internal flow processes may require flowmeters to be retrofitted, or spot measurement to be carried out as part of site surveys, and clamp-on flowmeters are suitable for this.

Katronic clamp-on flowmeters are installed on the outside of the pipe, to ensure that the integrity and sterility of the manufacturing process is not compromised.

Clamp-on flowmeters can be installed without needing to stop the process, making them suitable for production and manufacturing conditions where systems are in continuous operation.

The flowmeters are clean and safe and offer a series of advantages to the food and drink industry.

AMS Instrumentation & Calibration Pty Ltd

www.ams-ic.com.au

CLEAN-IN-PLACE GAS BLANKETING CARBONATING

STAINLESS STEEL SURFACE POLISHED VALVES IDEAL FOR DAIRY PROCESSING, BEVERAGE inc MICRO BREWERY, FOOD, PHARMACEUTICAL, CHEMICAL PLANTS.



WE HANDLE PRESSURE®



PRESSURE & SAFETY SYSTEMS

Tel: (03) 9699 7355

www.pressureandsafety.com.au



Magnetic separator for viscous liquid and slurry lines

The Meat Emulsion & Slurry Pipeline Separator is a hydro-dynamic magnetic separation system designed to efficiently extract metal contamination from viscous liquid and slurry lines.

Featuring powerful high-intensity +11,000 gauss RE80 HT Tear-Drop Probe Magnets, the system provides efficient magnetic separation without leaks, blockage or distortion,

and with minimal pressure build-up. The probes intercept the product flow and retain fine weakly magnetic fragments, including work-hardened stainless steel and stone.

This system offers many advantages to food manufacturers, including: reduced risk of product recall and brand name damage; reduced operator WHS/OSHA risks; versatile, sanitary and easily cleaned; protection of pumps and highly sensitive equipment against damage caused by the entry of metal fragments; and efficient fragment retention against product flow, achieved with specially shaped large diameter magnet elements.

The Meat Emulsion & Slurry Pipeline Separator can be installed in horizontal, sloping and vertical pipelines, sized 1-6" (25-152 mm). RE80 HT technology enables these magnets to withstand temperatures up to 150°C.

The magnet has proven effective in pet food slurries, offal, chicken mince, meat emulsion, pie fill mixes, turkey processing, sausage mince, shortening, MDM and other similar products with lumps to approximately 1/2" (12 mm) in size.

Magnattack Global

www.magnattackglobal.com

PROCESS and FACILITY DESIGN

Scaling up Australia's start-ups and mid-tier food manufacturers



RMR
PROCESS



AUSTRALIA - NEW ZEALAND
WWW.RMRPROCESS.COM
T: (03) 9023 9130

Nozzle for oiling and coating

Spray Nozzle Engineering, exclusive Bete partner in Australia and New Zealand, has launched a range of spraying solutions for food, beverage and dairy processing plants.



The HydroPulse from Bete provides a controlled intermittent liquid spray using only liquid pressure as the force for atomisation in addition to a drip-free performance. The HydroPulse nozzle is suitable for lubricating conveyors, pans and mould release. It is also commonly used for coating oil, sugar, flavours, colourants, eggs, butter, preservatives and adhesives.

Food-grade materials of construction (303SS assembly) are suitable for food-based applications as well as corrosive environments and harsh cleaning fluids. The simple and maintenance-friendly design allows for easy disassembly, inspection/cleaning and reassembly with basic hand tools and can be rebuilt without uninstalling entire assembly. The nozzle is suitable for conveyor-based applications in the following industries: food processing, beverage, meat, bottling, lubrication and coating, board manufacturing, packaging and canning.

The HydroPulse provides a uniform flat fan spray pattern with tapered edges for use in applications that need overlapping sprays. The flat fan spray pattern provides spray angles from 0 to 110° with flow rates of 3.78 to 93.49 L/min.

Spray Nozzle Engineering

www.sprayingsolutions.com.au



Rotary valve for fragile food

Coperion has optimised its ZVB rotary valve design to provide gentle material handling, while maintaining the strict sanitary standards of the food industry. It has a lower overall weight, the same robust design, optimised housing wall thicknesses, increased inlet cross-section and an improved inlet geometry for fragile food materials such as roasted coffee and finished cereals.

This results in a gentler handling and introduction of product to the rotary valve. The increased anti-chopping inlet deflects the product into the rotating rotor chambers of the rotary valve and prevents the product being damaged by the metering vanes. It has an improved overall capacity.

The rotary valves are also available for wet cleaning (eg, clean in place). The overall design provides operational reliability for sanitary production. The materials are suitable for use with cleaning agents or hot water flushing, and the valve can be equipped with flush end sealing at the inlet and outlet, and between side covers and the housing.

Coperion

www.coperion.com/en

Cut-resistant gloves

The Honeywell Rig Dog CR gloves provide workers with impact protection and a cut-resistant palm.

The gloves feature moulded TPR (thermoplastic rubber) impact pads that are ergonomically placed to provide optimal protection in impact situations, along with ANSI A7 cut-resistant palm to enhance protection against cuts and slashes. The gloves are comfortable and stylish.

Features include: TPR material on knuckles and fingers helps to protect against impact, as well as on key scrape-hazard area for added protection; polyurethane (PU) slip-resistant palm features EVA foam pads for added comfort and some vibration relief; reinforced thumb-crotch protects the highest wear area for increased glove longevity; Hi-Viz Spandex fabric stretches easily for flexing to help reduce hand fatigue; bright orange colour allows for visual awareness in low-light environments; silver, reflective piping enhances low-light visual awareness; hook and loop tab closure allows wearer to tighten or loosen cuff for a more comfortable and secure fit; and the gloves are fully washable, adding longevity and helping to limit bacterial growth.

Honeywell Industrial Safety

www.honeywellsafety.com



ELGi
Always Better.



OilFREE
CLASS-0 ISO 8573-1

Range: **45 - 450 kW | 190 - 2515 cfm**

UPTIME and '**Class - 0**' certification are synonymous with reliability and quality. These are the two prime factors that are essential for the applications of compressed air in the food and beverage industry. ELGi has earned its 'Class - 0' certification for its Oil-free technologies from TUV through rigorous testing as defined in the standard **ISO 8573-1:2010**.



pulford
AIR & GAS

Contact us for more information

Sydney: 1300 138 124 | Brisbane: 07 3265 7700 | Melbourne: 03 9999 2502 | Adelaide: 08 8443 5980



Technology for healthier hot chips

Hot chips (aka French fries) may become healthier and more environmentally friendly if a three-month trial of German Pulse Electric Field (PEF) technology at the University of Otago proves successful.

The pilot program trial is a part of a Ministry for Business and Innovation funded Food Industry Enabling Technology program worth \$16.8 million over a six-year period, ending in 2021.

What is PEF processing?

PEF processing is an efficient non-thermal food processing technique where very short (microseconds) high-voltage pulses in the order of 10 to 60 kV are applied to products. The high-voltage pulses applied induce pores in cell membranes, causing a loss of barrier function, leakage of intracellular content and loss of vitality.

PEF processing is quick, flexible, energy efficient and, because heat is minimised, products have a longer shelf life while maintaining better nutritional value than with traditional food processing techniques.

Despite its targeted effect on cell membranes, PEF does not affect vitamins, flavours or proteins. This allows microbial decontamination of heat-sensitive liquids while retaining their sensory qualities and functional value.

As PEF processing affects the cell membrane it can be used to enhance the extraction of pigments or bioactive compounds from food, increasing their yield and quality or to kill microorganisms as an alternative to the pasteurisation of bulk liquids, such as fruit juices and milk.

PEF, potatoes and the University of Otago

Sending electric pulses through the chip, it is claimed that PEF technology will result in raw fries being bendier and unbreakable, reduced potato wastage and less fat absorption as the chips cook.

Elea PEF processing equipment is to be put to the test for large-scale French fries production at the University of Otago.

The electric field being pulsed through uncut potatoes during processing alters their microstructure, which results in a more controlled release of sugar, more uniform colouration and reduced oil uptake. It also enhances processing as the softer texture makes the potatoes easier to cut, meaning there is less waste, the ability to develop new shapes (such as lattice cut) and increased knife durability (up to 60%).


Using PEF systems instead of preheaters has several advantages for potato processing. PEF treatment improves cut quality and significantly reduces French fries breakage. Water and energy consumption are reduced; blanching, drying and pre-fry times are shortened. Furthermore, the leaching of sugars is improved. The treatment can also reduce frying oil absorption and fat content up to 50%.

PEF benefits for French fries manufacturing

- Replacement of thermal preheater
- Instant start-up and shutdown
- Continuous, minimum energy consumption
- Less starch in process water
- Smaller footprint
- Reduced blanching and frying time
- Reduced ambient heat.

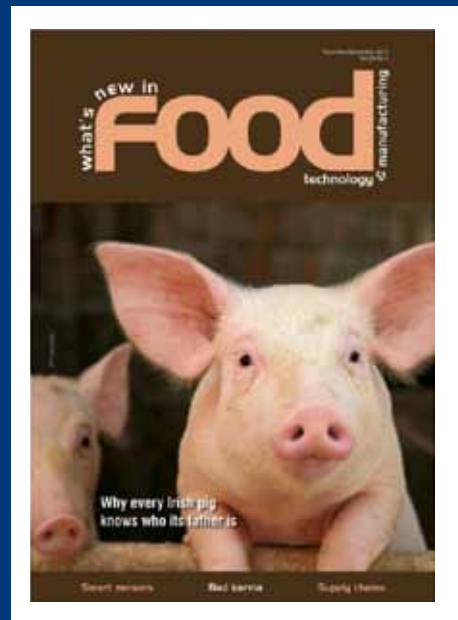
PEF benefits for French fries quality

- Texture softening
- Higher yield (less breakage)
- Longer fries
- Reduced oil uptake
- Smoother cut
- Increased knife durability
- Possibility to develop new cuts and shapes.

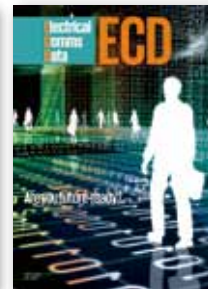
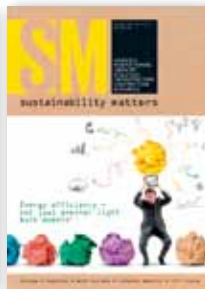
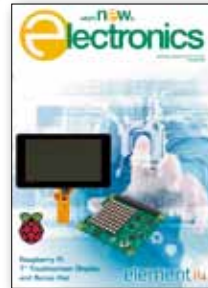
PEF technology is not limited to potato processing but has a wide variety of applications across many food processing industries. 

FREE

to industry and business professionals



The magazine you are reading is just one of eleven published by Westwick-Farrow Media. To receive your **free subscription** (magazine and eNewsletter), visit the link below.



www.WFMedia.com.au/subscribe

Tank explosion — 30,000 L prosecco lost

A stainless steel fermentation tank at the Conegliano Veneto winery in northern Italy has exploded resulting in the loss of around 30,000 L of prosecco.

Unlike champagne, prosecco is usually produced using the Charmat-Martinotti method, with the secondary fermentation taking place in stainless steel pressure tanks. Using this method, sparkling wines can be produced at a considerably lower cost than traditional method wines. The wine is mixed in a stainless steel pressure tank, together with sugar and yeast. When the sugar is converted into alcohol and carbon dioxide, the yeast is filtered and removed, and the wine is bottled.

But human error can interrupt this process.

It is assumed that the tank at the Conegliano Veneto winery was overfilled or the tank lid was faulty, resulting in the explosion of the tank and the loss of the wine.

The incident was posted to Facebook by L'enoteca Zanardo Giussano and generated millions of hits and witty comments. The loss of about 40,000 bottles of prosecco won't be good for the winery but across the globe it probably won't affect prosecco drinkers as forecasts suggest the amount of prosecco being produced in 2018 is around 440 million bottles higher than the 2017 harvest.

Hopefully 2018's 493.3 million bottles of prosecco will be enough for us all, even minus the 40,000 bottles lost in the explosion.



Westwick-Farrow Media
A.B.N. 22 152 305 336

www.wfmedia.com.au

Head Office

Cnr. Fox Valley Road & Kiogle Street,
(Locked Bag 1289) Wahroonga NSW 2076
Ph: +61 2 9487 2700 Fax: +61 2 9489 1265

Editor: Janette Woodhouse
wnift@wfmedia.com.au

Assistant Editor: Nichola Murphy

Publishing Director/MD: Geoff Hird

Art Director/Production Manager: Julie Wright

Art/Production: Colleen Sam, Wendy Blume

Circulation: Dianna Alberry, Sue Lavery
circulation@wfmedia.com.au

Copy Control: Mitchie Mullins
copy@wfmedia.com.au

Advertising Sales Manager

Kerrie Robinson
Ph: 0400 886 311
krobinson@wfmedia.com.au

Nikki Edwards
Ph: 0431 107 407
nedwards@wfmedia.com.au

*If you have any queries regarding our privacy policy
please email privacy@wfmedia.com.au*

Subscriptions for unregistered readers
- price on application



March 2018 total CAB audited circulation (Aust + NZ):
6,748 readers (95% personally requested)

Printed and bound by SOS Print + Media
Print Post Approved PP100007395
ISSN No. 1039-8414

NOTICE:

All material published in this magazine is published in good faith and every care is taken to accurately relay information provided to us. Readers are advised by the publishers to ensure that all necessary safety devices and precautions are installed and safe working procedures adopted before the use of any equipment found or purchased through the information we provide. Further, all performance criteria was provided by the representative company concerned and any dispute should be referred to them. Information indicating that products are made in Australia or New Zealand is supplied by the source company. Westwick-Farrow Pty Ltd does not quantify the amount of local content or the accuracy of the statement made by the source.



© stockadobe.com/au/Lukas Gajda



Filling and Packaging – Worldwide

Complete Food Packaging Solutions

- Filling and Packaging machines
- Bulk Packing lines
- Cheese Cutting and Packaging machines
- Can Seamers
- Thermoform, Fill and Seal
- Cup Filling and sealing
- Automatic Bag Insertion into boxes –
Made to measure bags
- Pouching and Cartoning machines
- Casepacking Systems

PATTYN



Case Erector



Cheese Cutting

KHS

Filling and Packaging – Worldwide



Pouching Machine

PATTYN



Bagmaker Inserter



Cheese Wrapping

ferrum



Can Seaming

PO Box 378

44-46 Catalina Drive, Tullamarine, VIC 3043 Australia

T: +61 3 9335 1211 F: +61 3 9335 1331

E: info@khspacific.com.au

READY-MADE SOLUTIONS

To Your Specific Bulk Bag Handling Problem



FILL

Fill one bulk bag per week or 20 per hour with REAR-POST, TWIN-CENTREPOST™, and SWING-DOWN® Bulk Bag Fillers

Flexicon's extra-broad model range, patented innovations and performance enhancements let you exact-match a filler to your specific cost and capacity requirements. Patented TWIN-CENTREPOST™ models maximise strength, accessibility to bag loops and economy. Cantilevered REAR-POST models allow pass-through roller conveyors. SWING-DOWN® models pivot the fill-head to the operator at floor level for quick, easy and safe spout connections. Optional mechanical and pneumatic conveyors.

CONDITION

Loosen material solidified in bulk bags during storage and shipment with BLOCK-BUSTER® Bulk Bag Conditioners

Opposing hydraulic rams drive contoured conditioning plates to crush and loosen solidified bulk material safely and easily. Bulk bags can be raised, lowered and rotated to allow complete conditioning of the entire bag through the use of automated turntables and scissor lifts, or electric hoist and trolley assemblies. Offered as stand-alone units for loading with forklift or electric hoist and trolley, or integrated with bulk bag dischargers for reduced cost, footprint and loading time.

UNLOAD

Save time, money and space with BULK-OUT® Multi-Function Bulk Bag Dischargers and Weigh Batching Stations

Condition, de-lump, screen, feed, weigh batch, combine with liquids, and convey as you discharge, with a custom-integrated, performance-guaranteed, dust-free discharger system. Offered as stand-alone units for loading with forklift or electric hoist and trolley, split frames for low headroom areas, economical half frames and mobile frames. All available with mechanical and pneumatic conveyors, flow promotion devices, bag dump access, automated weigh batching packages, and much more.

Stand-alone units to complete, automated systems integrated with mechanical and pneumatic conveyors

flexicon®
.com.au



See the full range of fast-payback equipment at flexicon.com.au: Flexible Screw Conveyors, Tubular Cable Conveyors, Pneumatic Conveying Systems, Bulk Bag Unloaders, Bulk Bag Conditioners, Bulk Bag Fillers, Bag Dump Stations, Drum/Box/Container Tipplers, Weigh Batching and Blending Systems, and Automated Plant-Wide Bulk Handling Systems

AUSTRALIA
sales@flexicon.com.au
1 300 FLEXICON

USA +1 610 814 2400
UK +44 (0)1227 374710
GERMANY +49 170 8 187 613
SPAIN +34 930 020 509
SINGAPORE +65 6778 9225
SOUTH AFRICA +27 (0)41 453 1871
CHILE +56 2 2415 1286

