

March/April 2015
Vol.22 No.8

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

**VISIT US ON
STAND 670**
and register for a
free magazine,
eNewsletter
and a pig

PP100007395

AUSPACK

Beverages

Sanitation

Logistics

THE "SECRET SAUCE" OF HIGHER PERFORMING MACHINES



© 2014 Bel-Ray Company, LLC.



It's no secret: the lifeblood of the world's most efficient production lines are lubricants. Specifically, Bel-Ray food-safe lubricants that withstand the effects of load, heat, water and dust. That's the Bel-Ray secret to maximizing performance and reducing machine downtime. Plus, Bel-Ray oils and greases are packaged in globally-compliant, multi-lingual labeling, an industry first from the leader in innovative specialty lubricants. Bel-Ray is not just the secret to higher performing machines. It's the secret to higher performing businesses. SEE THE ENTIRE LINE OF BEL-RAY PRODUCTS AT BELRAY.COM.



FLEX YOUR OPERATION

CONTACT US FOR A FREE ONSITE LUBRICANT SURVEY

contents

March/April 2015



6

food for thought

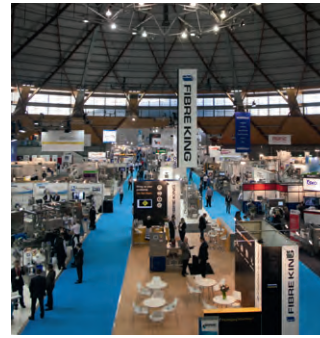
- 4 2015: Top nutrition trends predicted



10

beverages

- 10 The great bottle battle - Coke vs Pepsi
- 18 Optimising clean-in-place processes in food and beverage operations - Part I
- 26 Quick bacteria test for beer



27

Auspack

- 29 Celebrating 30 years of AUSPACK!
- 34 More than just an exhibition



40

testing

- 40 Detecting spoilage with a smartphone
- 44 Could bisphenol S be more harmful than bisphenol A?



45

bulk handling, storage & logistics

- 46 Automated loading and unloading of trucks
- 52 Falling dollars = rising robotics
- 57 Smart solution for sharing digital assets in your supply chain
- 60 Optimising CIP - Part II



63

packaging

- 65 Pathway to profit through smart packaging innovations
- 70 Guide to food packaging security
- 77 Why reliable, cost-effective ID and inspection solutions will reduce your costs



81

processing

- 84 Wanted: Optimal carcass valorisation 2.0
- 92 Hygienic design in the food industry



READ ONLINE!

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

Proudly sponsored by



<http://digital.syspro.com/syspro-food-safety-compliance-ap>



2015: Top nutrition trends predicted

After the excesses of the holiday season, most people's thoughts turn to dieting in the new year - even if the diet only lasts until Australia Day. So what will the top nutrition trends be for 2015?

Pollock Communications and nutrition trade magazine *Today's Dietitian* surveyed more than 500 registered dietitians about their predictions for what will trend in nutrition in 2015.

While kale and coconut are still trendy choices, seeds and nuts will be the top two superfoods in 2015. Greek yoghurt, ancient grains and avocado are also expected to be popular. While low-fat diets are on the way out (thank goodness!), gluten-free is here to stay - for a little longer, at least. Consumers will be focused on food that's GM-free, locally grown and high in quality protein.

Health and wellbeing is tipped to be a major focus for 2015, according to the survey, with 70% of dietitians saying that consumers will be more interested in nutrition and weight loss in 2015 than in 2014.

Here's the top picks of the 15 predictions made for 2015:

Sprinkle your superfoods

More than half (54%) of registered dietitians named seeds and nuts as the reigning superfoods of 2015. Kale will retain its title as Queen of Greens, with most nutrition experts surveyed saying that kale, Greek yoghurt, coconut products and avocado will be the prevailing healthy choices for consumers.

Go green

Green tea scored high marks with dietitians, with 35% selecting it as the drink of choice due to its myriad health benefits.

A 'beef' with protein

Most consumers view animal-based protein as high-quality sources of protein, but the truth is that not all proteins are equal, according to nutrition professionals. Nutrition experts recommend fish, seafood, eggs, legumes, nuts, poultry and dairy as healthy, high-quality proteins, followed by soy. Red meat is less popular with nutrition professionals, most likely due to its saturated fat and cholesterol content, plus the significant environmental footprint required to produce it.

Gluten-free still holds sway

66% of experts surveyed think that gluten-free or wheat-free diets will maintain popularity throughout 2015. "Regardless of the lack of evidence to support eating a wheat-or gluten-free diet for weight loss, consumers believe that eliminating foods with certain ingredients will help them lose weight or

be healthier," said Jenna A Bell, PhD, a registered dietitian who is Pollock Communications' senior vice president and director of food and wellness.

Trends like 'clean eating' and the Paleo diet - which often dictate dieters go gluten-free - are predicted to be popular eating trends in 2015.

Old is new

Despite a strong focus on grain-free diets, ancient grains like amaranth, quinoa, spelt and freekeh - not all of which are gluten-free - will be popular in 2015, according to half of all dietitians surveyed.

Low-fat: so 1980s

As low-carb diets wax, low-fat diets are on the wane. For yet another consecutive year, dietitians predict that low-fat diets will fail to garner support in 2015. In fact, just 4% named it as a popular eating trend.

Since fat is no longer considered the root of all evil, the question everyone is now asking is 'which kind of fat?'. 84% of nutrition experts said that consumers should replace saturated fat with 'good' fats - mono- and polyunsaturated fatty acids.

"We found that dietitians are making recommendations that align with current guidelines for reducing the risk of cardiovascular disease from the American College of Cardiology and American Heart Association," said Bell.

What's in a label?

Consumers will be looking more closely at labels in 2015, seeking out ingredient lists that include GMO-free, gluten-free, clean ingredients and organic features highlighted. 69% of dietitians said that GMO-free labels are most important to their clients.

No compromise

Despite the vast number of nutrition trends in existence, there are three things that consumers look for when buying food: convenience, taste and price. Nutrition experts agree that, regardless of what's trending in the nutrition world, there are some things that shoppers just won't sacrifice.

"Dietitians are at the forefront of everyday eating habits and purchasing decisions of people from all regional and economic environments, so it makes perfect sense to tap their expertise when it comes to forecasting nutrition trends," said Mara Honicker, publisher of *Today's Dietitian*.

What are you serving your customers?

Ensure your brands quality
and performance with a
Cormack Packaging closure
to suit every product.



Talk to our team today
1800 801 758 www.cormack.com.au



Food

FOR
thought



Two more Italian tomato exporters investigated for dumping

Vegetable producers and processors have welcomed an announcement that the Anti-Dumping Commission will investigate the alleged dumping of canned tomatoes in Australia by two Italian importers.

After SPC Ardmona lodged an application, an investigation has been launched into tomatoes exported from Italy by Feger di Gerardo Ferraioli SpA and La Doria SpA.

“This investigation is welcome news for Australia’s vegetable and potato industries which have struggled to compete against cheap processed foreign produce,” said AUSVEG spokesperson Andrew White.

“As the nation’s agricultural sector continues to shift towards a focus on free markets and international trade, it has become particularly important that Australian vegetable and potato growers and local processors are able to compete on an equal footing with their international counterparts.”

A 2014 investigation found that 103 of 105 Italian tomato exporters were found to be illegally dumping their products in Australia. Dumping duties were imposed on these companies.

The Anti-Dumping Commission’s commitment to investigating the remaining two exporters is “positive news”, White says.

Strict processing conditions needed after raw-milk cheese ban lifted

A ban on some types of raw-milk cheese has been lifted in Australia after the Australia and New Zealand Ministerial Forum on Food Regulation decision to lift the ban.

To help raw-milk cheese manufacturers safely produce their products under the new regulations, the Tasmanian Institute of Agriculture (TIA) has turned its laboratory into a small-scale cheese-making factory to study which types of cheese can be made safely using unpasteurised milk.

“Food safety is essential to industry sustainability and we need to be confident that raw-milk cheese is not going to cause foodborne illnesses from contamination with pathogenic bacteria,” said Tom Ross, Associate Professor in Food Microbiology at TIA’s Food Safety Centre.

Artisan cheese-makers are often interested in making cheese from raw milk as it is believed to have more flavour and produces a distinctive regional character.

The TIA has worked with the New Zealand Ministry of Primary Industries and the Victorian Department of Health to identify tools that will help cheese manufacturers safely produce a wide range of raw-milk cheeses.

For more information about the TIA, visit www.utas.edu.au/tia. The TIA is a joint venture between the University of Tasmania and the Tasmanian government.



New *Salmonella* serotype identified

Texan researchers have discovered a new serotype of the *Salmonella* bacteria. The serotype, discovered by a Texas Tech University research assistant professor, was confirmed by the Pasteur Institute in Paris, the international reference centre for *Salmonella*.

Convention dictates that a new serotype be named after the city in which it was discovered, so the new serotype will be called *Salmonella* Lubbock (or, more specifically, *Salmonella enterica* subsp. *enterica* Lubbock) after the university town of Lubbock, which was also the home of Buddy Holly.

“More important than the name, however, is that this discovery illustrates there is more that needs to be discovered about *Salmonella* and how it interacts with cattle populations,” said Guy Loneragan, a professor of food safety and public health at Texas Tech.

“With this understanding will come awareness of how to intervene to break the ecological cycle and reduce *Salmonella* in animals and in beef, pork and chicken products.”

Some of the strains of *Salmonella* Lubbock fall into the category of serotype patterns that are more broadly resistant to many families of antibiotics, furthering the need for more research on the subject. Human susceptibility to the Lubbock strains is unknown.



Salmon shelf life extended by ultrahigh-pressure processing

Ultrahigh-pressure (UHP) processing of salmon flesh improves shelf life, a new study in the *Journal of Food Science* shows.

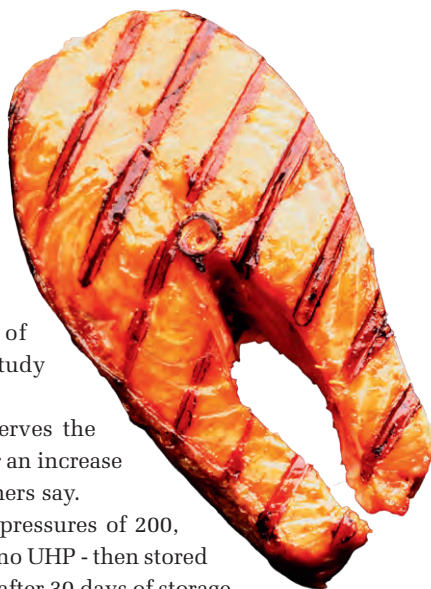
UHP does not require heat and preserves the quality of salmon flesh while allowing for an increase in the chilled storage period, the researchers say.

Researchers exposed salmon flesh to pressures of 200, 400 or 600 MPa - as well as a control with no UHP - then stored samples at 4°C and compared the quality after 30 days of storage.

They analysed the degree of changes in the interspacing of muscle bundles, colour, texture profiles (hardness, chewiness, cohesiveness and elasticity) and microbial growth. Pressures greater than 400 MPa improved the colour, hardness and chewiness of the flesh.

The researchers say these results suggest that UHP may be useful for preserving salmon flesh and could have applications in the salmon aquaculture and distribution industries.

The *Journal of Food Science* is published by the Institute of Food Technologists (IFT).



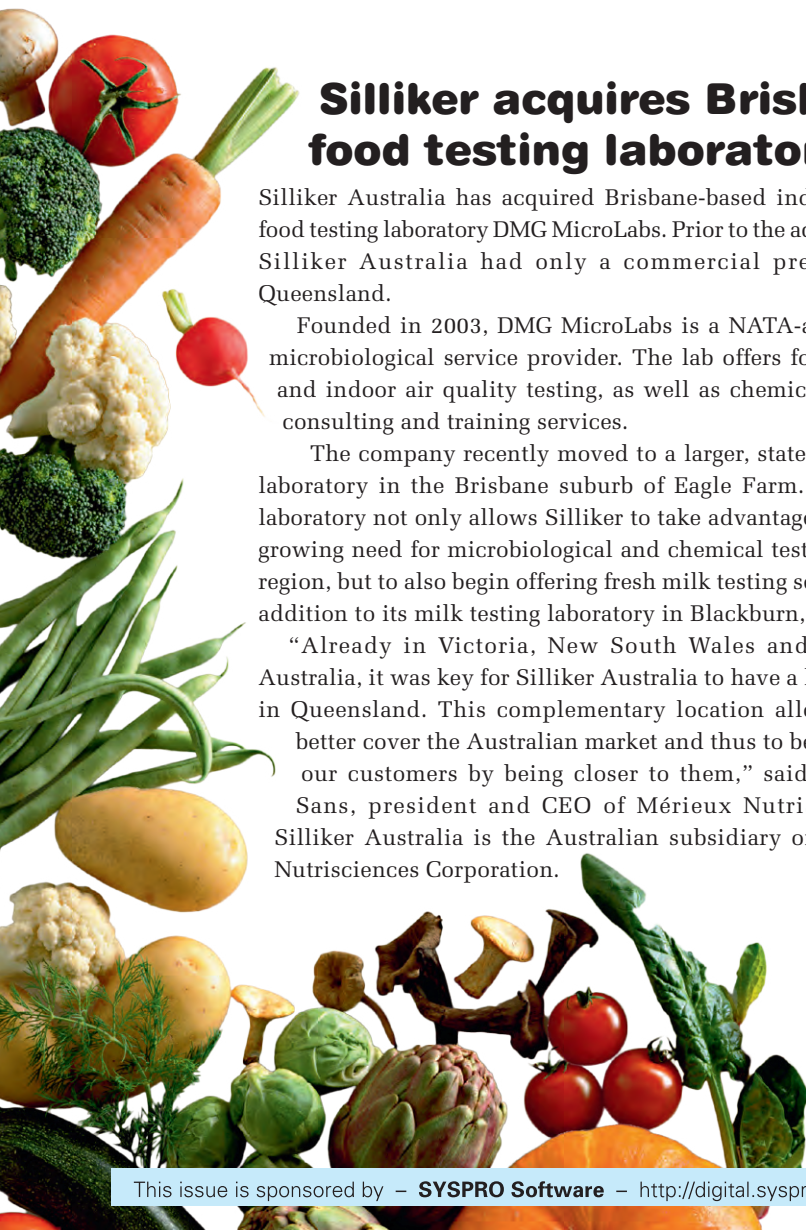
Silliker acquires Brisbane food testing laboratory

Silliker Australia has acquired Brisbane-based independent food testing laboratory DMG MicroLabs. Prior to the acquisition, Silliker Australia had only a commercial presence in Queensland.

Founded in 2003, DMG MicroLabs is a NATA-accredited microbiological service provider. The lab offers food, water and indoor air quality testing, as well as chemical testing, consulting and training services.

The company recently moved to a larger, state-of-the-art laboratory in the Brisbane suburb of Eagle Farm. The new laboratory not only allows Silliker to take advantage of a fast-growing need for microbiological and chemical testing in the region, but to also begin offering fresh milk testing services, in addition to its milk testing laboratory in Blackburn, Victoria.

"Already in Victoria, New South Wales and Western Australia, it was key for Silliker Australia to have a laboratory in Queensland. This complementary location allows us to better cover the Australian market and thus to better serve our customers by being closer to them," said Philippe Sans, president and CEO of Mérieux NutriSciences. Silliker Australia is the Australian subsidiary of Mérieux Nutrisciences Corporation.



Probiotics plus oral immunotherapy improves peanut allergies, trial shows

Probiotics could provide a long-term cure for peanut allergy sufferers, research from Murdoch Childrens Research Institute shows.

When given a daily probiotic, *Lactobacillus rhamnosus*, plus daily peanut oral immunotherapy in increasing doses, 80% of children were able to tolerate peanut at the end of an 18-month trial. In contrast, less than 4% of the placebo group were able to tolerate peanut by the end of the trial.

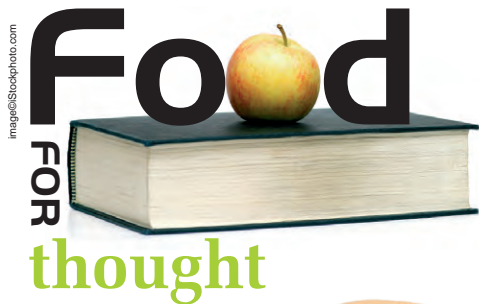
Of the probiotic-treated children, 23 of 28 (82.1%) were able to include peanut in their diet by the end of the trial, compared with just one of 28 (3.6%) of placebo-treated children.

"In the study, the combined delivery of probiotic and oral immunotherapy was a safe and effective treatment for peanut allergy; however, it is important to point out that this treatment must only be given under close medical supervision as we are giving peanut to children who are allergic to peanut, and children did have allergic reactions. Nevertheless, the likelihood of success was high - if nine children were given probiotic and peanut therapy, seven would benefit," said lead researcher professor Mimi Tang.

"It appears that we have been able to modify the allergic response to peanut such that the immune system produces protective responses rather than a harmful response to the peanut protein."

The team says further research is now required to confirm whether the patients will still be able to tolerate peanut years after completing the trial.





China turns to potatoes as staple food

After relying on rice and wheat for millennia, China could soon turn to a new staple: potatoes. The country's Ministry of Agriculture (MOA) announced that by 2020, 50% of the country's production of potatoes will be consumed as a staple food.

Potatoes will be used for noodles, steamed bread and other staple food products, opening up opportunities for manufacturing and - according to the MOA - leading to a healthier diet for the Chinese population.

The move is part of the government's drive to achieve sustainable development through adjusting the agriculture structure, China's *Global Times* reported.

"It was an attempt to ensure food security, ease the pressure on the environment and increase the income of farmers," said Yu Xinrong, a deputy director of the MOA.

Experts have suggested that potato processing techniques be improved to meet the demand. A campaign promoting potato consumption was also suggested.

Liu Lan, general secretary of the China Dietitian Association, says China is struggling with a huge population but limited farmland, making potatoes a suitable supplement to the present staple food system.



The microbiology of chilled food safety: seminar

The quality, shelf life and safety of chilled foods are affected by parameters such as ingredients, processing, storage and handling. Learn all about this category at the 'Chilling out with food safety' seminar at the CSIRO's Food Innovation Centre in Werribee on Wednesday, 4 March.

The seminar provides an opportunity for Australia's food companies to understand the microbiology of chilled foods and learn how new processing technologies such as high pressure processing (HPP), pulsed electric field (PEF), ultrasonics and microwave technology can add value and enhance the quality, shelf life and safety of chilled foods.

The program outline includes:

- Chilled food microbiology - what do you need to think about and why?
- Technologies offering opportunities for innovation in chilled foods - thermal vs non-thermal processing.
- Challenges with *Listeria* in the processing environment.
- Process cost modelling - does the benefit of an alternate process outweigh the cost?

Attendees will also have the opportunity to tour the CSIRO Food Innovation Centre's processing facility.



AUSPACK 2015 breaks all records - largest event yet

AUSPACK has more than just its 30th anniversary to celebrate in 2015 - it has also broken all records and is set to be the largest event in its 30-year history. AUSPACK has attracted the most exhibitors yet and will cover the largest floor space and include the biggest educational program since its inception in 1985.

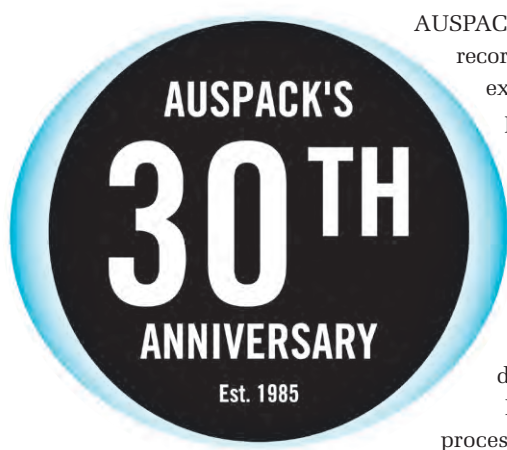
"We are very pleased to announce that AUSPACK 2015 will have the largest floor space of any exhibition in its history at 8017 m² and we have over 315 exhibitors including a record number of 80 internationals and 67 APPMA [Australian Packaging & Processing Machinery Association] member companies," said Luke Kasprzak, portfolio director - industrial division, Exhibitions and Trade Fairs.

"Five of the founding companies that started AUSPACK will also be exhibiting. Please take some time to visit CPS, Heat and Control, MPI, Nordson and Walls Machinery during the show."

More than 1200 brands will be represented at the event, showcasing new and innovative processing and packaging machinery.

As part of Packaging & Processing Week, the 2015 National Technical Forums will also be held during the week. During the four-day program, delegates will have the opportunity to hear 39 speakers from eight countries cover an extensive range of topics under the theme Open Innovation & Collaboration.

To register to attend AUSPACK 2015, visit www.auspack.com.au.



FLUKE PROCESS CALIBRATION TOOLS.

WORLD LEADER IN PROCESS PROFESSIONAL TEST TOOLS.



Fluke understands food and beverage processing plants must operate with extreme reliability and precise control of temperature and other operating parameters. At the same time, plant operators face requirements to save on energy costs, operate more efficiently and eliminate accidents.

Fluke has the broadest selection of process calibration tools in the industry. Designed to withstand the harshest environments and featuring first of its kind innovations, Fluke Calibration tools offer a full range of accurate, rugged and reliable calibration solutions for professionals in the food and beverage manufacturing industry.

Food and beverage processing.

Increase productivity in food and beverage.

Use Fluke tools for:

- Energy consumption issues
- Downtime prevention
- Equipment optimisation
- Waste minimisation

Contact Fluke Australia today for more information.

Contact Fluke Australia

+61 2 8850 3333

✉ auinfo@fluke.com

🌐 <http://au.fluke.com/PCT>

FLUKE®



The great bottle battle – Coke vs Pepsi

Chris Round, Caroline Judd, Simon Casinader*

Coke took Pepsi to court in Australia, alleging that the release of Pepsi's glass 'Carolina Bottle' infringed the rights and reputation of Coke's iconic glass 'Contour Bottle', or its outline or silhouette. Read about the great bottle battle and how you can protect your shapes.

On 28 November 2014, the Federal Court of Australia (Court) dismissed claims of trade mark infringement, misleading or deceptive conduct and passing off made by The Coca-Cola Company (Coke) against PepsiCo Inc, PepsiCo Australia Holdings Pty Ltd, and Schweppes Australia Pty Ltd, the manufacturer and distributor of PepsiCo Inc's products in Australia (collectively referred to as Pepsi).

The facts

Coke's glass bottle known as the Contour Bottle is well known and Coke has sold its beverages in a variety of styles of the glass Contour Bottle in Australia since 1937.

In August 2007, Pepsi released a glass bottle of its own in Australia, known as the Carolina Bottle, which led to Coke initiating this proceeding in October 2010.

The claims

Coke alleged that the Carolina Bottle infringed four of Coke's Australian registered trade marks for its iconic Contour Bot-

tle and that Pepsi had engaged in misleading or deceptive conduct and committed the tort of passing off.

Significantly, Coke framed its trade mark infringement case both on the basis that Pepsi used the whole bottle shape of the Carolina Bottle as a trade mark or specifically used the outline or silhouette of the Carolina Bottle as a trade mark.

In addition to the claims of trade mark infringement, Coke alleged that Pepsi had:

- engaged in misleading and deceptive conduct, as Coke's business and goods have become widely and favourably known and identified in the minds of consumers throughout Australia by reference to the Contour Bottle and the Coke Marks, and that members of the public in Australia expect to be dealing with Coke, or persons authorised or approved by or otherwise associated with it, when they are offered Pepsi beverages for sale in the Carolina Bottle
- passed off its Pepsi beverages as products of, or licensed by Coke, through the use of the Carolina Bottle.

The finding

The Court rejected each of Coke's claims against Pepsi. In his judgment, Justice Besanko made the following key findings.

Trade marks - use of marks

With respect to the allegations of trade mark infringement, his Honour considered the context in which Coke's beverages in the Contour Bottle and Pepsi's beverages in the Carolina Bottle are offered for sale and concluded that the overall shape of the Carolina Bottle was being used by Pepsi as a trade mark, as opposed to the outline or silhouette as suggested in the alternative by Coke.

Justice Besanko held that the outline or silhouette of the Carolina Bottle was not sufficient to indicate to the consumer a connection in the course of trade between the beverage and Pepsi, even though Coke had put forward expert evidence that this aspect of the Carolina Bottle may be seen by the consumer when the product is presented in a refrigerator for sale. Despite this finding, his Honour did conclude that the outline or silhouette of the Carolina Bottle was an element of the overall shape of the Carolina Bottle.

Trade marks - deceptive similarity

In determining deceptive similarity, his Honour addressed Australian trade mark no. 63697 and Australian trade mark no. 767355 (Detailed Marks) together, and considered trade mark numbers 1160893 and 1160894 (Outline Marks) sepa-

ately. Justice Besanko held that the Detailed Marks were both accurately described as having the features identified by the Full Court in *Coca-Cola v All-Fect Distributors Ltd* (1999) 96 FCR 107, which were that:

- the sides of the bottle are curved, rather than flat
- there is fluting on the top and lower portions of the bottle and no fluting in the central section
- the top and lower portions of the bottle have the same number of flutes
- the bottle has a flat base and a banded neck.

There were some differences between the Detailed Marks, with Australian trade mark no. 767355 having more clearly shown fluting and scalloping when compared to Australian trade mark no. 63697.

In comparing the Carolina Bottle to the Detailed Marks, Justice Besanko found that the differences were significant. The Carolina Bottle lacks the flutes or a clear belt band as featured in the Detailed Marks, while, uniquely, the Carolina Bottle has a horizontal wave pattern. Coke submitted that despite these differences, the Carolina Bottle was deceptively similar to the Detailed Marks as the outline or silhouette of the Carolina Bottle was an essential feature, but this was also rejected by the Court, in particular with respect to the more Detailed Marks.

With respect to the Outline Marks, the outline or silhouette of the Contour Bottle was the only or essential feature of the Outline Marks. When the Outline Marks were compared to the Carolina Bottle, Justice Besanko identified a number of distinctive features on the Carolina Bottle that were not featured in the Outline Marks.

As a result, his Honour held that the Carolina Bottle was not deceptively similar to any of the Coke Marks.

Misleading or deceptive conduct/passing off

Similarly, the Court dismissed Coke's allegations that Pepsi had engaged in misleading or deceptive conduct and that its sale of Pepsi in the Carolina Bottle amounted to passing off. In particular, Coke was unable to convince the Court that it had sufficient reputation at the relevant time (in February 2009, when the Carolina Bottle was reintroduced into the Australian market on a larger scale) in the mere outline or silhouette of the Contour Bottle. His Honour found that Coke had the requisite reputation in the overall shape and detailing of the Contour Bottle well before February 2009.

Therefore, the differences between the overall shapes of the Contour Bottle and the Carolina Bottle and the other elements that would influence the purchasing decisions of consumers such as brand names, device marks or logos led Justice Besanko to conclude that there was no possibility of deception.

Similar allegations made internationally

The decision of Justice Besanko follows the dismissal of similar claims made by Coke against Pepsi in New Zealand (*Coca-Cola Co v Frucor Soft Drinks Limited* (2013) 104 IPR 432; [2013] NZHC 3282) and Germany (LG Hamburg 315 O 310/11). Both decisions are currently the subject of appeal.

Lessons to learn

Shape trade marks can be valuable business assets, but applicants must be careful to file representations that depict




exactly how the shape is intended to be applied or portrayed in actual use.

Shape trade marks are usually filed in circumstances where a shape has become synonymous with a party and the shape is not the subject of a registered design either because the design has expired, or no design application was filed prior to the commercial release of the design.

It is important that a party files an accurate representation of a shape mark which depicts the essential features of the trade mark. If the shape mark representation does not clearly depict the essential features of the trade mark then it may be difficult to prove a trade mark infringement claim.

A strong shape mark includes features that are non-descriptive and non-functional. In Global Brand Marketing

Inc v YD Pty Ltd (2008) 76 IPR 161; [2008] FCA 605, Justice Sundberg suggested that these features make a shape “more arresting of appearance and more attractive, thus providing a means of distinguishing the goods from those of others”.

Any brand owners wishing to protect the distinctive shapes of their products as a trade mark, or have their existing shape trade mark portfolio reviewed to determine if their protection is adequate, should contact Chris Round, Partner at K&L Gates. 

K&L Gates
www.klgates.com

**Chris Round is an intellectual property lawyer with extensive experience in the registration of intellectual property rights and associated litigation. He represents clients in copyright, trade mark, patent, designs and associated trade practices litigation in all Australian Courts.*

**Caroline Judd has a focus on brand protection and experience in the registration, protection and enforcement of intellectual property rights for clients in the retail, technology and manufacturing industries.*

**Simon Casinader has experience in the litigation and dispute resolution, corporate advisory and intellectual property litigation areas of K&L Gates.*

Coriolis flow transmitter

Emerson Process Management has introduced the Micro Motion Model 5700, a Coriolis flow transmitter designed to translate measurement data into meaningful insight and instruction. The product is suitable for a broad range of applications, from liquid and gas custody transfer to simple process control.

Emerson performed usability testing on the product to fully understand user information demands and real-world application requirements. Every feature was designed to reduce the time and expertise needed to install and operate the Coriolis meter.

The device focuses on delivering useable information to provide deep process insight from Micro Motion Coriolis measurement. The result empowers users to leverage rich Coriolis measurement data in order to further understand and improve their operating environments and achieve high levels of productivity.

The unit provides users access to detailed measurement history for troubleshooting or optimising the process. The graphical user interface was designed for intuitive operation, with simplified installation, configuration, maintenance and troubleshooting. The transmitter translates Coriolis measurement data into useful operating insight through robust, time-stamped history files for process and meta health data, and logs for configuration changes and alarms.

The digital signal processing architecture provides fast flow response time, making it optimal for custody transfer proving and short batching applications. The historian feature also improves Micro Motion Smart Meter Verification, which provides measurement of the full meta health without process interruption - improving measurement confidence and easing regulation compliance.

Compatible with new and previously installed Micro Motion ELITE Coriolis sensors, the unit has a field-mount design that is suitable with most hazardous area installation practices and with both integral and remote installation options. It currently includes options for analog, pulse, discrete and Modbus outputs and an analog or HART input.

Emerson Process Management
www.emersonprocess.com.au





Motors that meet efficiency standards and levels in Australia and worldwide

The use of energy saving solutions has significant economic and environmental benefits for Australian businesses, including reduced running costs and reduced carbon emissions. Improving the efficiency of equipment is also a key objective globally. That's why SEW-EURODRIVE has extended its DR series of electric motors – made to meet global efficiency standards. Around the world governments are mandating Minimum Energy Performance Standards (MEPS) for motors. In Australia, the government now mandates MEPS through the Greenhouse and Energy Minimum Standards (GEMS) Act 2012 legislation. The act creates a national framework for appliance and equipment energy efficiency. This means electric motors must meet MEPS efficiency levels and must be registered for sale and use before they can be sold in Australia. SEW-EURODRIVE supports the need for efficiency in motors, supplying electric motors that meet and exceed MEPS levels. MOVIGEAR® and DRU offer IE4 Super Premium Efficiency Levels, the DRN and DRP ranges offer IE3 Premium Efficiency Levels and the DRE offers IE2 High Efficiency Levels. To find out more contact an SEW product specialist closest to you on 1300 739 287 or visit <http://energy-saving.sew-eurodrive.com/>.

www.sew-eurodrive.com.au

1300 SEW AUS (1300 739 287) to be directed to your nearest office
Melbourne (Head Office) | Sydney | Brisbane | Townsville | Perth | Adelaide

SEW
EURODRIVE



Organic vs conventional dairy studies flawed, NZ review says

The differences between organic and conventional dairy aren't quite as clear-cut as they might first appear, a New Zealand study says.

The researchers reviewed almost 200 publications, concluding that previous studies comparing the two have been largely ambiguous. This is due to the complexity of research questions and, most importantly, the range of variables and factors that influence milk composition.

"When comparing organic and conventional milk composition (especially milk fatty acids), previous studies have generally compared organic dairying with milk produced from grass-fed cows to conventional dairying with milk produced from concentrate-fed cows," wrote lead author Dr Don Otter, senior scientist, food and bio-based products, AgResearch Grasslands Research Centre.

"The differences in milk composition observed are actually due to the different diets of the cows (ie, pasture versus concentrate feeding) rather than organic versus conventional farming systems."

The researchers did not comment on whether consumers are willing to pay more for organic milk due to its perceived environmental and animal welfare benefits.

However, they do say that, because there are so many factors that affect milk composition, it is difficult to control for all of them when comparing organic to conventional milk production.

"The term 'organic' when applied to dairying is not universal and, to a large extent, is defined simply by regulations that differ from one country to the next. 'Conventional' is basically anything that is not 'organic'," the researchers wrote.



Un-Australian? Aussies drinking 25% less than 40 years ago

So much for the stereotype of the beer-swilling Aussie: research shows we're drinking a full 25% less alcohol than we did 40 years ago. While beer producers probably aren't happy about this, there is a definite upside: it has dramatically curbed alcohol-related violence.

The government report, *Australia's Changing Drinking Habits*, disproves commonly held beliefs that alcohol consumption and alcohol-related violence are increasing.

In 1974-75, Australians consumed an average of 13.1 litres of alcohol per person. Since the 1980s, this has declined, decreasing to 9.9 litres in 2012-13. Teenagers are drinking significantly less, with the proportion of young people abstaining increasing from 56% in 2007 to 72% in 2013.

Interestingly, alcohol-related violence has decreased by 30% in NSW in the last six years, despite the number of liquor licences increasing by 16%. Terry Mott, CEO of the Australian Liquor Stores Association, says this proves a lack of evidence between alcohol availability and violence.

This increase in the number of liquor stores has also not led to an increase in alcohol consumption.

Most Australians would prefer to see targeted programs, rather than whole-of-population control measures, to address alcohol-related problems. Only 28% of people support an increase in the price of alcohol, while targeted measures have received much stronger support: 85% support greater enforcement of penalties for drunk drivers, 84% support enforcement against supply minors and 82% support enforcement against serving intoxicated customers.

"Australia's drinking habits have changed significantly over the course of the four decades; we are more educated about alcohol and we are making much better choices than we ever have before," said Mott.

"The majority of Australians consume alcohol responsibly and enjoy the social benefits it brings. It is important to distinguish between the moderate consumption of alcohol by the overwhelming majority of Australians and the misuse of it by a small minority."

The 'Australia's Changing Drinking Habits' report is available from the Australian Liquor Stores Association's website: www.alsa.com.au.

TOTAL NEVASTANE FOOD GRADE LUBRICANTS

For food safety and TOTAL peace of mind



TOTAL NEVASTANE food grade lubricants

In food processing industries, food safety is of prime importance. TOTAL NEVASTANE provides a full range of food grade lubricants. The NEVASTANE range offers optimum protection and longer service life as well as being fully OEM approved, allergen free, Kosher and Halal compliant and approved by NSF-H1.



Authorised TOTAL Lubricants distributor:
Gordon Brothers Industries
1300 GORDON
oil@gordonbrothers.com.au
www.totaloil.com.au



The right choice in lubricants

TOTAL

Chappellet Vineyard: new technology for age-worthy wine

Over 40 years ago, the Chappellet family was the first winery to plant vineyards exclusively on high-elevation hillsides in the Napa Valley. The rugged terrain soon become legendary for producing wines with great intensity and depth.

Today, Chappellet Vineyard & Winery demonstrates the same pioneering spirit as it embraces technology, becoming among the first in the industry to install VitiSort, the optical sorter for wine grapes from Key Technology. The compact, two-stage system combines a mechanical MOG (material other than grape) removal shaker and optical sorter, with an integral juice recovery system.

Sorting up to 4.5 tons of red grapes/hour, VitiSort is suitable for wineries producing 5000-50,000 cases/year. It separates unwanted objects such as insects, skins, raisins, shot berries, stem jacks, petioles, leaves and other MOG from the good berries, enabling Chappellet to better control the quality of the must going into its fermentation tanks.

“VitiSort allows us to elevate the quality of all of our lots. With it, we can bring a B+ lot up to an A. We can take something that may have just missed the mark, take the MOG out and decrease the chance that the wine is rustic instead of refined,” said Phillip Titus, winemaker at Chappellet. “Five years ago, this kind of technology seemed ahead of its time. Now it’s highly desirable. I believe we will all be using this kind of technology as the wine industry modernises.”

“VitiSort allows us to make very subtle changes to the settings to adjust MOG removal,” explained Daniel Docher, assistant winemaker at Chappellet. “This versatility enables the sorter to be tailored to work with any red grapes in any region.

“With it, we typically run three to four tons an hour with only two people - one driving the forklift and the other overseeing everything else,” said Docher. “It would take a dozen people or more to hand-sort at that throughput, but they



couldn’t match the quality of VitiSort, because there is a limit to what humans can do.”

VitiSort begins with a vibratory conveyor that gently shakes the grapes to perform an initial mechanical separation of MOG, which falls through slots along with juice. MOG is accumulated on a sloped surface for disposal, and juice is automatically recovered for reintroduction to the must. Singulated grapes freefall from the end of the conveyor into the optical sorter, presenting a ‘sheet’ of product that allows a camera to inspect each grape. The sorter quickly analyses the images, comparing each object to user-defined accept/reject standards. When unwanted objects are identified, the sorter activates the ejector system, which is made up of a series of air jets that span the width of the system. While still airborne, the air jets pinpoint MOG to remove it from the product stream. Good grapes pass from the sorter into a trough or screw conveyor for delivery to the fermentation tank.

“With VitiSort, we can make a decision about how much MOG to remove, and then do it. With it, medium-size wineries have similar high-tech optical sorting equipment that had previously been so expensive only the large wineries could afford it,” said Docher. “This is the first optical sorter that actually does what we need it to do. It helps us make the best wines from the best grapes.”

Key Technology Australia Pty Ltd
www.keywww.com

Optoelectronic sensor for transparent objects

TranspaTect is an optoelectronic sensor for detecting, counting or positioning transparent objects and optically critical surfaces. The machine has no reflector, which simplifies machine design, cuts commissioning costs, and prevents problems involving replacement due to contamination.

The sensor uses a PinPoint LED as its light source and a switching distance from 0 to 700 mm. Surfaces with optical distortion or other distracting properties can be reliably detected. The optics, electronics and evaluation are accommodated in a zinc die-cast housing.

Instead of a reflector acting as a reference surface, the machine requires only a matt and stable machine background, eg, a glass-bead-blasted stainless steel wall or panel. According to the company, installation and commissioning of the sensor is therefore quicker and cheaper. Because the reference surface, on which sensitivity is taught-in via the teach-in button, is generally much larger than a reflector, accuracy is less critical for sensor alignment.

The sensor carries out continuous threshold adaptation to the new detection conditions caused by contamination (eg, dust or product residues on the optics), ensuring reliable switching behaviour.

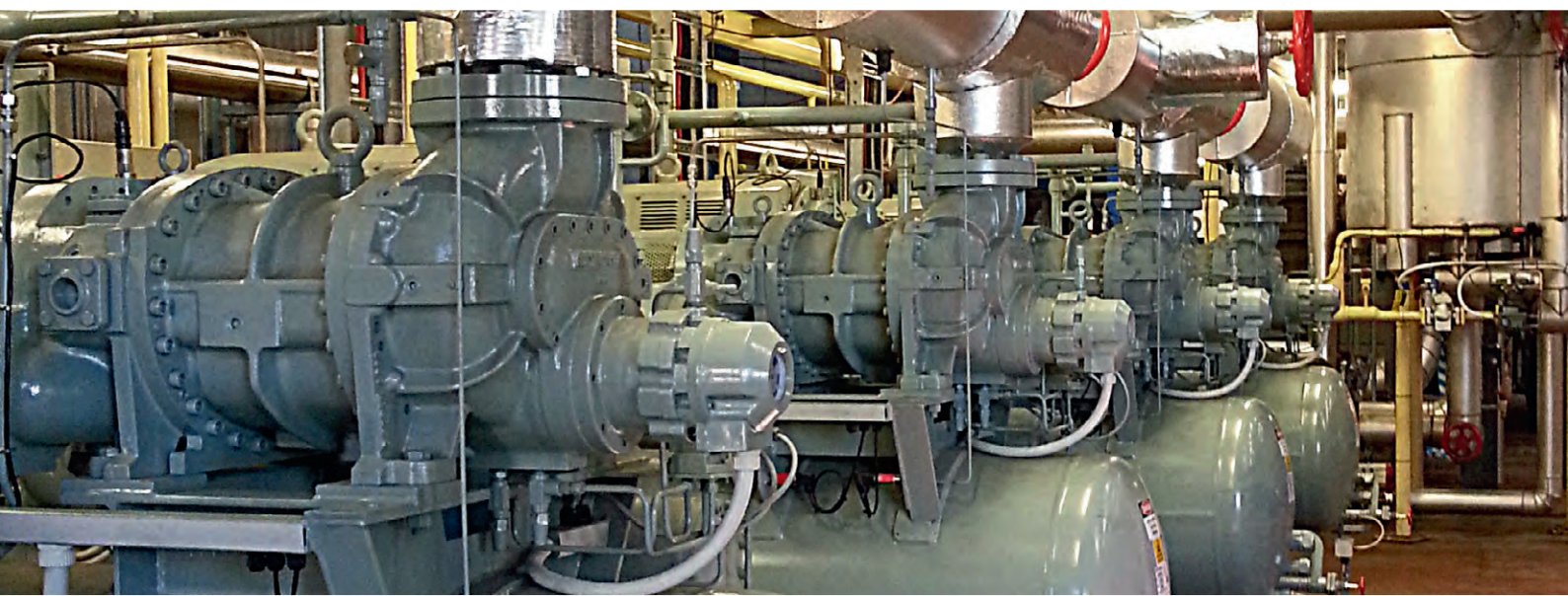
The sensor is suitable for the packaging plants of the food and beverages industry. Suitable applications include: monitoring of transparent trays in the inflow tunnels of tray sealers; detection of transparent food packaging on conveyor belts or monitoring bottle flow at the entrance to fillers; detection of transparent packaging materials made of hard and soft plastics and PET preforms at the entrances or exits of plastic injection moulding and stretch blow-moulding machines.

SICK PTY LTD
www.sick.com.au



TOTAL LUNARIA AND PLANETELF

Premium refrigeration lubricants



TOTAL Refrigeration Lubricants

The TOTAL range of refrigeration lubricants provides the efficiency, certainty and reliability needed for everyday industry demand. TOTAL LUNARIA and PLANETELF range cater for all refrigeration requirements, offering excellent equipment protection and performance.

Authorised TOTAL Lubricants distributor:

Gordon Brothers Industries
1300 GORDON
oil@gordonbrothers.com.au
www.totaloil.com.au

gordon



The right choice in lubricants

TOTAL



Optimising clean-in-place processes

in food and beverage operations – Part I

Benjamin Jude and Eric Lemaire*

Clean-in-place (CIP) processes are often intensive and waste large amounts of energy, water and chemicals. New innovations in CIP technology allow plant operators to cut costs in an environmentally friendly manner while still conforming to regulatory safety standards.

A typical clean-in-place (CIP) process requires large amounts of water, chemicals and energy. It is estimated that, on average, a food and beverage plant will spend 20% of each day on cleaning equipment, which represents significant downtime for a plant. Energy usage varies depending on the process. For example, a milk plant is likely to use 13% of its energy on CIP, whereas a powdered milk, cheese and whey process is likely to use 9% of its energy on CIP¹. In a fruit jam manufacturing facility in Manchester, England, cleaning hoses in the fruit room were identified as one of the highest end users of water in the facility (17% of total site water consumption)².

Many manufacturers are unsure of how their CIP systems are performing. Therefore, additional steps are often introduced as a safeguard to ensure adherence to sanitation standards. This practice results in higher consumption of water, chemicals and energy than is necessary in order to avoid the contamination issues.

A number of companies have addressed CIP improvements with small modifications such as altering the chemical concentration, or by adjusting the time taken for each stage of the CIP process. However, very few food and beverage manufacturers have put tools in place that render the CIP

process efficient. In fact, in an informal poll conducted by Schneider Electric on food and beverage clients in France, only 12% thought that their CIP systems were efficient yet only 18% of those surveyed had commenced a study around CIP optimisation. Yet industry leaders are clearly indicating that progress needs to be made in the areas of waste reduction and water and energy efficiency (see Figure 1).

Recent innovations in technology now enable plant operators to calculate the optimal mix of water, chemicals, temperature and flow required to achieve safety standards while saving at least 20% in energy cost and by reducing the downtime for cleaning by at least 20%. In addition, all the steps in the process can be easily traced and automatically documented, which simplifies any auditing requirements that need to be performed by regulatory inspectors.

Risks of inefficient and ineffective CIP systems

Food safety and litigation

With many hundreds of metres of pipework, and a multitude of valves, pumps and instrumentation that make up a typical CIP system (see Figure 2), the risk of equipment failure is high and can happen at any stage of the process with a potential impact on food safety. It is quite difficult to verify



© shaurijit/Dollar Photo Club

that all aspects of the cleaning process have been taken into account. Consider the instance of an operator who runs a cleaning process and does not even realise that a particular component (such as a pump) did not work because no alarm was generated.

The result of improper cleaning is costly to a plant in violation of food and beverage industry safety regulations. The all-too-frequent incidences of food safety disasters around the globe are often caused by simple mistakes or faulty processes in a food or beverage factory which lead to sickness, injury and even death for those who consume contaminated products. In addition to the human tragedy, these contamination incidents lead to the expense of product recalls, loss of confidence in a company's brand and ultimately loss of revenue.

Food safety authorities conduct plant audits to ensure that the critical control points identified as HACCP (hazard analysis and critical control points) are monitored and reviewed for regulatory compliance and continuous improvement. In the event of a contamination incident, full traceability (enabled by software) and 'proof of clean' will reduce the legislative and legal impact. The company involved will be in a better position to identify the contamination impact and to minimise the effort required to implement a withdrawal or recall procedure.

Production downtime

Lowering operational expenditure and reducing waste to lower the cost of production without impacting product quality are universal goals of food and beverage enterprises. However, when a CIP process is in operation, production is stopped.

This impacts profitability. As a result, two tendencies which are both negative to the business manifest themselves:

1. When a problem occurs, there is a natural reaction to avoid seeking the root cause of the problem. Such an intervention could involve even more time-consuming maintenance work.
2. With the risk of contamination at the forefront of most operators' minds, the tendency of the CIP operator is to overcompensate with increased cleaning time.

Fortunately, new CIP technologies alleviate the above problems because of significant improvements in efficiency:

- More advanced CIP automation enables dramatic reductions in troubleshooting time in the event of a problem, cutting what once took hours to perform into minutes of diagnostics.
- An optimised CIP process can reduce cleaning times by up to 20%. If CIP currently takes around five hours of each day, a 20% reduction in cleaning time will deliver approximately an extra hour of production time.

High consumption of energy and water

Efficiency improvement does not only focus on reducing cycle time, as well as energy, water and chemical consumption. The primary purpose of the CIP system is to remove fouling from the equipment. When production equipment is not completely clean, expensive raw materials have to be thrown out. Effective cleaning results in fewer instances of contamination and therefore improved production efficiency.

The cleaning function, however, is energy intensive. Almost half of a milk-processing facility's energy is used to clean the processing lines and equipment⁴. Calculating the precise temperature needed to clean equipment is critical to reducing the energy consumption. For every 1°C reduction in CIP temperature there will be a 1/60th reduction in the energy needed to heat the fluid⁵.

The amount of water or chemicals used can also be reduced by introducing recovery tanks so that the liquid can be re-used instead of sent down the drain.

Loss of innovation and flexibility

Food and beverage manufacturers must innovate in order to remain competitive. Recipes need to be improved and new product lines developed. Therefore, CIP systems need to be flexible in order to adapt to different types of fouling on the equipment as product lines evolve. Operators need to be able to alter cleaning recipes to suit particular types of fouling, whether product (sugar, fat, protein or minerals) or microbial (vegetative microorganisms or spore-forming microorganisms) and ensure that the CIP system is operating in an efficient manner. Chocolate, for example, will require a different cleaning recipe for butter than it will for flour.

Modern CIP systems equipped with automation software enable a simple drilldown into any aspect of the process. This traceability of the system offers a number of benefits:

3. Operators can check each CIP operation to verify whether it has worked correctly.
4. Diagnostics are simple to perform and deliver detailed information on each element of the cleaning cycle.
5. Faults and issues can quickly be highlighted and rectified.
6. Plant managers can generate detailed operational reports.
7. Food security reporting to regulators is easy to assemble and more comprehensive.

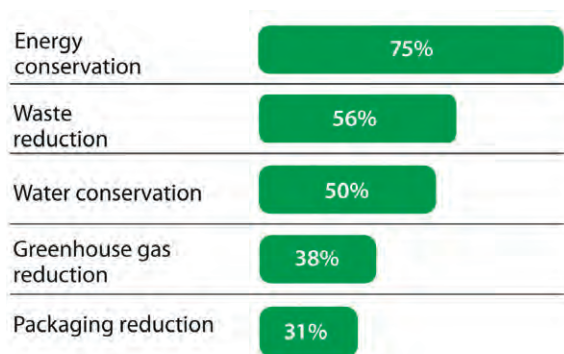


Figure 1: Top sustainability priorities of food and beverage, and consumer products industries³.

Incremental process improvements

Equipment manufacturers ensure that CIP systems are installed and in good working order but these systems need to be fine-tuned based on the environment of the particular plant.

Some food and beverage manufacturers have tried to improve the efficiency of their CIP systems. The process usually involves a manual, trial-and-error approach which does not consider a holistic view of the system. These efficiency improvement techniques involve the following:

- **Modifying chemicals** - New chemicals can be experimented with or the concentration of existing chemicals can be altered to see if cleanliness is achieved more easily. The risk is that new versions may prove to be more costly.
- **Altering cleaning times** - Increasing or decreasing the time taken for rinse or for chemical solution cycles may result in some efficiency gains although the balance of downtime to production output and impact on safety tolerance levels will need to be reconsidered.
- **Adjusting water temperature** - Increasing the temperature of water to decrease the cleaning time or conversely decreasing the temperature to lower energy costs are also possible options.
- **Reconfiguring settings** - A study of CIP line usage can be a useful way to improve production efficiency. For example, if line 1 is at 100% capacity and line 2 is rarely used, a simple rebalancing would be to move some equipment cleaning to line 2.
- **Maximising chemical effectiveness** - The introduction of enzyme-based detergents to speed up chemical reactions or membranes to filter chemicals and enable them to be re-used for longer helps save resources.
- **Implementing eco-friendly solutions** - Bio-decontaminants eliminate the need for the use of harsh chemicals and can help reduce the amount of energy, time and water for the cleaning process.
- **Using ozonated water** - Disinfection with ozonated water is effective on a range of microorganisms and can save on water, chemicals and energy. The typical five-tank process is reduced to just three and it is extremely safe for the environment because its by-product is oxygen. However, it may be more costly to implement into an existing CIP system as it requires the addition of an ozone station and other equipment on-site.
- **Developing a conservation mindset** - The replacement of faulty valves and fittings, switching off water sprays and

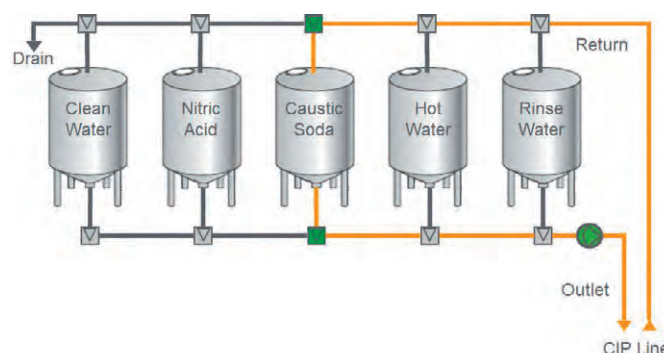



Figure 2: Example of a simple, single line CIP system.

hoses when not in use, and disconnecting or removing redundant pipework help to improve efficiency. Installing meters on equipment will help to monitor water consumption. An example of this is installing flowmeters on inlet and outlet pipes to verify the volume of liquid sent and received. This can be analysed to identify any unusual losses through the leak chamber of the valve.

Each of these above strategies is often performed in isolation and the outcomes documented. The downside of this trial-and-error approach is that it is time-consuming and much waste is generated in trying to determine the proper mix of water, chemicals and energy.

This tweaking of the CIP system can deliver some benefits; however, a holistic approach incorporating automation software makes the biggest impact on cost savings and safety improvement. The complexity of finding the optimal combination for cleaning the equipment while meeting required standards is simplified, thereby saving time, reducing errors and lowering water use and energy consumption.

In Part 2

In Part 2 of this article on page 60, the benefits of using an automated CIP system will be discussed, along with examples of the efficiencies that are gained by doing so. 

About the authors

Benjamin Jude is a Global Solution Architect/Food & Beverage Vertical Expert at Schneider Electric. For over 20 years he has specialised in automation and process engineering, and has provided turnkey solutions for firms within the food and beverage and pharmaceutical industries. He has particular expertise in process design and electrical control engineering, batch management (MES) and FDA compliance.

Eric Lemaire is Food & Beverage Group Marketing Director with Schneider Electric. He holds a degree in Food and Beverage Process Engineering and has more than 20 years' experience in the process automation industry. He has held many different engineering, R&D, marketing and sales positions, including manager of the French Food and Beverage and Pharmaceutical Industry operations.

Schneider Electric Industry Business
www.schneider-electric.com

– ESL –

without heat pasteurisation



With a lot of talk in the beverage industry about non-heat pasteurisation, we are pleased to announce that there is another effective method available that is more economic, more efficient, more beneficial and more compact than other alternatives on the market. With increasing desires to process and consume beverages/food with all the nutritional components still intact, we have some improved and realistic solutions relevant to products such as fruit juices, protein drinks, isotonic drinks, milk, bottled water and RTD's. We offer proven, non-invasive alternatives to heat-based pasteurisation, preserving the organoleptic integrity of the raw materials and the finished product. This is certainly one of the significant growth areas of innovation in the beverage industry.

For more info please contact Paul Baggio at info@fbpropak.com.au or call +61 3 9924-4050. You'll also see more of our food/beverage technology range on Stand 424 at Auspack in Melbourne from the 24th - 27th March 2015.

Beverages



Report on carbonated drinks market

Canadean's Global Carbonates Report 2014 provides detailed data and analysis, supported by analyst insight, for all sweetened, non-alcoholic drinks containing carbon dioxide.

Compiled from Canadean's global soft drinks database, the report contains a global summary, eight regional overviews and provides granular market profiles for 82 countries.

The report provides intelligence on: market values and volumes to 2017 for each country, region and globally; insight on current and emerging flavours and calorie ratings; packaging and distribution trends; market values, average consumer prices, private label shares and new product information; and market shares for leading companies.

© freemages.com/profile/tuareq



Juicing oranges improves nutrient bioaccessibility

While we're constantly told to eat whole fruit rather than drink sugary juice, when it comes to oranges, it seems that certain nutrients might be easier to absorb from juice than from the whole fruit.

Researchers have found that while the production of pasteurised orange juice slightly lowers carotenoid and vitamin C levels, it significantly improves the bioaccessibility of these nutrients.

Similarly, while juicing oranges dramatically reduces flavonoid levels, the remaining flavonoids are far more bioaccessible than those in orange segments, the researchers found.

Benefits of carotenoids and flavonoids include, among other benefits, lowering a person's risk for certain cancers and cardiovascular disease.

The research was published in the American Chemical Society's *Journal of Agricultural and Food Chemistry*.

Cork v Zork: sparkling wine closure trial commences



© freemages.com/profile/desmox

The Australian Wine Research Institute (AWRI) has commenced a commercial benchmarking trial for sparkling wine closures. The study will apply a series of physical, chemical and sensory tests to a Premium NV Pinot Noir Chardonnay wine at regular intervals over an initial two-year period.

The study aims to collect key performance data for the eight different closure technologies, including traditional two-disc natural cork, agglomerate cork, screw-cap, crown seal and the Zork SPK Optimum. A survey of Australian wine producers identified the closures that are of most interest to premium sparkling wine producers.

The wine selected for the trial is a tank fermented sparkling wine made from pinot noir and chardonnay, and this will be subjected to the following series of tests at five separate intervals over two years:

- Free and total sulfur dioxide
- Colour development
- Low molecular weight sulfur compounds
- Carbon dioxide retention
- Oxygen transmission rate
- Extraction force
- Sensory descriptive analysis

The AWRI intends to hold a number of tasting workshops in selected regions to showcase the wine's development under the different closures.

Rapid
Results.
Real
Answers
Sooner.

Products to ensure food safety;

- Hygiene monitoring
- Pathogen detection
- Microbial swabbing
- Microbial enumeration
- Allergen detection
- Antibiotic residue detection
- Sample collection and transport



Phone + 61 2 9882 3666
Email amsl@amsl.com.au
Web www.amsl.com.au



Haze-preventing enzymes approved for use in winemaking

The Food Standards Code has been amended to include the haze-preventing enzymes Aspergillopepsin 1 and 2.

The move has been welcomed by the Australian and New Zealand wine industries as it provides an alternative to bentonite, a clay commonly used to remove haze-forming proteins from white, rosé and sparkling wines.

According to the Australian Wine Research Institute (AWRI), while bentonite is effective at removing proteins, its use can result in significant wine losses. It is estimated to cost the global wine industry \$1 billion annually.

Aspergillopepsin 1 and 2 can be used to degrade haze-forming proteins in grape juice prior to fermentation, eliminating or reducing the need for bentonite. After the enzymes are added, the juice is heated for 60 seconds, unfolding the heat-unstable proteins and making them susceptible to enzyme attack.

The combined cost of the enzymes and juice heating step is considerably lower than the cost of batch bentonite treatment in all but the largest wineries the AWRI says.

The only supplier of a preparation of the Aspergillopepsin enzymes is Japanese company Meiji Seika Pharma, which sells a product called Proctase. However, the AWRI points out that the change to the Food Standards Code relates to the enzymes themselves and not any specific commercial product. Winemakers are advised to seek assurance from their suppliers that products are compliant with the relevant food standards.

Trials comparing the enzymes to standard bentonite use in 2012 showed no negative impacts when using the enzymes.

For more information about the trials, contact the AWRI: www.awri.com.au.

SPX®



DO YOU WANT TO BRING CLARITY TO YOUR SEPARATION PROCESS?

Via close collaboration with our customers, cutting-edge R&D and an innovative approach, SPX designs, develops and delivers best-in-class Seital separation solutions providing superior quality and efficiency. **To learn more on how SPX can clarify your process, contact us at**

Tel: (03) 9589 9222, Email: ft.aus.cs@spx.com or visit www.spx.com.au.

Seital Separation Technology



Beverages



BEVERAGES

UK sees reversal of cider's success story and beer's decline

In Australia, beer sales are dropping while cider sales are skyrocketing. This trend has been reflected in the UK - but things are changing. Beer sales in the UK are predicted to rise for the first time in five years, while sales of cider have begun to drop, according to Mintel.

After five consecutive years of decline, with sales dropping by over 500 million litres between 2009 and 2013, Mintel predicted that overall volume sales of beer would rebound in 2014. Sales increased by 1.3% to an estimated 4.24 billion litres.

According to Chris Wisson, senior drinks analyst at Mintel, a warm summer and the football World Cup were just what the beer market needed. He says the slowing cider market and tax cuts bode well for beer in the UK.

While craft beer is on the rise, Mintel's research shows that more than a third (36%) of consumers surveyed are unsure of what the term 'craft beer' actually means. However, they're prepared to pay more for it: 34% of beer drinkers say they'll pay more for craft beers, rising to 43% among 25- to 34-year-olds.

After several years of strong growth, cider sales are expected to fall by 0.8% to 949 million litres for 2014, down from 957 million litres in 2013. This is in stark contrast to the growth the category has experienced in previous years, with value sales rising by 10% in 2012 and 6% in 2013.

"Despite the significant recent growth of the cider category, volume sales are surprisingly estimated to dip slightly in 2014." Wisson said.



© iStockphoto.com/nazdravie

THE KEY TO WORKPLACE SAFETY

IMPLEMENTING A LOCKOUT/TAGOUT SYSTEM DOES NOT HAVE TO BE DAUNTING AND TIME CONSUMING. THE SAFESITE PROGRAM BY MAYO HARDWARE DELIVERS INDUSTRY LEADING LOCKOUT/TAGOUT SOLUTIONS WITH EASE AND EFFICIENCY.

 www.safesite.com.au

 1300 360 211

SafeSite
ease • efficiency • expertise

by  **mayohardware**



AUSTRALIAN
WATER

ASSOCIATION

ozwater'15

Australia's International Water Conference & Exhibition

Dedicated Food & Beverage Sessions

- MBR and RO treatment of dairy wastewater: industrial water recycling opportunities
- Low operating cost wastewater treatment technologies for red meat and other industries
- Investigation of risk based release criteria for the reuse of treated abattoir wastewater with respect to Q Fever
- Recovery of potassium from dander using different membrane options

International and National Keynote Speakers

- **Cathryn Ross**, Chief Executive, Water Services Regulation Authority (Ofwat) (UK)
- **Thierry Mallet**, Director, Innovation and Business Performance, Suez Environnement (France)
- **Bernard Salt**, Founder, KPMG Demographics (Australia)

*12 - 14 May 2015
Adelaide Convention Centre*

EARLY-BIRD REGISTRATIONS CLOSE 30 MARCH

Visit **www.ozwater.org** for a detailed program and to register

DIVERSIFY

your
water
knowledge

FOSTER

international
business
opportunities

BUILD

and extend
your
networks

ACCESS

renowned
keynote
speakers

EXPLORE

the 140+
international
water exhibitors

PRINCIPAL SPONSORS:



Quick bacteria test for beer

A new polymer powder is the key to a faster, simpler method for breweries to detect contamination in their beer.

Pathogens that enter into beer during the brewing process can ruin the pleasure of the drink, resulting in strong variations in taste and smell or causing the beer to become cloudy and sour. Breweries therefore keep a close eye on their production processes to detect harmful microorganisms.

However, conventional microbiological methods can take five to seven days to detect beverage-spoiling organisms, such as bacteria and yeasts. It is often too late at that point to take corrective action.

In collaboration with German company GEN-IAL, researchers at the Fraunhofer Institute for Applied Polymer Research (IAP) have developed a polymer powder that significantly simplifies these tests and shortens the time that they require.

The existing process requires beer to be filtered in special equipment. The bacteria remain on a membrane and are then cultivated for a few days in a special culture medium before they can be examined microscopically.


The polymer powder from the IAP replaces this process: the powder is added to the liquid sample and the powder's functionalised surface binds the bacteria efficiently.

The pathogens adhere to the 100-200 micron powder particles.

These can be easily removed along with the microbes in a specially developed system and analysed directly using various microbiological methods. This eliminates the need for the time-consuming enrichment in a nutrient medium.

The test is suitable for much larger quantities of beer and can also test drinks such as milk, juice, cola and red wine.

The membrane filtration method only enabled the testing of up to 1 L of beer at a time. And the method was not suitable at all for beverages such as fruit juices, milk and red wine as the suspended matter they contain can quickly clog the filters.

With the polymer powder, tests with 30 L or more are possible, and other beverages can also be tested. 

Control & Power Switches

Extensive Range of
Stainless Steel &
Plastic Enclosures



Kraus & Naimer Pty. Ltd.
BLUE LINE switchgear



www.krausnaimer.com.au

SYDNEY

Tel: (02) 9797 7333
Fax: (02) 9797 0092

MELBOURNE

Tel: (03) 9720 9777
Fax: (03) 9720 9766

BRISBANE

Tel: (07) 3252 8344
Fax: (07) 3252 1497

ADELAIDE

Tel: (08) 8371 1443
Fax: (08) 8371 0901

Linked with an Australian Wide Distribution Network

HVAC Dynapar Veeder-Root Eagle Signal Line Seiki Keyence Maple Greystone Novotechnik TWK AECO

PLCS

Encoders HMIs Controllers

Time Count Rate Flow

ph: 1 300 553 500 enhance your sensors VEEDERLINE www.veederline.com.au

Checkweighing
Simplified

AUSPACK feature

BRINGING INNOVATION TO
INSPECTION SYSTEMS



AUSPACK STAND 149

Checkweighing Simplified

IN-LINE CHECKWEIGHERS METAL DETECTORS

IP65 WATER & DUST PROTECTION

USER FRIENDLY COLOUR TOUCH SCREEN

STORES 1000 PRODUCTS WITH IMAGES

SEND DATA DIRECT TO USB STICK OR PRINTER

HIGH SPEED - UP TO 320 PACKS PER MINUTE

EASILY NETWORKED VIA ETHERNET/MODBUS

MULTIPLE DIGITAL I/O FOR SIMPLE INTEGRATION

JAPANESE QUALITY , LOCALLY SUPPORTED



AUSPACK STAND 149



Celebrating 30 years of AUSPACK!

In 2015, AUSPACK celebrates 30 years of bringing together manufacturers, distributors and importers of packaging and processing machinery.

This year's event will host more than 315 exhibitors over a floor space of 7862 m², a far cry from the first AUSPACK event in 1985, which consisted of a dozen companies on a cement floor at the Hordern Pavilion in Sydney.

It all began with the creation of the Australian Packaging and Processing Machinery Association (APPMA) in 1983 with just half a dozen members. Their objective then, as now, was to promote, integrate and foster participation and development at all levels of the packaging and processing machinery industry.

The founders of APPMA, as the association was known 30 years ago, believed that the industry needed a specialised trade show for packaging and processing machinery. To this end, founding members Malcolm Miller of National Packaging, Bob Brook of Bud Pak, Bill Juknitis of Advance Machinery, David Tierney of Heat and Control and Barton Porter of Inteco Australia worked together to develop an industry exhibition for the Australian and New Zealand market. And so, AUSPACK was born.

The APPMA now represents 97 of Australia's leading packaging and processing machinery and allied components companies, and continues to grow. Members include manufacturers, distributors and importers of packaging and processing machinery who are suppliers to industries such as food, beverage, cosmetic, pharmaceutical, veterinary and household packaging.

The undisputed flagship of the association, AUSPACK, has grown to be recognised as the largest biennial packaging and processing machinery and materials exhibition in Australia. This year's event will welcome record numbers of 67 APPMA member companies and 80 internationals, and has come to be recognised as an integral date in the international packaging and processing calendar.

Five of the founding member companies are exhibiting this year, so if you are visiting the event, please take some time to visit their stands - without them AUSPACK would not be possible. They are CPS, Heat & Control, MPI, Nordson and Walls Machinery.

Visit the APPMA on stand 255 at AUSPACK 2015 to find out more about the association and ask for your copy of the 2015 APPMA Members Directory.



APPMA
www.appma.com

AUSPACK 2015 Exhibitors

Company Name	Stand No.
A&D Australasia	149
A.B. Autopack	645
AAA Packaging Supplies	620
ABB	432
Absortech	660
Accuweigh	143
Achado	720
Adept Turnkey	232
ADM	229
ADSYS	115
Advantage Austria	322
Aeroklas	672
AIP - Australian Institute of Packaging	116
Allpack Australia	228
AmbaFlex	678
AMT	668
Apex Dynamics	103
APPMA	255
Asia Pacific Packaging	499
Aurora Process Equipment	710
AusIndustry	357
Australian Filling and Packing Machines	633
Australian Wrapping Company	412
Australis Engineering	359
AustralWest	736
Automaint	237
Axellent Automation	636
B&S Precision Engineering	730
Barry Wehmiller	343
BBC Technologies	121
Bestech	735
Beumer	511
BevTech	561
Biotec Solutions	516
Bliss and Reels	624
BluePrint Automation	448
Bluestrap	477
C.I. Kasei	108
Cama Group	528
Case Packing Systems	626
CASI	563
CCL Label	535
CFL	711
CFPMA	464, 519, 578, 579
CGP	319
Chang Shu Xin Sheng Bags	303
Chart Industries	479
Clean Lube Solutions	671
CMC Technologies	719
Coesia	440
Concetti Group	517
Confoil	573
Contech	737
Control Logic	471
CPS	243
Crafers Engineering	742
Dalian Jiaying Plastic	155
Dalian Takebishi Packing Industry	337
Datalogic	308
Daxner	718

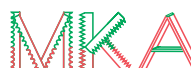
AUSPACK 2015 Exhibitors

Company Name	Stand No.	Company Name	Stand No.	Company Name	Stand No.
DFC Packaging	460	Kockums Bulk Systems	339	Recopak	456
Directus	259	Krones	555	Respack Manufacturing	618
Dongguan Kaidi Packing Materials	162	Krueger & Salecker	380	Result Packaging	368
Dongguan Xutian Packing Machine	465	Kuka Robotics	420	Reynolds Automation	452
Dongguan Zhiteng	157	Kurz	575	Rhima	330
Dotmar	374	Laser Coding/Thermal Coding	476	RK Rose + Krieger	123
E.R.C. Packaging	648	Leuze	468	rml Engineering	647
Easy-Print	422	Lighthouse	745	Robatech	396
Eco Carton	473	Linco	251	Robotic Automation	147
EDP	738	Machine Knives	227	Rockwell	376
Emrich	263	Magnattack	443	Rodan Industries	109
Eriez Magnetics	744	Mailpack	706	Rollex	333
ESKO	247	Makum	545	Romheld	370
Expander	482	MAR	640	S.I. Instruments	646
Fallsdell	521	MATCON	321	Sacmi	323
FB*Propac	424	Materials Handling	562	SD	168
Ferag/Denipro	540	Matthews Australasia	360	Selpak	439
Ferret	397	MBP Packaging	556	Shanghai Chuangfa Material	160
Festo	378	Meech Australia	520	Shantou Linghai Plastic	326
Fibre King	148	Metromotion	529	SICK	242
Filler Specialties	355	Mettler Toledo	436	Silgan White Cap	666
Filtec Australia	113	Milliken Chemical	132	Sky Softgel	241
Flexilink Computer Services	721	Millsom Hoists	641	Smalte Conveying	584
Foodmach	656	Mimaki	142	Solution Pack	199
Foster Packaging	417	Minipack	536	Spraying Systems	547
Fuchs Lubricants	734	Morrison Enterprises	729	SPS Technik	324
Funktion	543	Motion Technologies	580	Stevco	518
Furphy Engineering	664	MPI	338	Summit Machinery	530
GE Intelligent Systems	722	MST Packaging	158	Sunlec International	466
Gebo Cermex	643	Multiplex Packaging	297	Superior Pump Technology	713
GMD	581	NDC Automation	534	Svenic	680
Guangzhou J&J Packing	716	Nordson	652	Synergy Packaging	372
H. B. Fuller	732	NPAC	478	Syspro	256
Hastings Data loggers	118	NUPAC	428	Taiwan Yizou	717
HBM	549	Oai Hung	230	Tex Year Industries	644
Heat and Control	364	OEMSERV	505	The International Dairy Show	498
Highfine Engineering	249	Omniverse	512	The Le Mac Australia Group	510
HIWIN	107	Oriental Packing	715	The Van Dyke Press	560
HMPs	444	PAC Food	328	Thriving Enterprises	416
Hongyou Changzhou Package	463	Packaging Council of New Zealand	117	Tianjin Zepo Supply	309
HPM Global	725	Packline	384	Titan Packaging	599
HPS	739	Packovation	582	TNA	154
Huasheng Holdings	163	Packweigh	614	Toyota Materials Handling	544
Hydroflux	522	Paksmart	329	Tronics	221
HZ	166	Peacock Bros	366	Viking Food Solutions	524
ifm efector	509	Perform Packaging	628	Visy	225
Impact Automation	429	PharmEquip	304	Walls Machinery	334
Impresstik Labelling Systems	233	Phillro	610	Webcontrol Machinery	127
InControl	201	PIAB	501	Wedderburn	217
Innopack	131	Pilz Safe Automation	612	Wellman Packaging	559
Innovia	318	PKN	658	What's New in Food Technology	
insignia	550	Plastissimo	310	& Manufacturing	670
Intralox	150	Plastral	697	Wolf Machinery	632
ITW Zip-Pak	630	Premier Plastics	622	Workflow	740
JAVAC	296	Premier Tech Chronos	616	WR & D Wells	727
Jiangmen Peng Jiang Fulun Hardware	461	Primepak	325	Xiamen Holiday Pack	532
Jin Wang Australia	301	Propac Industrial	541	Xiamen Jian An Feng Packing	161
JL Lennard	551	Proseal	523	Xi'an Boai Industry and Trade	583
JMP Engineering	215	PT Polypack Indo Meyer	728	Xpac Technologies	674
Johns Adhesives	676	Pulford	567	Zhejiang Goldstone	156
Juxian Prospect Plastic	159	Q&L Packaging Machinery	164	Zibo Honest Plastics Weaves	462
KHS Pacific	708	Qimarox	399		
Kiel Industries	662	Qingdao Deyin Packing	165		

Australia's leading **packaging** and **processing machinery** and allied **components** companies

APPMA

Australian Packaging and Processing Machinery Association Limited



As at February 2015

For all of your packaging and processing machinery and allied components answers email appma@appma.com.au

AUSPACK 2015 Floor plan



tight for *space?*

position switches for any application

 **SCHMERSAL**



With its small foot print and robust build, the PS116 range of Position Switches from Schmersal can fit nearly any application.

With inter-changeable rotating actuating elements in 45° steps, it is perfect for use in food & beverage, packaging, manufacturing & safety environments including elevators.



compact
high quality design
symmetrical
housing
easy
to use

Install in confined spaces to monitor the position or presence of moving parts, workpieces or conveyed materials and choose from a variety of contact configurations. The PS116 offers flexible and reliable solutions for a multitude of applications.

COMPACT, ROBUST & EXTREMELY VERSATILE.

for more information call 1800 557 705 or email sales@control-logic.com.au
www.control-logic.com.au


control logic

industrial.
electrical.
automation.

More than just an exhibition

AUSPACK is not simply an exhibition - it gives visitors the opportunity to learn, network, collaborate and celebrate the latest food and beverage processing and packaging equipment and technologies.

315+

suppliers to the food and beverage processing and packaging industry in Australia and New Zealand will be displaying their latest products and innovations to Australian and New Zealand food and beverage processors at AUSPACK from 24-27 March at the Melbourne Convention and Exhibition Centre. But this won't be all - as part of AUSPACK's 30th anniversary celebrations, the Australian Institute of Packaging (AIP) and the APPMA have organised a whole week of events: Packaging and Processing Week 2015.

2015 National Technical Forums

24-26 March 2015, 8.30 am-4.30 pm, Melbourne Convention and Exhibition Centre

The AIP and the APPMA National Technical Forums will be held concurrently with AUSPACK and deliver an educational program that will cover a broad range of topics relating to the theme of Open Innovation and Collaboration. The forums will be divided into breakout sessions to ensure that a diverse range of issues and topics is covered including:

- 3D printing
- Intelligent packaging
- Chain of custody
- Eco design tools
- Packaging printing
- Primary packaging
- Retail-ready
- Robotics & automation
- Tamper evidence

2015 APPMA Scholarship

This will be awarded to a packaging engineer looking to further their education. The scholarship enables the recipient to enrol in a Diploma in Packaging Technology, an internationally recognised and accredited qualification for those wishing to pursue a career in the packaging industry or already in the industry wishing to expand their knowledge and expertise.

In conjunction with the AIP, the APPMA is offering a packaging engineer the opportunity to complete a Diploma in Packaging Technology to the value of \$9000. The diploma is a Level 5 qualification that prepares students to take responsibility for packaging operations at any level through the supply chain and can also lead to higher-level study.

2015 APPMA Industry Excellence Awards

The 2015 APPMA Industry Excellence Awards winners will be announced on 25 March at the Crown Melbourne.

"Companies that enter these biennial awards are recognised for their contribution and outstanding achievements against their peers within the wider packaging industry and we encourage everyone to enter," said Mark Dingley, chairman, APPMA.

The awards categories are:

- 2015 Export Achievement Award
- 2015 Design Achievement Award
- 2015 Customer Partnership Award
- 2015 Imported Equipment Award
- 2015 Best New Product Award

Register now at www.infosalons.com.au/AUSPACK15M/index.php to ensure your free and speedy entrance to AUSPACK 2015.

BESTECH Stand# 735

Sensors & Teaching Equipment

AUSPACK
PACKAGING + PROCESSING
30TH ANNIVERSARY 2015
OWNED AND PRESENTED BY THE APPMA

- ✓ Flexible Package Leak Testers
- ✓ Food Texture Analyzer
- ✓ Burst Pressure & Tank Level Measurement Sensors



Bestech Australia Pty Ltd

U14/44 Garden Bvd,

Dingley, VIC 3172

Ph: 03 9540 5100

E: AUSPK15@bestech.com.au

Fax: 03 9551 5541



Metal detector for wet products

Mettler-Toledo Safeline has launched the Profile Advantage metal detector which can reveal more metal contaminants than previous traditional systems when inspecting challenging applications such as wet, chilled or warm foods. As a result, it reduces the number of false rejects by up to 95%, allowing for cost savings in production environments including meat and poultry, dairy, bakery and ready meals.

Previously the 'product effect' (the electrical signal detected in some foods with a high moisture, salt content or packaged in metallised film) has reduced detection sensitivities significantly below the levels achieved with inspections of dry, non-conductive food products. Using a sophisticated inspection algorithm, the metal detector all but removes the product-effect phenomenon from the process. This results in up to 50% improvement in detection sensitivity levels irrespective of packaging material.

The detector uses multi-simultaneous frequency (MSF) technology. Unlike conventional metal detectors that simply capture and store the active product signal, the Profile Advantage modifies the signal during set-up so that the food product presents itself as if it were a dry product.

For manufacturers of products with stringent hygiene requirements, the detector has a robust, hygienic design. With a casing made from stainless steel, the system is capable of withstanding harsh washdown regimes, while curved edges and corners eliminate potential dirt traps, minimising the risk of biological contamination of the food. The metal detector is also available with optional bespoke conveyors, enabling manufacturers to customise the system to their particular production needs.

Mettler Toledo
www.mt.com

Spray nozzles for viscous coatings

Spraying Systems has a range of spray nozzles and systems suitable for spraying viscous coatings.

AutoJet Spray Systems use precision spray control which allows for accurate and consistent application of coatings. The AutoJet Egg Wash System enables bakeries to decrease their glaze use by up to 60%. The system applies the proper volume of glaze, even when line speed changes, and also provides reduced maintenance downtime.

Hydraulic PulaJet nozzles are suitable for spraying viscous coatings such as oils, release agents, chocolate and glazes. Precise intermittent spraying by the nozzles eliminates misting and minimises clean-up. The nozzles may be arranged in sanitary manifolds for a variety of conveyor widths.

Spraying Systems Co Pty Ltd
www.spray.com.au



Intermittent motion pouch machine

The Effytec HB14 HFFS Intermittent Motion Pouch machine has a speed of up to 90 ppm (simplex mode) or 180 ppm (duplex mode) and offers the ability to make twin sachets connected together with a micro perforation and shaped pouches with tear-off spouts.

It is suitable for co-packers who need to switch between powder and liquid applications.

HBM Packaging Technologies
www.hbm.com.au

"Walls Machinery ... specialists in the design, supply and service of packaging machinery solutions"

- Filling for tube, bottle, jar, pouch, sachet
- Horizontal & vertical form-fill-seal
- Checkweighers & metal detectors
- Robotic equipment
- X-ray inspection
- Cartoners & case sealers
- Bottle, jar, can inspection
- Tray sealers



Your complete packaging solution

SPARE PARTS

SERVICE

SALES

Free call: 1800 500 436

www.wallsmachinery.com.au

Oil level sight glasses

Esco Oil level sight glasses, available from Clean Lube Solutions, enable users to visually monitor oil level, colour, clarity and purity. Constructed of of pressure-welded durable cast acrylics and brass or stainless steel hardware, they withstand most petroleum products to remain clear and functional for years.

They are easy to install on most lubricating machinery oil reservoirs and are a cost-effective solution to protect machinery.

Clean Lube Solutions

www.cleanlubesolutions.com.au



Can leak detector with high sensitivity

The SealTick TSE6084, manufactured by Bestech Australia, uses a vacuum decay method, providing leak detection and measurement for cylindrical cans made from tin, cardboard or composite materials. It can be operated independently, running automatically from lid closure and giving rapid answers for test results in

5-15 s, depending on the size of the can and testing chamber.

Measurement results are logged into a spreadsheet-importable format for trend analysis and traceability. The main requirement for a successful application is to have a headspace of air (or modified atmosphere) in the test package. A web interface allows monitoring of real-time status and offers a best sensitivity of 15 micron. 20 testing methods can be programmed and stored and a 230 VAC power supply is required.

The system is simple to operate and non-destructive, with the product being returned to the packing line. The test is effective and safe even when the product protrudes and its stainless steel construction is suited to a production environment.

Bestech Australia Pty Ltd

www.bestech.com.au

A trusted partner in quality for 60 years



DTS Facta can provide analysis, consulting and training support to assist with allergen risk management across Asia Pacific.

Our laboratories use internationally accepted methods to determine the presence of allergens and has the broadest range of accredited analysis in Australia and New Zealand. Let DTS Food Laboratories provide support for your allergen risk management program.

NATA accredited since 1961, DTS is passionate about understanding the needs and requirements of its clients and their markets. We work by forming partnerships to become an integral part of our client's business and supply chain through the provision of a comprehensive range of analytical and assurance services.

Microbiology | Chemistry | Food Forensics | Allergens
GMO | Milk Analytical Services | Customer Risk
Mitigation Services | Indoor Air Quality | Water Quality

Why not make DTS your trusted partner in quality?

Contact:

E: sales@dtsfoodlabs.com.au W: dtsfoodlabs.com.au

Sales Office: Melbourne, Sydney, Brisbane

Labs: Melbourne, Brisbane

DTS 
FOOD LABORATORIES
YOUR TRUSTED PARTNERS IN QUALITY
INCORPORATING FACTA
FOOD ALLERGEN CONTROL TRAINING ANALYSIS
SAFETY QUALITY TEAMWORK PERFORMANCE CUSTOMER FOCUS

60
DIAMOND
ANNIVERSARY
1954-2014



Tank-free hot melt adhesive delivery system

The Graco InvisiPac is a tank-free hot melt adhesive delivery system. The system, which is available from Phillro Industries, reaches operating temperature in less than 10 min and will work with low-cost adhesives.

A vacuum system feeds pellets to an inline melt chamber, with the pellets automatically added as needed. The system sends a continuous flow of adhesive through production, significantly reducing the time adhesive spends at high temperature. The tank-free design means the adhesive spends less time at high temperature, significantly reducing char and its negative side effects.

Graco Australia Pty Ltd
www.graco.com

Fruit juice deaerator

Krones' VarioSpin deaerates fruit juices before bottling.

During deaeration, it is important to form a maximally large and turbulent surface while also ensuring thin layers, so as to minimise the diffusion paths of the gases concerned. At the same time, the mechanical stress on the products needs to be kept as low as possible, so as to restrict foaming. The deaerator has a swirl inlet, designed to gently pass the product along the tank's walls as soon as it comes into contact with the tank's cover. Due to the discharge velocity and the adhesive force involved, the juice forms a very thin film over the tank's walls.

Utilising the tank's entire surface area, including the cover, enables the tank's volume to be reduced by more than a third. The design thereby saves space and energy as the lesser volume can be managed by a smaller vacuum pump.

Krones (Thailand) Co Ltd
www.krones.co.th



Stainless steel rotary mixer

Fallsdell Machinery's stainless steel rotary mixers are available in two models: the premium stainless steel bowl and frame, featuring a direct drive bowl; and the budget stainless steel bowl and paint frame.

The company's mixers are suitable for mixing powders, granules, slurries, spices, dry fruit and nut mix, roasting nuts, coating products and more. Features include: 90 L capacity; 316 grade stainless steel bowl; single-phase motor; tipping bowl; optional removable lid.

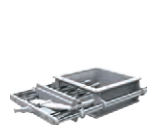
Fallsdell Machinery Pty Ltd
www.fallsdell.com.au

ELIMINATE METALLIC FOREIGN MATTER

FORCE 10: SPECIALIST MAGNETS FOR THE FOOD AND DAIRY INDUSTRY

TARGETING:

- > Work hardened 300 Series Stainless Steel fines
- > 400 Series Stainless Steel
- > Contamination that evades metal detection and xray
- > Contamination from rotary valves, augers, screws, sifter screens, blowers, fans, ingredients etc
- > Reduced metal detector trips
- > Eliminate recalls



FORCE10
 MAGNETIC SEPARATION

AUSPACK 2015 | see us on stand #710 | www.aurora-nz.com



ACIconnect

AUTOMATION | CONTROL | INSTRUMENTATION

OPTIMISING YOUR INDUSTRY

12-13 AUGUST 2015 | Hall 5, Southee Complex, Sydney Showground



Australia's dedicated Automation + Control + Instrumentation conference and exhibition

CONFERENCE HIGHLIGHTS

Keynotes:

Transforming Australian manufacturing — it's all about the customer
John McGuire — Global Industry Director, Aurecon

Smarter analytics — predictive asset optimisation and your industry
Joanna Batstone — VP and Lab Director, IBM Research-Australia + CTO, IBM ANZ

IoT and Industry — perfect match or perfect storm?
Chris Vains — Business Unit Manager - Automation Systems, Siemens

Future Networks Forum:

What does the future hold for industrial communications in the era of IoT, big data, cybersecurity and the cloud? Featuring experts from:

- PROFINET & Profibus Australia
- FieldComm Group
- EtherCAT Technology Group
- ODVA

LIVE Theatre: held on the expo floor, featuring technical and application presentations from leading vendors

Tech MiniLabs:

- Lightning and surge protection
- Process control loop tuning
- PLC ladder logic
- Troubleshooting Industrial Ethernet networks
- Nuts and bolts of AS/NZS 3000 wiring standards
- Troubleshooting Modbus protocol messages
- Investment planning and considerations for ACI projects
- Intrinsic safety considerations for ACI operations
- Harnessing IoT

EARN VALUABLE CPD HOURS

Full conference attendance worth up to **10.5 hours**

Exhibiting Sponsors

Platinum

SIEMENS

Gold

Weidmüller

AMS

Looking Forward

VEGA

Silver



Exhibitors



Association Partners



Training Partner

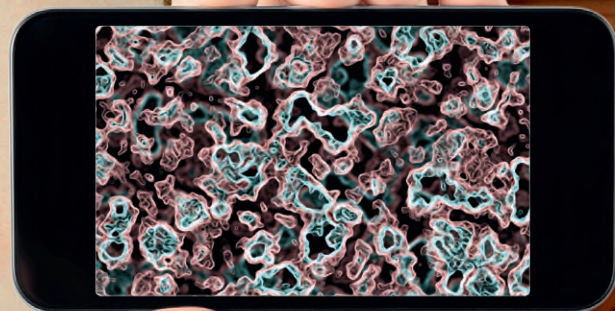


Media Partner



To register and for more information visit www.ACIconnect.com.au

Detecting spoilage with a smartphone



© freemages.com/profile/Besario
© iStockphoto.com/presure4U

Smart packaging that alerts you to possible food spoilage or contamination of products - that's one of the possibilities being considered by a team of MIT chemists who have devised a simple wireless sensor that can be read by a smartphone.

These inexpensive sensors, which can detect gaseous ammonia, hydrogen peroxide and cyclohexanone, among other gases, could be widely deployed, making it easier to monitor public spaces or detect food spoilage in warehouses.

"The beauty of these sensors is that they are really cheap. You put them up, they sit there and then you come around and read them. There's no wiring involved. There's no power," said Timothy Swager, the John D. MacArthur Professor of Chemistry at MIT. "You can get quite imaginative as to what you might want to do with a technology like this."

Swager is the senior author of a paper describing the new sensors in the *Proceedings of the National Academy of Sciences*. For several years, Swager's lab has been developing gas-detecting sensors based on devices known as chemiresistors, which consist of simple electrical circuits modified so that their resistance changes when exposed to a particular chemical. Measuring that change in resistance reveals whether the target gas is present.

The sensors are made from modified near-field communication (NFC) tags. These tags, which receive the little power they need from the device reading them, function as wirelessly addressable barcodes and are mainly used for tracking products such as cars or pharmaceuticals as they move through a supply chain, such as in a manufacturing plant or warehouse.

NFC tags can be read by any smartphone that has near-field communication capability, which is included in many newer smartphone models. These phones can send out short pulses of magnetic fields at radio frequency (13.56 MHz), inducing an electric current in the circuit on the tag, which relays information to the phone.

To adapt these tags, the MIT team first disrupted the electronic circuit by punching a hole in it. Then, they recon-

nected the circuit with a linker made of carbon nanotubes that are specialised to detect a particular gas. The team refers to the modified tags as CARDS: chemically actuated resonant devices.


When carbon nanotubes bind to the target gas, their ability to conduct electricity changes, which shifts the radio frequencies at which power can be transferred to the device. When a smartphone pings the CARD, the CARD responds only if it can receive sufficient power at the smartphone-transmitted radio frequencies, allowing the phone to determine whether the circuit has been altered and the gas is present.

Current versions of the CARDS can each detect only one type of gas, but a phone can read multiple CARDS to get input on many different gases, down to concentrations of parts per million. With the current version of the technology, the phone must be within 5 cm of the CARD to get a reading, but work is underway with Bluetooth technology to expand the range.

The researchers are now looking into possible applications. Because the devices are inexpensive and can be read by smartphones, they could be deployed nearly anywhere: indoors to detect explosives and other harmful gases or outdoors to monitor environmental pollutants.

Once an individual phone gathers data, the information could be uploaded to wireless networks and combined with sensor data from other phones, allowing coverage of very large areas, Swager says.

Incorporating the sensors into food packaging could help to avoid food waste, by detecting metabolites such as ammonia that could indicate the quality of raw food or prepared meals.

The CARDS could also be incorporated into dosimeters to help monitor worker safety in manufacturing plants by measuring how much gas the workers are exposed to. 



LED strobeoscope

Due to its configuration with 200 high-performance LEDs, the Rheintacho Strobe 7000 LED offers powerful light intensity. The high-performance stationary LED strobeoscope's powerful light output and homogenous illumination make it suitable for the inspection of XXL-web widths.

The large, homogeneous illumination surface delivers good results even at difficult light conditions, making the unit suitable for a range of measurement, observation and inspection functions. It is especially suitable for demanding applications, such as those in the printing industry. With an adjustable flash duration and adjustable light intensity, the Rheintacho Strobe 7000 LED will find the optimal setting for sharp images at every application.

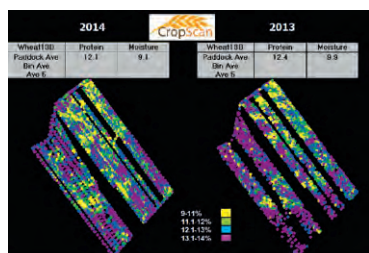
The strobeoscope can be controlled directly by the trigger signal of the existing system without the need for additional control units or by various external control devices. When using these trigger options simultaneously, it is possible to easily alternate between the signal inputs by using the switch on the reverse side of the strobeoscope. With this feature it is also possible to switch to solid light when the machine is at standstill.

SI Instruments

www.si-instruments.com

Real-time paddock maps for grain analysis during harvest

Next Instruments CropScan 3000H On Combine Analyser measures protein, oil and moisture during harvest of grains



and oil seeds. The data is collected every 7 - 11 s in the paddock, and then allows the farmer to view a real-time paddock map for protein and oil in the cabin.

The data generated by the system is stored in the

onboard PC as well as being sent to the cloud. A record of each bin load is sent to the CropNet website where the farmer can access and see the data in tabular and plot formats.

The farmer can also allow access to buyers and grain traders who can then buy parcels of grain stored on-farm.

The paddock maps allow farmers to blend for protein as they strip the grain. By identifying the sections of the paddock that produce >14% protein versus 11% protein, the farmer can combine both sections within the one bin load, enabling them to blend the wheat to meet prime hard grade consistently.

Next Instruments Pty Ltd

www.nextinstruments.net

TIGHTEN YOUR EFFLUENT CONTROL AND MONITOR YOUR PRODUCT LOSS WITH HACH BIOTECTOR TOC ANALYSERS!



- Certified uptime of 99.86% with no calibration between services
- Not affected by salts, fats or oils

Contact Hach today!

AU: 1300 887 735 | hachpacific.com.au
NZ: 0800 50 55 66 | hachpacific.co.nz





HPLC method for determination of benzo(a)pyrene in meat products

Thermo Fisher Scientific has developed an efficient high-performance liquid chromatography (HPLC) method with fluorescence detection for sensitive and rapid determination of benzo[a]pyrene in meat products.

Benzo[a]pyrene is a polycyclic aromatic hydrocarbon compound formed from the incomplete combustion of organic matter. Due to its potential carcinogenic and mutagenic properties, most countries have regulations limiting its concentration in drinking water, food additives, cosmetics, workplaces and factory emissions. Some samples such as sausage and preserved ham have too complex a matrix that interferes with the separation of benzo[a]pyrene, thus preventing use of a routine HPLC method and making benzo[a]pyrene quantification difficult.

This method uses online solid-phase extraction (SPE) for sample preparation instead of the commonly used offline SPE method. According to the company, this approach reduces costs associated with the SPE cartridge, labour, time, and reagents; and results are more consistent because the clean-up step is performed by automated online SPE rather than manual offline SPE.

Thermo Fisher Scientific
www.thermofisher.com.au

Oxygen transmission rate test instrument

Mocon has developed an oxygen transmission rate test instrument that accurately and repeatably measures barriers to 5×10^{-4} cc/(m² x day), which is 10 times lower than previous levels, according to the company. The OX-TRAN Model 2/21 10x system measures films or packages at precise temperature and relative humidity conditions.

The system is suitable for a variety of applications which require increasingly better oxygen barriers. Film and resin manufacturers, converters and packagers in industries such as electronics (OLED and thin film), solar, vacuum panel, food, pharmaceutical and medical device may benefit from the system's greater sensitivity for measuring ultra-oxygen transmission characteristics of films and packages.

The company has engineered a number of improvements into the system, including the improved proprietary COULOX coulometric sensor which counts each oxygen molecule permeating through the film.

Additional improvements include: improved electronics to reduce system noise level; TruSeal film cell design to eliminate edge leakage and give a good seal; and improved temperature stability.

Each module contains two test cells and is available in master and satellite configuration. The 10x module connects with all other modules in the OX-TRAN 2/21 family of transmission rate test systems.

The system complies with ASTM D3985.

Inspection Systems Pty Ltd
www.inspectionssystem.com.au



Food testing laboratory

ALS Food focuses on delivering high-quality food testing services and enhancing its reputation within the food and beverage industries. The company is committed to providing a responsive and flexible analytical service to meet clients' needs, with the aim of establishing productive, long-term relationships.

The Australian food laboratory operations employ more than 120 professional and support staff. People and knowledge are key priorities, with internal development program run to foster both technical and business skills.

ALS Global
www.alsglobal.com



Benchtop freeze dryers

John Morris Scientific has announced the release of two Martin Christ benchtop freeze dryers: Epsilon 1-4 LSCplus and Epsilon 2-4 LSCplus. These are high-performance, universal laboratory and pilot systems for lyophilisation of solid or liquid products in ampoules, vials, glass flasks, plasma bottles or dishes.

The two models share a geometrical likeness with large production machines and use similar temperature-controlling systems. They are capable of operations including: prefreezing products on temperature-controlled shelves; freeze drying (sublimation) of products according to preselected desired time, temperature and pressure profiles; and final drying of products.

The units have an internal ice condenser temperature with a minimum of -55 and -85°C respectively and are available with one shelf with 0.11 m² useable surface area.

New cooling techniques provide for shelf temperatures of -45 or -70°C (prefreezing) in the compact chamber. This permits safe freeze drying of extremely sensitive pharmaceutical and biotech products, such as amorphous structures with a low glass transition point.

John Morris Scientific Pty Ltd
www.johnmorris.com.au

TOC analyser

Hach BioTector B7000 TOC analysers, used as a management tool, provide food and beverage manufacturing customers with key information required to reduce wastage.

The analyser can be used to reduce product lost during processing, provide early warnings of plant issues, enable strong process insights/control and allow optimisation of energy and water consumption - all contributing to increased overall plant efficiency and profitability. By reducing product loss and providing quantifiable visibility into organic loadings in industrial wastewater, the site's environmental footprint can be improved and discharge limits can be met.

The product provides maximum uptime and reliability due to a self-cleaning oxidation technology that handles difficult samples even in challenging applications involving salts, fats, oils, greases, sludge and particulates.

Configurations are available for TOC, TOC/TN and TOC/TN/TP.

Hach Pacific Pty Ltd
www.hachpacific.com.au



Portable field incubator for testing bovine milk

Charm Sciences has released the Charm Field Incubator that enables portable testing for bovine milk.

The incubator is a portable, handheld, battery-operated device. The unit, which can be used to run any Charm ROSA test, has a 10- to 24-hour running time and can charge through USB connection or optional wall adaptor.

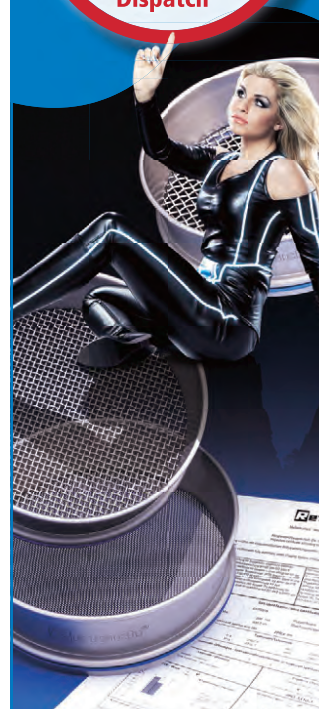
Green and red indicators identify proper temperature and test completion, and the device is easily adjusted for temperature and calibration.

Merck Millipore
www.merckmillipore.com

Retsch

WIDEST
RANGE OF
SIEVING
EQUIPMENT
IN THE
WORLD

Retsch
Test Sieves
CALL
1300 720 485
Same Day
Dispatch*



*subject to stock availability

All commonly used
test sieves are
in Stock
in Australia

MEP
instruments
The right chemistry.

MEP Instruments Pty Ltd
 Australia Tel 1300 720 485
 New Zealand Tel 09 477 0620
www.mep.net.au

TESTING



Could bisphenol S be more harmful than bisphenol A?

Bisphenol S (BPS), which is often used to replace bisphenol A (BPA) in consumer plastics, may in fact be more harmful than BPA itself, new research suggests.

When exposed to BPS at levels lower than those which humans would encounter, zebrafish experience an increase in neuron growth in the hypothalamus by 240%. In comparison, when exposed to BPA at similar levels, the neuron growth in the fish's brains was recorded at 180%. Both BPA and BPS exposure have been associated with hyperactive behaviours in zebrafish larvae.

"The two important findings of this research are, firstly, that exposure to very low concentrations of BPA, similar to environmental concentrations, produce more change in zebrafish development than exposure to higher concentrations. Secondly, that the BPA-analogue, BPS, produces similar effects," said Professor Ian Rae, an Honorary Professorial Fellow at the University of Melbourne.

"The apparent non-linear response merits further clinical work but is unlikely to change the minds of regulators, most of whom have judged that humans' exposure to BPA is generally below levels of concern. It's a popular field of research, however, and we can expect to see more publications like this that are scientifically interesting but without impact on regulators. Such results will sell well in some quarters and thus increase pressure on manufacturers to seek alternatives to BPA.

"The molecules of BPA and BPS are similar in shape and polarity and so likely to bind to the same receptor and, unsurprisingly, produce similar effects. So while BPS seems to be the alternative of the day, its effects have not been widely investigated and it could come under pressure, too."

"The effects in this study were seen at low doses of bisphenol A/S exposure (matching the concentrations of bisphenol A seen in a local river) but not at a higher concentration.


This is important as many endocrine-disrupting chemicals do not follow linear dose response curves (ie, effects seen at low concentrations may differ from those seen at higher concentrations) and this means that extra caution needs to be taken by regulatory authorities when they determine the tolerable level of exposure for chemicals such as bisphenol A. Also, the fact that similar effects were observed following exposure to the bisphenol A replacement, bisphenol S, is concerning and warrants further research," said Dr Anna Callan, a lecturer in the School of Medical Sciences at Edith Cowan University.

But not all experts agree that the findings are significant.

"This study is not applicable to human environmental exposures. The concentrations of BPA, while low, are still much higher than humans would be exposed to," said Dr Ian Musgrave, a senior lecturer in the Faculty of Medicine at the University of Adelaide.

"The concentrations of BPA the zebrafish embryos were exposed to that resulted in hyperactivity were roughly 1000 times higher than found in the blood of children with high exposure to BPA. Furthermore, the zebrafish embryos were directly exposed to the BPA at times when the major degradation pathway of BPA has not yet developed.

"Human embryos at a similar developmental stage are protected by the placental barrier and the mother's enzymes that remove BPA from the circulation. Human embryos would never be exposed to the kinds of BPA levels in this experiment. While a very interesting paper, it is not cause for alarm."

The study, Low-dose exposure to bisphenol A and replacement bisphenol S induces precocious hypothalamic neurogenesis in embryonic zebrafish, was published in the journal *PNAS*. 

bulk handling





Automated loading and unloading of trucks

Flexible loading system saves time at PepsiCo

There are no manned forklift trucks driving about loading truck trailers with boxes of chips at PepsiCo's Broek op Langedijk site in the Netherlands. Instead, the recently installed Joloda loading system saves 30 minutes/load as it pushes 42 pallets of chips into an extra-long truck in one fully automated operation. The Flat Floor Trailerskate Dock flexible loading system, the result of close collaboration between the loading specialist Joloda, the food group PepsiCo, the logistics provider Kühne + Nagel and the truck manufacturer Heiwo, features sensor intelligence from SICK as standard.

Speed is the key competitive advantage in the world of fast-moving consumer goods, accelerated by e-commerce. That is why companies are always searching for new ways of automating operational processes to meet the requirements of 'just-in-time' philosophy. A prime example is PepsiCo's fully automated loading system at Broek op Langedijk in the Netherlands.

Reduced loading time

The PepsiCo loading bay is buzzing with activity. "Normal trailers and extra-long trucks are constantly being loaded and unloaded here. They are used for the shuttle to the Kühne + Nagel warehouse in Utrecht," said Wouter Satijn, sales

director at Joloda Group. The extra-long trucks (also known as Eurocombis) have a 21.5 m load bed - big enough for 42 pallets. "The driver just has to connect his Eurocombi to the loading bay control system and the loading system does the rest," explained Satijn.

Distance measurement allows for flexibility

In the warehouse everything is geared towards just-in-time processing: the automated palletiser system ensures the individual boxes are placed in perfect alignment on the pallets. Each pallet is then taken to the Joloda automatic dock. Wouter Satijn explained, "The pallets are arranged in three groups: 16 pallets, then 10, then 16 again on the Trailerskate conveyor.



“When the roller gate on the auto dock opens, two bracket-mounted SICK DT500 long-range distance sensors come down. They measure the depth of the trailer and check whether the trailer is correctly equipped. Distance measurement is crucial, because normal 13.6 m trailers are loaded and unloaded here as well as the extra-long Eurocombis: it is important to Kühne + Nagel to be able to decide at the last moment whether whatever trailer is nearby should collect a load from Broek op Langedijk.” Satijn continued: “If the SICK sensors detect a depth of 13.6 m, then 16 plus 10 pallets can be loaded into the vehicle. If they detect a depth of 25.5 m, the system pushes all 42 pallets into the loading tunnel of the Eurocombi.”


Gliding smoothly with compressed air

The actual loading of the trailer uses the risor plate technology developed by Joloda. Satijn said: “The stationary auto dock and the trailer each have a system with compressed air hoses under the rails. While there is no air in the hoses, the rails lie slightly lower than floor level. Then, when compressed air is introduced, the risor plates rise to floor level. On the rails there are long ‘skates’ on which the pallets lie.” Satijn continued: “The compressed air makes the pallets float a few centimetres above the conveyor and allows them be moved

into the truck. Once the pallets have reached the correct position in the trailer, the pressure in the hoses is dropped and the rails sink back below floor level.”

SICK technology fulfils an important role here, too. Four PBS pressure sensors monitor not only the pressure while the pallets are being lifted, but also the reduction in pressure. “This ensures that the skates are not retracted until the system is no longer pressurised,” said Satijn.

More space, more safety

The automated loading system saves an enormous amount of space in comparison to the use of manned forklift trucks: space which can now be used flexibly for other purposes. This also improves safety at work and personal protection. In addition, there is hardly any mechanical load on the trailers because of the compressed air lifting system. “It is very important to us that all of the details satisfy our quality requirements. We only want the very best. That also applies to components we purchase from third parties. This is why we choose reliable market leaders such as SICK. Plus, it is a great advantage that SICK thinks proactively when problem solving,” summarised Wouter Satijn. 

SICK PTY LTD
www.sick.com.au

Do you need a PREMIUM fast action door?



See our products
at AUSPACK, exhibited by
Premier Door Systems
Stand 622



EFAFLEX
Safe High-Speed Doors

Web www.dmf.com.au
Email sales@dmf.com.au

Free call 1800 281170

PREMIER

DOOR SYSTEMS


dmf
INTERNATIONAL

Logistics management software update

Emerson Process Management's Syncade Suite manufacturing execution system now provides terminal managers with increased security tools and improved control of material movements and inventory. Version 4.9 of the Syncade Logistics module allows operators to manage the storage and distribution of materials transported by railcars, trucks, ships, barges and pipelines.

To safeguard material and operate efficiently, terminal managers need visibility to the status and stock ownership of their tanks. The module enables operators to see both source and destination tank values to verify that moved quantity is accurately and safely stored and delivered. The module also facilitates tighter control of inline blending, tank swing changeovers and accounting at the line segment level for precise stock allocation.

The module's robust material tracking and automatic generation of bills of lading and other required documents make it easier to provide customers and regulatory agencies with clear documentation of the materials during transit and storage.

Syncade Logistics helps ensure the security of a terminal by controlling access to the physical facility and materials and by capturing verification of railcars and trucks via security cards, biometric controls or RFID tags. This transactional information is archived and can be quickly retrieved for review or analysis.

Emerson Process Management
www.emersonprocess.com.au



Teflon-slatted conveyor belt for par-frying

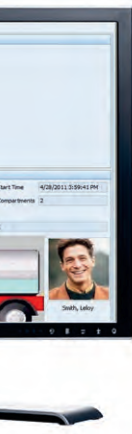
Cambridge Engineered Solutions has developed SLATrak, a Teflon-slatted, non-stick surface conveyor belt designed for the par-fried process of lightly breaded food products such as chicken nuggets, panko- and tempura-battered seafood, onion rings and other vegetables.

The conveyor is used to carry food products approximately 1 m inside the fryer to allow the breading to fry and crust without sticking to the belt. It then transfers to a standard metal belt inside the same fryer to finish the frying process.

The belt is available in industry standard widths and is suitable for temperatures up to 260°C. All materials are FDA-approved, according to the company.

The belts can run on processors' existing conveyors and do not require retrofits or changing of sprockets.

Cambridge Engineered Solutions
www.cambridge-es.com



Forklift reach truck

The Mitsubishi RBF-20CA forklift reach truck is suitable for the food and manufacturing industry, where warehouses are generally busy and floor space is at a premium. Hydraulics, travelling and power steering functions have been integrated into one AC control system. The simplicity of the controls allows the operator to be more focused and productive. Visibility is also significantly enhanced, with the free lift cylinder mounted diagonally and away from the mast symmetry, allowing for unhindered forward view.

AC motor technology delivers a smooth and powerful drive, while 360° steering gives the truck a tight turning radius, creating space efficiency in busy warehouse environments. The truck is available in three different models with a maximum lift height of 10 m.

MLA Holdings Pty Ltd
www.mlaholdings.com.au



Horizontal motion conveyor

The tna roflo 3 conveyor is a horizontal motion distribution system whose low force operation minimises product loss, offering speed and direction control to optimise performance.

Particularly suited to heavy coated products, as seasoning does not build up on the pans, the conveyor has an easy-to-clean design to help manufacturers reduce waste and comply with HACCP and QA standards.

TNA Australia Pty Ltd
www.tnasolutions.com

Improving Materials Handling Efficiency Protect Product Purity



Eriez offers a broad range of magnetic separators for the food processing industry, ranging from simple magnetic grates to powerful high-intensity magnetic filters for the ultimate in product purity.

Magnetic separators and Metal Detectors are the first line of defence to remove unwanted steel in the process flow that can damage equipment or contaminate product.

- Fit virtually any type of process including gravity or free flowing, belt or conveyor fed and liquid lines
- Each Magnetic Separator comes in a range of strengths to ensure target metal is removed
- Extremely sensitive metal detectors safeguard against both ferrous and non-ferrous and stainless steel metal contaminants

A newly released Food Industry Equipment Brochure is available

Visit www.eriez.com.au



**ERIEZ MAGNETICS
PTY LIMITED**
ACN 008 451 885

**21 Shirley Way
Epping VIC 3076**

**Phone: 03 8401 7400
Email: sales@eriez.com.au**

Work begins on NSW's largest prepacked salad facility

Food manufacturing facility specialist Wiley has secured a contract for what will be NSW's largest prepacked salad facility. OneHarvest engaged Wiley to create an early concept design for the multimillion-dollar project, which is located in Smeaton Grange, Camden.

Designed to supply supermarkets across the east coast, the facility will process a variety of salad leaves including spinach, lettuce, rocket and kale, as well as salad mixes and kits. These will predominantly be sold under supermarkets' own-brand labels.

"[Wiley's] unique expertise and track record of assisting us in delivering projects in Queensland and Victoria drove our decision to engage their services again for the design and construction of our first facility in New South Wales," said OneHarvest Managing Director Sam Robson.

"This project will enable OneHarvest to service the largest market for prepackaged salads in the country with fresher product, owing to the facility being closer to the freeway network and our retail customers' points of distribution."

Wiley and OneHarvest first worked together on OneHarvest's processing facility at Wacol in Brisbane. Earthworks, civil works and drainage are now underway on the new site. Completion is planned for October 2015.



© Joephotostudio/Dollar Photo Club

OLI VIBRATORS

EFFICIENT DISCHARGE SOLUTIONS



OLI has created a product line of pneumatic vibrators, aerators and electric vibrators specific for flow aids applications. The products have been tested and certified to meet the most stringent, international standards. Reliability and high availability from over 50 subsidiaries worldwide make OLI the international leader in vibration technology.

WWW.OLIVIBRA.COM



DESIGNED FOR MILLING:
MAX RELIABILITY MOTOVIBRATORS



OLI Vibrators Pty Ltd.
Factory 4, 3 Gatwick Road
Bayswater Vic 3153 - Australia
Tel.: +61 3 8761 6911
Fax: +61 3 8761 6922
www.olivibrators.com.au

Ultralight food conveyor belt

Ammeraal Beltech has launched the uni ULB (Ultra Light Belt), a belting solution which combines light weight with strength and cost savings.

The premium-quality plastic belt has been developed as an all-round economical solution for light to medium-duty applications,

particularly in foods, and especially where hygiene and ease of cleaning are important. It is particularly suitable for raw foods such as poultry and fish, as well as sandwiches and ready meals, French fries and packaged salads.

The belt is easy to remove and re-use, making maintenance much easier, and its light weight also makes handling much less labour intensive.

The belt is compatible with a wide range of pre-existing accessories including flights, sideguards and sprockets. It is suitable for A to B transport conveyors at a loading of less than 1000 kg on a 1 m wide conveyor, and pro rata for narrower-width belts.

Ammeraal Conveyor Belting P/L

www.ammeraal.com.au



Relative humidity and temperature sensor

The Michell I7000 Hygrosmart Relative Humidity and Temperature sensor claims

to provide highly reliable and accurate measurements of the key parameters for ensuring food is kept fresh and in good condition. The sensor is accurate to $\pm 2\%RH$ and to $\pm 0.2^{\circ}C$ and it gives long-term stability with less than 1% RH drift over a year to maintain the ideal storage conditions over time.

The robust sensor's small size makes it easily interchangeable. It has a simple 'plug and play' system, which means that users can maintain the accuracy of their RH and temperature measurements in the storage units themselves.

The modules are supplied fully calibrated, with a traceable calibration certificate.

AMS Instrumentation & Calibration Pty Ltd
www.ams-ic.com.au



Corrosion protection for aluminium drives

NORD Drivesystems manufactures permanently corrosion-resistant drives using the nsd tupH sealed surface conversion system. Aluminium drives are given a smooth, ultrahard surface that is unaffected by blows or scratches. The drives are tested in applications with a maritime atmosphere. They are also tested for resilience against blistering per ASTM D714, corrosion per ASTM D610-08 and scribe per ASTM D1654-08 according to DIN EN ISO 2409.

Additionally, the ASTM D3170 Gravelometer test showed no loss of adhesion or chipping and the ASTM B117-09 salt spray test according to DIN EN ISO 9227 produced no corrosion after 2000 h.

nsd tupH is FDA approved for food applications and treated systems resist cleaning agents in the pH2 to pH12 range. The system is available for all aluminium-enclosed drives, including four gearbox families, smooth-surface motors and distributed drive electronics units.

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

Delivering you optimised vibratory feed solutions



- Designed to maximise production efficiency & reduce maintenance costs
- Superior vibratory equipment for the food & materials handling industries
- 40 Years application and industry expertise
- Australian designed and manufactured

Give us a call to discuss your needs today on (03) 9800 6777
 Or visit us at www.enmin.com.au

enmin
 VIBRATORY EQUIPMENT
 To get it right, get enmin!

METERING CONVEYING ELEVATING WEIGHING COUNTING SCREENING SIZING

Falling dollars = rising robotics

Shermine Gotfredsen, General Manager, APAC, Universal Robots

A new generation of lightweight robots could help Australian food manufacturers take advantage of the falling dollar.

Local food manufacturers will be looking to take advantage of improved global price competitiveness, after more than five years of dollar-driven gloom, by ramping up production for the export market.

However, many manufacturers will have to meet this new and increased need without the necessary production infrastructure in place.

During the past few years, the high Australian dollar has seen a significant reduction in production capabilities in Australia including factory closures and employee layoffs. At the same time, some markets including Europe and Asia have experienced record levels of investment in production capability and the lowering of operational costs.

With price competitiveness now a reality, local food manufacturers will have to work out how they can 'ramp up' in such a competitive marketplace, without the key infrastructure that had supported the industry in years past.

It's here that the new generation of compact industrial robots could help Australian manufacturers with an eye for the export market.

During the past few years, robotic technology has significantly improved in design and functionality, while at the same time becoming affordable even for smaller manufacturers. Investing in this technology today could help meet increased demand without driving up operational costs.

Introducing the next wave of food manufacturing robots

The modern automated food production line bears little resemblance to that of past generations. The focus of today's technology is smaller robots that are easily programmable, lightweight and often working safely alongside human employees.

Weighing approximately 20-30 kg, these robots can be moved around a food manufacturing facility with ease. Their multi-axis movement and intuitive programming means they can take on a much wider range of tasks than ever before.

It's these kinds of attributes, as well as the price tag, that make them very appealing even to smaller food manufacturers. Improved productivity and low overhead means manufacturers are able to get a return on investment in less than 195 days.

The new production line worker

Today's lightweight robots are able to complete tasks on the production line that would normally be performed by several employees.

Tasks such as processing and packaging or pallet stacking can be performed thousands of times a day. These robots thrive in the repetitive, constant environment of a production line.



For a food manufacturer looking to quickly take advantage of the falling dollar, this productivity hike is quite compelling.

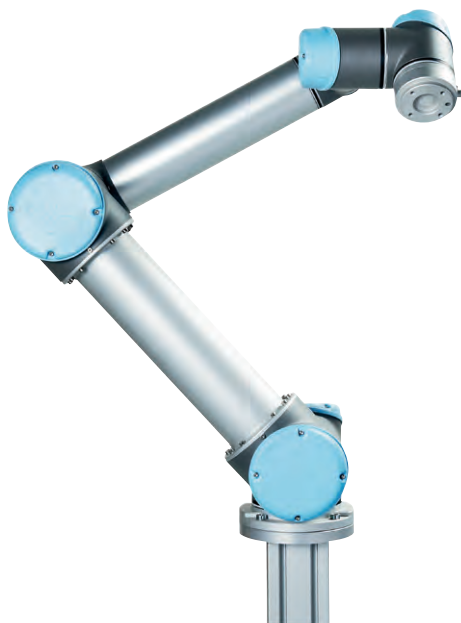
Importantly, they can complete these tasks extremely accurately, an important asset for quality control in food manufacturing. The new lightweight industrial robots can also operate within an error margin of plus/minus 0.1 mm, which significantly reduces the time employees spend on quality checks and prevents the wastage of food or packaging, for example.

Similarly, the consistent precision that robots deliver eradicates lapses in employee concentration, reducing errors, eliminating workplace accidents and increasing consistency of quality.

Safety first

An important factor for every food manufacturer is safety - particularly in environments where a robotic workforce operates in close proximity to its human counterparts.

Safety features such as sensors to detect an opposing force or obstruction in the robot's field of operations ensure that



collaborative robots function safely and efficiently without causing harm to humans. By doing the monotonous and, in many cases, the heavy-lifting and potential dangerous tasks, robots can enhance the workforce's safety level while at the same time increasing productivity.

An affordable opportunity

The change in the local exchange rate is undoubtedly heartily welcomed by most local food manufacturers. The ability to respond quickly to this windfall, without overburdening operational budgets, will be the industry's focus during the next few months.

Lightweight robots provide an opportunity for local food manufacturers to increase production capacity, while at the same time maintaining production line flexibility and safety in the workplace. Investing in lightweight robotics today could provide the local food industry with a strong production platform for many years to come.



Universal Robots APAC
www.universal-robots.com

WHEN SIMPLICITY MEETS PRODUCTIVITY

The new RBF-CA sit-on reach truck from Mitsubishi: Easy to operate, excels in productivity, creates space efficiency in busy warehouse environments.

MITSUBISHI FORKLIFT TRUCKS

www.mlaholdings.com.au OR CALL

131

6

5

2

JMP

Palletising
and
Packaging
Systems



JMP
engineering

- ▶ Packaging Systems
- ▶ Palletising Systems
- ▶ Conveyor Systems
- ▶ Stretch Wrapping
- ▶ Service

Any Product Any
Speed
Any Mix Any
Where



JMP Australia
Ph +61 3 9460 1219

JMP New Zealand
Ph +64 9 828 3304

www.jmpengineering.com

Bacardi-Martini: fewer bottling lines, greater productivity

Bacardi-Martini prepares and bottles vodka, tequila, liqueurs and vermouths in Beaucaire, southern France. Twenty different products and 24 glass bottle formats, from 200 mL to 2 L, are processed at the site. They engaged Gebo Cermex to assist with the establishment of new lines and to improve productivity.

After study, the solution proposed by the Gebo Cermex team made it possible to switch from six to two lines, with a high-speed line for large production runs and a high-flexibility line for small and medium-sized ones. A two-thirds reduction in the number of lines was accompanied by an increase in the number of bottles produced per minute on the site.

Olivier Goffin, Director of the Beer, Wine and Spirits market for Gebo Cermex, says: "We worked on optimising the efficiency and reliability of the site while reducing the overall footprint, which improves the circulation of people and product flows. It was by reasoning according to the length of the production run, and no longer according to the brand, that we were able to achieve this result, which enables smoother production with far fewer downtimes."

Existing equipment retained

Much of the equipment being operated on pre-existing lines was retained and reinstalled on two new lines, including the depalletising, rinsing, filling, capping and palletising equipment.

"Our approach was intended to be highly pragmatic, taking into account the expectations of speed and flexibility along with the desire to retain and re-use existing equipment in order to comply with the budgetary framework. The overall layout of lines to factor in the constraints of the existing site was another strong point in the Gebo Cermex approach," says Mario Trigueiro, Gebo sales engineer for the Beaucaire site.

Two filling machines per line

The solution's effectiveness was enhanced by the installation of two filling machines on each line. For products such as vermouths which require a lengthy machine cleaning and sterilising process, the second filling machine takes over when the recipe is changed.

Line 2 has also been equipped with a new labelling machine selected for its ability to



© freemagies.com/profile/dreamjay

apply labels to the front, neck or back of the bottle using up to eight label references.

Gebo conveyors for all flows

Conveying and management of the accumulation of empty containers upstream from filling; of full containers through to packing; and of cases through to the palletiser is performed by Gebo conveyors and accumulation tables. Each unit is connected to a modular central architecture which groups together all parameters and manages the interactions between equipment. Conveyors installed at the Beaucaire site are also servodriven, for minimum power consumption.

A Cermex automated line end for both lines

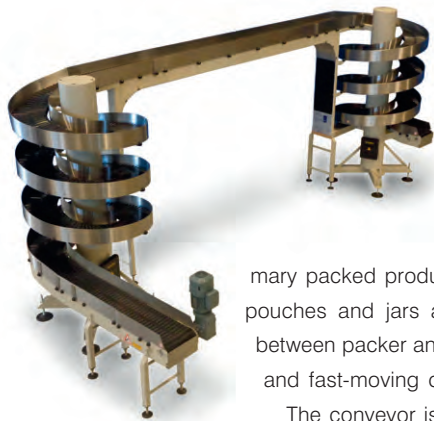
Line 1, at high speed, includes a pressureless combiner which operates at up to 300 bottles/min. Line 2, boasting high flexibility, merges products onto one line without applying pressure at a rate of 150 bottles/h.

To manage the speed of line 1 and the flexibility of line 2, an 'AN' pick and place case-packing robot was installed. At each cycle, the numerical axis case packer grabs 36 bottles and places them six per case in six cases simultaneously.

Upstream from the robotic case packer, a case erector forms the case, while downstream the case gluer seals the top flaps. An inkjet printer applies the barcode and the cases are conveyed by a spiral elevator to the palletiser.

The EITTM (efficiency improvement tool) developed by Gebo collects real-time operational information on each of the line's components, to enable operators to identify the primary causes of stoppages and resolve them quickly, and to provide data for production reports.

Allied Industries Pty Ltd
www.alliedindustries.com.au



Spiral conveyor

The Ambaflex SpiralVeyor Portal is a spiral conveyor suitable for handling pri-

mary packed products like flow packs, cartons, pouches and jars as well as secondary packs between packer and palletising for foods, drinks and fast-moving consumer goods.

The conveyor is designed to shorten supply paths and enable easy access to equipment. The line consists of two spirals, one up, one down, and an overhead bridging conveyor element suspended in between. The system can be configured in various ways to suit the application and space available.

In addition to the standard model, the Portal-ONE model contains only one belt that goes all the way from the infeed of the up spiral to the outfeed of the down spiral, eliminating product transfers and reducing jams.

The conveyor offers improved safety by not creating areas that are a struggle to access or reach. The system does not need to be set to the product size, product damage is reduced and there is no need for safety fences to catch falling items.

AmbaFlex

www.ambaflex.com

GS1 certified B2B platform



Prospecta Software's ConnektHub is a B2B platform that simplifies product data management and B2B transactions between trading partners across the supply chain process for organisations in the food and grocery, retail and office supplies industries.

The product has been certified by GS1 Australia for interoperability with trading partners using GS1net, a data synchronisation solution allowing trading partners to accurately and automatically exchange product and pricing data.

The system helps suppliers, distributors and buyers to synchronise product data and exchange e-commerce transactions with trading partners across the world without any data discrepancy. It assists in maintaining and uploading data to the GS1net catalogue, to ensure that suppliers comply with their customers' requirements of data integrity and data accuracy across the supply chain process.

Prospecta Software Australia Pty Ltd

www.prospecta.com.au

Powder Handling Systems

Concept to commissioning

Ready for a System Upgrade, or new Plant?

Below are some of our building blocks that we use in system design.

See us Stand B22 at Auspack

Breaking Sacks -

Sack Emptiers

Easy to clean sanitary design. For flours, sugars, spices, cosmetics, seeds - almost any powder or granular material.



New Sievmaster with Check Sieving

Moving and storing Powders -

IBC's

Intermediate Bulk Containers are transport and metering items in process work. The large valve in the base ensures controlled feeding and complete discharge.



IBC showing cone valve

Conveying Powders -

Pneumatic Conveying

Moving bulk powders and granules by vacuum, lean or dense phase systems.

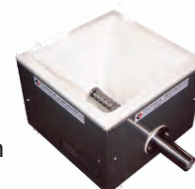


Vacuum Conveyor

Feeding Powders -

Flexible Wall Feeder

For accurate controlled batch feed or continuous process feeding, automatically.



Mid size feeder

Moving Objects -

Vacuum Assisted Lifting

For safe and effortless moving of sacks, cartons, pails etc. Eliminates muscular injuries.



Lifting a 20 kg sack

The Professionals in Powder Handling Vacuum lifting, and Packaging.



KOCKUMS
Bulk Systems

Head Office VIC - Tel: (03) 9457 8270

www.kockumsbulk.com.au



Triple-tine forklifts cut congestion at CHEP



CHEP service centres are rolling out a number of measures to reduce wait times.

Following a successful trial at CHEP's Gillman Service Centre in South Australia during 2014, the pooled equipment provider is looking to roll out triple-tine forklift trucks to its metro operations nationally in 2015.

According to Mike O'Flaherty, regional operations manager, load times have reduced by an average of 10.5 minutes compared to loading with a double-tine forklift.

"It has certainly decreased the wait time customers' trucks spend in the yard, which delivers cost benefits. I've been here [at Gillman Service Centre] for 23 years and this is the least congested I've ever seen the yard in this normally busy lead-up to Christmas," O'Flaherty says.

"By using a triple pallet handler attachment, we are now able to carry three stacks of pallets in a movement compared to two stacks with the double pallet handlers. "This means we achieve a 50% improvement in productivity and a 50% improvement in load/unload times."

CHEP worked with the manufacturers on the forklift truck specs and on building an attachment that handles three stacks of pallets safely and is strong enough to cope with the 50% increase in weight. The five-tonne fork truck is small enough to manoeuvre around a CHEP yard and has the flexibility to pick up one, two or three stacks of pallets/product at one time.

"The driver acceptance has been really good. Truck drivers have been commenting on the faster load times," O'Flaherty says.

The company has also fitted the forklift trucks with larger gas tanks, cutting filling time down to once per shift and saving up to 30 minutes per forklift. CHEP Logistics trucks are now loaded overnight to reduce yard congestion during the day.

*CHEP Australia
www.chep.com*

SCHMALZ

MILLSOM
MATERIALS HANDLING

MODULAR END EFFECTOR & SOFT PACKAGING PADS



Flexible suction pads combined with the light weight and modular **end effector** suitable for **high speed robots**.

FREECALL
1800 992 211
components@millsom.com.au
www.millsom.com.au



Scan the QR
code to see the
video of the
system in use.

Vehicle-mount computer with improved visibility

Honeywell's Thor CV31 vehicle-mount computer features the Microsoft Windows Embedded Compact 7 operating system and claims to improve driver visibility by more than 20% when compared with other devices. The computer is suited to warehouse operations, including cold storage environments, because it displays supply chain workflow information in a way that is in easy view and reach of drivers, without getting in the way, so they can stay focused.

Designed for forklift and other vehicle installation, the computer features a 30 min backup battery and ignition control, which helps boost driver productivity by eliminating the need for reboots and idle time reconnecting following vehicle battery swaps.

The device is multimodal, capable of handling complex voice, screen and scan-intensive applications. It is designed to support Vocollect voice-directed workflows and features near-field communication (NFC) technology for headset pairing using Vocollect TouchConnect.

The device is compatible with the mounts, keyboards, accessories and scanners of its predecessor, the CV30.

Honeywell Ltd
www.honeywell.com.au



Smart solution for sharing digital assets in your supply chain

Developed in collaboration with industry, GS1 Australia's SmartMedia is a multisector solution for managing and sharing up-to-date and authenticated images, multimedia files and other product-related digital assets and data with trading partners. It allows trading partners to access all digital assets in one location, saving time and money, and improving accuracy.

SmartMedia is easy to use as it is fully integrated with GS1net and other GS1 Australia services as part of the supply chain process.

Delivering rich functionality, at minimal costs, the solution is applicable in both large and small companies. It also provides consumers with a great shopping experience by giving them instant access to engaging digital content about products.

The advent of online has fundamentally changed shopping

The online revolution has transformed the shopping landscape forever. To succeed in the online world, brands and retailers need shoppers to access not only rich product content, but visually engaging experiences that can assist in the selection and buying process.

In the new retail marketplace, accessibility to product information, product images and other product-related digital content is a survival necessity. Consumers and trading partners expect this information to be readily available, always up to date and authentic.

Brand owners face the challenge of having to support different channels and processes to distribute product images and specifications to trading partners, media outlets, other third parties and even their own internal sales force, creating duplication of effort, low quality and high costs.

The SmartMedia initiative can help businesses meet this online revolution challenge by providing a single source of multimedia and digital assets to share with trading partners.

It is the ideal, low-cost, standards-based industry solution for storing, managing and sharing authenticated, multimedia content. Businesses also have the option of loading content either directly, via third-party solution providers or through the GS1 Photography Service.

The big players are already onboard

Many buying organisations, including Woolworths, Coles, Metcash as well as Bidvest, NAFDA, Ausfec Limited, Food-Traders, OfficeMax, Staples, Office National, HealthShare NSW and SP Health, are now using GS1 Australia's SmartMedia service to automatically access authenticated product images and related digital content from their suppliers.

"Our SmartMedia service is an exciting initiative that will help businesses face the challenges of today's online revolution by providing a single source of visually engaging multimedia and digital assets for the production of printed collateral, websites, point-of-sale (POS), mobile apps and general promotional use," said Maria Palazzolo, CEO at GS1 Australia.

As well as major retailers, many leading FMCG and health-care suppliers, including Colgate-Palmolive, Mars, Nestlé, Procter & Gamble, Simplot, 3M, Cerebos and Unilever, are using SmartMedia as their main solution for the management and sharing of product content and digital assets. One of the benefits these companies have identified is having the option to provide content themselves, via third parties or GS1.

What are the benefits?

Businesses can use SmartMedia as a central internal registry (intranet) of digital assets across different departments. Smart-

Media will also enable companies to provide product images for use across other GS1 services, including GS1net.

1. Reduced time to market

- Reduction of up to one week in the creation of printed catalogues
- Content is always up to date through automation tools
- Image validation to GS1 standards reduces rejection, revisions and delays

- Easy access to product images and digital assets

- A single sharing system to meet the needs of all trading partners in Australia and New Zealand

2. Increased efficiency

- Standardised image formats for all clients
- Basic product information (aligned with GS1 standards)
- Extended product information available, based on item classification

- Ability to customise product data to meet company-specific needs

- Product data integration with GS1net to avoid duplication

- System-to-system integration for uploading and maintaining data and media files

3. Cost savings

- A whole-of-industry solution, supported by key retailers across sectors

- A single fee for unlimited usage, images, product records and users

- A single fee across Australia and New Zealand

- Discounted access to GS1net users

- Integrated with GS1 Barcode Testing and GS1 Photography Service

An integrated approach

SmartMedia works in complete unison with other GS1 Australia services to ensure standardisation, decrease duplication and maximise savings.

GS1net users, for example, will reap the benefits from a fully integrated approach to product data. As products are added,



In the new retail marketplace, accessibility to product information, product images and other product-related digital content is a survival necessity.




updated or end-dated in GS1net, SmartMedia will automatically reflect these changes, saving time and effort in the management of the system. SmartMedia also enables other GS1 Australia services, such as GoScan and Recallnet, to access up-to-date product images and specifications from a user's SmartMedia catalogue.

All brand owners using the GS1 Barcode Testing Service are able to access barcode verification reports automatically via their SmartMedia account.

Companies that choose to extend the GS1 Barcode Testing Service to include product imagery via the GS1 Photography Service will not only save on photography costs, but will also have all product images automatically uploaded into SmartMedia, ready to be shared with trading partners.

To support the exponential growth in the adoption of SmartMedia and the associated demand for photography for the management of digital assets, GS1 Australia has enhanced its GS1 Photography Service to include 3D and 360° photography options and label data collection.

SmartMedia is not only an efficient instrument for cataloguing and sharing product content, it is also a powerful sales tool that can assist any salesforce in the market. Optimised display on tablets and mobile devices equips sales and marketing teams with the ability to showcase product ranges, images, videos, collateral and other promotional material with ease and on the go. 

GS1 Australia
www.gs1au.org

NUTRITION SAFELY PRESERVED.



Dried milk is feeding the world. A preserving and safe approach to the process and conveying of food is ensuring the conservation of quality. Vacuum is an important factor with this. Ask for vacuum technology by Busch! www.vacuum-by-busch.com

Vacuum by



Busch Australia Pty Ltd. | Phone: +61 3 9355 0600 | Email: sales@busch.com.au



Lift trolley

The FoldaLift Trolley from King Materials Handling is suitable for raising products to van, truck, desk or bench height. It can be used as a 'pull back' (2 wheels) or horizontal trolley (2 wheels + 2 castors).

The 500 mm² deck lifts from 165 to 1050 mm high, using a hand 'brake' winch that is completely silent.

The trolley has dual ball bearing 250 mm diameter rear fixed wheels (with

50 mm wide treads to go over grating easily) and 80 mm front castors with brakes. The removable deck can be stowed separately or it can fit behind the fold-up legs, enabling the trolley to be stowed using minimal space in a van or truck. On arrival, the load can be lifted from the van, moved over rough ground or up steps, and finally raised to shelf or desk height.

With 130 kg of capacity, the winch uses a 2:1 lift system, which means lifting the load takes half the effort of a direct lift winch system.

The trolley can rotate on its own axis, enabling it to negotiate narrow passages. The unit weight is 28 kg + 5 kg for the deck. The dimensions are 620 mm (w), 1405 mm (h) and 450 mm (folded depth).

King Materials Handling

www.kingmaterialshandling.com.au

Carton singulator

Dematic has introduced a carton singulator, suitable for parcel sortation and general merchandise operations. It aligns skewed and side-by-side cartons - without the need for manual human intervention - for proper orientation in single file prior to sorting and automatic unloading. Automatic alignment optimises the speed and throughput of the conveyor and sortation system.

The singulator is modular and compact, measuring 7 m in length, and can be retrofitted to an organisation's existing conveyor and sortation system, or implemented with new systems.

Dematic Pty Ltd

www.dematic.com.au

Clearly the best



Industrial Door Solutions

M.T.I. Qualos Pty. Ltd. are leaders in the manufacturing and service of Industrial Transparent Flexible Doors, Insulated Traffic Doors, and Roll-Fast Doors. We produce to the highest quality standard within a full range of industrial doors to suit any door application.

Contact our team today to find a solution for you.

NEW 36pp brochure now available. Contact us to get your **FREE** copy.



M.T.I. Qualos Pty. Ltd.
55 Northern Road, West Heidelberg, Vic. 3081
Tel: 1300 135 539
E: sales@mtiqualos.com.au
W: www.mtiqualos.com.au

Optimising clean-in-place processes

in food and beverage operations – Part II

Benjamin Jude and Eric Lemaire*

Existing clean-in-place (CIP) processes are time intensive and waste large amounts of energy, water and chemicals. In Part 1 of this article the risks and costs associated with inefficient CIP processes were discussed, but new innovations in CIP technology can now allow plant operators to cut costs in an environmentally friendly manner while still conforming to regulatory safety standards.

Recent innovations in technology now enable plant operators to calculate the optimal mix of water, chemicals, temperature and flow required to achieve safety standards while saving energy and reducing the downtime for cleaning, as well as providing tracing and documentation.

Optimisation strategy

While every food and beverage processing plant's requirements are different and details will vary, experience has shown the most successful approach for CIP is based on three pillars:

- Effective and efficient design
- Energy efficiency
- Automation optimisation

An initial audit of each of these elements helps to identify any existing gaps and can establish an execution roadmap for leveraging efficiency and safety gains.

Efficient and effective design

Efficiencies can be gained by introducing smaller, decentralised CIP systems to the plant. This approach reduces the amount of energy required to transport heated chemicals through long pipes to far corners of the production installation. The shorter distances for delivery of detergents, save water, energy and time.¹

Multi-use CIP systems can also generate significant water and chemical savings. For example, a dairy processor in Australia had previously utilised a single-use CIP system. In its old system, all the water and chemicals were used once and then discharged to waste. The system was replaced with a multi-use CIP system that recycles the final rinse water for the pre-rinse cycle. All chemicals used in the system are also

returned and circulated through holding vats, where temperature and conductivity are monitored and automatically adjusted to meet specifications. The new CIP system saved the company AU\$40,000 per year with a payback period of only one year.²

Improvements such as repairing leaks, removing dead legs (stagnant water in pipes that could grow bacteria), installing self-priming pumps to avoid cavitation issues (bubbles or voids, caused by changes in pressure that can lead to early pump wear) and replacing static spray balls with rotating ones for tank cleaning can lead to significant water savings and improved productivity.

Energy efficiencies

Up to 30% in energy savings can be gained by making improvements to inefficient, outdated equipment components that waste electricity and by modifying wasteful business processes. Examples include introducing variable speed drives rather than fixed speed drives so that operators can specify the flow rate within the recipe parameters. On the process side, adjustments can be made by better balancing rinsing time to rinsing volume.

Energy efficiencies can also be gained from a better managed heating and chemical sorting process (ie, the transition phases from water to chemical, and from chemical to water). Software monitoring will prevent fresh water from infiltrating the chemical tank which then avoids having to reheat the chemical tank.

For example, the fresh water should be maintained at a temperature of 10-15°C and the caustic soda tank temperature should be maintained at around 80°C. If the PLCs that manage the CIP are not set up correctly, fresh water can enter the caustic soda tank, lowering its temperature. In order to return



© Jag_cz/Dollar Photo Club

the caustic soda tank to proper operational temperature, some steam (and therefore energy) will be needed to be used.

Automation optimisation

Controls, sensors and alarms are all elements of automation that enable dashboards to be implemented and key performance indicators (KPIs) to be set. Typical KPIs may include cubic metres of water per number of CIPs, water re-use percentage, energy consumed per tonne of product or kilograms of wastewater generated per kilolitre of product.³

Automation improves the quality of information available and allows tighter control of the various parts of the cleaning process (such as creating parameters around the opening and closing of valves and pump operation). It is important that the automation architecture is open; this enables the CIP processing equipment to communicate with other process equipment such as tanks or pasteurisers. Integrated 'status check' ability streamlines the efficiency of the operation.

An efficient cleaning recipe is based on four key parameters (sometimes referred to as the '4T rule'). The process automation system monitors and verifies these four fundamental parameters. By using software to calculate the optimal combination of each parameter, a dramatic reduction in costs can be achieved. The four 'Ts' are defined as follows:

- **Time** - Duration of the cleaning cycles
- **Temperature** - The temperature of the cleaning products
- **Titre** - The concentration of the cleaning products
- **Turbulence** - The speed and impact of liquids projected by cleaning products that need to be generated to perform the cleaning task (1.5 m/s minimum speed)

A good analogy for understanding how the 4T rule works is to compare the process to a human washing greasy hands. Grease on skin needs a particular amount of soap or detergent to remove the grease (titre). In addition, the water needs to be hot enough to react with the grease and detergent (temperature). The hands need to be rubbed together (turbulence) for long enough (time) to be completely clean. If any one of these elements is not quite right, eg, not enough soap, the water is cold or the hands are not washed for long enough, then the hands won't get clean.

In addition to cleaning recipes, system optimisation also hinges on the design and interconnectivity of the pipework, valves, pumps, instrumentation and PLCs. This infrastructure enables the software to communicate within the system. An expert with knowledge of process and instrumentation drawings (PIDs), automation software, as well as food and beverage industry cleaning applications, can simplify the planning, design and operational deployment process.

A PLC/SCADA application with dedicated library for CIP enables an operator to have full visibility over the automation system, and to deploy the correct recipes (implementing the 4T principles) at the right time.

Historical data generated by such a system can help to further optimise the operational parameters. The CIP optimisation software can be configured with different cleaning recipes which can be implemented at the push of a button, making plant operation more flexible. Different recipe settings and cleaning parameters can be aligned with specific pieces of equipment.

The automation software also enables simplified root cause analysis of any issues. The information stored in the library can also be utilised to generate 'proof of clean' reports as requested by food safety authorities.

System performance efficiency can also be tracked and compared to an established benchmark. If any anomalies are observed, the software can drill down into specific elements or sub-processes of the system to help troubleshoot any issues.

For example, an incident was observed recently in an Australian dairy factory. A valve opened to indicate that the cleaning cycle was in progress. To the operators, the system appeared to be functioning properly. The CIP optimisation software discovered later that a pump was not working (therefore, no cleaning fluid had passed through the pipes). The repercussions of not being aware of this problem could have been very serious. However, the problem was averted as the faulty pump was picked up by the automation system report, and the incident was examined in the library to identify the root cause of the problem. Without such a reporting process it is possible that system operators may have realised that a problem existed and re-run the CIP process just to make sure it was clean. However, in this particular instance a re-run would not have helped.

Within such a system, it is possible to define which sequence has the best profile according to the 4T rule (this is called a 'golden CIP ratio') and then compare this optimal ratio to the actual performance each time a cleaning program is run. If the chemical tanks are displaying an incorrect temperature or an incorrect percentage of chemical (titre), or if the duration (time) is not the same, or if the flow (turbulence) is not the same, the tool will decrease or increase the golden CIP ratio according to the difference. The golden CIP is benchmarked at 100.

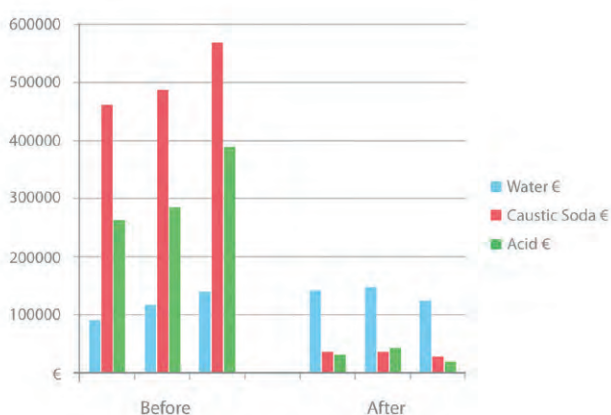


Figure 1: Monthly costs before and after CIP optimisation.

If the number shows 50 it means that there was a significant problem during the caustic soda or acid phase or both. Within the software windows it is possible to check the detail as to which parameter was not performing according to the weight that has been predefined for each key 'T' parameter.

It is also possible to track and manage all chemical waste that goes down the drain. If the conductivity meter indicates that it is in a chemical phase and the drain valve is still open, the software tool has a counter showing the volume going down the drain. To manage this volume it is possible to configure a threshold by colour-coding the counter (such as red or yellow) when it reaches this threshold.

A final check can be made following the last rinse. The software will indicate a 'remaining conductivity' measurement. If this number is high then it means that the final rinse was not well done and that some chemicals are still present in the pipework.

Operational savings

An example from a Schneider Electric customer illustrates operational savings gained from an optimised CIP system (see Figure 1)⁴. In this instance the costs of water, caustic soda and acid were calculated for three months before CIP redesign and for three months afterwards. While the water usage increased

slightly as a result of the optimisation, this was more than balanced out by the dramatic reduction in chemical needs.

An annual savings of approximately €90,000 was realised without taking into account the increase in production uptime or reduction in energy consumption.

Cleaning the cleaning system

Periodically, the cleaning system itself needs to be cleaned. It is important to include this aspect in the CIP design as it requires dedicated pipe and spray balls to be fitted in the CIP tanks. CIP automation software should feature an automatic cleaning recipe that can be activated by the operator at regular intervals. This auto cleaning will remove build-up of cleaning products and residue in the pipework and tanks, therefore enabling the CIP system to operate at maximum efficiency.

Conclusion

Food and beverage manufacturers that seek to increase operational efficiency and cut costs should begin by performing an audit of their CIP system to identify areas for improvement. The audit will help determine whether incremental improvements such as balancing out the line capacity or adding a recovery tank to re-use water need to be made.

A high level of efficiency can be achieved by addressing CIP design, energy-efficiency improvements and advanced process automation. Such an initiative will result in a positive impact on waste, energy cost, and environmental resource issues. Improved food safety and increased production will benefit both peace of mind and profit margins. 🐮

References

1. Source: Bulletin of the International Dairy Federation 401/2005.
2. Source: Eco efficiency for the dairy processing industry.
3. Excerpt from Typical key performance indicators for a dairy processor: Eco Efficiency in the Dairy Processing Industry.
4. Data for this graph was taken directly from a report provided by a Schneider Electric customer in France

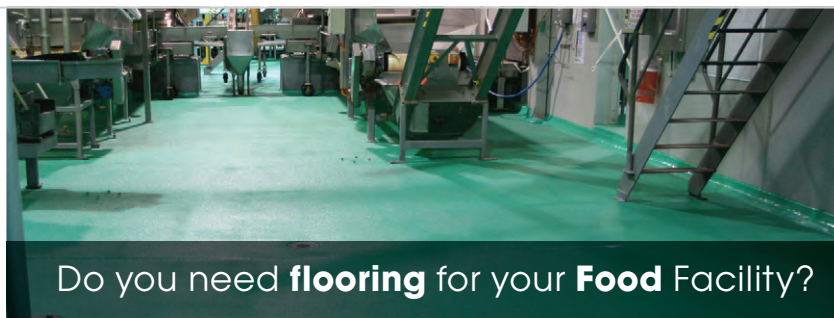
Schneider Electric Industry Business
www.schneider-electric.com

Roxset™

HEALTH AND SAFETY FLOORING
 SLIP RESISTANT • ULTRA CLEAN • IMPERVIOUS



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



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

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



packaging



Suppliers of Shrink Films,
Shrink Sleeves, Food Trays,
and associated
Packaging/Processing
Machinery



Food Trays

With the growth of the ready meal market within Australia, DFC Packaging has set its course to become a major supplier to many of the manufacturers within this part of the food industry. With the growth of the Dual Ovenable Smooth Wall Aluminium tray within this category and the introduction of the Delight Dual Ovenable Plastic Card Board tray our customers are seeing us as a viable and forward moving company. With recent successful visits to overseas suppliers we are also going to expand our range to CPET, PP & PET type trays to increase our offerings to our customers.

DFC Packaging has also expanded its range of machinery and are now able to supply tray-sealing equipment into the Australian marketplace. This machinery is already market proven and we have several machines already installed and running successfully within key market suppliers. With this new range of tray-sealing equipment, we can now offer a total package to the customer by supplying the tray sealer, tray and film as a one-stop shop.

Decorative Shrink Sleeves



DFC Packaging supply printed, plain and pre-form shrink sleeves for many different applications. Printed shrink sleeves provide a 360° decorative labelling opportunity, thereby offering greater shelf presence. Shrink sleeves can be provided in different substrates, including PET, PVC and OPS.

Plain and pre-form shrink sleeves provide a level of tamper evidence and can be perforated for ease of removal by the consumer.

DFC Packaging can provide the total solution by providing not only the sleeves but also the equipment to apply and shrink.



VIC: 22 Summit Rd
Noble Park, VIC 3174
03 9701 2000
03 9701 2022

NSW: 5 Healey Circuit
Huntingwood, NSW 2148
02 8886 2450
02 9625 0288

www.dfc.com.au

Pathway to profit through smart packaging innovations

Active and intelligent packaging technologies are already seen by many brand owners and retailers as a route to increasing profits or improving the bottom line through savings in the supply chain.

Interactive packaging can enhance the consumer experience as well as provide useful insights into customer behaviour and as smart money follows smart ideas, venture capital inflows into active and intelligent packaging seem to be accelerating rapidly.

Delayed ripening and shelf-life extension

Cellresin Technologies' SmartFresh binds to plant ethylene receptors blocking the ethylene effect, thus delaying ripening and extending storage life.

The active ethylene inhibitor can be introduced into a number of packaging formats at no extra cost to the process, including multilayer materials where it is placed in the middle 'print' layer. It is released as a gas via the natural respiration of water vapour from the produce. With an estimated 30% of broccoli lost due to spoilage along the supply chain, it is estimated that, using the most recent figures available, the inhibitor technology could save as much as \$240 million each year.

Printed electronics

Several printed electronics products are ready for full market rollout, including Thin Film's Smart Label, which can combine a temperature indicator, product authentication and expiration date trigger. An example is the MedTracker from TempTime, under joint development with Thin Film. And AdherTech is currently testing its Smart Pill Bottle, which can track and improve patient compliance, with three of the major pharmaceutical companies, as well as online pharmacies.

Self-heating technology

RBC Technologies has developed packaging that can be heated anytime, anywhere without wires, batteries or a flame. The product is being commercialised for use in the DJO Global thermo-formable Rapid Splint with Exothermix product line.

The RBC self-heating technology is based on a derivative of hearing aid battery chemistry, which scavenges oxygen from the air to power the heating reaction. As opposed to other 'self-heating' technologies, the reaction is air activated, making it inherently safe, but also very powerful.

Many other functional packaging-enabled products are in the development pipeline for use in medical device, military and consumer packaged goods applications. The uses for the technology range from heat-assisted drug delivery and customisable medical devices to self-heated meals and personal care products like wipes and lotions.

Add games


SMARTRAC is using RFID technology for use in the games industry. There is a range of opportunities for games to interact with physical merchandise, based on game characters, or add value to ordinary packaged products, such as cereals that include games or a range of downloadable features.

Opportunities for distribution charges to increase game participation through the on-pack promotions and access, measurable promotion campaigns, freemium-to-premium games, cross-licensing between brands and game merchandise business are just the start.

Overt and covert protection

Quantum dots are chemically engineered nanoparticles that possess 20+ unique corresponding properties and characteristics and their signatures may be detected in the field by the use of handheld devices and forensically with sophisticated laboratory equipment, according to the Quantum Technology Group.

Quantum dots may be used as an overt or covert protection system and combined with other security technologies such as synthetic DNA, phosphors, holograms, security ink and more. They are suitable for use on a wide variety of substrates including polymers, paper, metals and glass. The use of quantum dots as the next-generation security technology represents overwhelming challenges to counterfeiters, said Quantum's Daniel Forte.

The new technologies above were all featured at the Active and Intelligent Packaging Industry Association (AIPIA) 3rd Congress, which took place alongside Pack Expo International and PharmaEXPO last November in Chicago. AIPIA's mission is to decimate supply chain costs, reduce waste and increase profitability by the implementation of high-tech solutions in packaging. 

'Bottled water with a conscience' chooses aluminium over plastic

Inspired by a documentary that highlighted the environmental challenges posed by plastic bottles, Jess Page and Nicole Doucet launched Green Sheep Water - 'the bottled water with a green conscience'.

"Studies show that Americans use about 1500 plastic water bottles every second, and only about 30% of those bottles are recycled - the rest end up in landfills and oceans," explained Page. "While re-usable water bottles are optimal for the environment, they are not always practical in our consumers' busy lives."

So Green Sheep Water selected infinitely recyclable, 473 mL aluminium bottles made by Ball Corporation as the packaging for their water.

"After nearly three years of working together to create the right package, we are excited that Green Sheep is launching its



© iStockphoto.com/powerofforever

water in Alumi-Tek bottles, which are 100% recyclable, chill faster and are reclosable," said Bruce Doelling, vice president, sales, for Ball's metal beverage packaging division, Americas. "With sustainability at the core of the Green Sheep brand, the new bottles also have a premium look without the need for a wraparound label."

Ball Corporation
www.ball.com

Linear PET container blowing machine

Bosch has launched its BLO linear PET container blowing machine, which has a maximum speed of up to 35,000 containers/h and the ability to handle container volumes from 60 mL to 2 L.

When combined with aseptic filling technologies from Ampack, the equipment can be used for hygienic applications, including dairy-based yoghurt and coffee drinks, as well as mineral water and other beverages.

The BLO was created to minimise PET material use and energy consumption. By rotating the preforms during the heating stage, equal heat distribution on every material surface is ensured, allowing for the production of thin-walled containers.

The company claims the machine produces lightweight containers with the smallest bottle neck rims on the market, which reduces the amount of material required and costs.

With its intermittent motion and step-by-step production feature, the machine heats only a few preforms at a time. This prevents possible product jams during the production process, resulting in reliable operation and maximum uptime.

The product's linear machine concept and open-machine design facilitate maintenance and operation procedures. The machine enables fast, simple and toll-less format changeovers, as only a few moulds need to be

changed in the blow-moulding machine. Other modules and machines can be easily integrated with the BLO machine.

Nupac Industries Pty Ltd
www.nupac.com.au



© iStockphoto.com/gpointstudio

Pre-made pouch packaging machine

The ADM-XD20, engineered and built to local standards, packs the large, demanding, pre-made bags that many machines fail to do. It performs well with bags that need better handling for the effects of bridging, high-filling demands and rigorous settling.

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; IMS driver.

The product can adapt to various styles of pouches that need attention. It is suitable for packing up to 10 L of pet food; rice and grain; dried fruit and nuts; frozen foods; cereal; confectionery; organic foods; fertilisers. Up to 99 programs can be stored in the recipe function.

ADM Packaging Technology Pty Ltd
www.admpt.com.au

Often copied. Never equalled.

robag® Bci

up to a 30% improvement in
performance in both output
and reduction in rejects

AUSPACK
booth # 154



simplicity

tna has made it even easier
to operate by simplifying the
film system and upgraded to
a larger user screen (GUI) for
improved visibility of operation.

performance

We have increased speed and
precision to provide up to a
30% improvement in
performance in both output
and reduction in rejects.

flexibility

You get the ultimate flexibility with
all tna robag® 3cis – with a wide
range of bag formats to suit most
applications and completely
upgradable to different jaw sizes.

See our innovative technology for yourself at
AUSPACK booth #154.



paul irwin » regional sales manager » tna australia Pty Ltd » p: +61 (3) 9839 2300 » m: +61 412 366 351 » f: +61 (3) 9839 2399 » info@tnasolutions.com

Stay in touch with tna



Follow us
@tnasolutions



Search
tna solutions



YouTube Channel
tnasolutionsmedia



Search tna
packaging solutions

rethink the
conventional
tnasolutions.com

System for serialisation of pharmaceutical packaging

Bosch Packaging Technology has expanded its portfolio for the serialisation of pharmaceutical packaging. Many countries are about to implement legislation changes for a stricter labelling of pharmaceuticals. Consequently, drug manufacturers require safer and more flexible solutions.

The CPS (Carton Printing System) forms the basis of all serialisation solutions from Bosch. The system prints 1D or 2D data matrix codes on up to 400 folding cartons/min. If the contrast and readability of the data matrix codes do not conform with the required level of quality, the products are automatically sorted out.

The systems can be connected to both machine software and company IT in a multilevel process, ensuring that serial numbers are attributed reliably, regardless of whether they are allocated centrally or generated by the company.

Production parameters and data of all packaging lines are visible at all times, and in the case of unforeseen events like downtime or modification, capacities are automatically replanned.

The system has a modular design which can be extended with, for example, a weighing or tamper-evident module.

Bosch Packaging Technology

www.boschpackaging.com

Edrington stays in the black with O-I

Television shows like *Boardwalk Empire* and *Mad Men* have reinvigorated Scotch whisky's popularity. In a nod to the past, Edrington has released its Cutty Sark Prohibition Edition in a black glass bottle produced by O-I. The premium edition blended Scotch is the first of its kind released in the US market by the brand.

"We spotted an opportunity for expansion through the US on-trade, where whisky chasers were becoming popular again thanks to TV programs like *Mad Men*," said Jason Craig, brand director for Cutty Sark.

"We therefore set about designing a premium edition Scotch whisky to fit this niche. We wanted it to be even smoother than Cutty Sark Blend and have a higher than normal alcohol content - 100 proof rather than the 80 proof of our major competitors. We found the answer in Prohibition - an old-school, authentic Scotch; smooth on the tongue but with a big finish through the inclusion of different whiskies like The Macallan and Highland

Park. Once the blend was created, the challenge was to find packaging which marked it out as something special."

Boardwalk Empire shows characters pouring shots from black glass bottles with white labels, as was done in the prohibition era. Edrington sought to replicate this for its new edition.

Traditionally, black glass is a very expensive option. However, having produced Black Grouse Alpha Edition using black glass, O-I had installed technology to create black glass bottles cost-effectively at its Alloa plant, close to Edrington's filling lines in Glasgow.

The packaging cost was still looking expensive for what is a \$30 bottle of whisky, so O-I and Edrington rationalised the options by using the same bottle shape, cork and capsule already being used for Cutty Sark Storm.

"It's amazing what black glass does to brand image," said Craig. "If you put the black version alongside a green Storm bottle, people say it looks bigger, seems more premium, feels a bit special. The cork seal also reflects the tradition of time."

To augment the large size impression and emphasise the product's authenticity, O-I has embossed 'The Real McCoy' - a reference to Captain William McCoy, who smuggled the brand into the country - above the front label and 'Since 1923' beneath it.

Edrington says that when the 750 mL bottle was tested in the US, the consumer response was exactly what it had hoped for: consumers perceived it as a premium brand.

Edrington's initial orders for the US have been matched by demand from other markets and the brand is launching in six countries in both 700 and 750 mL sizes. The company anticipates it will be shipping up to 15,000 cases/year within three years.

O-I Asia Pacific
www.o-i.com



Microwave multi-compartment steam-cooking bag

Sirane Smart-Release is a microwave multi-compartment steam-cooking bag which allows the retailer to keep food separate until the moment during cooking they want it to combine.

The technology was developed for the seafood market, as the bag allows protein and sauce to be kept separate. It is also suitable for poultry, vegetables and desserts.

The food and sauces are kept separate in the packaging - sealed into two compartments. The central dividing seal has been designed to rupture in a controlled way, once a certain pressure is reached, allowing the mixing of the contents of the two compartments. A second vent in the main compartment then opens, maintaining pressure in the bag.

The venting seals can be tuned for retailers to meet the cooking requirements of the specific contents.

CMAActive

www.cmactive.com



PACKAGING

Compact combination checkweigher/metal detector system

LOMA has launched the CW3 Compact Combination Checkweigher/Metal Detector System. The system combines metal detection and checkweighing technology with a small footprint.

Constructed from stainless steel, the system features a modular design that saves line space and ensures non-stop operation.

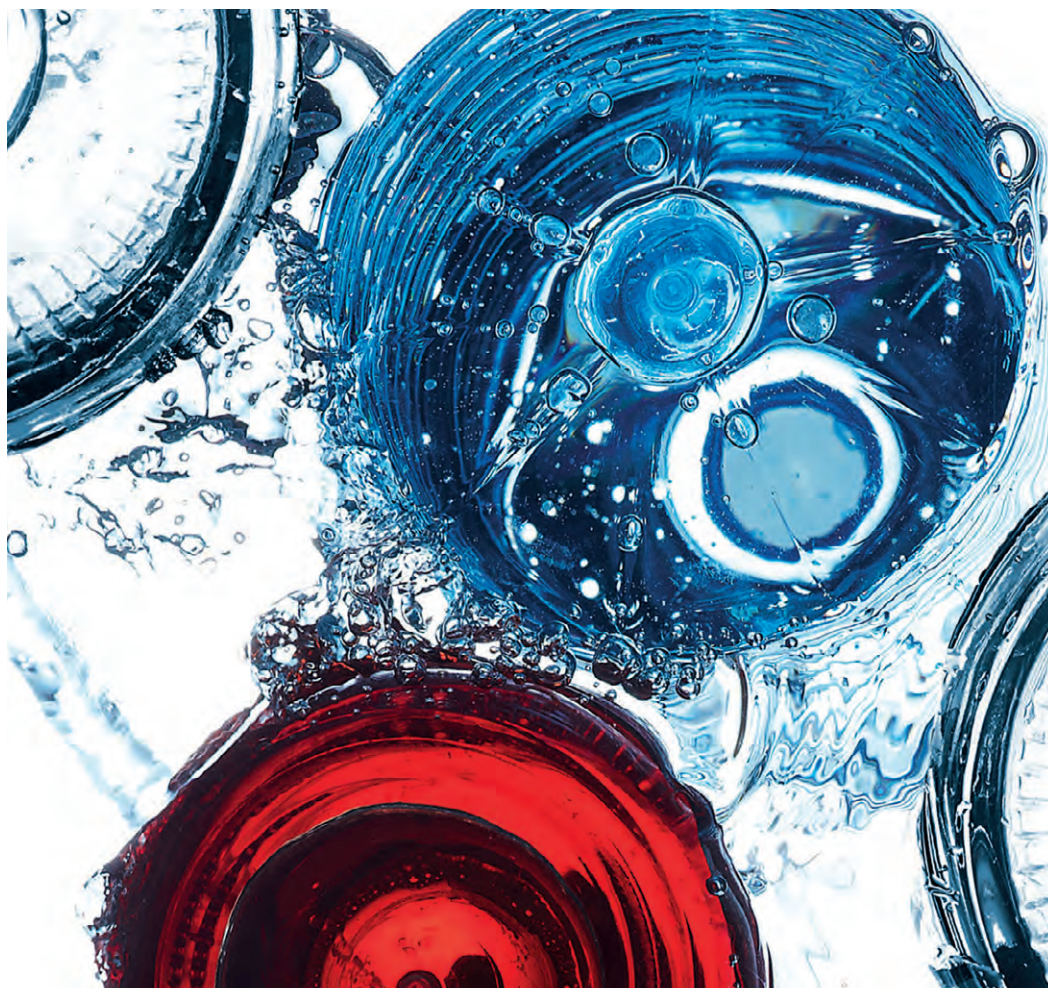
The system is accredited to OIML R51 and EC TA (MID) and can adapt to a wide range of different products because of its true variable frequency metal detection and versatile checkweighing capabilities.

Other system features include: three belt widths: 200, 300 or 400 mm; reject confirmation and bin full sensors; electronically lockable reject bin; line block and air pressure failure sensors; software access control system; IP65 washdown specifications.

The system is suitable for weighing a wide range of flexible and rigid packs and its diverter rejects products up to 6 kg.

Inspection Systems Pty Ltd

www.inspectionssystem.com.au



One in four bottles worldwide

has been filled, labelled or packed on a KRONES line.

As a complete-system vendor for the beverage industry, we equip our customers with everything they need for their production operations. With across-the-board corporate commitment to in-depth expertise, we have evolved into the sector's technological leader.

AUSPACK 2015
Melbourne, 24 – 27 March
Stand 555

www.krones.com

 **KRONES**

Guide to food packaging security

Pierre Pienaar FAIP*

Packaging security is critical to food, keeping food fresh as well as safe to eat. Packaging security encompasses everything from consumer tampering to bioterrorism to product counterfeiting.

The definition of tamper-evident packaging is: Packaging having an indicator or barrier to entry which, if breached or missing, can reasonably be expected to provide visible or audible evidence to consumers that tampering has occurred.

Tamper evidence in packaging

Tampering involves the intentional altering of information, a product, a package or system. Solutions may involve all phases of product production, distribution, logistics, sale and use. No single solution can be considered as 'tamper-proof'. In most cases, many levels of security need to be considered to minimise the risk of tampering.

Some considerations are:

- Identify all feasible methods of unauthorised access into a product or package. In addition to the primary means

of entry, also consider secondary or 'back door' methods.

- Identify type of tampering, including what level of knowledge, materials or equipment is involved.
- Improve the tamper resistance by making tampering more difficult.
- Add tamper-evident features to help indicate the existence of tampering.
- Educate consumers so they are aware of tampering.
- Ensure that the window of opportunity for tampering is minimised.

Product packaging

Tamper-evident design is possibly most visible in product packaging and labelling, where it can be critical to know that the product has not been modified since leaving the manufacturer.



© Medjagran/Dollar Photo Club

Cans of baby food were among the first cases where manufacturers were extorted by persons claiming to have added various poisons to baby food and replaced them on supermarket shelves. The threat of public fear meant that tamper-evident design principles had the potential to save a lot of money in the future.

Jars of food items soon started appearing with a metal bubble-top lid, commonly known as a 'safety button', which popped out if the jar had been opened and stayed flat if the jar was unopened. Customers were advised not to buy a product with a popped lid.

Newer jars of food tend to come with a plastic shrink-sleeve on the edge of the lid, which is removed when opening.

The Johnson & Johnson Tylenol Crisis of 1982 involved over-the-counter medications. Due to various regulations, many manufacturers of food (and medicine) now use induction seal-

ing to assist in providing evidence of tampering. Packaging that tears open in a ragged manner or otherwise cannot be resealed is also used to help indicate tampering.

In many cases, multiple layers or indicators are used because no single layer or device is 'tamper-proof'. Consideration should be given to unique indicators. Ideally, these should be changed regularly to avoid counterfeiting.

End users and consumers need to be educated to keep an eye open for signs of tampering, both at the primary and secondary level of packaging.

Track and trace


Processors and their suppliers are developing a variety of packaging technologies to keep food safe from such interference and to provide fast, thorough product tracking and tracing in the event of a recall.

Covert and overt packaging techniques are developing more and more and becoming substantially more sophisticated. Covert techniques require a scanner or other device for detection. Marking packages with invisible, ultraviolet-luminescent ink is an example of covert security. Overt techniques include something visible on the package, such as a batch code or tamper-evident band.

RFID tags as a form of tamper evidence

Radiofrequency identification (RFID) tags consist of a tamper-evident technology to ensure that the RFID tag has not been interfered with after initial positioning on an article. If tampered with, these tags become disabled, thereby preventing use of the tags on counterfeit or substitute products. This also ensures that detecting a working tag also means identifying the original product to which it is attached. As food and beverage companies increasingly experiment with RFID to satisfy retailer demands, they are enjoying the side benefit of greater control of cases and pallets moving through the supply chain. The heightened control increases the security of products during distribution.

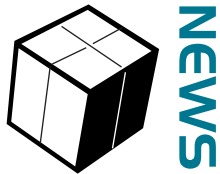
A fundamental reason to incorporate security features into packaging is to provide protection against vindictive tampering, or at least evidence of an attempt. Tamper-evident packages typically show visible signs of interference, such as a broken seal.

The time has come for us to commence placing tamper evidence onto any product that touches the body and ingested, inhaled or absorbed into the blood stream. 



Pierre Pienaar MSc, FAIP is the Education Director of the Australian Institute of Packaging (AIP). He also has his own consulting business, PackTech Solutions, that assists companies in all aspects of packaging technology and packaging engineering.

Australian Institute of Packaging
www.aipack.com.au



Nanotech mango boxes to reduce post-harvest fruit losses

Mangoes: much-loved by consumers, but so difficult to transport. An international team of researchers has developed special packaging that will help ensure mangoes reach their destination in prime condition.

The researchers, from Canada, Sri Lanka and India, discovered that a natural compound called hexanal delays the ripening of mangoes. From there, they used nanotechnology to develop hexanal-impregnated packaging and biowax coatings to improve the fruit's resilience and shipping.

The team is now expanding its work to include other fruit and look at ways to commercialise the technologies.

The research has received funding from the Canadian International Food Security Research Fund (CIFSRF). According to Jean Lebel, president of Canada's International Development Research Centre (IDRC), this project - along with several others recently announced - "will improve the lives of poor small-holder farmers and strengthen rural economies".

"At the same time, we are identifying the most effective ways of taking these food security solutions and achieving large-scale impacts with them," said Lebel.

Along with the IDRC and Foreign Affairs, Trade and Development Canada, the CIFSRF has also announced two other projects to prevent livestock disease. To date, more than 100,000 farmers in poor communities around the world have worked with researchers to develop many promising CIFSRF research results.

US tube and stick packaging market to reach US\$2.1 bn in 2018

Demand for tube and stick packaging in the US is forecast to reach US\$2.1 billion in 2018 - a growth of 4% per year - a new report from The Freedonia Group reveals.

Stick packs are expected to show the fastest gains, with new applications and continued favourable prospects in several existing uses predicted, such as condiments and pharmaceuticals.

Representing around 60% of demand in 2013, squeeze tubes represent the largest tube and stick packaging product type.

Demand for squeeze tubes is expected to increase 3.8% annually to a total value of US\$1.3 billion in 2018.

A greater use of decorative processes and advanced delivery systems that can protect and/or extend the shelf life of oxygen-sensitive contents is expected to drive growth in this segment. Unit-of-use tubes, which offer accurate dosing of pharmaceuticals and serve as sample or promotional packaging, will also experience strong growth.

However, the value growth of the squeeze tube segment will be restrained by import competition in smaller-sized plastic tubes from China, India and other nations that offer low-cost production.

For more information about the Tube & Stick Packaging report, visit www.freedoniagroup.com.



2013 BPA study has gone to the dogs: oral exposure doesn't increase BPA levels

Oral exposure to BPA does not lead to higher than expected levels of BPA in the blood, a new study has shown. This counters a 2013 study which found that placing concentrated BPA solutions under dogs' tongues led to higher levels of an active form of BPA in the blood.

The authors of the dog study hypothesised that their results meant the amount of BPA in human blood could be higher than regulatory agencies assumed, leading to frequent and intense questioning of regulatory agencies' BPA recommendations.

"Testing this hypothesis, in humans, became necessary," said toxicologist Justin Teeguarden of the Department of Energy's Pacific Northwest National Laboratory, author of the new study in humans.

Teeguarden and colleagues set out to determine if absorption of BPA from tissues of the mouth increased BPA blood levels in humans.

The researchers found that this method of delivery did not lead to higher levels of the active form of BPA in the blood samples. The body inactivated 98 out of every 1000 BPA molecules by the time BPA entered the bloodstream. This has been reflected in all human studies to date.

The study was published in the journal *Toxicology and Applied Pharmacology*.



High Performance Coding - whatever the environment



Domino's A520i delivers flexible, efficient and versatile coding in wash down environments.

From dairy processing to beverage manufacturing to food production - whatever your industry, the Domino A520i provides all the protection you need to keep your production line running. Specifically designed for wash down environments, the A520i uses marine grade stainless steel (316), with IP66 rated fully sealed electronics and additional reliability from our innovative plenum airflow cooling system which means the printer stays cool and works even in the harshest of environments.



See insignia and the remarkable A520i at AUSPACK Stand #550



insignia
tried&true



DOMINO
Any Code Any Substrate



www.insignia.com.au



1300 467 446



1300 780 049



sales@insignia.com.au

Out-of-the-box packaging for ready-to-serve cocktails



Established in 1874, Bickford's has come a long way from its beginnings in Adelaide. Best known for its Bickford's Lime Juice Cordial, the company has diversified considerably and now produces not only cordials but also fruit juices, essences, flavoured and unflavoured waters and premium adult-orientated carbonated sodas.

Bickford's juices and cordials also feature in a range of ready-to-pour cocktails sold under the VOK trademark. As part of the collaboration, Bickford's developed an in-house packing solution to commercialise the line of ready-to-serve, two-litre, bag-in-box (BIB) cocktails.

Bickford's commissioned HMPS to design and build the HMPS1000 Bag-in-Box packer for its BIB cocktail range. The machine erects, loads and seals BIB packs ranging in size from one to 10 litres.

When compared with bottles or cans, the BIB packs offer transportation benefits as there is no shipping of air. The bag technology is suitable for all non-carbonated beverages.

"The first prototype of the Bag-in-Box we manufactured for Yalumba Wines and Coca-Cola Amatil in the early 1990s, and we are very proud of the transformation of our machines, integrating robots and cutting-edge technology," said HMPS Managing Director Mark Emmett.

Hot Melt Packing Systems
www.hmps.com.au

PACKAGING MACHINERY SPECIALISTS



- Fillers(volumetric/pouch/piston/bag in box)
- Labellers
- Tray sealers
- Cartoners, case packers
- Shrink wrappers
- Inspection systems (X-ray, sensor & vision)
- Pallet wrappers
- Palletisers



Ph:- +61 2 8814 3100
sales@hbm.com.au
www.hbm.com.au

Steam venting film

KM Packaging Services has launched a steam venting product for ovenable meals and snacks. The film is compatible with polypropylene trays and can be supplied as peel seal or weld seal, with or without KM's anti-fog treatment.

A high oxygen barrier is available, where venting holes in the film are coated to prevent air getting in or out, hermetically sealing the tray. On heating in a microwave oven, the coating softens to facilitate ventilation. Alternatively, pepper pot holes can be created in the centre of the lid, allowing steam to escape but keeping the seal intact. The cluster of holes can be placed in virtually any position on the lid, depending on the contents of the tray and the desired ventilation effect.

The steam venting film is designed to maintain the freshness of frozen or chilled ready meals and also to encourage faster cooking. As well as lidding applications, the film can also be supplied as roll-fed bags for vegetables and can be printed to promote branding.

KM Packaging Services Ltd
www.kmpack.co.uk



© Kazoka303030 / Dollar Photo Club

Continuous band sealer

Packserv has available to rent the CBS-900 continuous band sealer for vertical and horizontal sealing. The sealer is suitable for small to medium-sized production runs. The operator feeds the bag into the machine by placing the filled bags on a conveyor, and they are guided through the sealing process. The benchtop machine is portable and lightweight, comes with its own conveyor and requires 10 A 240 V power.

Controls, including height, speed and temperature, are adjustable to suit product type, size and production output. The machine is suitable for sealing any thermoplastic material, including polyethylene, polypropylene and laminations containing foils.

The sealer is commonly used to seal coffee, sauces, marinades, grains, herbs, spices and nuts. The machine operates at a speed of 0-12 m/min and can produce a sealing width of 6-15 mm at a temperature range of 0-300°C.

Packserv Pty Ltd

www.packserv.com.au

Absorbent EPS base for meat and fish

LINPAC Packaging has developed LINslice, an absorbent EPS base suitable for products such as sliced smoked salmon and pre-cooked meats. Micro-perforations have been created within the base to absorb juices which can contain bacteria and detract from the look of the product.

The base will work with both HFFS and vacuum bagging applications. EPS is made up of 95% air, meaning the board is a lightweight, low-carbon option, but the company says it is robust enough to provide a stable base for sliced products and retains its rigidity in moist, chilled environments.

The base is available in a choice of colours and sizes and is an alternative to laminated papers and board.

LINPAC Rotational Mouldings

www.linpac.com.au



© vipavlenkoff/Dollar Photo Club

PACKAGING

DFC Packaging shrink sleeves provide full tamper evidence and 360 degree printable area using latest Gravure printing technology
Sleeves can provide total UV and visible light block.

Our range of shrink sleeve application machinery will save you time and money



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



dfcpackaging
[Sleeves] Pty Ltd

ABN: 73 088 253 212

DFC Packaging
NSW.
5 Healey Circuit
Huntingwood NSW 2148
02 9625 0266
sales@dfc.com.au
www.dfc.com.au



Bremercafe's dips are flowing with Riggs Autopack depositors

Bremercafe (Adelaide Hills Dips), a South Australian company that has been producing premium dip, pesto and dukkah products for more than 18 years, was looking for a cost-effective solution to the filling of its dip products.

Working with HBM Packaging Technologies, Bremercafe conducted an on-site trial to semiautomate their dip filling process with the installation of a Riggs Autopack Model 1000 depositor with 40 L hopper. The depositor has a fill range of 125-1200 mL, and Riggs supplied 14 and 19 mm plunger type cut-off valves, making the unit suitable for Bremercafe's different tub and bottle sizes.

Bremercafe owner Bela Janosi found the depositor to be simple to operate, easy to clean and accurate in its filling, which reduced overfills and therefore product wastage. However, the labour saving was the biggest advantage achieved by taking the step up from hand-filling.

HBM Packaging Technologies
www.hbm.com.au



Compact ink jet colour label printer for small labels

The QuickLabel Kiara! 50 compact colour label printer is designed for printing small labels at high quality. Suitable for businesses with small products, the printer will print labels from 2.54 to 5.49 cm in width and 2.54 to 39.70 cm in length.

The printer is a compact size - 25.40 cm tall and weighing 4.5 kg - and is capable of printing up to 68 labels/min in 1200 dpi resolution.

The printer prints full bleed labels using a dye-based ink formulation that provides the widest possible colour gamut for colour matching and is compatible with glossy and matte label stocks.

The label printer will automatically detect when cleaning is necessary and, if needed, will pause during the print job, perform an automatic cleaning and then resume printing on the same label.

Metromatics Pty Ltd
www.metromatics.com.au

*How will you
 protect your Joey?*

ZIPPAK
 We're Uniquely Flexible.



Re-close your pouch with

VECTOR
 Resealable Matrix

For more information
 call AUS: 03 9579 3911/NZ: 09 838 5747
 email at salesausnz@zippak.com
 or visit our website at www.zippak.com

Why reliable, cost-effective ID and inspection solutions will reduce your costs

Mark Dingley*

Inspection is key to improving your business's production methods, reducing waste and increasing efficiency. Taking that one step further, reliable inspection is a must for any business that is serious about making the most of its resources and being competitive.

So what is it? It's consistent - it checks every product. It takes action - if the product is not within tolerance, it either automatically stops the line or rejects the product. It's all about capturing quality data; for instance, it will show an analysis of rejected products, such as "40% were due to the front label not being placed straight", which is information a business can then use immediately to fix the problem.

Inspection technologies include vision inspection, metal detection, X-ray and checkweighing. This article focuses on vision.

What are the benefits?

Vision technology has many benefits over the human eye. As capable and flexible as it is, the eye just can't make fast, precise and repetitive measurements. But a vision inspection system can.

It gives manufacturers these key benefits:

- Automated quality control by establishing a reliable system that delivers over and over, and the ability to ensure quality based on specific parameters.
- Quality data is collected every time a product passes through for inspection; every product is monitored and the information sent into production-management systems for process control.
- Throughput is improved and optimised, by providing data that allows managers to react to upstream issues faster;

the solution can also empower operators to fix issues to improve overall quality.

- It results in cost savings by reducing waste and manual efforts.

These systems also make it possible to demonstrate that reliable quality assurance processes are in place to reassure customers.

Vision systems make sure products are labelled and filled correctly, are compliant, in-spec and shelf-ready straight off the production line. These improvements in turn improve return on investment (ROI), as well as provide data for continuous improvement and enable lean manufacturing.

Some people can be overwhelmed by automated inspection processes, but our [Matthews Australasia's] approach simplifies the process.

Firstly, what is the business's biggest quality issue? Then, which issues can automated inspection solve? After that, we look at what the critical issue is that the business has to have resolved, and what would be nice to resolve? From drilling down like that, we get the base solution that particular business needs.

Types of vision inspection technology

There are three types of vision technology:

1. Vision systems: this is the basic solution, giving a pass or fail. They have few tools and cover simple applications.



...the eye just can't make fast, precise and repetitive measurements. But a vision inspection system can.



2. Smart cameras: these have faster cameras, offer more flexibility and can carry out more complex inspections.
3. Vision systems (also called machine vision systems): these PLC-based systems are fully customised and system dependent.

What type of 'quality' do you want?

There are two types of quality checks: control and assurance.

Of course, it's completely up to each business which they use, but here is our view, from what we've seen in nearly 40 years of helping businesses improve their processes:

- Quality control (QC) is the traditional approach; it detects defective output.
- Quality assurance (QA) is the proactive 'lean' approach; it minimises the chance a business's output will be sub-standard and is all about process design.

In our view, the scale tips in favour of using QA as a guide to reducing waste, increasing efficiency and improving production methods overall. This is why reliable, cost-effective inspection solutions reduce a business's costs and improve competitiveness.



Mark Dingley is General Manager of Operations for Matthews Australasia. He presented this paper at the AIP National Conference.



Matthews Intelligent Identification Pty Ltd
www.matthews.com.au



Fresh produce packaging

Coveris has launched its Freshlife range of fresh produce packaging, which is suitable for a range of produce categories including soft fruit, berries, tomatoes, mushrooms and potatoes.

The range includes dedicated moisture and respiration controlled formats such as AP (atmosphere packaging), polymer solutions and MMP (modified moisture packaging) films which are designed to enhance shelf life for retailers.

The packaging range also features green polyethylene (PE) films. Made from natural sugarcane resources, the film combines a low-carbon footprint with renewable sourcing suitable for potatoes and other produce categories.

Coveris

www.coveris.com

Cutting, sealing and perforating flexible foils

Rohrer AG's SonoCut technology uses ultrasound for cutting and sealing tubular bags and perforating FFS multipacks. The high-precision punching tool is an efficient alternative when thermal processes or classic tubular pouch machines are pushed beyond their limits.

SonoCut technology is suitable for processing modern ecological materials and ultra-thin foils. It makes users independent from PS films as it can create break lines even on alternative film laminates such as PP, PET and PLA. Multi-portion packs made of flexible plastics and laminates were previously inconceivable. FFS multipacks made of PET, for instance, are now a reality thanks to SonoCut. The technology enables cutting and sealing combinations to produce and seal individual peelable films on packaging. Inexpensive films keep costs low, recyclable plastics improve the ecobalance and stable processes increase production reliability.

Combining ultrasound with a precision tool enables a whole new range of packaging solutions. The ultrasound components are integrated in the mechanical structure where they form an autarkic unit. SonoCut creates airtight packaging even if the seal surfaces are soiled or contaminated. SonoCut retrofit components are suitable for integration in existing systems due for refurbishing.

Ultrasound sealing processes offer significant advantages in comparison to thermal methods: creates airtight seals even when the seal is contaminated with product; less heat transfer is involved; less dead space and more compact seals; higher cycles times; better productivity; less cost.

Rohrer AG

www.rohrerag.com



Deep-freeze adhesive for food-safe labelling

UPM Raflatac has launched 149 DF deep-freeze adhesive for the European market. The high-clarity adhesive is designed for fast conversion and minimal residue on die tools for higher efficiency.

With clear film labels, the water-based acrylic adhesive also provides an improved level of transparency compared to hot-melt solutions and enhances shelf appeal for frozen foods. The acrylic formulation provides good UV-ageing resistance to retain adhesive performance and clarity in the long term.

The adhesive is food-contact approved and available with a full range of face materials, both films and papers.

UPM Raflatac Pty Ltd
www.upmraflatac.com

Dry line packaging system

The Cermex VersaBloc is a packaging system designed to assist the dry part of a packaging line to react quickly to changes in packing rhythms, formats and patterns, with multiple changeovers each day.

The system combines the machine technology of the EvoFlex infeed palletiser and the VersaFilm multichannel shrink tunnel to form a block encompassing all end-of-line operations. The system requires one operator to control the whole rational working area and a changeover time of 4 min via a centralised user-friendly interface. The compact layout cuts floor space by as much as 25% and, the company says, it reduces the total cost of ownership by as much as 8% and the installation time by over 20%.

The infeed palletiser has a speed of 12 layers/min with a ground-level layout, providing good accessibility and visibility, with no pack elevator, stairs, gantries or elevated platforms required. It requires fewer conveyors than a high-level infeed system, and easy access to machine parts for maintenance.

The shrink tunnel provides separate control of airflow per section to aid shrinkage, a 1 to 3-lane tunnel with optimised air circulation and insulation to achieve energy savings, air circulation which is adjustable to the product's height and collation and a gas-fired tunnel option contributing to lower energy costs and a smaller carbon footprint.

Allied Industries Pty Ltd
www.alliedindustries.com.au

i-FLOW

Nitrogen Solutions for the Food & Beverage Industry



- // Modified atmosphere packaging
- // Packaging strength
- // Controlled atmosphere storage
- // Foaming and fluffing
- // Wine production & bottling
- // Insect and larvae reduction

Call: + 61 (0) 300 965 352
Email: enquires@peakindustrial.com

www.peakindustrial.com



PEAK
 INDUSTRIAL

Chocolatier demands a smooth production line

At the Zotter Schokoladen factory in Southeast Austria, the process of making chocolate from cocoa beans requires ingredients and mixtures in various states to remain in near-continuous motion for hours and days on end.

Smooth operation ensures top-quality final product. In addition, the production line is open to thousands of visitors every year, so the company is keen to avoid any malfunctions. Reliable drive systems are therefore vital, and the facility relies on geared motors from NORD Drivesystems for conveying, mixing and pumping tasks.

'Black gold': roasted and ground

The Zotter company introduces dozens of new flavours every year, ranging from pineapple, lemon and coconut, to celery, asparagus and cheese. But classic chocolate remains an indispensable ingredient for a large part of the product range. For years, chocolate has been produced in-house according to Zotter's recipes.

Cocoa beans are cleaned, roasted for several minutes at temperatures above 100°C and subsequently sterilised under steam pressure. Conveyor drives with 0.75 kW rated power ensure transportation between the cleaning, roasting and sterilising stations. The next step is a crusher, where the cocoa nibs are de-shelled. A grinder with a NORD drive then turns the nibs into liquid cocoa paste, which is piped to a mixer. The pumps required for this stage feature 4 kW geared motors. Inside the mixer, sugar and sometimes dried milk are added to the cocoa paste. On top of that, extra cocoa butter is added from neighbouring tanks which are equipped with several 1.1 kW pump drives.

Liquid turns solid ...

Mixing the cocoa mass with the other ingredients results in a pourable mass, which is ground in a rolling machine to achieve a fine texture. A dedicated worm gear unit powered by a 4 kW helical geared motor then ensures compression. This drive features an innovative construction which allows for using larger bearings in an overlapping offset configuration and shafts which are also larger than standard systems. The drive systems are therefore considerably stronger and more durable, since wear through radial and axial forces is minimised.



... and solid turns liquid

Conveyor drives then transport the solidified intermediate product through five rolling machines, where it is gradually refined. Only then does the mixture arrive at the last step of chocolate production. The single-shaft conche is used to reduce the water content, which ensures a smooth, silky consistency. Bitter compounds are evaporated through sophisticated temperature monitoring while the desired aromas remain. In this application, NORD drives are used for transportation, agitating and pumping tasks. A helical geared motor serves as a belt drive for filling the conche. Depending on the recipe, the chocolate mass is agitated for up to 48 hours at increased temperatures in a liquid state, until a product with the finest glaze and the desired aromatic profile is created. The agitator arms are moved by a space-saving direct drive. The parallel shaft geared motor used for this purpose provides a rated power of 55 kW. The conched mixture is evacuated via a pump system driven by a helical geared motor.

Thomas Linshalm, head of chocolate processing at the confectionery company, explains: "We operate a large number of geared motors. Just in case, it is therefore very important for us to always have quick access to spare parts. In general, however, the drives perform very reliably."

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

FREE SUBSCRIPTION

What's New in Food Technology & Manufacturing is **FREE** to qualified ICT industry professionals in Australia & New Zealand.

To **continue** receiving your free copy you will be asked to register every three years.



QUICK REGISTRATION @ www.FoodProcessing.com.au/subscribe

Processing



Nestlé's anaerobic digestion plant a sweet success

As part of Nestlé's efforts to develop environmentally sustainable manufacturing at its Fawdon confectionery factory, near Newcastle in northern England, the company commissioned British company Clearfleau to build an on-site anaerobic digestion (AD) plant.

Clearfleau's design was chosen due to its high-rate, liquid-based digestion system, which uses an innovative and robust solids-processing system, together with its compact design to fit on the edge of the factory car park.

Previously, production residues from Fawdon - a producer of gums, pastilles and Rolos - were discharged to sewer or fed to pigs in the locality. Following the installation of the AD plant, all biodegradable production residues are now converted into renewable energy on the factory site.

One year after commissioning, the plant is converting 200,000 L/day of feedstock into renewable energy. This feedstock includes wash waters from the site and 1200 tonnes of residual by-products and ingredients per annum.

The biogas produced is fuelling a combined heat and power (CHP) engine, which produces 200 kW of electricity, used in the confectionery production process. This is about 8% of the factory's power requirements, cutting the annual electricity bill by about £100,000 per annum. In addition, the site has registered for the UK's feed-in tariff and will receive annual payments of about £250,000 per annum.



© iStockphoto.com/Jeannot Olivet

In addition to saving on fossil-fuel purchase plus the other savings and revenue benefits, the project has reduced the carbon footprint and environmental impact of the site. The payback period on Nestlé's investment in Clearfleau's AD plant is predicted to be 4-5 years.

Clearfleau Chief Executive Craig Chapman, says: "Clearfleau was delighted to be selected by Nestlé to deliver this important plant and we very much appreciate their collaborative approach to the delivery of this project. For Nestlé, what was previously a processing overhead is now a valuable financial and environmental asset."

Clearfleau Limited
www.clearfleau.com



Small DC servo motor controller

Only the size of a postage stamp but delivering up to 144 W of power, the DC servo motor control unit from maxon motor Australia solves many engineering problems in the field of food manufacturing.

The 24 V, 2 A controller can drive both brushed and brushless DC motors, giving full four-quadrant control over the motors with a PWM frequency of 53.6 kHz and a fast current control bandwidth of 53.6 kHz.

The controller is designed for integration directly into the application as a plug-in module and weighs only 7 g. RC servo signal inputs for set speed, set current, offset and current limitation have been included, which will allow radio-control users to upgrade their devices with higher quality industrial-grade DC motors or brushless motors.

The maximum speed is limited to 150,000 rpm and there is a full suite of protective functions complementing an extended operating temperature range up to 80°C.

maxon motor Australia Pty Ltd

www.maxonmotor.com.au

Smooth Move

Use quiet pneumatic drive technology from Vibration Systems to move your product smoothly, quietly and efficiently.

Resonance drive system can drive conveyors up to 20 metres long with one simple drive unit, giving transport speeds to 25m/min with low energy use.



CALL TOLL FREE 1800 300 877 FOR MORE INFORMATION

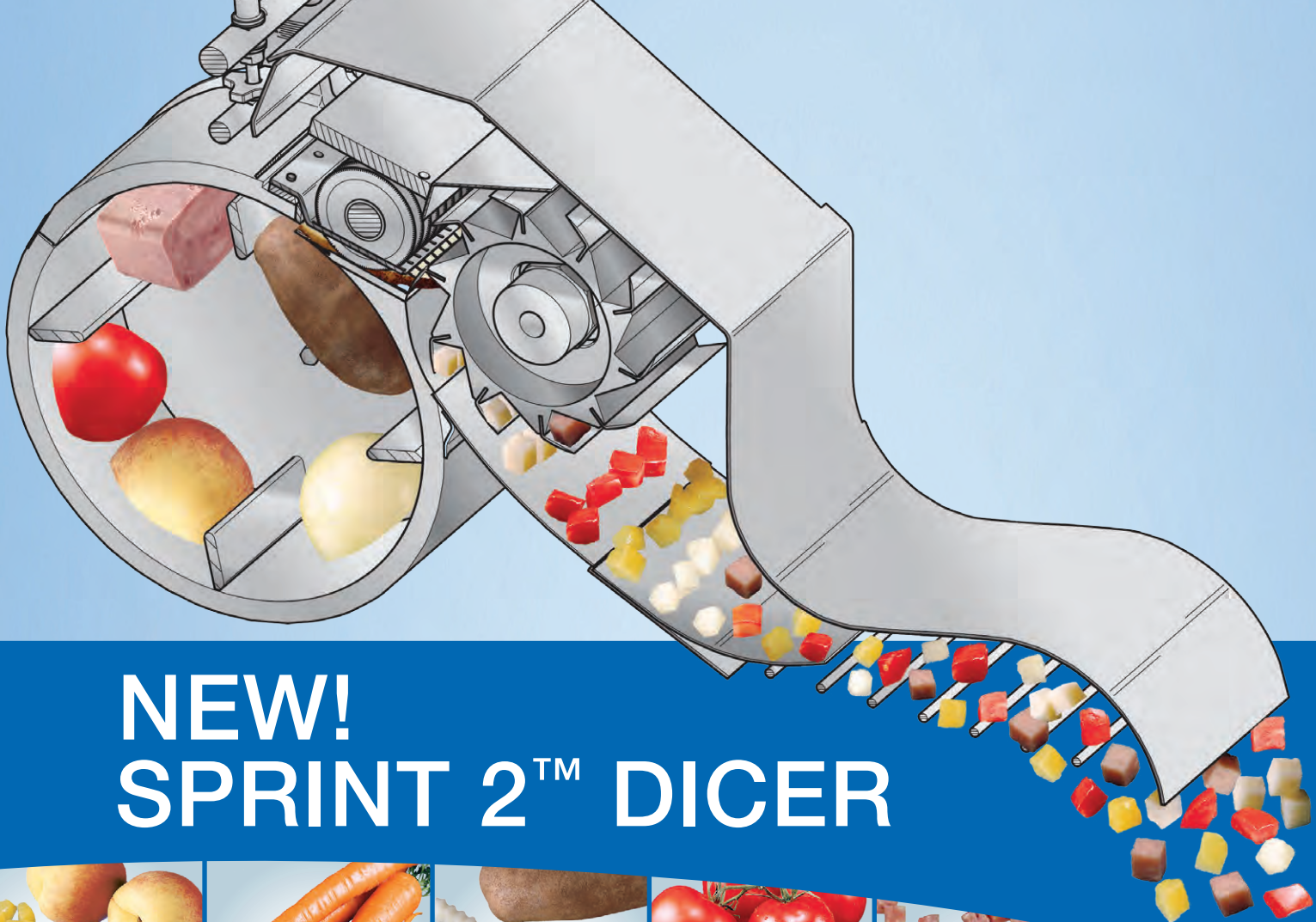
sales@vibrationsystems.com.au - www.vibrationsystems.com.au



ESR Pty Ltd ABN 34 001 931 746 trading as

Vibration Systems & Solutions (Australia)

BRANCHES AND DISTRIBUTORS IN ALL STATES AND NEW ZEALAND



NEW! SPRINT 2™ DICER



Merging the Cutting Advances and Features from the DiversaCut Sprint® and the Model G

The new SPRINT 2™ Dicer combines the legendary Model G Dicer footprint and similar infeed/discharge heights with the cutting advances offered by the popular DiversaCut Sprint® Dicer. The new dicer offers a convenient solution for food processors seeking to replace their existing Model G, G-A, GK-A, H, or H-A Dicer.

The SPRINT 2 Dicer produces a wide variety of dices, granulations, slices, and strips of vegetables, fruits, bakery products, meats, and seafood. The cutting principle is based on the DiversaCut Sprint technology turned at an adjusted angle. The SPRINT 2 also offers an optional stainless steel 3 HP (2.2 kW) motor with VFD (variable frequency drive) that offers more power than the DiversaCut Sprint or the standard Model G-A.



Cutting Solutions

Slicing

Dicing

Shredding

Granulating

Milling

Grinding

Pureeing

URSCHEL®

The Global Leader in Food Cutting Technology

Wanted: Optimal carcass valorisation 2.0

Frans van der Steen, Meat Technology and Development Manager, Marel

This article, the third and final part of a trilogy* on meat harvesting and processing, is a plea for modern-style optimal carcass valorisation from a food-tech perspective.

What used to be only natural for the butchers and home slaughterers of yore remains a major challenge for today's residual meat industry: achieving optimal carcass valorisation. Optimal carcass yield is the ancient art of achieving optimal utility for each part of the animal, first and foremost an economic issue. Today, however, a dear moral duty has been added: achieving maximal societal utility. Megatrends such as global population growth and impending food and raw materials shortages make ever-increasing moral and technological demands on the meat industry, while the risk of new food crises needs to be minimised. Within these economic and ethical parameters, optimal carcass valorisation 2.0 emerges, optimal utility for both industry and society; people, planet and profit.

The meat chain

Within the meat industry, great efficiencies, and thus added value, can be achieved by optimally over-viewing, monitoring

and connecting the entire chain, from hog to hot dog. This chain consists of farmers, slaughterhouses, residual meat producers and processors producing final products. While each party involved tends to have a good overview mainly of their own part of the production process, a food technological approach adds value by over-viewing as well as monitoring the entire chain for optimal economic and societal utility. It does so, among others, by connecting supply and demand within the chain, allowing for optimal carcass valorisation 2.0 to take place.

The chain from hog to hot dog includes many food-technological factors which have great and direct impact on the characteristics and the perceived quality of the final meat product. Characteristics such as colour, structure, tenderness and bite all depend on the handling of these factors at various stages and times in the chain.

Farmers and slaughterhouses are the first link in the chain. Factors such as breed, pedigree, feed, animal stress during



© Nkarel/Dollar Photo Club

the slaughtering process and meat ageing at this stage largely determine the quality of the raw material entering the chain.

Next, the bone material left over after deboning reaches the residual meat producer, who turns it into mechanically separated meat (MSM), a semi-finished product. In this process the MSM producer exerts great influence on fibre length, damage to muscle fibre structure, calcium content, meat protein percentage, as well as moisture and collagen content through the pressure applied in the harvester, filter size used, filling level and capacity of the chamber as well as the marrow content of the meat.

The final processor then designs the final product, influencing remaining factors such as the muscle-marrow-protein balance, water and fat binding capacity, taste and bite. At this point, the previous process steps have all left their mark on final product quality. The degree of muscle tissue damage during harvesting, for example, affects water-binding capacity, fat-binding capacity and bite of the final product.

Thus, purchasing MSM leaves processors with only relatively few factors to be influenced in their own part of the process, with all the other factors already having been influenced at the earlier stages of breeding, slaughtering or meat harvesting. Potential (partial) neglect of these factors by the other parties previously involved can only be remedied by the processor using relatively expensive additives in order to still achieve the product specifications required. Thus, awareness and traceability of how each quality-determining factor was handled at every previous stage of the process is of the greatest economic and societal interest to the meat industry and, ultimately, to the consumer as well.

Optimal carcass valorisation

It is exactly this holistic approach, this integral insight into the intrinsic quality of the raw material, into one's own production process (for MSM producers), and into the product specs and applications desired by the customer, that enables maximum value addition to the chain, throughout the chain. It should be noted here that a high degree of industrialisation of the production process reinforces the increase of efficiency substantially (compare to Part 2 of this trilogy*).

MSM producers with insufficient information about the quality of their raw materials run the risk of significant value loss, besides obvious quality risks. Likewise, not knowing the specs of their customers' final products may incur unnecessary cost for either party, often both. A good example is the production of chicken nuggets and Dutch frankfurter sausages, snacks often made from separated chicken meat and pork.

The residual meat harvested from chicken breast cap carcasses is often uniformly processed in frankfurter sausages at a relatively low unit price, whereas expensive chicken breast fillets are unlikely to be shredded and processed in chicken nuggets. Nevertheless, it would be distinctly possible to harvest a high-grade meat from the breast cap carcasses first for use in the chicken nuggets. The remaining lower-grade meat could then be used for the production of frankfurter sausages, making both products more efficient and therefore cheaper, without noticeable loss of quality. At the same time, the expensive breast fillets would thus retain their highest possible market value.

The above losses are purely economic and could be easily prevented by producers of MSM through product traceability, demand orientation and quality differentiation in the process. This can be achieved by entering into partnerships with both suppliers and customers, with whom agreements can be made about specific bone types (and hence qualities), such as pipe bones, rib bones or backbones. Customers should inform their suppliers of their exact residual meat usage and their meat-quality requirements.

The food technologists should overview this entire process and optimise the final product based on this information. Together with farmers, slaughterhouses, MSM producers and further processors, the food technologist establishes and achieves appropriate quality across all stages for each meat product - no more, no less. Thus (s)he achieves substantial savings for both MSM producers and processors by optimally using each part of the animal. This is old-fashioned optimal carcass valorisation, modern style: highly industrialised and transparent.

The most labour-intensive activities should be automated whenever possible, while the process should be designed to allow for optimal differentiation and value creation.

Full transparency and traceability also contribute to the societal confidence in residual meat products. In a fully transparent residual meat chain, the products on the shelves have been created in a 'verifiably controlled' manner - a sign of professionalism, reliability and safety. As such, transparency offers a great opportunity to further enhance the industry's image.

Moreover, optimal value creation may help the industry respond adequately to the societal need and global megatrend of sustainability, for example, through the stimulation of clean-label production methods or the reduction of product movements, transport steps and product mileage. The societal awareness generated by full traceability of bones and residual meat may well prove to be an incentive for local purchasing strategies and perhaps even far-reaching chain integration under the same roof. Provided that labour-intensive processes are further automated and the final product is made at the very end of the chain whenever possible, local purchasing, production and processing will remain economically feasible, even in high-wage countries.

This clever and exciting interplay between striving for the highest economic utility and doing good for people, animals and planet constitutes optimal carcass yield 2.0. It requires in-depth insight into the raw material and the chain processes as well as the talent of optimally matching supply and demand within that chain. It also requires uncompromising transparency about the product, an open mind and eye to the outside world and a highly industrialised production process. Behold our challenges!

Conclusion

The entire trilogy carries a clear, unambiguous message: the meat industry needs to proceed towards a rational, industrial,

streamlined and high-tech production process. The dairy and poultry industry have led the way in process automation and chain integration, to great success!

The hardware is ready for it: the current generation of meat harvesters is able to combine high capacity with consistently high meat quality and will soon even become high-tech management tools in the most complex of production processes.

The production process itself should consist of as few steps and product movements as possible and therefore take place locally, preferably under the same roof. The most labour-intensive activities should be automated whenever possible, while the process should be designed to allow for optimal differentiation and value creation. This requires a willingness to diversify as well as great flexibility on the part of the MSM producers. To achieve both diversification and flexibility, the creation of final products should be deferred until the end of the production process as much as possible.

Knowledge of and information about the raw material, the process of meat harvesting and the specifications of the processor's final product should be available to and shared with the entire chain. The handling of the factors affecting meat quality must be transparent, traceable and controllable at all times, to those within and outside the chain. Only by combining thorough knowledge with full transparency to one another and to the outside world can the meat industry achieve the professionalism the world so desperately needs. Call it optimal carcass valorisation 2.0. 🐮

** In the November/December 2014 issue of What's New in Food Technology & Manufacturing, 'No time for waste: technical developments in meat harvesting' showed that modern technology is rapidly turning machines into highly efficient means of productivity, soon even management tools. In the following issue, 'Turning hogs into hot dogs' established the value of industrialisation and integration of the entire meat chain, from production to final processing.*

Marel
www.marel.com



Stainless steel retractable hose reels

Tecpro Australia has available the Ramex stainless steel retractable hose reels.

The range of retractable, spring and motor rewind hose reels is available in both standard AISI 304 stainless steel and also in AISI 316 stainless steel where higher standards of hygiene and chemical resistance are required. For potentially explosive environments, ATEX compliant hose reels are also available.

The reels use AISI 303 swivel joints and hardened and ground AISI 416-420 shafts, making them durable and resistant to chemicals. The retraction springs have a long life as they are manufactured from German spring steel. They deliver a consistently smooth action, reducing

operator strain and ensuring easy recoiling of the hose. The tension in the springs can be easily disabled, making it quick and safe to replace the springs on-site.

The reels suit a wide range of hose diameters and lengths, and the open design simplifies washing of the hose and reel.

Tecpro Australia
www.tecpro.com.au

Your guide to superior food and beverage performance

In the Food and Beverage industry, the ability for your site to make more improved, informed decisions about its operation is critical to process efficiency.

From the handling and batching of raw ingredients, to the manufacturing, final packaging and dispatching of the product, upgrading to a new automation system is often a core component to successfully achieve these optimum efficiency gains.

With many process plants today still running an outdated DCS, NHP have created a complete White Paper that addresses the ways in which a new automation system can deliver superior performance.

If you are experiencing higher maintenance and operating costs associated with supporting legacy hardware, this is for you and it's FREE.



Scan the QR Code to receive your free copy of Technical News which focuses on automation system optimisation



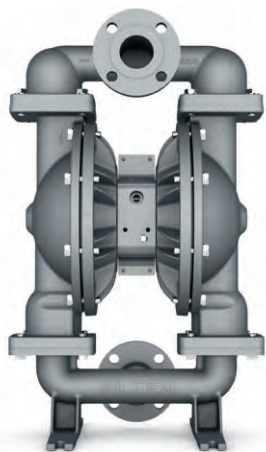
**Authorised
Distributor**

NHP ELECTRICAL ENGINEERING PRODUCTS PTY LTD
Sales 1300 NHP NHP | nhp.com.au |   

EASY TO DO BUSINESS WITH



NFM&TMADV 01/15



Stainless steel AODD pumps

Wilden has released the 430 and 830 Advanced FIT 316 stainless steel AODD pumps. Featuring corrosion resistance in aggressive chemical applications, the pumps have been designed to replace existing Wilden 38 mm and 51 mm pump installations.

The pumps precisely fit bolt-to-bolt and pipe-to-pipe in existing fluid-handling piping systems to provide increased performance with no repiping necessary. They have been engineered to be an easy, cost-effective way to enhance and upgrade existing pump performance with improved bolted product containment.

Other features include: increased flow rates up to 54% compared with current Wilden models; fewer fasteners and easy accessibility with power tools for faster assembly/disassembly and shorter downtime; labour-saving manifold flexibility to assist in tight-fitting installations; NPT or BSPT threads or ANSI or DIN flanges; designed for abrasive applications.

Dowdens Pumping Sales & Service
www.dowdens.com.au

Safety laser scanner

Leuze electronic has developed the RSL 400 series safety laser scanner. The series comprises 16 versions with operating ranges from 3 to 8.25 m. The scanners can be configured easily via Bluetooth and Ethernet TCP/IP.



Despite the large number of possible field pairs (100), the creation of independent configurations with application-oriented one-step configuration is simpler than ever, according to the company. The scanner is equipped with a wide scanning angle of 270° and offers a high degree of flexibility and cost saving for users. For example, it is suitable to mount on corners or edges for simultaneous cover of front and side guarding of AGVs and, depending on the application, can replace or save on a second laser scanner.

With two completely autonomous protective functions, two pairs of safety switching and nine other configurable switching outputs, the scanner can therefore solve two safety tasks simultaneously.

Visit Leuze on stand 468 at AUSPACK 2015.

Leuze Pty Ltd
www.leuze.com.au

Pulsed electric field system for smooth-cut, low-fat potato chips

Oil uptake in snack products such as potato crisps is dependent on product characteristics and process conditions, including frying time, temperature, product shape and surface.

A conventional potato slice has a 'feathered' surface, which increases uptake of frying oil. Elea's Pulsed Electric Field system produces potato slices with a smooth surface, which inhibits oil uptake. The company claims a reduction of up to 25% in oil uptake has been observed, while maintaining crispness and mouthfeel.

The physical process allows for the production of low-fat snack products without the use of fat replacers.

Elea
www.elea-technology.eu

Aerofloat
 Wastewater Treatment Specialists

FIND OUT MORE
www.aerofloat.com.au

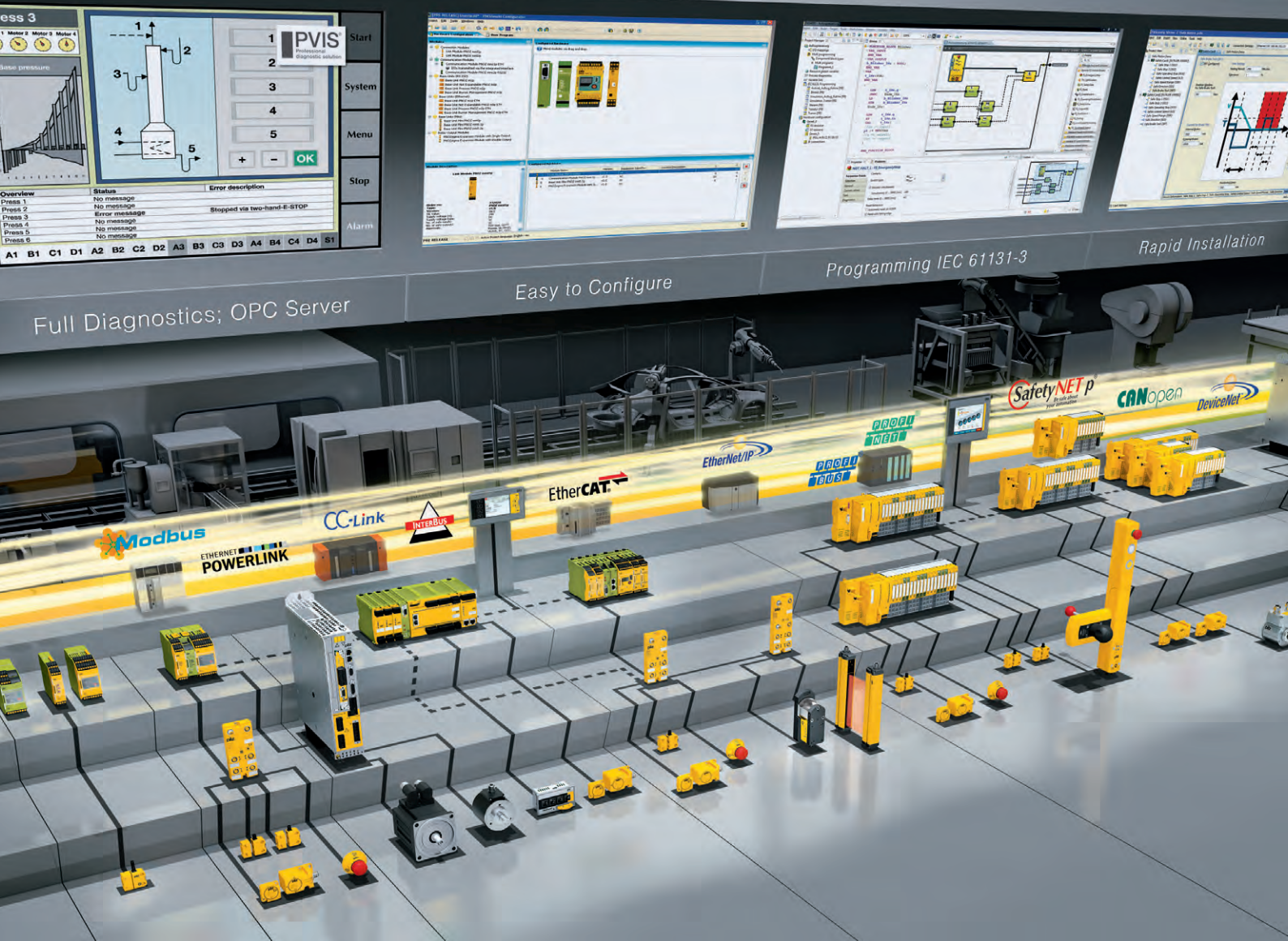
ray.anderson@aerofloat.com.au
 0419 223 293

DO YOU HAVE A WASTEWATER PROBLEM?

Aerofloat's world first technology:

- Various models available - Flows from 1-500 m3/day.
- Removes up to 97% suspended solids and grease.
- Water quality for sewer discharge standards or wash water reuse.





Automation: complete and simple!

pilz
the spirit of safety

- ▶ Full diagnostic options for reduced machine downtimes
- ▶ Open communication for high flexibility
- ▶ Innovative software solutions for easy configuration and programming
- ▶ High scalability for individual solutions
- ▶ One system for safety and automation

The 4-fold safety
of automation

COMPONENTS
SYSTEMS
SERVICES

Technical Ecological
Personal Economical

Visit us at
Auspack 2015
Stand 613

Melbourne • Sydney • Brisbane • Auckland

Ph: 1300 723 334 Ph: 03 9544 6300 Fax: 03 9544 6311

www.pilz.com.au safety@pilz.com.au



Intelligent optical rice sorter

Buhler has developed the SORTEX S UltraVision intelligent optical sorter for rice. The sorter is available with up to six chutes and the inspection system detects subtle rice discolouration and defects, including varying degrees of purples, greys, yellows, streaks and specks.

The multichromatic cameras accentuate the difference between grain colours, while the textured LED lighting enables improved detection, and the 'Crosshair Targeting' technology targets and ejects defects accurately.

The intelligent automation system maintains consistent performance and removes the need for manual set-up. Rice varieties are pre-installed and the auto-calibration system optimises lighting and cameras. The soft landing feature almost eliminates product breakages.

The operating software produces export-quality sorting in three steps and defect control enables rejection of individual defects. The system has remote access capability providing real-time technical support and can produce performance reports on ejection rates, performance data, defect analysis, statistics and traceability.

Buhler AG Australia NZ

www.buhlergroup.com

Sealed connectors

Bulgin Buccaneer 7000 Series are dust- and waterproof connectors that are suitable for mains power applications in harsh environments such as industrial machinery and building automation.

The connectors, which are available from element14, have IP66, IP68 and IP69K ratings and are available in two versions: metal, offering robust construction to protect against EMI; and thermoplastic, which is a lightweight, self-extinguishing material suitable for long-term outdoor use.

element14

au.element14.com

Metal-detectable teflon tape

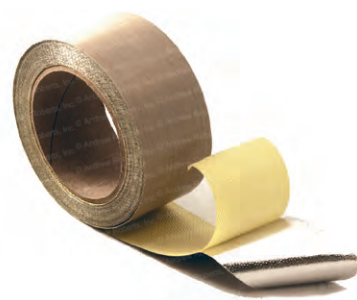
Teflon metal-detectable tape is a Teflon-glass fabric with a foil backing and silicone adhesive to provide a non-stick surface to heat sealers and chute liners. Providing protection against worn tape falling into a poly bag or package and going undetected, this foil-backed Teflon tape can be identified by a metal detector before leaving the factory facility.

Applications for this composite Teflon-tape fabric and aluminium foil tape include packaging in food, pharmaceuticals and medical disposable products.

The tape is available from JR Engineered Polymers in slit rolls from 6.35 mm to 914 mm wide by 32.9 m long. Metal detectable tape is 0.203 mm thick and operates at 260°C continuous.

JR Engineered Polymers Pty Ltd

www.engineeredpolymers.com.au





...KEEP COOL!



Solitherm Slim Line Series

Available in Cooling Capacities of 320W - 1500W

NEW STOCK AVAILABLE



Solitherm Compact Series

Available in Cooling Capacities of 750W - 4000W

NEW STOCK AVAILABLE

ENCLOSURE CABINET PRECISION COOLING

Seifert Systems - Precision air conditioning for process control cabinet applications. Designed to keep your electronics cool and operating at optimum performance. Seifert air conditioning incorporates filter less technology. No need to change filter mats means less maintenance and less down time. Cooling capacities range from 200 watt to 2600 watt. Seifert also offer heat exchangers heaters and fan systems - complete thermal solutions.

A 105 Lewis Rd, Wantirna South VIC 3152

E info@seifertsystems.com.au

T +61 3 9801 1906 / F +61 3 9887 0845

seifertsystems.com.au

HAPPY MACHINES FOR SAFER FOOD



Improving Efficiency, Performance and Quality – Safer Food with CASSIDA food grade lubricants

The CASSIDA portfolio covers a full range of food grade lubricants including speciality oils and greases. Our products fulfil the highest safety and quality standards and are registered by NSF International and certified according to ISO, Halal and Kosher standards.

The performance of CASSIDA lubricants, coupled with FUCHS' expert knowledge and service support, allows plant efficiency to be increased, maintenance costs to be reduced and the level of food safety to be improved.

Get to know the CASSIDA food grade lubricants for Happy Machines at fuchs.com.au or Free Call Australia 1800 1800 13.



The Fuchs Australasia team will be able to answer all your Cassida questions at Australia's Premier International Exhibition of Packaging and Processing Machinery, Material and Associated Technology - AusPack 2015.



24-27 March 2015 | Melbourne Convention and Exhibition Centre



Hygienic design in the food industry

Up to 30% of time in food and beverage is spent cleaning. Any reduction in this time that does not compromise the quality of the outcome directly contributes to a company's bottom line.

So, it is not surprising that processors place great importance on the cleaning-friendly design - hygienic design - of the machines during the purchase of new equipment. They want to achieve optimal hygienic conditions while minimising their investment in time and cleaning agents and by selecting machines 'geared up for hygiene' they gain a twofold benefit - increased food safety and increased productivity.

The central idea of hygienic design can be summed up fast: it is always about preventing microorganisms or impurities of any kind from affecting a food product using constructional measures. A central aspect here is that the machines and systems are easy to clean. However, what might seem simple is in fact no easy task. EHEDG, 3A or material specifications of the FDA - the list of hygiene requirements is long.

For Dr Jürgen Hofmann, hygienic design is, however, not a book with seven seals but quite simply the answer to the question: how can the system be optimally cleaned? According to him, many sources for the danger of impurities can be avoided using simple constructional details. "One only has to talk to a member of the cleaning staff to understand that sharp edges are less favourable than smooth transitions," stated Hofmann. His engineering office advises mechanical engineers and food producers who want to gear up their systems for improved hygiene. The chairman of the German division of

the European Hygienic Engineering & Design Group (EHEDG) knows from years of practical experience what has to be taken into account so that these are easy to clean: namely, particularly avoiding gaps, recesses, constructional cavities and flow-free zones, because here there is the increased risk of deposits and biofilms.

FrieslandCampina took into account these typical design features when it came down to putting the new dessert and yoghurt line in Gütersloh into operation. Almost 2000 actuators and valves ensure that the networked system comprising pipes, heaters and stainless steel tanks works accurately - in the heart of the sensitive process field, where cleaning agents and water are regularly used. Valve terminals by Bürkert, which were installed into the hygienic design casing, make the 'short cuts' to the actuators and sensors possible. The switch cabinets offer protection against the toughest washdown attacks with high-pressure cleaners. A blue silicone seal, which is resistant to all types of cleaning agents, guarantees absolute impermeability. Overhanging sloping roofs with a 30° angle and horizontal drip edges on the casing ensure that liquids drip off quickly and reliably.

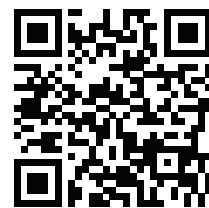
Stainless steel = hygienic design?

In addition to construction in accordance with hygienic criteria, the selection of the materials that are used for



SIEMENS

Free
whitepaper
now
available



www.siemens.com.au/futureofmanufacturing

A winning recipe for success

A simple upgrade has reduced one company's energy consumption by 40 percent. Find out how Siemens is improving the competitiveness of the food industry.

*“Everybody
was a winner
in this one:
the community,
the environment,
and both
businesses.”*

**Chris Connors, CEO
Sunshine Sugar**

The sugar industry has been a cornerstone of life in northern NSW for more than one hundred years. Although time might have stood still on the sleepy banks of the Clarence River, inside Australia's oldest operating sugar mill a simple upgrade has delivered extraordinary results.

Sunshine Sugar, Australia's only manufacturer of locally produced, certified sustainable, raw and refined sugar products needed to replace their ageing centrifugal drive system. They chose a Siemens AC drive-motor combination, which has yielded a 40 percent reduction in energy consumption.

To provide the right solution for Sunshine Sugar, Siemens was able to draw on the advanced know-how of our Sugar Competence Centre, and more 1,200 reference sites worldwide of

successful centrifugals operated by AC drives. Our industry-specific portfolio ranges from automation, instrumentation, drive technology and low-voltage switchgear, to global services for the full plant life cycle.

Want more information?

Visit www.siemens.com.au/futureofmanufacturing to:

- See the full award-winning solution provided for Sunshine Sugar
- Download an industry whitepaper on crystallization and automation
- Find out how Siemens technology could increase your company's productivity

www.siemens.com.au

building the machines and systems also plays an important role. Stainless steel is generally considered to be the most hygienic material of all; however, Jürgen Hofmann warned: “Stainless steel corrodes too under certain conditions!” Chlorides that are found in cleaning agents and even in the food itself are the cause. The corrosion depends on the state of the surfaces. Hofmann said: “It is essential that the areas that come into contact with the products are good quality. Initially passivation, for example electropolishing, and a medium surface roughness of max. 0.8 µm guarantees this.” An own working group of the EHEDG occupies itself with the chemical treatment of stainless steel surfaces. It is responsible for one of the numerous guidelines that define the criteria for cleaning-friendly design. Furthermore, the EHEDG certifies components which satisfy these requirements.

However, this alone is no guarantee that the system is in a hygienic state. Even on installing a certified sensor, it is possible for the entire measuring point to become unhygienic. The weakest link always determines the ‘cleanability’ of a system - which can slow down any optimised clean-in-place (CIP) process.

But when is CIP cleaning possible and when do the systems have to be hand-cleaned because product residues can’t be completely flushed out? This is when being able to




The weakest link always determines the ‘cleanability’ of a system - which can slow down any optimised clean-in-place (CIP) process.



dismantle the system easily, another facet of hygienic design, becomes essential.

If you are attending the giant food processing exhibition Anuga FoodTec, being held in Cologne between 24 and 27 March, you may find attending the following forums on hygienic design worthwhile:

- 24/3/2015 - 1.00-2.35 pm - Forum 3 - Why hygienic design (Boulevard North)
- 24/3/2015 - 3.33-5.05 pm - Forum 5 - Hygienic and cleaning aspects of bulks/containers and trucks (Congress Centre North)
- 25/3/2015 - 3.30-5.15 pm - Forum 14 - Aspects and specific areas in hygienic processing (Congress Centre North) 

Mr. Clean!



With our control head 8681 a new star is born! Not only because its status display is especially bright, but also that its talent shines through in its central role in decentralized automation. Universally adaptable, combining with all valve forms, it takes on the complete pneumatic control, feedback, diagnosis and even bus communication. And since it is made of chemically stable materials, has a high IP protection and is easy to clean, the 8681 is perfectly suited for hygienic applications.

Want to know more? Just call: 1300 888 868

bürkert
FLUID CONTROL SYSTEMS

Beer recovery plants

GEA Filtration has developed beer recovery plants which recover beer from surplus yeast in tank bottoms by means of cross-flow membrane filtration.

The membrane filtration plants use ceramic membranes and have a compact skid design. The modular plant design is available in a range of sizes to cover breweries of any capacity. The plants are easy to clean and sanitise, due to chemical- and temperature-stable membranes, and feature an integrated automatic control system.

The recovered beer contains no more suspended solids or yeasts, due to low operation temperatures and can be returned into the brewing process.

GEA Filtration
www.gea.com



Software platform for managing wireless networks

Emerson Process Management has introduced the Smart Wireless Navigator, a

software platform that enables users with large wireless deployments to bring together smart wireless tools for planning, managing and maintaining networks.

The device helps users to manage their expanding wireless infrastructure. Its single software platform design makes it easier for users with large deployments of wireless to manage their networks across functional groups.

An intuitive design organises large amounts of wireless diagnostic information and data, and existing infrastructure is illustrated and easily understood.

Emerson Process Management
www.emersonprocess.com.au



Intelligent vacuum pumps

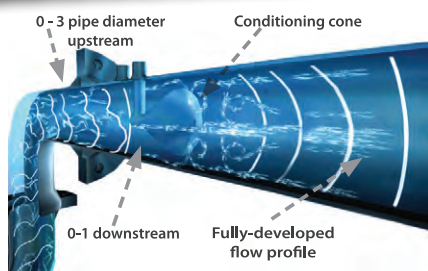
Atlas Copco has introduced the GHS VSD+ Series of highly efficient, intelligent vacuum pumps with variable speed drive (VSD). These vacuum pumps have been designed to deliver peak performance at operating pressures commonly found in industrial applications.

Features of the vacuum pump range include: energy savings of around 50%; significant improvement in efficiency and reduced life cycle costs; better performance against benchmarked oil-sealed and dry vane vacuum pumps; quiet operation, with noise levels around half that of comparable technologies; conforms to energy management and environmental commitments according to ISO 50001/14001; reduced environmental impact due to ultrahigh oil retention at all operating pressures.

Atlas Copco Compressors Australia
www.atlascopco.com.au



Flow Meter Solutions for Steam, Water & Gas



V-Cone® Flow Meter Advanced dP Flow Measurement

Exceptional Performance

Low Maintenance • Long Life

± 0.5% Proven Accuracy

- ✓ Wide Turndown
- ✓ Pre-Conditions Flow
- ✓ Installation Flexibility
- ✓ Minimal Straight Pipe

AMS

Contact AMS Instrumentation & Calibration Pty Ltd today at 03 9017 8225

or visit us online to learn more.
www.ams-ic.com.au

Unit 20, 51 Kalman Drive, Boronia, Vic, 3155, Australia
www.ams-ic.com.au | P: 03 9017 8225 | F 03 9729 9604



Aeration flow meter for wastewater treatment

Fluid Components International's ST100 Thermal Mass Flow Meter is suitable for use in wastewater treatment plants for flow measurement in aeration basins. It is Profibus PA compatible, providing accuracy combined with digital bus communication flexibility to reduce air flow energy costs.

The current version of Profibus PA includes functions to simplify the handling of field devices, and enable plant system retrofits. The meter's insertion style configuration makes it a simple drop-in replacement. Engineers and technicians can manage multiple fluid flow process variables and configure the meter remotely from the safety of the control room.

The meter is also suitable for use with Fieldbus, HART, Modbus, 4-20 mA analog, frequency/pulse or alarm relays. If a plant's communication needs change, the meter adapts with a plug-in card replacement that can be changed out in the field.

The meter's LCD/readout provides continuous display of all process measurements and alarm status, and the ability to interrogate for service diagnostics. The meter stores up to five unique calibration groups to accommodate broad flow ranges, differing mixtures of the same gas and multiple gases, and obtains up to 1000:1 turn down. Also included is an onboard data logger with a removable 2 GB micro-SD memory card capable of storing 21 million readings.

The meter can be calibrated to measure wet gas, mixed gases and dirty gases. The basic insertion style air/gas meter features a thermal flow sensing element that measures flow from 0.07 - 305 NMPS with accuracy of $\pm 0.75\%$ of reading, $\pm 0.5\%$ of full scale.

Designed for rugged industrial processes and plants, the meters include service up to 454°C and are available with both integral and remote up to 300 m electronics versions. The meter is approved for hazardous environments. Approvals include: SIL 1, ATEX, IECEx, FM, FMc, CPA, Inmetro and GOST-R.

AMS Instrumentation & Calibration Pty Ltd

www.ams-ic.com.au

Low-flow, water-saving trigger nozzle

The Strahman Mini M-70LF Series from Spray Nozzle Engineering is designed for heavy-duty cleaning in all industrial applications, and is suitable for both hot and cold washdown applications. The spray nozzle is compact and weighs 800 g.

The spray nozzle is water efficient, designed to reduce potential water wastage by providing an optimum cleaning performance at lower flow rates. With an adjustable spray pattern controlled by the trigger, the user has the flexibility to vary and control the spray on demand, while its ergonomic design via the palm trigger reduces operator fatigue during prolonged use.

The Mini M-70LF Series is accredited with the Smart Approved WaterMark, Australia's outdoor water-saving labelling program, and has been assessed by an independent expert technical panel to be a true water-efficient product.

Spray Nozzle Engineering

www.sprayingsolutions.com.au










developing



processing



packing



validating



"Your trusted advisors to provide quality solutions in food processing technology" www.foodprocessingspecialists.com.au

Fruit and vegetable processor steams ahead

Oerlemans Foods is a grower, processor and supplier of freshly frozen vegetables, fruit and potato products, which are exported to more than 50 countries worldwide. With a range of over 1000 products and brands, Oerlemans focuses on the international foodservice, retail and industrial markets, processing up to 175,000 tons of food per year, with an annual turnover of €135 million.

As part of its quest for continuous improvement, Oerlemans decided to invest in a new steam peeling line at its processing plant in the Netherlands.

Oerlemans researched various peeling solutions for its processing line against its performance criteria before choosing TOMRA's steam peeling line.

The steam peeling line, with a capacity of 25 tons/h, incorporates the Orbit steam peeler, the TOMRA steam accumulator and the Dry Peel Separator (DPS).

The steam peeler can operate at a high steam supply pressure using a steam accumulator to achieve very low steam times and providing minimal peel loss. The steam peeler includes TOMRA's mixing process and steam saving process, which enhances the efficiency of the peeling process.

"TOMRA's steam peeling line highly exceeded our expectations. The combination of the Orbit with the DPS showed substantial revenue improvements compared to the Orbit and brusher in our other plant. This yield improvement was achieved even during the first production runs," said



© iStockphoto.com/Robert Matić

Gerard Busser, manufacturing services manager at Oerlemans Foods.

"The complete steam peeling line allows us to achieve an excellent final product quality with a high yield, and the amount of heat that is transferred to the product is also very low," said Busser.

TOMRA Sorting Solutions Pty Ltd
www.tomra.com

PROCESSING

BOOST PRODUCTIVITY REDUCE LABOUR COSTS



Impact Automation can offer a range of processing and packing equipment to automate labour intensive processes, including:

- Tray and Tub Denesters
- Lidding Equipment
- Sealing Equipment
- Customised Conveyor Systems
- Pharmaceutical Automation
- Weighing Equipment
- Carton and Case Erectors
- Case Packers ... and more

www.impactautomation.com.au
Call **02 96486000**

Meet Ian Gillanders – our new rep for Victoria and the southern states – at Auspack on Stand 429



VISIT US AT AUSPACK 2015 STAND 429

Heat exchanger cools Tahi's honey

Cooling viscous food products is not a simple task and Tahi Honey of Whangarei, NZ, wanted to cool its pure high-grade active Manuka honey to low temperatures.

Knox Henderson, operations manager for Tahi Honey, explained: "Tahi Honey has grown exponentially over the last year, so the need to increase throughput was a priority. In the past we had relied on ambient cooling methods to cream our honey, but this is a time-consuming method suitable only for small batch productions. We approached GEA to help us out in regard to creating a cooling unit that could reduce the temperature of honey by 22+ degrees C in order to cream it. This needed to be done as we were doing the final stage of filtering so that the honey was going into the creaming tank at the correct temperature. We also needed the unit to be portable, which presented an additional challenge."

In this application the challenge of cooling such a viscous product required a different approach, and the newly available HRS Rotex Rotating Scraped Surface Heat Exchanger provided a perfect solution. Design features in the Rotex such as the helicoidally shaped spiral blade mounted on the scraper bar make it suitable for heating and cooling difficult and viscous food products, helping to reduce pressure drop and pumping power required, at



the same time increasing heat transfer coefficients and overall heat exchanger performance. The compact nature of the HRS Rotex also allowed the small skid-mounted system, supplied by GEA Process Engineering NZ, to be portable and easily manoeuvrable.

Commenting on the experiences in cooling the high-grade Manuka honey with the HRS Rotex, Henderson said: "What we received has more than met our requirements and performed better than the figures quoted. The HRS Rotex has no trouble with the viscosity of Manuka honey even at low temperatures and can reduce 40+ degrees honey to well below 20°C while handling a throughput of at least 500 kg/h. With the HRS equipment now in place, we have decreased our production time by 4 days!"

Chris Little, general manager for HRS Australia & New Zealand, said: "HRS is delighted to have collaborated with Tahi Honey and GEA on an interesting and challenging project, and we see this system as another step forward in the Southern Hemisphere food market for HRS and our partners."

"HRS always offers the optimum heat exchanger solution to any heat transfer application and in this instance our exciting new Rotating Scraped Surface Heat Exchanger was clearly the best and most efficient option offering a host of advantages over old plate heat exchanger technology. The flow rate required for Tahi only required our R1 mono tube Rotex; we are looking forward to the next project, which will require our R3 multitube Rotex SSHE, performing a much larger duty in a single compact unit."

HRS Heat Exchangers Australia New Zealand
www.hrs-heatexchangers.com



A.B.N. 22 152 305 336
www.westwick-farrow.com.au

Head Office
 Cnr. Fox Valley Road & Kiogle Street,
 (Locked Bag 1289) Wahroonga NSW 2076
 Ph: +61 2 9487 2700 Fax: +61 2 9489 1265

Chief Editor: Janette Woodhouse
wnift@westwick-farrow.com.au

Publisher: Geoff Hird

Art Director/Production Manager: Julie Wright

Art/Production: Tanya Scarselletti, Odette Boulton

Packaging Section Editor: Alice Richard

Assistant Editor: Alice Richard

Circulation Manager: Sue Lavery
circulation@westwick-farrow.com.au

Copy Control: Mitchie Mullins
copy@westwick-farrow.com.au

Advertising Sales

National Sales Manager - Nicola Fender-Fox
 Ph: 0414 703 780
nfender-fox@westwick-farrow.com.au

NSW, QLD - Kerrie Robinson
 Ph: 0400 886 311
krobinson@westwick-farrow.com.au

VIC, SA - Sandra Romanin
 Ph: 0414 558 464
sromanin@westwick-farrow.com.au

WA - Mandi Grubisin
 Ph: 0468 840 739
mgrubisin@westwick-farrow.com.au

NZ - Mark Ryu
 Ph: 0800 44 2529 Fax: +61 2 9489 1265
mryu@westwick-farrow.com.au

Germany, Austria, Switzerland - Eisenacher Medien
 Ph: +49 228 249860 info@eisenacher-medien.de

Asia - Lachlan Rainey
 Ph: +61 (0) 402 157 167
lrainey@westwick-farrow.com.au

If you have any queries regarding our privacy policy please email privacy@westwick-farrow.com.au

Subscriptions for unregistered readers
 - price on application



September 2014 total CAB audited circulation (Aust + NZ):
 6545 readers (81% personally requested)

Printed and bound by SOS Print + Media
 Print Post Approved PP100007395
 ISSN No. 1039-8414

NOTICE:
 All material published in this magazine is published in good faith and every care is taken to accurately relay information provided to us. Readers are advised by the publishers to ensure that all necessary safety devices and precautions are installed and safe working procedures adopted before the use of any equipment found or purchased through the information we provide. Further, all performance criteria was provided by the representative company concerned and any dispute should be referred to them. Information indicating that products are made in Australia or New Zealand is supplied by the source company. Westwick-Farrow Pty Ltd does not quantify the amount of local content or the accuracy of the statement made by the source.



REGISTER
TODAY FOR
YOUR

FREE SUBSCRIPTION

If you live in Australia or New Zealand and your job title matches those on this form, we will deliver you 6 complimentary issues a year!

THREE QUICK WAYS TO REGISTER

- + WWW.FOODPROCESSING.COM.AU/SUBSCRIBE
- + FAX THIS COMPLETED FORM TO (02) 9489 1265
- + MAIL THIS COMPLETED FORM TO LOCKED BAG 1289 WAHROONGA NSW 2076

Wrapper number:
(if known)

--	--	--	--	--	--

***All fields required to qualify for your FREE magazine**

NAME*

JOB TITLE*

ORGANISATION NAME*

ADDRESS*

POSTCODE*

COUNTRY*

PHONE NUMBER*

MOBILE NUMBER*

EMAIL*

SIGNATURE*

DATE*

JOB FUNCTION* [] INDUSTRY* [] COMPANY SIZE* []

[select one from lists to the right>]

PRIVACY POLICY AVAILABLE ONLINE AT WWW.WESTWICK-FARROW.COM.AU

OPTIONS

I WOULD LIKE TO RECEIVE THIS MAGAZINE [] DIGITAL [] PRINT [] BOTH

I WOULD ALSO LIKE TO RECEIVE THE *FOOD PROCESSING* E-NEWSLETTER []

JOB FUNCTION

(please choose one only)

- 1 Management - Director/C-level
- 2 Management - Specialist
- 18 Analyst/Researcher
- 20 Business Owner
- 13 Consultant
- 14 Contractor/Tradesperson
- 16 Education/Training
- 3 Engineer - Electrical
- 5 Engineer - Process
- 6 Engineer - Project
- 15 OHS/EHS
- 22 Postgrad Student
- 7 Purchasing/Procurement
- 19 Sales/Marketing
- 12 Scientific Officer - QA
- 11 Scientific Officer - R&D
- 23 Scientist
- 17 Student - Undergrad/Apprentice
- 10 Technical Officer
- 9 Technician - IT
- 8 Technician - Maintenance/Service

INDUSTRY

(please choose one only)

- 1 Agriculture/Rural
- 47 Biotech
- 2 Building/Construction
- 3 Chemicals/Allied Products
- 40 Cleaning
- 50 Consulting/Contracting
- 6 Education/Training
- 8 Engineering Services
- 9 Environmental Services
- 10 Finance/Banking/Insurance/Legal
- 11 Food - Bakery
- 12 Food - Beverages
- 13 Food - Confectionary
- 14 Food - Dairy
- 15 Food - Fruit & Vegetables
- 16 Food - Meat
- 17 Government
- 20 Health/Medical
- 43 Information Technology
- 21 Instrumentalities (eg CSIRO)
- 26 Laboratory - Analytical
- 27 Laboratory - Clinical/Medical
- 28 Laboratory - Life Sciences
- 29 Logistics/Transport/Warehouse
- 30 Manufacturing
- 33 Packaging
- 45 Pest Control
- 48 Pharma/BioPharma
- 34 Processing
- 35 Retail/Wholesale/Hire
- 36 Service/Maintenance
- 38 Testing/Certification (eg NATA)
- 39 Utilities

COMPANY SIZE

(please choose one only)

- 1 Under 100
- 2 100 - 250
- 3 251 - 500
- 4 Over 500

READY-MADE SOLUTIONS

To Your Specific Bulk Bag Handling Problem



FILL

Fill one bulk bag per week or 20 per hour with REAR-POST, TWIN-CENTREPOST™, and SWING-DOWN® Bulk Bag Fillers

Flexicon's extra-broad model range, patented innovations and performance enhancements let you exact-match a filler to your specific cost and capacity requirements. Patented TWIN-CENTREPOST™ models maximise strength, accessibility to bag loops and economy. Cantilevered REAR-POST models allow pass-through roller conveyors. SWING-DOWN® models pivot the fill-head to the operator at floor level for quick, easy and safe spout connections. Optional mechanical and pneumatic conveyors.



CONDITION

Loosen material solidified in bulk bags during storage and shipment with BLOCK-BUSTER® Bulk Bag Conditioners

Opposing hydraulic rams drive contoured conditioning plates to crush and loosen solidified bulk material safely and easily. Bulk bags can be raised, lowered and rotated to allow complete conditioning of the entire bag through the use of automated turntables and scissor lifts, or electric hoist and trolley assemblies. Offered as stand-alone units for loading with forklift or electric hoist and trolley, or integrated with bulk bag dischargers for reduced cost, footprint and loading time.



UNLOAD

Save time, money and space with BULK-OUT® Multi-Function Bulk Bag Dischargers and Weigh Batching Stations

Condition, de-lump, screen, feed, weigh batch, combine with liquids, and convey as you discharge, with a custom-integrated, performance-guaranteed, dust-free discharger system. Offered as stand-alone units for loading with forklift or electric hoist and trolley, split frames for low headroom areas, economical half frames and mobile frames. All available with mechanical and pneumatic conveyors, flow promotion devices, bag dump access, automated weigh batching packages, and much more.

Stand-alone units to complete, automated systems integrated with mechanical and pneumatic conveyors

flexicon®
.com.au



See the full range of fast-payback equipment at flexicon.com.au: Flexible Screw Conveyors, Tubular Cable Conveyors, Pneumatic Conveying Systems, Bulk Bag Unloaders, Bulk Bag Conditioners, Bulk Bag Fillers, Bag Dump Stations, Drum/Box/Container Tipplers, Weigh Batching and Blending Systems, and Automated Plant-Wide Bulk Handling Systems



AUSTRALIA
sales@flexicon.com.au
1300 FLEXICON


USA +1 610 814 2400
UK +44 (0)1227 374710
SINGAPORE +65 6778 9225
SOUTH AFRICA +27 (0)41 453 1871
CHILE +56 2 2415 1286




Talk to Matthews today to see how we can provide...

Improve your
production line
reliability and
productivity.

 **Inspection solutions to improve product quality**

 **Reliable coding & labelling technology that just works**

 **Software integration solutions that give you real-time data**

productive



Matthew's
INTELLIGENT IDENTIFICATION

1300 CODING
(1300 263 464)
www.matthews.com.au

Matthews
INTELLIGENT IDENTIFICATION

