

July/August 2016
Vol.24 No.2

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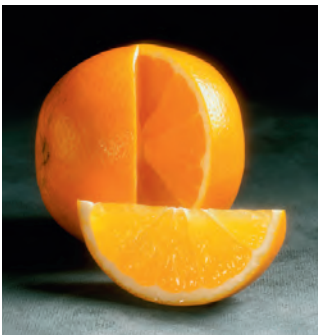
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Growing food for Martians

Food sourcing and processing is not limited to Earth — if humans want to be able to settle in extraterrestrial environments they will need to be able to feed themselves. Researchers at the Wageningen University & Research centre in the Netherlands have been attempting to simulate the growth of crops on Mars.

In their second experiment on how to grow crops on Mars and moon soil simulant a surprising outcome was achieved — they were able to grow 10 different crop species and to harvest tomatoes, peas, rye, garden rocket, radish and garden cress.

“The total above-ground biomass produced on the Mars soil simulant was not significantly different from the potting compost we used as a control,” said researcher Dr Wieger Wamelink. The goal of the experiments is to provide the basis for growing crops on Mars and on the moon, in order to feed the first settlers.

Moon soil simulant

A few improvements have been made since the first experiment. Wamelink: “We used trays instead of small pots and added organic material (fresh cut grass) to the Mars and moon soil simulant. This solved the problem we had with watering in the first experiment and also added manure to the soils.” In particular the crop growth on the moon soil simulant showed improvement. Where in the first moon soil experiment most plants died, in the next round they flourished and the researchers could harvest from the same species as on the Mars soil simulant and the earth potting compost control.

Great potential

The production of biomass on the Mars soil simulant was lower than on the earth control, but it was a minor difference and caused by one of the trays that showed less growth. It was also not statistically different from the earth control. “That was a real surprise to us,” commented Wamelink. “It shows that the Mars soil simulant has great potential when properly prepared and watered. The biomass growth on the moon soil simulant was less than on both other soils, about half of the biomass. Only the spinach showed poor biomass production.”


Heavy metals

Although the Wageningen researchers harvested several edible crops, they did not eat them as the soils contain heavy metals like lead, arsenic and mercury and also a lot of iron. If the components become available for the plants, they may be taken up and find their way into the fruits, making them poisonous.

Further research on this is necessary and that is one of the reasons why a crowdfunding campaign has been started to finance the third experiment that will be all about food safety.

The experiment should start in April 2016 with the growth of a new batch of crops including potatoes and beans. If the crops prove to be safe enough to eat, the funders will be invited for dinner where a ‘Martian meal’ will be served that includes the harvested crops; at least for those who dare.

The experiment

The soil experiment began in April 2015. Final harvest took place in October 2015. Ten different crop species (tomato, rye, radish, pea, leek, spinach, garden rocket, cress, quinoa and chives) were sown in trays with either Mars or moon soil simulant and earth potting compost as a control. Plants were cultivated in a glasshouse under constant temperature, humidity and light conditions and under Earth atmosphere. “This is because we expect that first crop growth on Mars and moon will take place in underground rooms to protect the plants from the hostile environment including cosmic radiation,” explained Wamelink. The Wageningen UR researchers use Mars and moon soil simulants provided by NASA that mimic Mars and moon soil as closely as possible. The Mars soil simulant originates from a volcano on Hawaii and the moon soil simulant from an Arizonian desert. 

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UK chicken necks and *Campylobacter* testing



The UK's Food Standards Agency's (FSA) target to reduce the number of human cases of *Campylobacter* poisoning by 100,000 a year has met an unlikely hitch — the amount of neck skin on retail chickens.

To track their progress the FSA has been running a year-long survey to measure the amount of *Campylobacter* on chickens bought from shops and supermarkets.

The results of the second quarter of the survey showed 11% of chickens tested positive for the highest level of contamination, down from 19% in October to December 2014.

But now an interesting problem has arisen and upset the testing protocol — a growing number of processors are removing the neck skin from chickens before they are sold. Generally this skin is the most contaminated part of the bird and so the FSA's protocol for testing for *Campylobacter* levels was to measure the amount of the bug on this part of the chicken.

This is good news for the consumer because it reduces the amount of *Campylobacter* on the bird, but it throws into disarray the FSA's results. Given that chicken samples now contain varying amounts of neck skin, it makes it difficult to compare fairly one retailer with another and to give accurate comparisons with previous quarterly results.

Currently the FSA has decided to suspend the survey for the time being while it looks again at what sort of testing it might do to provide clear information on the progress being made by retailers to tackle *Campylobacter*.

Nestlé research partnership to address gut bacteria and health

Imperial College London and Nestlé Research have announced the establishment of a research and innovation partnership exploring metabolic health and nutrition.

The partners have agreed to jointly engage in preclinical and clinical studies, with Nestlé looking to invest approximately 10 million Swiss francs over five years.

The collaboration hopes to enable both partners to find translatable answers to some of the fundamental questions in nutrition such as:

- To what degree does the gut microbiome play a role in the digestion of fermentable dietary fibres?
- Do metabolites generated by the gut microbiome have an effect on metabolism and health?
- Do specific metabolites impart different brain states and have an impact on centrally regulated phenomena, such as mood and emotion?

Biscuits prove popular with young and old

The demographics of biscuit consumption remain a challenge to marketers, with teenagers and older Australians the nation's most avid biscuit eaters.

Roy Morgan Research has revealed that the proportion of Australians aged 14+ who eat sweet biscuits in any given seven-day period is on the decline — but remains substantially higher than the country's savoury biscuit eaters.

In 2015, 42.4% of Australians reported eating at least one sweet biscuit in an average seven days, down from 46.3% in 2011. Consumption of savoury biscuits/crackers remained relatively stable at 32.4%, compared to 33.1% in 2011.

More than half (51.6%) of the 65+ demographic consumed sweet biscuits in an average seven days, ahead of under 18s (46.5%). Under 18s were slightly more likely to eat savoury biscuits — 36.3% vs 36.2% of the over 65s.

More than half (55%) of Australia's sweet-biscuit consumers eat only sweet biscuits.

Savoury-biscuit crunchers are not as exclusive in their tastes — only 40.5% limit themselves solely to savoury.

Overall, Aussies who eat either kind of biscuit in any given seven days tend to be above average for eating the other kind as well: 59.5% of people who eat savoury biscuits also eat sweet, while 45.4% of sweet-biscuit eaters also consume savoury.



Key trends in dairy consumption

Top trends to watch in the dairy sector include daypart targeting, in which brands pitch products for consumption at particular times of the day, and high-protein products, according to Canadian.



Analysis of consumer research from over 50,000 consumers across 47 countries was presented at a Dairy Innovation Summit held in Amsterdam on 13–14 April 2016, where Canadian outlined top trends to watch in dairy and identified next areas for dairy innovation and growth.

Tanvi Savara, Consumer Insight Analyst at Canadian, said that top consumer and innovation trends for dairy in 2016 include targeting niche consumer groups, creating new occasions for dairy consumption and snacking on the go.

Savara said that dairy brands are targeting new dayparts to boost consumer engagement and brand loyalty. The analyst also notes that high-protein products will have a significant impact on the dairy sector over the next few years, as the trend extends beyond its typical demographic consumer base of younger consumers to target the 55+ demographic with a healthy ageing proposition.

Other trends discussed at the event included: ‘snackifying dairy’, which covers new launches of products such as yoghurt drinks with added fibre, chia seeds and nuts and bite-sized cheeses; sensory pleasure, wherein manufacturers are breaking the mould by introducing spicy flavours to ice-creams and yoghurts; and alternative milks, including a new wave of innovation in milks derived from nuts, grains, rice and seeds.

Maggots and antibacterial surfaces

The immature stage of the rat-tailed maggot, the drone fly *Eristalis tenax*, resembles a hairless baby rodent with a ‘tail’ that is actually used as a breathing tube. Even though these maggots live in stagnant, fetid water that is rich in bacteria, fungi and algae, they are able to avoid infection by any of these microorganisms.

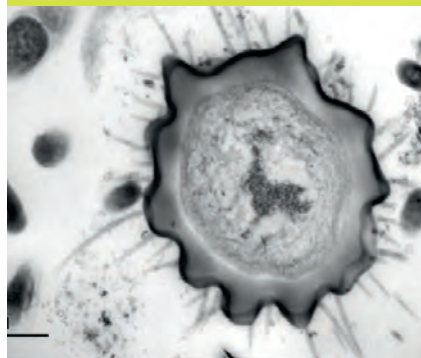
And now we know how.

A cell biologist at the Institute of Ophthalmology at University College London, Matthew Hayes, has discovered never-before-seen structures that appear to keep the maggot mostly free of bacteria, despite living in a very dirty environment. His findings appear in an article in the *Journal of Insect Science*.

Using scanning and transmission electron microscopes, Hayes found that much of the larva is covered with thin spines, or ‘nanopillars’, that narrow to sharp points. He noticed a direct relationship between the presence of the spines and the absence of bacteria on the surface of the larva and speculated that the carpet of spines simply makes it impossible for the bacteria to find enough room to adhere to the larva’s body surface.

“They’re much like anti-pigeon spikes that keep the birds away because they can’t find a nice surface to land on,” he said.

Hayes also ventured that the spines could possibly have superoleophobic properties (the ability to repel oils), which would also impede the bacteria from colonising and forming a biofilm that could ultimately harm or kill the maggot. The composition of the spines is as unique as the structures themselves, Hayes said. Each spine appears to consist of a stack of hollow-cored disks, the largest at the bottom and the smallest at the top.



Electron-microscope image showing the nanopillars that poke up from the body of the rat-tailed maggot. The length and density of the spines vary as shown in this cross-section image of the cuticle.

Image credit: Matthew Hayes.

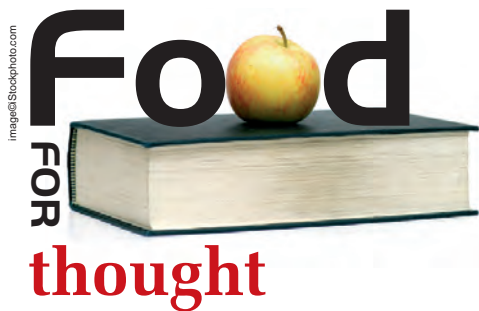
applications in many different fields, including the food industry where biofilms can act as pathogen banks.

Hayes’ full article, Identification of Nanopillars on the Cuticle of the Aquatic Larvae of the Drone Fly (Diptera: Syrphidae), has been published in the Entomological Society of America’s *Journal of Insect Science* and is available at <http://dx.doi.org/10.1093/jisesa/iew019>.



A rat-tailed maggot, which is able to stay surprisingly bacteria-free.

(Credit: XenonX3/CC 1.0)



Gluten-free certification in Australia and New Zealand

The Allergen Control Group, owner of the Gluten-Free Certification Program, continues to strive to expand market share and brand recognition worldwide and therefore is proud to announce the addition of BSI as a newly trained and approved third-party auditing and certification company. Based in Australia, BSI will help support the program's goal to expand in the Asia-Pacific marketplace and grow the number of gluten-free brands permitted to display the GFCP trademarks on their company's gluten-free product packaging.

"As a trusted supplier of food safety and quality training courses, BSI welcomes the opportunity to expand their capabilities, in order to better serve the food industry," said Todd Redwood, Director-Food, BSI Asia Pacific. "With its Food Centre of Excellence based in Australia, BSI will help support the program's goal to expand in the Asia-Pacific as well as global marketplace." This collaboration is a natural fit for BSI and ACG, who both share a common interest in managing risk and meeting legal requirements in the food industry.

While in Australia, ACG President Paul Valder also had the opportunity to train and onboard two new authorised training and services providers.

Integrity Compliance Solutions is an Australian-based company offering comprehensive recognised training across Australia, New Zealand and South-East Asia in all aspects of supply chain management. ICS trainers have extensive experience in food safety, auditing, quality management, operational management, technical and regulatory. Each ICS specialist has a science or food degree and technical qualifications in addition to experience across a range of food sectors. ICS specialists are actively involved in food safety training, consulting and third-party auditing against GFSI standards including BRC, SQF2000, ISO22000, FSSC22000 and retailer standards such as Coles, WQAv8, Spotless, Subway, McDonald's, Metcash and ALDI.

Approach Advisory Board Specialists, based in New Zealand, aims to increase the value of your business and offers consulting services focused on developing objectives and strategy, strengthening governance and risk management, creating a high-performing advisory board and optimising technology. Director and principal advisor Terry Hoskins said that he "is proud to partner with the Allergen Control Group for training in the GFCP and will strive to both meet and exceed the high standard set by the Allergen Control Group." He said that he looks forward to transferring his knowledge and supporting the growth of the program in New Zealand.

Customise your wine before you pour with new bottle closure system

A bottle closure system that lets consumers customise their beverages has won the Brancott Estate Winexplorer Innovation Challenge. More than 100 entries were received for the Australian/New Zealand challenge, which was looking for innovations set to impact the global wine industry.

Vinnovate, a South Australian start-up company, won first prize with its new bottle closure.

Suitable for wine, water and other beverage containers, the screw cap closure features a small, push-activated compartment within the cap that allows consumers to tailor wines to their own tastes, on demand.

The innovation — the development of which was boosted after Vinnovate founders Simon and Joshua Schmidt won a UniSA Venture Catalyst grant last year — has the potential to transform the wine industry.

"Being able to customise beverages is the next big consumer trend, and we believe our innovation can positively impact how people enjoy and consume wine," Joshua Schmidt said.

"Our new closure adds a functional element to wine packaging — it means the consumer can tailor their wine to their own personal tastes, whether that's to reduce the effects of preservatives in wine or to subtly enhance the flavour.

"We believe consumers should have a choice, and that's something that makes our product unique.

"It also means that the UniSA program to support students with high-potential new ideas, inventions or business applications is paying dividends."





How do you know

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Question time ...



Which date do you need? Use by or best before?

Unsure whether your company's food or beverage products need a best before or a use-by date code? This quick Q&A will help.

Q. What is a use-by date?

A. Items with use-by dates must be consumed before that date expires. After then, they may be unsafe to eat, even if they look and smell 'okay'. Neither can food legally be sold after the use-by date expires.

Q. When do I need one?

A. Perishable food items need a use-by date. This includes most dairy (milk, soft cheese, etc), meats, ready-prepared salads and prepared fish (such as smoked salmon).

Q. What is a best-before date?

A. This indicates the date from which the item's quality begins to deteriorate from its peak. Typically these foods are still safe to consume after that date and will retain their colour, taste, texture and flavour (if they've been stored properly). As a rule, if the food looks and smells as the consumer expects, it should be safe to eat — even after the best before date. Foods with a best before date can still be sold after that date (provided they're still fit for human consumption).

Q. When do I need a best before date?

A. Foods that tend to last longer, such as frozen foods, cereals, biscuits, sauces, confectionery, dried goods, sugar, flour, etc, take a best before date.

Q. Are there exceptions to the rules?

A. Of course! Some foods don't require any date mark. These include: bread, which can be labelled with an individual "baked on" or "baked for" date if its shelf life is less than 7 days, and where the best before date is 2+ years, such as canned foods. It's also important to note if product needs specific storage conditions to reach its best before or use-by date (eg, "This milk should be kept refrigerated".)

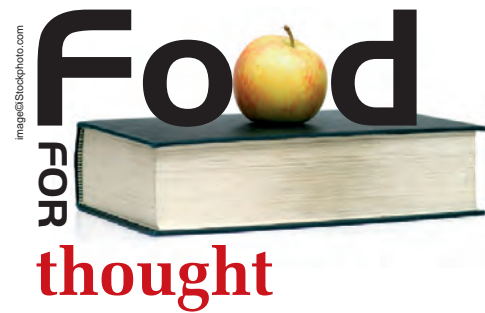
Q. Which technology can I use for date coding?

A. This will depend on your packaging type and production environment. Some of the most popular technologies include small character continuous inkjet (CIJ), drop-on-demand inkjet printers (DOD), thermal transfer overprinter (TTO) and laser.

Q. Where can I find more information?

A. The Food Standards Code clearly sets out all the regulations. Double-check the code if you're in doubt.

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Bribery — there's an ISO standard coming to defeat that

The bribery industry is valued at around US\$1 trillion each year according to the World Bank. The 'uneven' playing field created by endemic bribery damages companies and economies and is a major factor in poverty.

Legislation and international agreements have tried to address the issue of bribery but it remains a significant problem.

Now, ISO has a new standard in development that aims to combat bribery. It has reached the final stage before publication.

The draft version of the ISO standard got an overwhelming 91% vote of confidence from the ISO members involved in its creation.



ISO 37001, Anti-bribery management systems, is designed to help organisations implement effective measures to prevent and address bribery, and instil a culture of honesty, transparency and integrity. While it cannot guarantee that bribery will not occur, it can provide the tools and systems to greatly reduce the risk and help organisations deal with it effectively if it does arise.

Implementing ISO 37001 will also provide reassurance among investors and other stakeholders that an organisation has an effective system in place to manage the risk of bribery.

Neill Stansbury, chair of the ISO project committee developing the standard, said the strong result of the vote gave the committee even greater confidence in the standard's ultimate potential.

"Bribery can be prevented if organisations in the public and private sectors, with genuine intent, implement effective controls.

"The overwhelming positive vote on the draft version of ISO 37001 gives us further confidence that it will be an effective tool to help organisations of all kinds take effective measures to combat bribery in all its forms."

The draft version of ISO 37001 can be purchased from SAIGlobal or through the ISO Store.

The final version of ISO 37001 is expected to be published later this year.

packaging coding & logistics

Cheese company saves energy with centralised vacuum

DMK Deutsches Milchkontor is one of Germany's largest dairy companies, employing more than 7000 staff at 28 sites. Each year it processes milk from about 9400 producers to manufacture 6.7 million tons of high-quality cheese products, which are sold to national and international retailing companies, food manufacturers and large volume consumers.

At its production facility in Georgsmarienhütte, the company produces sliced cheese and mozzarella in packaged portions.

Various types of sliced cheese are packaged in three packaging lines by thermoforming machines, with products packed as both DMK and external brands. Two additional thermoforming machines package mozzarella in 2.5 kg and 10 kg blocks for further processing by customers.

DMK conducts its energy management according to ISO 50001 standards, leading the company to seek a solution to reduce vacuum system energy consumption. All five thermoforming machines originally had two vacuum pumps each: one to form the foil into the mould and one to extract air from the packaging chamber. DMK Energy Manager Yvonne Gödeker wished to reduce the number of vacuum pumps and relocate them away from the production area. The production area is air conditioned, so heat emitted by vacuum pumps was causing increased energy costs.

Busch recommended the installation of a centralised vacuum system. Vacuum is supplied by a pipework system with three vacuum circuits:

1. Rough vacuum

Several vacuum pumps maintain a permanent rough vacuum of between 30 and 40 mbar in the vacuum reservoirs

and pipework system. This vacuum is available directly at the packaging point to evacuate the packaging to rough vacuum level. The medium vacuum circuit is then activated.

2. Medium vacuum

The medium vacuum modules evacuate the packaging chamber and the packaging from rough vacuum level to the final package pressure of less than five mbar. This two-stage evacuation has the advantage of speed: the final pressure is achieved rapidly, allowing short cycle times. The two-stage process is also the most energy-efficient way of achieving a vacuum of less than five mbar. Panda vacuum pumps in a medium vacuum unit are used as vacuum boosters.

3. Forming vacuum

This vacuum circuit is used to form the plastic foil into trays. The vacuum level required is between 100 and 200 mbar.

A controller maintains the required vacuum level in all three vacuum circuits, matching the demand created by the individual packaging lines. Vacuum pumps are switched on or off as required, maintaining the desired pressure in the vacuum reservoirs.

The three packaging lines rarely require maximum pumping speed simultaneously, so in general only some of the vacuum pumps are in operation.

In the original decentralised vacuum system, both vacuum pumps were started with the packaging machine and ran continuously at full speed. This maximum output was dimensioned to meet the demand created by the shortest cycle time and largest packaging volume of the machine. The new centralised vacuum system has drastically reduced the running time of individual vacuum pumps, which in



conjunction with the two-stage package evacuation has resulted in significant energy savings. After a year of operation the centralisation of the vacuum system had saved about 100,000 kW/h, reducing DMK's energy costs by approximately €5,000.

The centralised vacuum system is located in an intermediate floor above the production and packaging areas. The relocation of vacuum pumps installed directly to the packaging machines prevents emitted heat from reaching the packaging machines and production area. In addition, no warm air from vacuum pump exhausts is given off to air-conditioned rooms. This has reduced the cooling required by the packaging machine tools, and air-conditioning costs are also lower.

As the centralised vacuum system is now located externally, it is no longer necessary for service personnel to enter the production area. Service technicians can carry out maintenance without interrupting production, as the system has a reserve vacuum unit. Starting this reserve unit allows the first unit to be disconnected from the network and maintenance tasks to be carried out. This has reduced expenditure, as no production time is lost and maintenance is no longer required at weekends when costs are higher.

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Is that package sealed correctly?

Inline package seal integrity testing

Every year, factories worldwide turn out something like a trillion units of film packaging for food, cosmetic, pharmaceutical and consumer technology products and naturally, if the packaging seal has been compromised consumers are not happy.

Years ago children went to the local milk bar to spend their pocket money asking for “two coppers, a musk stick and three Lypties”. The shop owner put the lollies in a small white paper bag and scrunched the bag closed. Now, however, the lollies are pre-packaged and purchased from supermarkets.

The lollies are not all that is pre-packaged — almost everything is. Ninety percent of this packaging is manufactured using thermal contact processes; in other words, sealed with the aid of hot tools.

During these processes, the packaged goods can sometimes get into the seam and prevent it from sealing properly. Currently, manufacturers generally have to rely on spot checks to catch these

packaging faults. If incorrectly sealed food or medical product packaging ends up on supermarket or pharmacy shelves, it can impair the product quality or shorten its shelf life — to say nothing of harming the manufacturer's reputation.

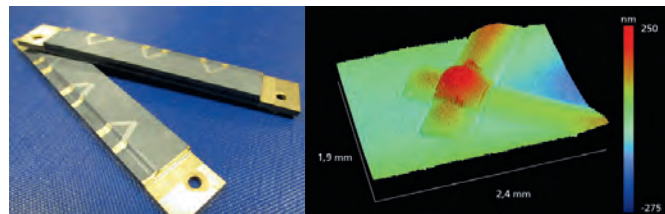
In the future, a thin-film temperature sensor will allow companies to carry out fast and reliable inline detection and rejection of packaging that has been incorrectly sealed.

Thin-film sensors for inline monitoring of the packaging process

Researchers at the Fraunhofer Institutes for Mechanics of Materials IWM in Freiburg and for Process Engineering and Packaging IVV in Dresden have developed a method that will enable manufac-



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Sealing bars fitted with thin-film sensors (left). White light interferometer image of a measuring point with conducting tracks approx. 250 nm thick and 600 µm wide (right).

© Photo Fraunhofer IVV

and partially melt the plastic composite, sealing the packaging. Once the lollies are poured in, the tube is then clamped by the tools at the designated places and heat-sealed in the same manner. Finally, a blade separates each pack from the next unit.

How well the seam holds depends above all on the temperature of the sealing bar surface: if it is too hot, the film burns; if it is too cold, the film sections are not fused tightly enough together. Either way the package is not sealed properly. It is hardly surprising that manufacturers go to great lengths to detect such faults. For example, some spot checks are performed by placing the packaging in a water bath, and air bubbles rising to the surface indicate leaks.

An end to spot checks

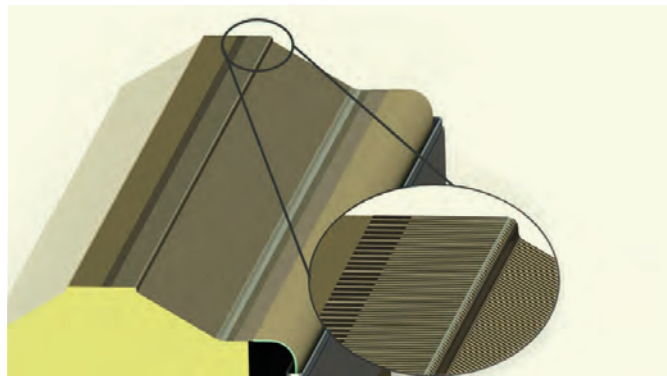
There is, however, an alternative. “Because we apply the temperature sensors directly to the sealing bar, we receive direct information about every single packaging unit for each sealing process,” explained Gregor Wendt, scientist at Fraunhofer IVV in Dresden.

If the temperature is too high or too low, it can be adjusted immediately at the machine — before large numbers

turers to significantly reduce the amount of incorrectly sealed packaging, if not prevent it altogether. Thin-film temperature sensors integrated directly into the sealing bar will facilitate inline monitoring of the packaging process.

“Instead of simply relying on spot checks, manufacturers will be able to inspect every single item of packaging,” confirmed Alexander Fromm, project manager in the Functional Coating Materials group at the Fraunhofer IWM. “This gives them far greater assurance that all food and drug packaging is tightly sealed. In addition, it removes the need for time-consuming downstream testing.”

Take confectionery packaging as an example. The current method is to have two heated sealing bars clamp a film tube




Design draft of a fully instrumented sealing bar with sensor array and detailed view of sensors on sealing bar surface.

© Photo Fraunhofer IVV

of incorrectly sealed units of packaging start flowing off the line. The inline quality inspection method also reliably recognises products that have become wedged in the packaging, such as a piece of product that has slipped into the seam. This works as follows: when sealing bars seal films together, the films absorb some of the bars' heat. Accordingly, the bars cool down a little. How far the temperature drops depends on the mass of the object wedged in the packaging. If a piece of lolly has strayed into the sealing zone, it also absorbs some of the heat — the bars cool down faster than without wedged goods.

The highly sensitive system is even capable of detecting coffee powder in the seam — and of doing so faster and more accurately than the sensors that have been used in sealing processes up to now. For the sensor itself, the coating specialists use thermocouples manufactured in established thin-film processes. They vapour-deposit the various materials of the thermocouple in a vacuum directly onto the sealing bar. With a layer just a few hundred nanometres thick, the resulting sensor is extremely thin and has a very short response time.

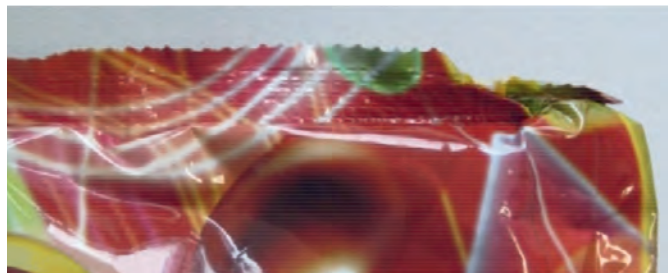
At Fraunhofer IWM, researchers are developing adapted protective coatings for specific industrial applications. Meanwhile, their colleagues at Fraunhofer IVV in Dresden are integrating sensor-fitted sealing bars into packaging systems and handling the ways in which sensors make contact.

In tests on a laboratory sealing unit, the research team has already been able to verify that the sealing process with an integrated thin-film sensor functions properly. In further steps, the scientists are currently working on solutions to adapt this technology to the tools generally used in industrial manufacturing, including the high number of cycles and wide variety of film materials this entails. 



View inside vacuum chamber during the coating process.

© Photo Fraunhofer IVV



Top image: Examples of leaking or visually deficient film packaging: contamination via packaged goods in the sealed seam (above) and folds in the weld seam (below).

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3D vision sensor

SICK has developed its first 3D vision sensor — the TriSpector1000 — which can carry out inspection tasks standalone and without programming.

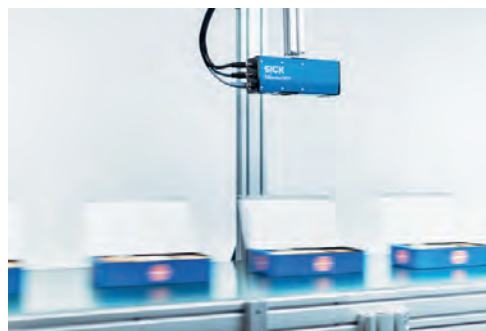
The vision sensor is suitable for measuring volume in the food industry, monitoring the integrity of totes including contents, completeness and emptiness, and in quality control systems in the consumer goods and packaging industry, to count and position objects, measuring their volume and thickness.

The device creates 3D images of moving objects directly on the product line. It uses laser triangulation to capture height profiles, which it uses to generate a 3D image of the object. A configurable object finder and analysis tools are applied to the 3D image. The higher-level control system can access the results of these analyses via simple switching outputs or an Ethernet network.

Intensity data improves 3D navigation and allows the system to check for the presence of labels, printed patterns or object rotation. The device has a large field of view and can re-use stored settings. The IP67 metal housing with plastic windows offers necessary protection, enabling the device to withstand the harsh conditions in the food industry.

SICK Pty Ltd

www.sick.com.au



Premade pouch packing

The ADM-DP30 pouch packing machine is configurable for various pouch styles, including pillow bag, gusseted bag, quadseal bag and doy pouch, with an infeed system allowing multiple bag sizes.

The large printing area replaces the need for labels. Multiple conveyor orientations mean the machine is ready for any plant layout. The system can be run by a single operator, with all human interactions at waist to head height level.

The system runs at up to 25 bpm and is suitable to pack rice, grain, dried fruit and nuts, frozen foods, cereal, confectionery, organic foods and coffee.

Features include: stainless steel construction; anodised aluminium parts; Panasonic PLC; Panasonic HMI touch screen; automatic bag infeed drive; bag support and shaker; robust components; automatic program set-up; quick changeover; guarding and interlocks to AS4024 standards; Omron temperature controller; Schneider motion controllers.

Options available include a printer, a labeller, gas flushing and vacuum sealing.

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Hygienic bottling using hot fill technology

With consumer resistance to sugary soft drinks growing, many people are turning to juices and sports drinks as a healthy alternative. For bottlers, however, this means satisfying the special technical demands made of the process and filling technology for such products. In South Africa, Coca-Cola Canners has opted for a bespoke high-performance hot filling line from KHS.

With its four canning and two PET lines, the production site in Wadeville just outside Johannesburg is one of the largest of its kind in the world. 320 employees working round the clock make sure that around 350 million litres of near-water beverage Glacéau, sports beverage Powerade and the Coca-Cola, Sprite and Fanta brands leave the factory every year.

Coca-Cola now bottles iced tea, sports drinks and juices with and without fruit chunks on the new line. The new pulpy beverages could not be bottled on the two existing lines for PET bottles. "The technology required for this is more sophisticated," said Steve Nagiah, plant manager at Coca-Cola Canners.

Wanting to use hot fill technology for hygienic reasons and anticipating an output of up to 48,000 bottles/h, and following a carefully considered consultation process, Coca-Cola Canners decided to go for a system manufactured by its long-standing partner KHS.

"For this demanding project we developed a system which is precisely tailored to meet Coca-Cola's specifications," declared Philipp Casparby, project manager for KHS Manufacturing (South Africa), KHS's South African subsidiary. Like other KHS block systems, the new line covers all stages in production from stretch blow moulding through filling to labelling, packaging and pelletising.



Coca-Cola Canners in South Africa bottles a range of soft drinks in PET. KHS has developed and installed a complete new line for the site that is able to fill up to 48,000 bottles/h.

The key is in the detail, however; the line also processes fruit juices with a percentage of fruit pieces. These fruit chunks must not be damaged during filling; at the same time the low filling dosage tolerances must be adhered to. The company designed a line with two precision volumetric fillers. On this the fruit pieces are first bottled with a little juice before the second filler tops up the bottles with the rest of the juice.


The entire filling process makes use of hot fill technology where the content is heated to over 100°C and then filled at a temperature of about 83°C. This makes sure that microorganisms are safely eliminated. With the new line Coca-Cola Canners is able to fill up to 48,000 bottles/h holding between 0.3 and 1.5 litres.

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Collaborative dual-arm robot for packaging applications

HMPS, together with robotic partner ABB, has adapted the YuMi collaborative robot to suit specific packaging applications.

The robot is compact, with dimensions similar to that of a human. Its dual arm feature seven axes of movement, each allowing good dexterity and precision.

With its dual arms, flexible hands, universal parts feeding system, camera-based part location, lead-through programming and precise motion control, it is able to surpass the precision and speed of human-only working, resulting in high-quality products and less waste.

The robot comes with integrated, flexible hands which can be deployed in a variety of configurations, including servo grippers, dual suction cups and vision. The hands

allow for complete customisation to meet the demands of many packaging tasks. This enables the robot to work with humans in a packaging environment that requires flexibility along with some repetition and precision. Some of the potential packaging applications include kitting of multiple components into packages, component assembly and packing of fragile materials.

The robot can operate in close collaboration with humans due to its inherently safe design. It has a lightweight yet rigid magnesium skeleton covered with a floating plastic casing, which is wrapped in soft padding to absorb impacts.

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Accuracy, simplicity and increased plant efficiency were the medicines for Baxter

Baxter Laboratories, a contract manufacturer to the pharmaceutical and personal care industry, prides itself on innovation, customer service excellence and effective supply chain management. So when the labelling accuracy of its existing equipment began to falter, it was quick to respond with a review of a better alternatives.

That was 18 months ago, and the solution Result Group recommended for Baxter was the HERMA 400 label applicator. This compact label applicator is versatile and particularly user-friendly. But, importantly for Baxter, the result was a vast improvement in labelling accuracy.

"All HERMA label applicator machines use the tried and tested state-of-the-art HERMA 400 servo-driven applicator, which ensures labels are consistently applied with a very high degree of accuracy," said Michael Harrop, from Result Group.

Once the HERMA 400 proved itself to be an invaluable asset, Baxter looked to completely replace its existing equipment with the robust and durable HERMA 362E. This has been in operation for six months now, labelling a range of pack formats including spray bottles, tubes, bottles and jars, just to name a few.

The HERMA E Series label applicators combine the durability and speed of the larger HERMA M Series with the space saving of the compact HERMA C Series. The feature



of speed also applies to module changeovers, which can be installed and changed quickly, greatly reducing ongoing production costs.

Baxter Operations Manager Ian Tilley said, "We're now swapping all our machines over to HERMA. Not only have the machines increased our labelling accuracy and production efficiency, and minimised set-up time, the service that we've received from Result Group throughout the process has been second to none.

"The extent to which we're happy with the HERMA 362E is demonstrated by the fact that we've got more machines on order."

The HERMA 362E has front, back and wraparound labelling capabilities with an excellent price-performance ratio. It also features an operator-friendly, easy-to-use touch screen with the ability to save job and mechanical settings, once again saving you time in set-up.

Michael Harrop from Result Group said, "With its advanced handling, we always knew the HERMA system was good, but it's very reassuring to learn of our client's satisfaction with them. Satisfaction that is simply because of a great result."

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Grains exports could rise 20% by 2030

The expanding middle class in Asia could result in an increase in Australia's wheat exports income from \$5.7 billion to \$7 billion by 2030. This 20% increase reflects the growing demand for grain, red meat and dairy in Asia and could transform the Australian grain industry according to new research by ANZ.

The grains-focused report, The Grains Muster, says that while human consumption of grain is significant and has increased globally, future prosperity of the Australian grain sector will be bolstered by two key drivers: the drought in Australia reducing the ability to support grass-fed cattle and a dramatic increase of people in Asia shifting their diets to consume red meat and dairy.

In order to achieve an aggressive growth scenario, the report states Australia would need to increase wheat production by 20% from 25 to 30 million tonnes over the next 14 years.

ANZ Head of Agribusiness Mark Bennett said: "Unprecedented growth in demand for animal and dairy protein in China and South-East Asia has the potential to transform our grains industry over coming years.

"Historically our growth momentum has come from improvements in productivity, and producers will need to continue to find efficiencies in their operations wherever they can. One area with huge potential for production is the likely redirection of global capital flows into Australian agriculture with an expected increased focus on cropping operations," Bennett said.

Key findings:

- Australia could increase wheat production by 20% from 25 to 30 million tonnes, which would see the sector generate an additional \$1.3 billion in export income by 2030, from \$5.7 billion to \$7 billion.
- Australia currently produces around 25 million tonnes of wheat, 18 of which is exported.
- A key driver of grain demand in China and South-East Asia is wheat-based food production, namely noodles, breads and bakery.
- The growing demand for animal protein in Asia, namely meat and dairy, can directly and indirectly impact the feed complex and Australian grain use.
- Recent free trade agreements in key North Asia growth markets have improved Australian grain farmers' access to around 70,000 food consumers and 4.8 million livestock per Australian farmer.
- Seasonal conditions in Queensland and Northern NSW mean there has been an increasing need to finish cattle on feed in feedlots to ensure quality and consistency,



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which has seen a significant increase in local demand for grain.

- Australians currently consume around 2 million tonnes of wheat each year and in China more than 50% of its 1.4 billion people consume flour-based foods.

“Infrastructure investment remains vital to drive efficiencies in the supply chain; however, it may not be the right place to look for the big impact on profitable grain production.”

ANZ General Manager of Regional Business Banking Christine Linden said: “Australian wheat enjoys an excellent reputation in global markets, but it appears that this ingredient, and the resources required to produce it, may be in higher demand than ever due to the global call for more animal protein.

“While this is clearly encouraging for Australian agribusiness, we cannot forget the flow-on benefits this shift will create for regional communities. Regional and rural Australia is at its best when agribusiness is strong, with buoyed regional commercial confidence driving improved economic and social conditions in the bush.”

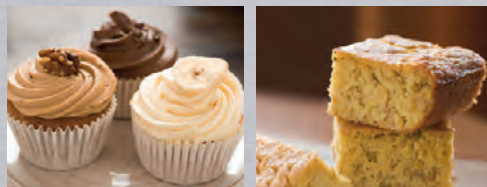


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4.5 thousand tonnes of flour recalled

due to *E. coli* scare

Janette Woodhouse

Huge recalls cause huge damage to brands, profitability and even viability — and 4500 million kg of flour is a huge recall.

Since 1 December last year, 38 people across 20 states in the US have been confirmed infected with Shiga toxin-producing *Escherichia coli* O121 (STEC O121). Public health investigators have established that the isolates from ill people are closely related genetically so they believe there is a common source of infection causing this outbreak.

Accessing the PulseNet system, a national subtyping network of public health and food regulatory agency laboratories, investigators used pulsed-field gel electrophoresis and whole genome sequencing to DNA fingerprint the STEC bacteria isolated from the ill people.

So far 38 people, aged from 1–95 years, have been confirmed ill with 10 being hospitalised. None have developed haemolytic uremic syndrome, a type of kidney failure, and no deaths have been reported.

However, the outbreak cannot be considered contained as more cases of illness cannot be ruled out since the time between infection and symptoms averages two to three weeks. This time lag makes identifying the source of disease quite difficult.

Can you remember what you ate three weeks ago?

The infected people (or their carers) were interviewed about what they had eaten and other exposures in the week before they became ill.

- Sixteen (76%) of 21 people reported that they or someone in their household used flour in the week before they became ill.
- Nine (41%) of 22 people reported eating or tasting raw homemade dough or batter.
- Twelve (55%) of 22 people reported using Gold Medal brand flour.
- Three ill people reported eating or playing with raw dough at restaurants.

From this scant information, collaborative investigative efforts of state, local and federal health and regulatory officials indicated that flour produced at General Mills' Kansas City, Missouri, facility was a likely source of this outbreak. In an epidemiologic investigation, investigators compared the responses of ill people in this outbreak to those of people of similar age and gender reported to state health departments with other illnesses. Preliminary results of this investigation indicated an association

between STEC O121 infection and someone in the household using Gold Medal brand flour to make something to eat.

Federal, state and local regulatory officials performed traceback investigations using package information collected from ill people and records collected from restaurants where ill people were exposed to raw dough. These investigations indicated that the flour used by ill people or used in restaurant locations was produced in the same week in November 2015 at the General Mills facility in Kansas City, Missouri.

On 31 May 2016, General Mills issued a voluntary recall of more than 4.5 million kilos of flour due to the possible *E. coli* contamination. The recalled flours were produced in the Kansas City facility during a time frame identified by traceback and sold nationwide.

"As a leading provider of flour for 150 years, we felt it was important to not only recall the product and replace it for consumers if there was any doubt, but also to take this opportunity to remind our consumers how to safely handle flour," said Liz Nordlie, president of the General Mills Baking division.

Almost six weeks after the recall officials uncovered the 'smoking gun' - matching *E. coli* O121 from a sample of General Mills flour recovered from a sick person's home to the outbreak strain that had sickened at least 38 people since December.

The effect of this confirmation and recall on the General Mills brand will be huge.

Companies do it tough after recalls

Do you remember the Hepatitis A outbreak that was linked to Patties Foods' Nanna's and Creative Gourmet businesses early last year? The product recall saw thousands of packets of berries pulled from shop shelves and put a major dent into the company's full-year profit report. Its net profit after tax was down from \$16.7 million to just \$2.1 million — more than \$14 million gone!

The company decided to exit the frozen fruit market and sold its frozen berries business to Entyce Food Ingredients for an undisclosed sum earlier this year and now has agreed to a private equity takeover bid from Pacific Equity Partners (PEP).





Bakery automates wrapping to meet market demands

Established in 1954, Schwob's Swiss Bakery is one of Melbourne's oldest artisan bread bakers.

To capitalise on a major expansion in its core wholesale market, which includes supermarkets, the food service sector and independent retailers, Schwob's accelerated production and automated its packaging process with the installation of a PFM Hurricane Servo flow-wrapper from Emrich Packaging Machinery.

The high-speed Hurricane servo-controlled horizontal flow-wrapper can achieve a maximum speed of 100 mechanical cycles/min. Crucially for Schwob's, the Hurricane allows for a rapid product changeover time of just 3 min, assisted by 24 pre-programmed set-ups. This adaptability means the machine can be rapidly changed from wrapping a large bread loaf to an individual roll.

The wrapper produces packs that are sealed lengthwise and crosswise on three sides from a roll of heat-sealable packaging film, with or without support trays. It also provides features such as no product-no bag and misplaced product detection, eliminating film wastage and product damage.

Schwob's Director John Inman also praises the reliability and robustness of the wrapper, qualities that he says are vital to enable the bakery to meet market demands for fresh products.

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Ishida delivers flexibility and quality to muesli manufacturer

To cope with high demand for its products, German oat flakes and muesli producer Peter Kölln required a packing solution that was able to process a wide range of pack formats and be equally suitable for muesli and extruded cereals. In addition, the company was seeking a high-performance quality control system.

In collaboration with its customer, Ishida Germany devised a high-performance packing line comprising fully automatic multihead weighers and inspection systems to provide flexibility and enhanced quality control.

The Ishida solution, comprising two CCW-RS multihead weighers, an IX-GA-4075 X-ray inspection system and a DACS-G checkweigher, is able to handle a variety of different types of muesli and extruded cereals (which the company markets under the name 'Fleks') in different pack formats, with fill weights ranging from 325 g to 1 kg.

The line is capable of speeds of up to 140 packs/min (70 weighments/min/machine), with accuracy to within 0.5% of the target weight. The only factor that prevents the weighers from achieving an even higher output is the low fall speed of the lightweight products.

The pre-mixed muesli and Fleks are fed via a bucket elevator onto the two weighers. The cereals pass through inlet chutes onto the dispersion tables, where the sensitive Ishida loadcell with feedback to the infeed ensures there is an even and consistent product flow to the radial feeders.

All hoppers are equipped with sift-proof hopper doors to prevent fine product from leaking during the weighing process.

A microprocessor rapidly calculates the optimum combination of hoppers that comes closest to the target weight. These dosed portions are then released directly into the packaging machine via a timing hopper. Aluminium-coated film is used for the Fleks, while muesli products are packed into clear plastic bags and later into cardboard boxes.

One particular challenge created by the fully automatic weighing of these cereal products is the amount of dust generated. While the design of the CCW-RS weighers ensures gentle product flow, all contact parts are also electrostatically polished so that dust traps are minimised, preventing product residues suddenly coming loose and landing in a different pack as unwanted cereal clumps. In addition, to prevent dust pollution in the factory, the



weighers are housed in a special dust enclosure with air extraction.

After weighing and filling, the packing line, which until then has been split, converges and the products undergo a thorough inspection process. The Ishida IX-GA-4075 X-ray inspection system detects stone, glass and metal foreign bodies that can occur in products containing raisins and nuts. Bags containing product clumps, which are also regarded as a quality defect, are eliminated using an integrated airblast nozzle.

The technology behind Ishida's X-ray inspection system is based on software featuring an intelligent genetic algorithm. By analysing image data over a number of generations, the machine achieves a high level of inspection accuracy.

Since similar contaminants are usually found repeatedly in food manufacture, the system can, with each inspection procedure, create an increasingly accurate comparison log. A data log collects this valuable information and helps to eliminate recurring sources of contamination.

Products undergo a further quality check before end-of-line packing, where an Ishida DACS-G checkweigher rejects packs that do not meet the correct specifications. The checkweigher is also equipped with a metal detector, which is used when processing muesli for a further foreign body check.

Peter Kölln is already benefiting from its high-performance packing line. Technical project planner Denise Stoldt said that the system is running "really smoothly" in three-shift mode and has reached a stable output. "The crucial factor is the enormous flexibility offered by the new line, which allows us to process a very wide range of products on one system at high speed." The technical upgrade has also enabled the company to add a new oat flake product to its range.

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The spectrometer is equipped with B&W Tek's CleanLaze technology for good laser stabilisation and narrow line width. Other features include a spectral resolution as fine as 3.5 cm^{-1} , wide Raman shift coverage up to 4000 cm^{-1} and a TE-cooled, 2048-pixel CCD array. With a convenient fibre-optic interface, it can collect data to within 65 cm^{-1} of the Rayleigh line. The system's small footprint, lightweight design and low power consumption provide research-grade Raman capabilities anywhere.

The system offers 532 and 785 nm excitation wavelength options. It also features a TE-cooled CCD detector, allowing the maximum effective integration time of several minutes. This makes the product suitable for demanding applications involving low concentrations and weak Raman scatters.

Applications include: bioscience and medical diagnosis; polymers and chemical processes; food and agriculture; geology and mineralogy; pharmaceuticals; environmental science; Raman microscopy; forensic analysis; gemology; art and archaeology; teaching; quality control; and general research.

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SCIEX

Somatic cell counting in milk

Somatic cell testing is used for monitoring dairy herd health and ensuring quality in milk and milk products.

Dairy processors need to know the level of somatic cells present in milk, as high counts are linked to reduced yields, impacts on organoleptic qualities and reduced shelf life.

At the farm level, somatic cell testing can be used to indicate the presence of mastitis in individual cows, or assessing the entire herd. Somatic cell counts can indicate whether medical treatment has been effective, or whether further intervention is required.

The most common test method currently available is microscopy, but this method can be inaccurate due to subjectivity and may require the use of hazardous chemicals. Sending samples to an external lab can result in delays for results.

The LactiCyte from Page and Pederson provides somatic cell counts for fresh and preserved cow, goat, sheep and buffalo milk in a test time of less than 60 s. Using a fluorescent microscope technique and magnification approach, the actual cells counted are recorded by a charged-coupled device (CCD) camera and saved to an internal database.

The compact device has a cell counting range of 100,000 to 10,000,000 somatic cells/mL. It is suitable for use at the farm or processing plant.

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UV spectroscopic analyser

The CA-6 UV Family of Spectroscopic Analysers from Electro-Chemical Devices (ECD) can monitor any two selected parameters in separate measurement ranges for ammonia, nitrate or chemical oxygen demand (COD 254 nm).

The analysers provide accurate, reliable and economical online sampling with UV absorption sensor technology to monitor harmful pollutant parameter levels. The sensors are available in multiple parameter measurement ranges: ammonia from 0–10 mg/L or 0–1000 mg/L; nitrate from 0–30 mg/L, 0–100 mg/L or 0–250 mg/L and COD 254 nm from 0–200 mg/L or 0–20,000 mg/L.

Each model can be ordered with either a single parameter or dual parameters in the factory precalibrated measurement ranges. Each parameter is analysed based on the measurement of UV absorption in the sample. The absorbance of the solution or gas is measured through a quartz flow cell at a specific wavelength using a long-life Xenon lamp and photo detectors. The absorbance level is directly related to the sample concentration according to Beer-Lambert's Law, which correlates the attenuation of light to the properties of the material through which the light is travelling.

Accuracy is 5% for the measurement of ammonia, nitrate and COD based on a sample temperature range of 0 to 80°C, but the sample must be liquid and not frozen. Repeatability varies based on the parameter chosen and the single or dual parameter configuration, ranging from 0.15 to 3%.

The analyser is designed with four alarm relays. A single 4–20 mA analog output is included with 12-bit resolution. RS232 communications are provided for data download to a CSV file, with an optional RS485 MODBUS communication module available.

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Microwave reaction system with software-based automation

Anton Paar's microwave reaction platform, the Multiwave PRO, is receiving a software update. The product is becoming an IoT (Internet of Things) device, enabling users to receive automated notification of completed runs and error reporting via email as well as remotely control the instrument using VNC.

Reducing time to get results in the laboratory is a major concern of laboratory managers. Instruments are getting faster, but the biggest time drain is still the time between analytical steps. Laboratory technicians frequently find themselves waiting for a process to finish or walking back and forth between their desk and an instrument to determine if the process is completed. With the software update, the Multiwave PRO becomes part of the IoT and takes the first step in reducing the time between sample preparation and analysis.

The free update, available on the Anton Paar homepage, builds on the already robust software package used by the reaction system. Current features — such as audio notification and visual notification on the 9" capacitive touch screen, in addition to a variety of data export capabilities and a comprehensive video manual — make the laboratory microwave platform easy to use.

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The software is easy to use, with automatic calibration included.

For more information, click [here](#).

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On-site strip test for soy detection

With the launch of the improved Romer AgraStrip Soy kit, the total assay time of the product's lateral flow device is reduced to 11 min while maintaining high standards of analytical accuracy. In addition, an extraction reagent will allow for the recovery of processed soy protein.

The kit uses a monoclonal antibody that allows low amounts of soy to be detected in a short period of time. The first incubation step has been reduced from 20 to 5 min, leading to a total assay time of 11 min. Furthermore, the AgraStrip Extraction Reagent for Processed Soy improves the recovery of processed soy proteins, which are often difficult to detect, and thereby helps to avoid false negative results.

The test can be applied to a variety of finished food products, as well as rinse water and environmental swab samples.

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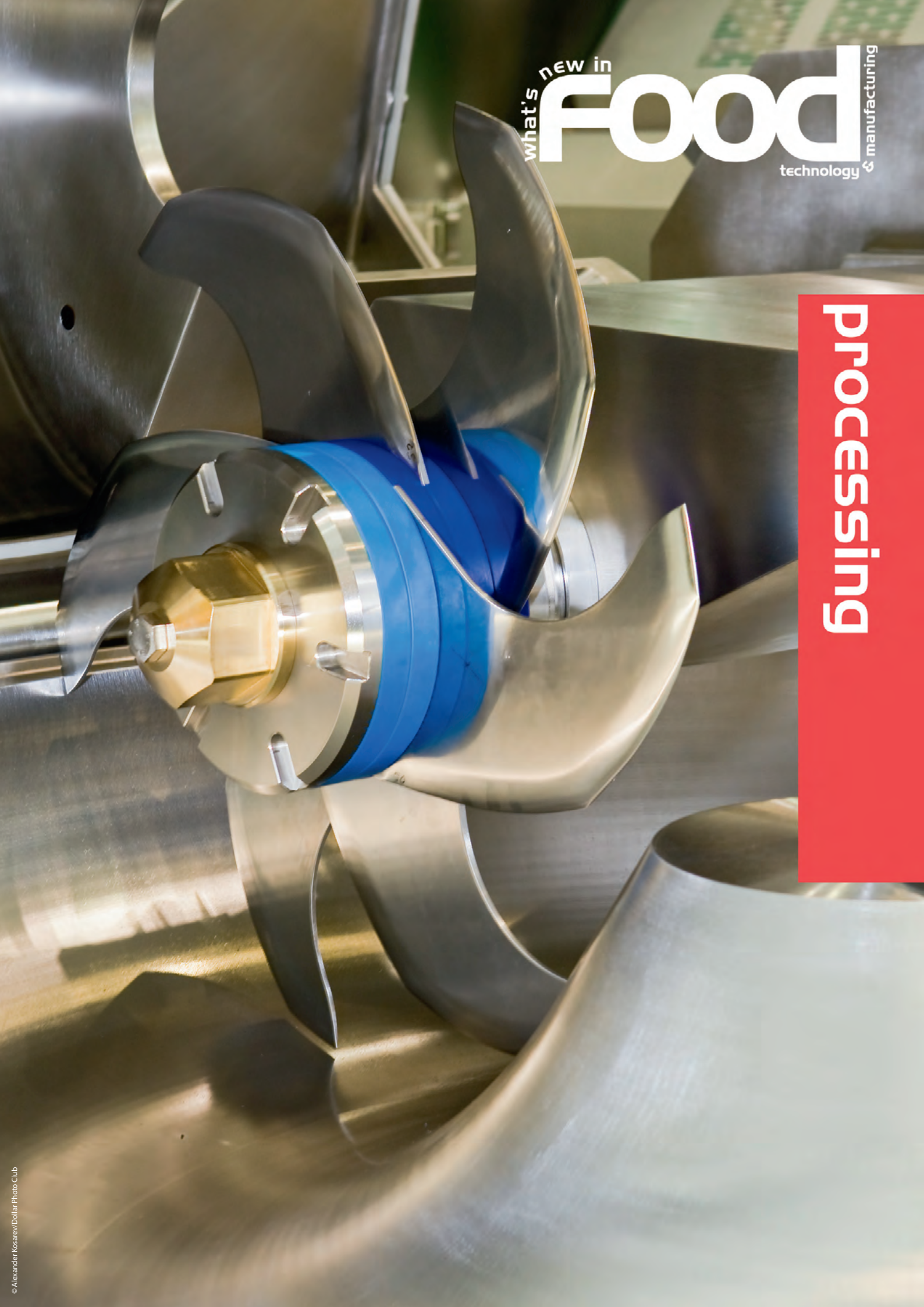
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Processing



Sensors in hygienic conditions

Achieving reliable results, even in harsh conditions, is particularly important in food production and processing. Supplying contaminated or inedible food can result in considerable financial losses and a damaged reputation.

One method of fulfilling the strict hygiene standards that apply in this context is to clean the systems using high pressure every day; however, this means that the individual components are exposed to strong thermal and mechanical loads as well as aggressive chemical cleaning agents, which presents a real challenge to sensors.

Organisations such as the EHEDG (European Hygienic Engineering & Design Group) and the American 3-A Sanitary Standards are developing guidelines for hygienic machine and system construction — including the components used in the systems. In an age of globalisation, we rely more and more on harmonisation between these guidelines and the certification criteria.

Washdown and hygienic design

Machines and systems which process foodstuffs are arranged in different zones in accordance with the relevant hygiene requirements:

Zone B

Splash zone (cleaning zone, washdown): Washdown indicates that the splash zone of a machine can be wet-cleaned well and quickly. With this type of cleaning, there will be very few or no residues (foodstuffs, cleaning agents, water) left on the surfaces. Sensors in the splash zone must therefore be rugged when exposed to cleaning agents and high-pressure cleaning.

Zone A

Foodstuff zone (hygiene zone): For 'hygienically designed' machines and the sensors used in these machines, certain additional standards apply. A machine is considered to be hygienically designed if it remains free from product residues during use, as this forms an ideal breeding ground for germs. Consequently, it is important to avoid dead space and open joints when designing components.

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Sensors that are designed in accordance with hygiene standards are constructed in such a way that they can be used directly in the foodstuff zone (hygiene zone) of a machine. Fewer build-ups of product deposits means less cleaning, in turn reducing the amount of detergent, water and energy required. The system throughput increases thanks to shorter cleaning intervals — this can be an economic benefit, particularly if products are changed frequently.

The material makes all the difference

To ensure the reliability within the particular requirements of the food industry, sensors are manufactured in a range of housing materials:

Stainless steel (Inox)

Sensors enclosed in stainless-steel housing are chemically resistant, rustproof and durable. They guarantee chemical material resistance and absolute tightness during intensive cleaning and disinfection.

VISTAL

A high-strength plastic, reinforced with glass fibre, boasting mechanical properties which exceed those of conventional plastics. A VISTAL housing can reach a level of mechanical strength and tightness sufficient to receive a rating of IP69K.

PTFE

A PTFE coating ensures all-round protection for the sensors and cables. The PTFE plastic is not affected by solvents or other aggressive chemicals. Its surface is so smooth and slippery that hardly any external substance can stick to it, making it suitable for use in hygienic and wet areas.

Housing with the enclosure rating IP69K

Housing with the enclosure rating IP69K guarantees that the sensors and their accessories will stand up to intensive cleaning processes, regardless of whether these involve a high-pressure jet of up to 100 bar or water temperatures of up to 80°C.

Hygienic accessories

What use are hygienic sensors if the mounting components provide a breeding ground for germs? Mounting systems should also fully comply with EHEDG recommendations; connecting cables can be made of PVC with M12 plug connectors for use in the food and beverage industry. With Ecolab certification and enclosure rating IP69K, users can be sure that connecting cables are resistant to the cleaning agents and disinfectants for which they have been tested.



SICK Pty Ltd
www.sick.com.au

Deflection elbows

The cast aluminium line of Smart Elbow deflection elbows from HammerTek is now available in tube and pipe sizes from 3.8 to 30.5 cm in diameter. Engineered for dilute-phase and dense-phase pneumatic conveying, the deflection elbows prevent material from impacting the elbow wall, eliminating or minimising breakage and the generation of fines when conveying friable materials such as chips, flakes, corn, seeds, sugar, salt, cocoa nibs and pet food pellets.

According to the company, material build-up and plugging due to frictional heat is also eliminated when conveying heat-sensitive materials such as sugar, flour, spice/seasoning mixes, ground coffee, dried milk and cocoa powder.

The elbows feature a spherical chamber that protrudes partially beyond the desired 90° or 45° pathway, which causes a ball of material suspended in air to rotate, gently deflecting incoming product around the bend without impacting the elbow wall or generating heat.

Other deflection elbows, offered in varying size ranges up to 45.7 cm, are available in cast iron, carbon steel, stainless steel and specialised alloys, which additionally prevent elbow wear when conveying sharp, hard materials such as salt, rice hulls, corn meal, soy beans, cocoa bean hulls, hops, barley, cocoa nibs, corn, tobacco leaves, wheat, oats, nut shells, wood chips, hog fuel and other abrasives.

According to the manufacturer, conventional sweep elbows and 'plugged tee' elbows are typically replaced with deflection elbows to eliminate the cost of elbow replacements, ensure product quality, allow directional changes in restricted spaces and prevent unscheduled system shutdowns due to elbow maintenance or repair.

HammerTek

www.hammertek.com





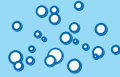
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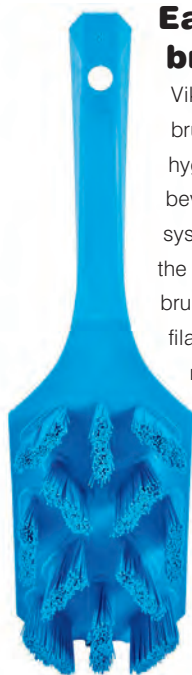


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Easy-clean food-grade brushware

Vikan's Ultra Safe Technology (UST) brushware products are secure, safe and hygienic cleaning tools for the food and beverage industry. The filament retention system is moulded as an integral part of the brush, effectively making it a one-piece brush and eliminating the risk of loose filaments, which can lead to product rejection, recalls and waste.



Manufactured without the use of non EU Food Contact approved resins, the brush head pattern makes the brush easy to clean and dry and improves cleaning efficiency, reducing the risk of product rejection or recall due to contamination from microbes/bacteria, foreign bodies, cleaning chemicals or allergens.

WR&D Wells Pty Ltd
www.wrdwells.com

Coriolis transmitter with ethernet connectivity

Emerson Process Management has upgraded the Micro Motion Model 5700 transmitter with a native ethernet connection to improve connectivity and functionality, allowing for easier access to measurement information.

The native ethernet upgrade includes dual redundant ethernet ports, directly integrated in the device with no need for extra converters or adapters. The dual-port architecture means multiple devices can be installed in a variety of configurations, minimising wiring and switch needs for space and cost savings. The upgrade is available with multiple protocol choices, including EtherNet/IP, Modbus TCP and PROFINET.

The transmitter incorporates a configurable I/O channel that can be used as a discrete input or set to an mA, frequency or discrete output. This enables powerful application options with minimal equipment. For example, the discrete input can be used as a totaliser reset; the discrete output can control a valve in conjunction with the integrated batch control software; the frequency output enables a quick connection for proving applications; or the mA output can be used to tie into existing or legacy control systems.

To speed up integration and connection with EtherNet/IP systems, the transmitter contains an EDS (electronic data

sheet) file for fast access to instrument information with little to no manual set-up. This also enables automatic AOP (add-on profile) generation for quick and powerful system integration. Preconfigured input assemblies allow users to select exactly what is needed from a wealth of information in a Coriolis meter, without burdening the network with unwanted traffic.



Emerson Process Management Aust P/L
www.emersonprocess.com.au

Natural cork stoppers with non-detectable TCA guarantee

Amorim has developed technology that enables the delivery of natural cork stoppers with a non-detectable TCA guarantee.

Known as NDtech, the technology screens individual cork stoppers on the production line to eliminate the risk of corks contaminated with 2,4,6-trichloroanisole (TCA) reaching winemakers.

The screening is conducted using sophisticated gas chromatography and the process takes seconds — compared with up to 14 minutes for previous systems — making the technology practical on a major industrial scale.

The technology, which has been validated by wine industry research facility Hochschule Geisenheim University, can detect any cork with more than 0.5 nanograms of TCA/L (parts per trillion), the equivalent of one drop of water in 800 Olympic-size swimming pools. These corks are removed from the production line automatically.

Amorim Australasia Pty Ltd
www.amorimcork.com.au



The world is in a hurry

Are you ready for ready meals? Wiley have invested a great deal in understanding the global trend towards ready meals and value added food manufacturing.

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How salad vegetable surfaces harbour pathogens and it's not how you expect

Contaminated irrigation water, animal wastes and handling by sick workers are all potential sources of viral and pathogen contamination on fresh produce. When the produce is consumed without cooking (ie, without a kill step), this contamination can result in significant foodborne illness. Incidents involving salad vegetables and sprout garnishes proliferate throughout the world.

Some researchers at the University of Illinois College of Agricultural, Consumer and Environmental Sciences (ACES) decided to look at how viruses could stick to the surface of 24 common salad vegetables. They expected to establish that the small virus particles could 'hide' in the rough structures of the cuticle, the waxy layer that protects the plant against diseases and reduces water loss.

They did not get the results they expected. In fact, vegetables with three-dimensional crystalline wax structures on the leaf cuticle harboured significantly fewer virus particles after rinsing. The researchers found a thousand-fold difference in the number of viral particles adhering to different types of leafy greens and tomatoes.

The researchers inoculated leafy salad greens and tomatoes with a swine virus that mimics human rotavirus, a common pathogen responsible for diarrhoea, vomiting, fever and abdominal pain. After exposing the vegetable surfaces to the virus, the researchers rinsed the vegetables twice with a standard saline solution.

"We chose 24 of the most common salad vegetables in the US and assayed them to see if there was any relationship between the morphology and chemistry of the leaf or fruit surface and the adherence of viral particles, before and after a washing treatment.

"We correlated virus adherence to roughness of the surface at different scales. We also looked at the chemistry of the proteins and waxes associated with the leaf cuticle — a waxy layer that protects the plant against diseases and reduces water loss," explained University of Illinois geneticist Jack Juvik.

"Before this, no-one had tested the relationship between chemistry and surface texture on the adherence of virus particles.

"I was surprised," Juvik said. "But normally, viruses adhere to oxygen groups, like OH, which are associated with proteins and carbohydrates on the surface. When the wax completely covers the surface, it becomes totally hydrophobic, which renders the whole leaf surface harder for viruses to attach to. Furthermore, rinsing those leaves with water gives the viruses the OH groups they're looking for, so they're easier to wash away.

"Viruses are literally everywhere, causing many opportunities for infection. But the information from this study can be used down the road to select or breed for varieties that might have the capacity to reduce adherence of these particles," Juvik went on to say.


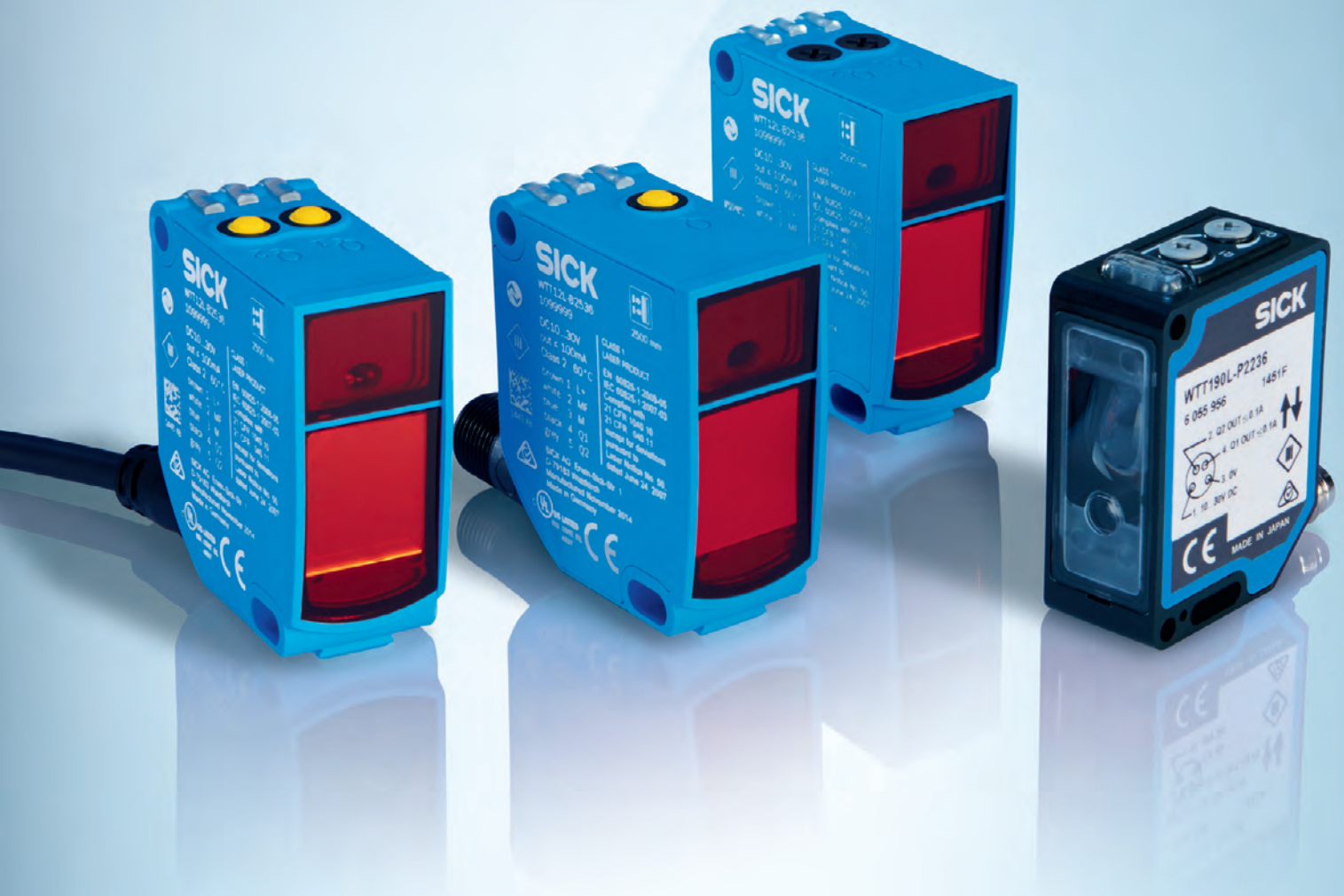
The researchers have already repeated the study using the bacterium *E. coli*, but they plan to look at even more vegetable varieties and pathogens in future studies. 

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For the first time, the PowerProx MultiTask photoelectric sensor offers all the advantages of time-of-flight technology in the world's smallest housing – and at a high detection speed. With sensing ranges from 5 cm to 3.8 m, no object goes undetected by the PowerProx photoelectric sensor. To achieve this, SICK has not only packed all the advantages of time-of-flight technology into the smallest housing the world has ever seen, but has also increased detection speed. This means that even objects being transported at high speed, small and flat objects, and jet-black and shiny objects can now be reliably detected over an extensive sensing range. PowerProx combines sensing range, speed, precision, and reliability in a single sensor family. We think that's intelligent. For more information please visit www.sick.com.au or call 1800 334 802.



Multifunction safety relay

Control Logic has available the Schmersal PROTECT SRB-E series safety controllers, providing multifunctional, configurable safety protection.

Each module in the series can be adjusted to any one of up to 11 preset configurations to suit multiple applications. Configuration settings include: reset selection; activating or deactivating cross-wire monitoring; two hand control; and monitored contact configuration — all via a rotary dial on the front. Once configured, the dials are secured under a plastic cover to prevent the possibility of tampering.

All safety sensors, light curtains and electromechanical safety equipment can be utilised with the range. The safety relay modules of the series can be used in applications up to Category 4 with AS4024.1, PLe in accordance with ISO 13849 and SIL 3 in accordance to IEC 61508.

Control Logic Pty Ltd

www.control-logic.com.au



Safety signs for washdown environments

Brady Australia's range of ToughWash Plastic Encapsulated Signs and Tags featuring a one-piece construction and subsurface graphics is designed to withstand harsh washdown conditions.

Designed specifically for food processors who face tough challenges when it comes to workplace safety and compliance, operational efficiency and food safety, Toughwash signs and tags provide an option for visual communications on the production floor. Available with metal or X-ray detectable properties, these signs and tags are made to withstand the harsh environments of food plants.

The signs and tags feature full-colour, high-resolution printing with clear graphics that are both easy to read and professional looking. They are designed to withstand high-pressure water, chemicals and abrasion for enhanced durability.

By having durable, reliable visuals on the manufacturing floor, employees can have procedural and safety information right at the point of need to help support both compliance and safety. The signs and tags are available in both stock and custom made, with a variety of size and graphic options.

Brady Australia Pty Ltd

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Rotary piston flowmeters

Trimec Flow Products rotary piston flowmeters are suitable for a range of applications and environments. All meters are custom-built and calibrated to suit specific applications.

The flowmeters are particularly suitable for high-viscosity products, offer accuracy and repeatability, are not affected by changes in viscosity and require little maintenance.

Suitable applications include off-truck metering of refined fuels, LPG, aviation fuels and fertilisers; loading terminals for over-the-road tankers and railcars; boat and general marine refuelling; agricultural chemical batching and blending; industrial applications; and food and beverage applications.

Suitable liquids metered include fuel oil, gasoline, kerosene, avgas, Jet A, LPG, ethanol, biodiesel, diesel exhaust fluid (DEF), fertilisers, solvents, alcohols, petrochemicals, liquid sugars, fruit juices, alcohols, acetic acid, caustic soda, grease, glucose, ink, insecticides, latex emulsions, liquid sugar, margarine, mayonnaise, molasses, resin, tallow, urethane, water, xylene and liquid yeast.

Trimec Flow Products Pty Ltd

UV disinfection preserves the taste of Nu-Pure spring water



Nu-Pure Beverages is an Australian business that produces bottled spring water and other beverages. The company's spring water is sourced from selected Australian springs, pure with a natural balance of minerals.

UV disinfection from UV-Guard Australia was selected by Nu-Pure process engineers to disinfect the spring water at a number of stages in the manufacturing processes. As UV disinfection is a chemical- and byproduct-free process, it can safeguard the water being produced without adversely affecting its taste and odour.

"The food and beverage industry is an increasingly regulated and safety-conscious market and must meet stringent quality standards.

UV water disinfection can prolong shelf life without compromising on flavour, plus it delivers safe, uncontaminated and chemical-free products, making it ideal for goods for human consumption," said UV-Guard Technical Director Luke Chamberlain.

Nu-Pure contacted UV-Guard with requirements for UV disinfection units at three stages of its manufacturing processes: two stages in its Victorian manufacturing plant and one stage at its Queensland manufacturing plant.

"The systems we developed for Nu-Pure were both food-grade compliant and WaterMark certified. The UVG X3-440 is a multilamped system with three 450 W UV lamps designed for food-grade applications where a large treatment flow is required. The unit is installed with a UV intensity monitor to alert Nu-Pure whenever the design UV dose is in risk of not being achieved," Chamberlain said.

"We also installed two UVG S440 units in parallel at both the Victorian and Queensland manufacturing plants. Installing two units in parallel allows for a level of redundancy. If one unit is out of action for servicing, disinfected water can still be achieved through the other system," Chamberlain said.

"The UV-Guard equipment is an integral part of our quality management system and HACCP program to ensure a safe, quality product is continuously produced in our bottling plants," said the national technical manager of Nu-Pure Beverages, Bruce Taylor.

UV-Guard Australia Pty Ltd
www.uvguard.com



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AMS Instrumentation & Calibration Pty Ltd Analytical Process Division



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





Double sausage link cutter

The Kyoei KKS-621WT double sausage link cutter uses complex light sensor technology to provide speed, precision and efficiency.

The compact design allows users to integrate the machine into existing sausage production lines to cut links of sausages such as frankfurters, hot dogs and wieners. The machines are safe and hygienic, can be disassembled without tools and are easy to maintain.

The system completely removes the links of sausage with diameters of 12–35 mm and can also be customised to meet specific requirements. It is suitable for all types of casings — natural, cellulose or collagen — and can include an optional slitting device to put slits in one side or both sides of the sausage to improve shelf appeal.

Barnco Sales Pty Ltd

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PharmEquip supplies quality sanitary and industrial hose assemblies in both PTFE and Silicone material, as well as stocking a broad range of stainless steel fittings, gaskets and silicone tubing



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Compact sampling system

The ES20 compact sampling system from Michell Instruments now has the option of an Easidew PRO XP dewpoint transmitter. This makes the system suitable for a range of moisture measurement applications in hazardous areas where explosion-proof certification is needed, in addition to the existing intrinsically safe options.



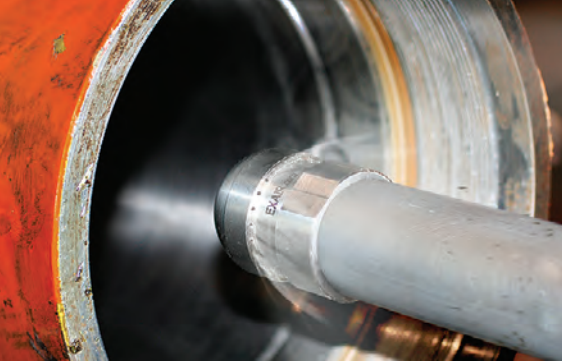
The ES20 system was designed to offer several standard configurations suited to typical industrial and gas process applications, such as monitoring moisture in compressed air or natural gas. These standard configurations enable short lead times and fast delivery of orders.

Sample conditioning is vital when monitoring moisture levels in gas, not only to ensure that the pressure and temperature of the sample gas is consistent, but also to prolong the life of the sensor by removing contaminants such as dust or molecules of oil carried in the gas stream. The ES20 compact sampling system offers a choice of particulate or coalescing filters with a maximum pressure of 20 barg. Three mounting options are also offered to suit various indoor or outdoor locations: the system can be either mounted on a base plate, within a GRP enclosure or with a stainless steel enclosure, to provide IP66/ NEMA 4X protection.

The dewpoint transmitters provide accuracy of $\pm 2^{\circ}\text{Cdp}$, with a wide measurement capability of -100 to $+20^{\circ}\text{C}$ dewpoint, and are available with Michell's sensor exchange program, in which users are able to order a freshly calibrated sensor to fit in their system, replace their old sensor and return it to Michell.

AMS Instrumentation & Calibration Pty Ltd

www.ams-ic.com.au



Large back blow air nozzle

EXAIR's Model 1008SS 1" Back Blow Air Nozzle has been designed to blow debris and liquids from pipe or hose inside diameters, axle housings, bores, holes, internal threads and other internal part features found in hydraulic cylinders, gear boxes, differential housings and more.

An array of holes provides a forceful 360° airflow to clear out coolant, chips and light oils from machining processes. The nozzle prevents chips from being

blown further into a part, tube or pipe and eliminates any safety hazard created by blowing debris out the far end of a pipe or tube.

The nozzle will fit inside openings as small as 51 mm and is effective on diameters up to 406 mm. It is constructed of type 316 stainless steel for durability and resistance to corrosion. Installation is simplified and a secure fit is assured with 4.7 mm flats milled on the body. Since airflow is directed back towards the operator, personal protective equipment is recommended. Optional extension pipes of 305, 914 and 1829 mm provide reach for longer tube and pipe clean-out. A 1/4" model for 22 to 102 mm diameters is also available.

The Back Blow Air Nozzle meets OSHA standards 29 CFR 1910.95(a) and 29 CFR 1910.242(b) for noise and outlet pressure. It is also CE compliant.

Compressed Air Australia Pty Ltd

www.caasafety.com.au



Stainless steel-faced sensors

Turck has announced four 2-wire, DC stainless steel-faced sensors with an extended sensing range.

The stainless steel-faced sensors are suitable for use as substitutes for traditional plastic-faced sensors in applications where the sensors are routinely damaged by impact. The one-piece housing is made from high-grade stainless steel, which resists corrosion and is rated IP67 against moisture ingress. The standard temperature rating for the line is -25 to +70°C.

The rugged construction and design of the stainless steel sensor line allows it to fit the needs of a wide variety of applications. PTFE or WeldGuard coating is available on request.

Turck Australia Pty Ltd

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Free-chlorine analyser

Suitable for the treatment of drinking water, water in beverage and food production and process water in various industries, the Sigrist AquaDMS Disinfection Measuring System helps technicians effectively optimise the chlorination of water.

All sensors are equipped with a sensor-cleaning function that ensures they are automatically cleaned at least once within a 24 h cycle. The process removes coatings of organic and inorganic material from the sensors to provide zero point stability and no drift, delivering a precise reading of chlorine levels every time.

The automatic cleaning function eliminates the need for the product to be manually cleaned with chemical additives, saving both money and time. The mechanism also allows installations to benefit from the convenience of longer calibration cycles.

The fast and efficient analyser allows the user to directly measure chlorine levels within the water in real time. This removes the need to send water samples to a lab and gives the technician precise and immediate control over chlorine levels so that they can be adjusted if necessary.

Compact and easy to install, the system includes an intelligent control system and flow regulator. The operator touch screen, sensor, assembly and wiring are pre-mounted on a panel. The control system features an easy-to-use touch screen and colour display that clearly illustrates values, alarm and status messages. The flow regulator ensures a stable flow of water through the system for the continuous accurate measurement of disinfectants.

As free chlorine measurements are affected by pH and temperature, an optional pH electrode can be integrated into the product. An input is also available for temperature as well as digital in and out.

Prodetec Pty Ltd

www.prodetec.com.au



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An algae shake and a critter fritter please

Ensuring there will be enough protein available to feed the world in 2050



It is estimated that by 2050 an extra 265 million tonnes of protein will be needed to feed the world's population. This means that current production levels will have to be raised by about 50%.

Every adult needs about 60 g of high-grade protein each day. To feed the global population, agriculture produces some 525 million tonnes a year of plant products containing protein such as corn (maize), rice, wheat or soybeans. By 2050 this will need to increase to 790 million tonnes to account for the expected population increase.

To close the looming protein gap, Bühler and ETH Zurich (Swiss Federal Institute of Technology Zurich) have entered into a close cooperation: "Together, we plan to create the basis for the industrial utilisation of alternative sources of protein such as pulses, algae and insects to ensure a sustainable supply of food and feed for humans and animals and to make them attractive for consumers," explained Ian Roberts, chief technology officer of Bühler. As part of this joint venture, Bühler is supporting the new chair of the Sustainable Food Processing Group at the Institute of Food, Nutrition and Health of the ETH Zurich, affiliated with the World Food System Center, Prof. Alexander Mathys.

Closing this protein gap is a serious challenge

Even for today, our protein supplies are not sustainable because we consume too much animal protein in the form of meat or

fish. Two-thirds of all vegetable proteins produced end up in the stomachs of livestock such as cattle, pigs, poultry or fish. "Intensive farming, mass animal breeding and fishing do not cover our protein needs in a sustainable and environmentally compatible way," said Roberts. "What we need are new, innovative approaches to protein production and processing. Otherwise, our agricultural systems face the threat of collapse," added Prof. Alexander Mathys.

Although an increasing number of people enjoy eating meat and fish, there is no alternative in the long term to increasing the utilisation of plant proteins. High hopes are currently being pinned on pulses such as peas, lentils or beans. These gluten-free sources of protein are currently experiencing a revival, especially in Europe and North America, although they have always been part of the staple diet in Asian and African. Bühler offers systems that not only hull, split and sort pulses but also process them in their pure form or blended with other raw materials to make pasta, baked products, snacks or meat substitutes. Such novel products make pulses more attractive for a wider circle of consumers because they do not have to change their dietary habits.




In the medium to long term, however, the use of new raw materials is inevitable. Algae and insects especially stand out as high-grade sources of protein. Microalgae such as *Chlorella* or *Spirulina* (*Arthrospira*) do not compete with existing farming land, grow quickly and take up little space. Their high-quality protein may be processed, for instance, into food and animal feeds. Whole algae and algae extracts are already available in the marketplace today. They are consumed mainly in Asian countries, but are also highly appreciated in the West by a small community of particularly health-conscious consumers. If algae-based products are to appeal to a broad mass of western consumers, they will need to be integrated in traditional foods without significantly changing their taste and texture. In addition to proteins, algae also contain valuable polyunsaturated fatty acids and colour pigments.

Further, insects such as mealworms or the larvae of the black soldier fly also hold major potential. They can be fed with industrial co-products or even certain types of waste and are astonishingly efficient: from 2 kg of feed, they build 1 kg of insect mass. Another benefit is their low space requirement. As a protein source, insect meal has similarities with fish meal. It could, therefore, revolutionise aquaculture as a sustainable source of feed and help reduce the pressure on natural fish populations.

Insects are considered a delicacy in Asia and are offered in the market in a similarly wide range as meat varieties and cuts are at a butcher's store in western countries. Europeans and North Americans, admittedly, still often find insects repulsive. However, if their distaste can be overcome by suitable processing — into protein powder, for example — and if open issues

regarding food safety, the legal situation and processing can be settled, insects may in the future become an extremely promising source of protein for human nutrition.

Bühler is currently setting up a pilot facility with a partner in China for processing fly larvae and mealworms on an industrial scale. Its aim is to produce insect flour as a replacement of fishmeal plus a high-grade fat with properties similar to those of palm kernel oil.

"The benefits of algae and insects are obvious. In designing integrated biorefineries for their cultivation and processing, it is important that we collaborate at an early stage with technology companies such as Bühler," said Prof. Mathys, summarising the motivation for the collaboration of ETH Zurich with the Uzwil-based technology group. A lot of questions regarding industrial-scale cultivation, extraction and processing of algae or insect proteins still remain to be answered. Bühler possesses vast process engineering expertise, which could be put to use in such future processing and production systems. For instance, the Group has already demonstrated that the most cost-efficient mechanical method for rupturing algae cells today is by agitator bead mills. This wet grinding technology is also used for manufacturing printing inks or paints. It allows particularly gentle rupturing of the tough cell walls of algae for extracting and separating all the valuable constituents. 

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Horizontal slicer

The Grasselli KSL Boneless horizontal slicer uses a multiblade cutting system to cut even, parallel slices.

The slicer has a working width option of 380, 600 or 380+380 mm, depending on the model, with a minimum slice thickness of 2.5 mm and maximum product height of 100 mm.

Its cutting capacity is over 2000 kg/h for fresh meat or cooked boneless meat, depending on product size and condition, with an adjustable operating speed $\pm 40\%$.

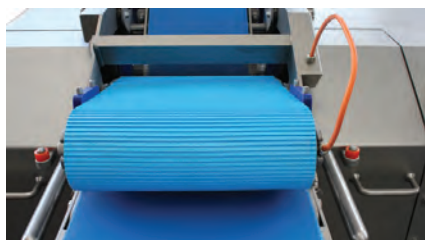
The slicer is fully adjustable, giving the ability to slice delicate products, and has a variety of blade profiles for a range of applications. The multiple feed belt surface texture options enable the slicer to be customised to specific products.

The machine is suitable for integration into totally automated production lines and has an automated blade tensioning system. No tools are needed to prepare for cleaning and all components remain attached. There is a built-in automatic lubrication system for all major dynamic parts.

All major mechanical components are produced from extra high grade heat-treated steel, with seamless welding and radius edges to aid in efficient sanitation. The frame is made entirely of stainless steel.

The Dual Lane version with two independently adjustable cutting lanes offers a 6 mm minimum slicing pitch and 'butterfly' cutting option.

Food Processing Equipment Pty Ltd
www.fpe.net.au



High-capacity ice-cream extrusion line

Tetra Pak has released a high-capacity ice-cream extrusion line. Delivering up to 43,200 pieces/h, the line is more than twice as fast as the highest speed production line currently operating in Australia at about 18,000 units/h.

According to the company, a 60% increase in production can be achieved with only 44% more energy and without extra operators, due to automation of previously manual operations and easy machine access for cleaning and maintenance.

The extrusion line allows flexibility in switching between sticks and sandwiches, as well as handling up to four flavours and up to 12 different coatings.

The efficient freezer and high-precision cutting equipment produce a uniform product with high stability — due to effective temperature control at every stage — as well as identical thickness.

Further along the process, the dip and transfer unit allows a gentle and precise dipping as well as a careful and error-free lay-off to the wrapper, resulting in minimal product waste.

Key extrusion technology innovations include: optimal hardening thanks to intelligent product placement and evaporator design; a combination of robot technology and mechanical design; computer-based synchronisation of machines; high process repeatability.

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



Biotechnic supplies radially-crimped sanitary hose assemblies to the food and beverage sectors.

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We have recently been appointed as the exclusive Australian distributor for Tudertecnica hose from Italy for their Food and Pharma range of hoses.

Email us to be included on our mail list to receive information on new products in 2016, which will include PTFE and Silicone materials. All recipients will receive an additional discount on any quotations.

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 North Geelong, VIC
 Phone : 0418 525 524
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biotechnic
 0418-525 524



Inductive sensors

Inductive sensors with a correction factor $K=1$ have been developed by ifm efector. Particularly developed for factory automation, the sensors provide a uniform sensing range for the detection of all metals. The compact dimensions of the devices allow use in the smallest of spaces, while electromagnetic field immune sensor technology prevents incorrect switching.

The sensors are suitable for the detection of aluminium where conventional sensors show a considerably reduced sensing range, while at the same time featuring a constant sensing range on all other kinds of metals. Fast changing switching states are precisely monitored by high switching frequencies.

The inductive sensors are immune to magnetic fields and are claimed to be able to operate with absolute reliability even next to electric brakes. The wide operating temperature range of -40 to 85°C allows universal use and the high protection rating IP68/IP69K ensures constant reliability.

ifm efector pty ltd

www.ifmefector.com/au

Full-gloss, polyurethane, antimicrobial-enhanced floor coating

Flowcrete Australia has launched the full-gloss, polyurethane, antimicrobial-enhanced Flowfresh Sealer system.

Offering a vibrant and colourful coating, the sealer provides hygienic, aesthetically appealing floors that meet the criteria of authorities such as Food Standards Australia New Zealand, as well as internationally recognised food safety organisations.

Its gloss finish makes the surface easier to clean than traditional matt systems, while the seamless, impervious surface ensures that the floor meets food safety requirements.

The hygienic properties of the flooring range have enabled it to achieve HACCP International certification. Every system includes the antimicrobial additive Polygiene, which is able to eliminate up to 99.9% of bacteria that comes into contact with the floor, according to the company. This formulation meets the ISO 22196 standard, which measures the antibacterial effectiveness of plastics and other non-porous surfaces.

The robust flooring will retain its functionality and colour for an extended period of time within intensive food production environments characterised by corrosive food byproducts, thermal shock from hot ovens and steam cleaning, spillages and heavy impacts.

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Having your ERP go app

Del Williams

Although food distributors and manufacturers handle routine business with complex enterprise resource planning (ERP) systems, too often application-specific solutions can be left out. Tasks with forms requiring approvals through various departments not typically covered by an ERP system are particularly at risk.

Whether this involves managing sales, returns, food safety traceability or marketing and distribution by certain target dates, successfully integration all of these areas and more into an ERP system requires creating application-specific solutions.

Ideally the process would start with an automatically generated form at the point of sale, combined with a data sharing and approval process that streamlines coordination throughout the company and its partners.

Streamlining for a national brand

When a chocolate candy manufacturer and distributor grew rapidly into a nationally recognised brand, for instance, specific applications were left uncovered by its ERP system. This led to challenges in efficiently managing and coordinating its field sales targets, pricing, approvals, auditing and marketing.

Much of this process was time-consuming for its sales reps in the field, using a combination of email, phone, typed notes and Excel spreadsheets to take orders from supermarkets and convenience stores nationally.

An automated method to track and manage distribution, invoice the candy sold and meet the company's manufacturing quota was also required, but their ERP system was not set up to accommodate this. Better coordination among order changes, sales audits and invoice reconciling was also necessary. The candy company sought to streamline its process from the point of order through manufacturing, distribution, delivery and invoicing.

This sort of situation leaves food distributors and manufacturers with the unpalatable option of paying existing ERP providers to add new modules or programming to accommodate the required changes. However, this is often a costly approach

“

What many food industry manufacturers and distributors actually require is a quick, cost-effective way to add application-specific solutions without costly ERP upgrades.

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© Dmitry Vereshchagin/Dollar Photo Club

that can take many months and hundreds of thousands of dollars to implement. Since this only addresses the challenge at hand, additional costs are required the next time the food distributors and manufacturers need tweaks to the system.

Fortunately, there are electronic document management solutions already being used in the industry that are designed to address just such scenarios.

Faster, cheaper workflow and auditing

What many food industry manufacturers and distributors actually require is a quick, cost-effective way to add application-specific solutions without costly ERP upgrades. Such an electronic document management solution would be flexible enough to create a workflow system that allows individual departments to easily follow and approve documents wherever they go — for better management, control, service level tracking and auditing.

Now the advent of secure software-as-a-service (SaaS) solutions, tailored to the food industry's unique workflow requirements, is allowing seamless function with existing ERP systems.

One example of this streamlined, workflow-based strategy is a cloud-based, electronic document management solution called Kern EDGE, by Kern, Inc., a document output management company.

Because the software suite is offered as SaaS and useable by anyone with a browser, it does not require any capital investment, requires minimal IT attention, can be connected to existing ERP or CRM solutions, and can go from concept to implementation in less than a month.

In order to streamline food companies' handling of workflow, the Kern-EDGE software suite is tailored to work seamlessly within the framework of each food company's workflow and applications. To ensure this, Kern consults with the company to understand their process, anticipate the flow of information, as well as identify and satisfy any existing business rules. A flow chart is created and approved and a proof of concept delivered in as little as a week. This workflow can later be modified if slight changes are required.

For instance, to improve workflow, customer communication, distribution by target dates and marketing exposure, Kern helped to automate the chocolate company's workflow process from taking the order through invoicing. To do so, they took the chocolate company's sales order form and business rules and created an online portal so their sales reps could

log on from laptops by sales number ID and remotely submit orders.

Since each entry automatically communicates with the company's ERP system, the Kern EDGE software suite acts like an extension of the system.

It manages not only the customer order, their discount, order process and delivery date, but also workflows this data throughout the company to those who require it regardless of department — from accounting and distribution to marketing and advertising.


Now sales reps can track their own sales figures, commissions and other vital info from their laptops in the field for greater accountability, and the system tallies cooperative ad credit for the company's retail partners.

Additionally, the system allows complete access and tracking of every transaction, including the optional creation of a PDF of the original sales order, accessible by multiple index fields. If an order is changed, sales reps can remotely use the portal to create another PDF of the change, with each version saved, dated and attached to the original order. Appending additional documents, such as invoices or checks, to the order can also be done at any time, which can further help with sales and accounting reconciliation audits.

Unlike complex ERP software that must be programmed, the software suite is quickly adaptable to business process requirements, such as adding new offices, user groups and required authorisations. This flexibility is designed into the system because it is easily configured into an existing software engine as definable parameters, rather than programmed from scratch.

While the electronic document management software suite costs a fraction of ERP reprogramming and implementation, it is very secure. With built-in redundancies, backup power from Tier IV data centres and multiple layers of document security, it provides a safe, high-level private cloud solution.

Unlike most SaaS, Kern-EDGE is not priced on a per-seat basis, but rather on the complexity of the project and amount of data involved.

For food manufacturers and distributors seeking to improve workflow and efficiency from their sales force onward, the bottom line is that such cloud-based SaaS solutions will allow them to nimbly adapt and respond to customers at a fraction of the time and cost of modifying their ERP system. 

Kern, Inc.
www.kernedge.com

Safety stainless steel air knife nozzle

Using an open pipe to supply compressed air can result in excessive noise levels and compressed air wastage. To combat this, Spray Nozzle Engineering supplies a range of safety air nozzles that reduce compressed air noise and usage.

The Silvent range of air knives can be constructed to meet any requirements and are used to clean, dry, sort or cool processes during manufacture. Silvent has a full range of stainless air knives for both food and industrial applications, as well as pre-made manifolds for ease of installation. This lowers the sound level, reduces energy consumption and increases the efficiency of the drying process.

The Silvent 374 nozzle creates a coned air stream of 335 mm at a distance of 150 mm with a wide striking surface — suitable for drying, sorting or cleaning wide objects. With the blowing force of 38.0 N and a length of 269 mm, the air knife is capable of withstanding high ambient temperatures and corrosive chemical environments, as well as satisfying the hygienic requirements of the food processing industry.

The Silvent 374 nozzle can reduce noise levels by up to approximately 80% and compressed air usage by up to 37%, according to the company.

Spray Nozzle Engineering

www.sprayingolutions.com.au



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Corrosion inhibitor technology

Cortec's Vapor phase Corrosion Inhibitor (VpCI) products help protect structures and metal equipment from rust and corrosion in the food, beverage and pharmaceutical industries.

Alkaline, acidic or oxidising environments are prevalent where high volumes of cleaning water and a wide pH range of food substances are handled. Corrosion not only raises the risk of equipment failure and production problems, but also threatens to contaminate the materials being processed.

The technology offers a green alternative to hazardous, oil-derived corrosion preventatives. The eco-friendly, compostable and biodegradable solutions, made from sustainable materials, provides time and labour savings. The multifunctional products are easily formulated; require little to no surface preparation; protect multimetals; disperse in water, oils and solvents; and do not interfere with operations of mechanical components.

The range, which includes NSF certified and USDA certified biobased products, includes simple biodegradable film as well as VpCI packaging materials, rust removers, lubricants and other structural and equipment applications.

Among the products are EcoAir and EcoSpray products, which eliminate the use of aerosols as spray can propellants.

A.S. Harrison & Co (Australia)

www.asharrison.com.au

Hygienic connector for the food and beverage industry

The Han F+B connector meets the demanding and stringent hygiene standards in the food and beverages industry. Its easy-to-clean housing design meets the requirements and conditions in splash zones (Zone 2). The housing design features large radii and smooth surfaces in keeping with the principles of the EHEDG guidelines. As a result, so-called dirt pockets and the potential bacterial load on the connector are avoided.

The connector is designed with IP69K protection for the permanent, durable protection of the electric connections, including in scenarios involving daily high-pressure or steam cleaning. The plastic material is a PP plastic that is resistant to ECOLAB-certified cleaning agents and has also obtained FDA 21 approval.

The variety of possible inserts enables the transmission of data, signals or power. Consequently, the connector offers increased flexibility in the planning and design of modern systems when compared with hardwired systems.

For more information, click [here](#).

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The quest for new, green refrigerants

Amidst alternatives, CO₂ is emerging as the most efficient, safe and clean refrigerant preferred by a growing number of global, regional and local retailers. 2016 is seeing a rapid increase in the number of CO₂ systems and new technologies to make the climate-friendly refrigerant an attractive solution.

The last couple of years have seen difficulties for decision-makers in food retail to make a final choice when it comes to refrigerants and system type. Many refrigerant options and system configurations have been battling to receive attention. Supermarket refrigeration has been in the environmental spotlight and it has been revealed how leakage of HFCs in centralised systems is a major challenge. At the same time, energy efficiency has gained top priority in order to save costs and reduce the carbon footprint.

From this disarray, CO₂ is emerging as one of the most efficient, safe and clean refrigerants for food retail. In 2015 alone, producer of cooling components Danfoss has seen an increase of more than 20% in the installed base of transcritical CO₂ systems in supermarkets compared to the year before. Driven by the F-gas regulation in Europe and the SNAP regulation in the US, the installation of CO₂ systems is expected to accelerate in 2016 and 2017 led by major, global retailers.

The market is ready for this huge transformation in food retail refrigeration and the required technical solutions are in place. For the last 15 years, Danfoss and other refrigeration specialists have pioneered technologies for transcritical refrigeration, and today a complete and well-tested product portfolio is available for climate-friendly and energy-efficient solutions.

Heat reclaim is trending in food retail refrigeration

2016 will see a continued growing interest in transcritical CO₂ systems with heat reclaim. The smart solution is fast becoming standard, and 20 years from now, people will look back and wonder at the huge amounts of surplus heat that is today wasted from the cooling systems of supermarkets.

Despite the impressive number of transcritical solutions with heat reclaim installed by now — mostly in colder climates — we have only seen the tip of the iceberg. The installations have all confirmed that the refrigeration system

can provide ample heat to fulfil demands for heating and hot water, eliminating the need for separate heating installations in the supermarket.


The heat reclaim solutions have returned energy savings of 20% or more and pay-back times of less than two and a half years.

Looking further ahead, supermarkets will not only cover their own heating demand by heat reclaim. They will move from energy consumers to energy suppliers by offering the surplus heat to the local district energy grid. The obvious advantages are new revenue streams and reduced carbon footprint of the supermarkets.

New technologies pave the way for CO₂ refrigeration in warm climates

Global retailers prefer global refrigeration solutions. From a phenomenon of colder climates, CO₂ refrigeration is progressing to warmer climates, and 2016 is likely to see a breakthrough in transcritical solutions for subtropical and even tropical climates. New technologies are rapidly emerging as highly energy-efficient solutions that help retailers reduce complexity and meet current and future regulation on traditional refrigerants in all climates.

One of the most promising new technologies is the ejector, devised by Danfoss in close cooperation with refrigeration specialists from SINTEF. The ejector increases the energy efficiency of parallel compression significantly and enhances the viability of transcritical refrigeration in warm climates.

The ejector is still in the prototype stage, but the initial trial set-ups in 10 supermarkets have shown that the simple ejector technology can increase the efficiency of the parallel compression system significantly. Furthermore, ejectors allow smaller and more compact compressor packs to be installed in the first place. 

Danfoss Drives
www.danfoss.com.au



Detectable plastics

Treotham supplies the igus range of lubricant-free, high-performance plastics that can be traced with standard metal detection methods. The magnetic motion plastics reduce costs, increase process reliability and help prevent foreign substances from entering food products.

The material is used in the igubal series, which include flange bearings, rod end bearings, clevis joints, pillow block bearings and spherical bearings. Both the housing and spherical balls are made of the detectable plastic.

The plastics do not require external lubrication, which eliminates the risk of products in the food and packaging industry coming into contact with lubricant. The materials A181 and iglidur A350 don't need to be actively lubricated and are compliant with the EC directive 10/2011 and with FDA specifications for repeated contact with food.

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what's new in
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Moving 2 million litres of wine a week

To maintain its weekly output of more than two million litres of wine, Casella has expanded its material handling fleet to 140 Toyota forklifts nationally.

One of Australia's largest wine exporters, Casella Family Brands is based at Yenda, near Griffith in rural NSW, and exports its products to 52 countries worldwide. Since 1969, Casella has been Australia's largest family-owned winery, with its major brand [yellow tail] accounting for one-fifth of all bottled wine products leaving Australia.

The impressive scale of Casella Family Brands' operation includes one of the fastest wine-bottling lines in the world, capable of processing 36,000 bottles per hour.

The winery site occupies 32 hectares and includes the largest rain and wastewater treatment plant of its type in Australia. The company's weekly output through Yenda, of 2,100,000 litres of wine, equates to 3900 pallets or 210 containers.

Achieving Casella Family Brands' annual wine product volume requires the grapes from 15,000–16,000 hectares of vineyard. Fruit is sourced from premium growing districts including Coonawarra, Wrattenbully, Padthaway, the Barossa and Clare Valleys in South Australia, and the Mornington Peninsula in Victoria.

In 2011, Casella processed close to 10% of Australia's grape crush.

The 82 forklifts at the Yenda facility are supported by Liftek Griffith on behalf of Toyota Material Handling Australia (TMHA) with an on-site workshop and service technician.

The Toyota forklifts at Yenda range from the 2.5-tonne payload 8FG25 to larger 4.5- and 8-tonne payload forklifts. The company also has a 15-tonne capacity Toyota 4FD150 with a Bolzoni Auramo side attachment for stacking empty 6- and 12-metre containers. Each 12-metre container can hold 1100 cartons, or about 10,000 litres of wine.

Liftek Griffith founder Vince Staltare hired an additional service technician in 2004 to meet the increased service requirements of Casella Family Brands' then 36 Toyota forklifts. Vince's son Chaise is now managing director of the dealership.

Casella Family Brands' head of distribution, Sam McLeod, said the quality of the product and after-sales support were key factors in choosing Toyota forklifts.

"Toyota builds a very reliable forklift and our local dealer services our business needs well," he said.

"Currently we have one full-time employee from Liftek Griffith on-site five days a week, as well as a 24-hour breakdown service. At peak periods, such as vintage, we have a second person come on-site to enable all servicing to be completed in set time frames.

"There is always a peak in mid-January for the forklift fleet as we receive the first grapes for vintage."



Image courtesy of jill111 (via Pixabay) under CCO Public Domain

In addition to the 82 Toyota forklifts at the main site in Yenda, further units are located at the domestic warehouse, DMR-Rice Mill and Miranda's. Casella Family Brands winery Peter Lehmann Wines also has six Toyota forklifts in the Barossa Valley, including two battery-electric forklifts and four 2.5-tonne forklifts that were transferred from Yenda. The Toyota forklifts at Yenda are used throughout the whole winemaking, bottling and shipping process.

Toyota's 8FG25 model makes up the majority of the Casella forklift fleet. It is one of the comprehensive Toyota 8-Series range of counterbalance forklifts, which includes gas and diesel models as well as full range of battery-electric forklifts.

Safety features of the 8-Series forklift range include Toyota's exclusive System of Active Stability (SAS) and Operator Presence Sensing (OPS) as standard features.

Liftek's Chaise Staltare said his company had expanded in parallel with Casella Family Brands.

"We have grown with Casella Family Brands and have always aimed to offer them service that is second to none," Staltare said.

"We planned the details with Casella and now have a small, fully equipped workshop at the winery. Prevention is better than cure, and we have a service technician on deck five days a week to keep the Casella forklifts in tip-top condition.

"Having the workshop allows us to carry a wide range of spare parts — more than can be carried in a service van — so forklifts can be back in production more quickly. We also offer a 24-hour breakdown service out of Griffith at night and on weekends."

Liftek has serviced Griffith and the wider Riverina area since 1995, when Vince Staltare drew on his 15 years' experience in the material handling industry to start his own business. In 1999, Chaise joined the business after completing his automotive qualification.

Toyota Material Handling Australia Pty Ltd
www.toyotamaterialhandling.com.au

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Many types of goods including food, pharmaceuticals and chemical reagents must be kept cold while in storage and transit. If goods are shipped on ice or under refrigeration, the end user needs to be certain that cold temperatures were maintained. Traditionally this has been done with the use of electronic data loggers; however, these are not cost-effective or practical for many applications.

CryoMark from NiGK is a disposable chemical indicator that can be included in cold shipments. If temperatures have been exceeded, the indicators will change colour to red, allowing the receiver to confirm that the goods have arrived in good condition, without the need to send back a data logger to the shipper for download and analysis.

The indicators are easy to use: simply activate and place inside the packaging next to the goods. There are different indicators for different temperature cut-offs, suitable for frozen or refrigerated goods.

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Hygienic high-speed door

DMF International has available the Efaflex SRT EC Easy Clean door.

Suitable for applications such as meatworks and dairy plants, the high-speed roll door fulfils HACCP requirements. With full stainless steel 304 construction and an elastic curtain, the door provides an easy-to-clean design, allowing the column sections to drain easily. The door columns open easily to ensure no contaminants remain inside and the complete door can be hosed down.



A range of activation sensors are available, including touch-free to minimise cross contamination. The door size can also be customised.

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Bulk bag weigh batching system

An automated bulk bag weigh batching system from Flexicon meters ingredients into a FLEXI-DISC tubular cable conveyor that transports batches of a specified weight to downstream processing equipment, dust-free.

The BULK-OUT BFC Series bulk bag discharger features a cantilevered I-beam with electric hoist and trolley for loading and unloading of bulk bags without the use of a forklift. FLOW-FLEXER bag activators raise and lower opposite bottom edges of the bag at timed intervals, promoting continuous and complete discharge of free- and non-free-flowing materials through the bag spout.

The discharger rests on load cells that signal a PLC to stop a vibratory feeder that meters material into the conveyor once a pre-programmed batch weight has been metered out.

Low-friction polymer discs attached to stainless steel or galvanised cable within stainless steel conveyor tubing, gently and smoothly transport friable food and non-food products and fully evacuate the conveyor of material to achieve accurate batch weights.

The discs and cable are driven by a wheel at one end of the circuit and put under tension by a wheel at the other end. The conveyor tubing can be routed horizontally, vertically or at any angle, around corners or through small holes in plant walls. Inspection windows can be added to any straight run of tubing.

The conveyor can accommodate multiple metered inlets for primary ingredients and non-metered inlets for minor ingredients, as well as multiple full-flow outlets and valved outlets for selective distribution of materials.

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NEW





Closed supply chain

key to clean, green food exports

Andrew Spence

A closed loop supply chain and a strong contact network in Asia are behind the success of an emerging premium food company from South Australia.

Beston Global Food Company listed on the Australian Stock Exchange last September and has reported an underlying net profit after tax of \$1.7 million for the first half. It exports premium seafood, dairy, meat and health nutrition products to China, the Middle East, Thailand, Japan and Vietnam.

In January, the Adelaide-based company announced it had entered into a joint venture agreement with Sunwah, the largest importer of seafood products into Hong Kong and Macau. Sunwah also owns and operates restaurants in Hong Kong and China, including the Nishimura Japanese Restaurant chain.

Beston Chief Executive Officer Sean Ebert said the company was in a strong position with high-quality assets on its balance sheet, no debt and cash reserves at 31 December of \$34.45 million.

He said the company's focus in the second half of the financial year was to continue to make revenue and margin gains in its existing operational businesses while expanding its revenue base with a number of initiatives.

"This included new products and new alliances and distribution arrangements, as well as the generation of new revenue streams based around the BFC patented OZIRIS food safety technology," Ebert said.

Beston Chairman Roger Sexton, a former investment banker in London, Singapore and Hong Kong, said the company's unique supply chain that allowed it to grow, process and distribute almost all of its products was key to its success.

"We have what we call a closed loop supply chain so we own farms and other sources of supply, we own the processing and we own the marketing and distribution so all three legs are owned by the company and that's quite a unique model," he said.

"We have very good products and we have excellent marketing distribution operations in Asia with our own people so we are taking those products directly to the market.

"We're certainly in an expansion mode."

Beston employs 190 people across the group and has staff across Asia, including a 26-strong workforce in China.


Its full range of dairy and seafood products includes southern rock lobster, tuna, kingfish, oysters, cheeses and milk. Beston's brands have a focus on "clean, green and healthy" and include Ferguson Australia, Mori Seafood, B-d Farm Paris Creek, Australian Provincial Cheeses and Scorpio Foods.

Dr Sexton said rising incomes in China meant people were demanding higher quality foods such as fish, meat, eggs and dairy products.

"Increasingly, discerning consumers are looking for healthy products from Australia and they recognise that South Australia is a source of very pure, very healthy food products," he said.

"New Zealand got into China earlier than Australia so we're playing catch-up, but South Australia is recognised as having similar qualities to New Zealand in terms of the purity of our farms and oceans."

Sunwah Group Chairman Jonathan Choi said the joint venture with Beston recognised and capitalised on the relative strengths of the two companies.

"Beston has a wide variety of premium quality food and beverage products which are in high demand in Asia. Sunwah has a strong distribution business in Hong Kong and Macau, which has earned a reputation over a period of more than 50 years for the provenance of its products and the quality of service provided to its customers. We share a lot in common. It is a perfect marriage," Dr Choi said. 



Bag dump station with tubular cable conveyor

Flexicon's Manual Dumping Station with integral FLEXI-DISC Tubular Cable Conveyor collects dust created during manual dumping from bags, boxes, pails and other containers, and conveys the material at any angle over short or long distances.

The unit features a high-velocity vacuum fan that draws airborne dust from the operator's atmosphere onto cartridge filters. Automatic reverse-

pulse filter cleaning allows continuous operation; timer-activated solenoid valves release short blasts of compressed plant air inside the filters causing dust build-up on outer filter surfaces to fall into the hopper.

Filters can be accessed by removing the interior baffle and replaced using quick-disconnect fittings. The conveyor moves material using high-strength polymer discs affixed to a stainless steel or galvanised cable that slides fragile materials within smooth stainless steel tubing, gently, quietly and dust-free, horizontally, vertically or at any incline. The discs and cable are driven by a wheel at one end of the circuit and put under tension by a wheel at the other end, and fully evacuate the conveyor of material.

The modular system can have single or multiple inlets and outlets, and convey over short distances or hundreds of metres.

Constructed of stainless steel finished to food, dairy, pharmaceutical or industrial standards, the system is suitable for manual dumping and conveying of food products that are prone to breakage or degradation including: cereals, coffees, teas, dried fruits, frozen vegetables, grains, nuts, peas, pet foods, seeds, snack foods and spices.

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Tank management system for wineries

Schneider Electric's Advanced Planning and Scheduling (APS) Tank Management System enables users to visualise and optimise winery operations. The system helps users to manage scheduling activities in a unified environment and provides the opportunity to optimise daily operations at medium- to large-scale winery tank farms.

The system provides the ability to optimise production according to strategic business objectives and constraints, such as minimising the transfer distance of wine; reducing ullage; availability of vital resources such as workers and equipment; optimal tank selection according to required attributes; and maintaining sufficient free operating space.

The system models the winery tank farm so that users can create, evaluate and optimise strategic scenarios on demand. The model includes:

physical infrastructure (tanks and attributes — locations, sizes, etc, tank areas or groupings, fixed and mobile equipment — filters, centrifuges, floatators, etc); employees and shifts; current tank inventory; operations — in situ and transfers; mixing rules; intake yields; bottling requests; exports; and purchase orders.

The system has a simple and straightforward plain text integration with any winery ERP or information system. It provides users with a quick dashboard visualisation of current and future tank farm status.

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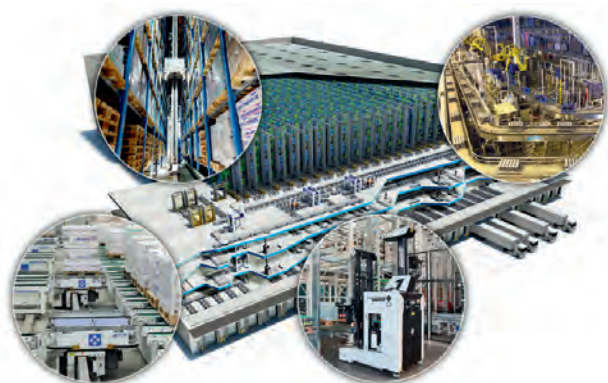
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Krones acquires intralogistics supplier

Krones has purchased 60% of the shares in System Logistics, an Italian supplier of intralogistics, material flow technology and warehousing solutions to the food and beverage industries.

With a workforce of more than 250, System Logistics develops almost all solutions itself, including software. The product portfolio includes automated storage and retrieval systems including stacker cranes, mini loads, material handling systems and automated guided vehicles.

Cambridge names Applied Industrial Technologies as preferred distributor

Metal conveyor belt manufacturer Cambridge Engineered Solutions has expanded its international presence, adding five new representatives in Australia/New Zealand, Denmark, India, Japan and Romania.

Cambridge designs and fabricates metal conveyor belts for companies around the world in food processing (baking, beverage, meat, poultry and snack foods), agriculture, packaging and industrial manufacturing (automotive, building products, carpeting, chemicals, electronics, glass, high-temperature environments, protein and solar energy).

In Australia/New Zealand, Applied Industrial Technologies will be Cambridge's preferred distributor, working on new accounts and select key targets in food and industrial markets.

Other new Cambridge partners are: 6 Sigma Foodtech, India; Taiyo Wire Cloth, Japan; DK Transporbaand, Denmark/Norway; and Scraba Technik, Romania.

Ammeraal Beltech acquires Australian distributor Rydell

Ammeraal Beltech has announced the acquisition of its longstanding Australian distribution partner, Rydell Industrial (Belting) Co.

Based in Melbourne, with seven additional branches across Australia, current Rydell managing director Wayne Durdin will continue to lead the company and its existing staff, reporting to Ammeraal Beltech's Asia-Pacific operations.

The company will operate for the time being as Rydell Beltech Pty Ltd, a wholly owned subsidiary of Ammeraal Beltech.

Powder Handling Systems

Concept to commissioning

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IBC showing cone valve

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Get ready for Foodtech Packtech 2016

- When: 11–13 October 2016
- Where: ASB Showgrounds (formerly known as the Auckland Showgrounds), 217 Greenlane Road, Greenlane, Auckland
- Registration: www.foodtechpacktech.co.nz/visitor-information/register

New Zealand's foremost food and packaging technology exhibition, Foodtech Packtech (FTPT), is being held from 11–13 October 2016, in Auckland — and everyone in the food and beverage processing and packaging industries is welcome to attend.

Held only once every two years, this free-to-attend event will provide visitors with the opportunity to come face to face with the experts and discover the freshest ideas, latest technologies and the newest developments entering the food manufacturing and packaging technology industries.

This year Foodtech Packtech is co-locating with the Materials Handling & Logistics Expo and more than 250 local and international exhibiting companies will showcase their goods and services to more than 4500 qualified visitors.

Foodtech Packtech will also offer a comprehensive educational and professional development seminar program. Presented by industry leaders across both the food manufacturing and packaging technology sectors, the three-day program will provide visitors with insights on the latest technologies and leading-edge innovations critical to the growth and development of the industry.

The Foodtech Packtech 2016 theme of Adding Value to NZ's Food Chain will be dominant over the three days through live product demonstrations, special features and a very full schedule of industry lead education and learning seminars.

A complete list of seminars for the 2016 exhibition will be available on the Foodtech Packtech website, www.foodtechpacktech.co.nz, closer to the event.

"There is very strong industry support for Foodtech Packtech 2016," said FTPT Sales Manager Deb Haimes, "which, I believe, reflects the current industry and economic sentiment. We see many exhibitors returning after a more challenging period. As businesses gain confidence and adopt a more positive outlook, FTPT 2016 will showcase amazing examples of successful high-tech Kiwi food and beverage manufacturing capability.

Materials Handling & Logistics Expo

The Materials Handling & Logistics Expo (MHL) is New Zealand's premier trade event for the materials handling, warehousing and logistics industry. It will bring together customers and suppliers from every aspect of material flow management along the supply chain and will cover a wide range of industry sectors including logistics, materials handling, food and beverage, retail, packaging, pharmaceutical, manufacturing, transport, engineering, technology, government and many more.

It provides industry buyers with the opportunity to view the most up-to-date materials, equipment, services, technology and innovations, and discuss their needs with supply professionals.

At every Foodtech Packtech exhibition What's New in Food Technology & Manufacturing hands out hundreds of magazines and farm animal-shaped stress balls. Two years ago we handed out chickens but, to our horror, an innocent chicken was misappropriated by a ruthless exhibitor, forced into a plastic bag and vacuum packed.



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