

## THE JUGGLER

Revolutionises milk dispensing

**MICROBES CAN'T THINK!**  
Reducing the guesswork

**ALLERGENS**  
Practical control methods

**RECALL**  
GS1 Australia's effective systems

  
**the juggler™**  
cafe milk tap system

  
**SIX  
SIMPLE  
MACHINES**



## Help keep contaminants out

Tork blue – the 'high vis' of food safety



Rely on highly visible Tork® blue to provide extra reassurance in food safety compliance. We provide blue wipers, cloths and towels for scheduled and unscheduled cleaning, and better hand hygiene.

- **Highly visible** blue makes it easier to see contaminants in food production
- **Food safe** with HACCP and ISEGA certification
- **Increase efficiency** with extra strong and absorbent wipers and cloths



ISEGA

For a **FREE** sample, visit [tork.co.nz/foodsafety](http://tork.co.nz/foodsafety)

**TORK**





# HOSHIZAKI

*Simply the world's best ice™*



Hoshizaki is the world's leading brand in ice makers with over 60 years of creating the world's best ice.

Hoshizaki refrigeration and freezer products are designed for kitchen professionals who demand a reliable, cost effective and easy to maintain product.

- ◆ Clear hard ice
- ◆ The ice has high displacement
- ◆ The crescent ice allows pouring and nipping of spirits without splash
- ◆ The ice doesn't bridge while in the ice storage bin

### *Contact us*

**E** [info@lancerbeverage.com](mailto:info@lancerbeverage.com)

**W** [www.lancerbeverage.com](http://www.lancerbeverage.com)

**P** 08 8268 1388





## GS1 Australia Recall streamlines the recall and withdrawal notification process

**R**etailers, manufacturers and consumers are growing increasingly concerned about food safety and the number of products being recalled or withdrawn.

According to the Australian Competition and Consumer Commission (ACCC), there have already been 69 recalls of food and grocery items reported in 2016\*.

These product recall events have shown that delivery of timely and accurate information to trading partners and regulatory agencies is paramount in the protection and safety of the consumer, the company and the brand.

In May 2010, the ACCC published the 'Review of Australian product safety recalls system' report which highlighted the need to improve the effectiveness of the product recall management process.

### The total recall

GS1 Australia Recall (formerly GS1 Recallnet) was officially launched in August 2011. The GS1 Australia Recall (*Recall*) service is a web-based portal which enables manufacturers, suppliers and distributors to efficiently, accurately and securely communicate product recalls to customers and regulators.

Based on GS1 standards and global best practice, the service is designed to increase the speed and accuracy in the removal of unsafe or unsuitable products from the supply chain.

Developed in collaboration with Food Standards Australia New Zealand (FSANZ), the Australian Food and Grocery Council (AFGC), the ACCC, national retailers and a number of Australian and international food and grocery manufacturers, *Recall* has assisted over 250 Australian food and beverage

companies with the development and implementation of their product recall and withdrawal management process.

With current subscribers including major retailers such as Coles, Woolworths, Metcash and Costco, *Recall* is the key to a more effective product recall management process.

*Recall* has recently been certified by HACCP Australia as being effective and suitable for businesses operating a HACCP food safety program and is also mentioned in the FSANZ Food Industry Recall Protocol.

Nestlé's eBusiness Manager, Mandeep Sodhi said, "Nestlé has integrated *GS1 Recall* within its own product recall and withdrawal processes as it provides far greater speed, accuracy and control over such a critical event."

### Product recall communication plans and tools are must haves

Just as the food industry has taken on board food safety certification in an effort to prevent food safety incidents, *Recall* provides a framework to quickly and effectively respond should an incident progress to a recall or withdrawal notice.

Peter Chambers, GS1 Australia's Head of Supply Chain Improvement, said the increasing demands for food product safety for consumers and an effective product recall management process are the main focus in today's supply chain pyramid.



“GS1 Australia Recall uses global GS1 standards and ISO standards, allowing interoperability with other recall portals and is clearly supported by industry and regulators including FSANZ and ACCC,” said Mr Chambers.

*Recall* provides a standardised solution across industry that delivers process improvement and information vital to consumer and food safety excellence. In the event of a product recall, *Recall* ensures affected products are correctly identified and expressly removed, targeting all affected parties with the right information to allow them to remove only the items identified in the notice.

GS1 Australia provides complete training and ongoing support so users can be reassured they will be adequately prepared to action a recall or withdrawal notice, safely and securely online.

“*Recall* is the only product recall notification system that is documented in the FSANZ Food Industry Recall Protocol. Therefore companies using the *Recall* portal to communicate a notice can be assured they are meeting their regulatory requirements,” added Mr Chambers.

“The ability of *Recall* to receive and assemble information from trading partners enables companies to record and report on the progress of a product recall.”

**If we have to notify our customers of a recall, we know we will be able to do so quickly. With GS1 Recall Australia, we can be sure that the notification will reach the people it needs to, when it needs to, so they can act quickly.”**

**Rick Drury, Managing Director at Drury Orchards**

### ‘Mock Recalls’ get you ready for the real thing

*Recall* is also helping organisations with a critical part of product recall preparation – undertaking mock recalls.

In Australia, an annual mock recall is required for all businesses that manufacture, import, distribute or wholesale food products as part of their recall procedure in line with the Food Industry Recall Protocol set by FSANZ. The annual mock

recall is an essential part of HACCP, ISO and many other quality certification programs.

“Ensuring your company is ready to execute a recall effectively, to minimise consumer harm and business interruption, is of critical importance to businesses of any size, and the only way to do this accurately is to put your recall plans into practice,” Mr Chambers said.

Effective mock recall drills provide valuable insights into handling the real thing when it happens. The mock recall function in *Recall* is designed to be part of a full mock recall process in a secure environment, helping organisations find and bridge any gaps before they encounter a real-life recall situation.

In addition to the industry protocol, many retailers and trading partners require their suppliers to demonstrate their ability to trace and recall a product by conducting mock recalls at least twice a year.

“Effective mock recall drills enable Australian food and grocery companies to effectively prepare for a possible recall event and at the same time, achieve their SQF/BRC accreditation by generating a mock recall notification to an independent third party organisation,” Mr Chambers added.

**It is no longer good enough to have a rough, hastily prepared, manual notice to communicate a product recall notice. We want our suppliers to be prepared to create an industry best practice notice, quickly and with an audit trail.”**

**Aaron Westwood, Exis Sustainable Systems – food safety consultants for Harris Farm Markets.**

### For more information

*Recall* is the only standards based solution for effective recall and withdrawal notifications to be issued by your business.

By increasing the speed and accuracy of recall and withdrawal notifications, *Recall* significantly decreases business and consumer risk, reduces costs, protects brands and ultimately, helps improve food safety in Australia.

To find out more about *Recall* and how it will help your organisation to minimise the impact and cost of a product recall or withdrawal, **visit the [www.gs1au.org/our-services/recall/](http://www.gs1au.org/our-services/recall/) or contact GS1 Australia on 1300 BARCODE to speak to one of their experts.**

GS1 Australia is the leading provider of supply chain standards and solutions for over 20 industry sectors. We introduced barcoding to Australia in 1979 and today we enable more than 17,000 member companies of all sizes to become more efficient by implementing the GS1 system. We bring businesses, associations and industries together. This community comes to GS1 Australia for advice, networking and solutions to their supply chain challenges. ✨



**Recall**



\*Source: <http://www.recalls.gov.au/content/index.phpml/itemId/952823>

# Flowcrete

for the world at your feet

**INTRODUCING...**

**HACCP INTERNATIONAL CERTIFIED**

**ANTIMICROBIAL FLOORING**

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



HACCP INTERNATIONAL CERTIFIED



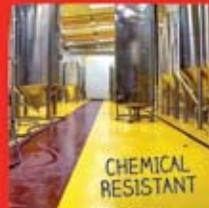
CONTAINS ANTIMICROBIAL POLYGIENE®



INTEGRATED DRAINAGE



SUITABLE FOR STEAM CLEANING AND WASHDOWNS



CHEMICAL RESISTANT



SLIP RESISTANT



DURABLE AND HARD WEARING

To find out more or contact your local office, visit [www.flowcrete.com](http://www.flowcrete.com)

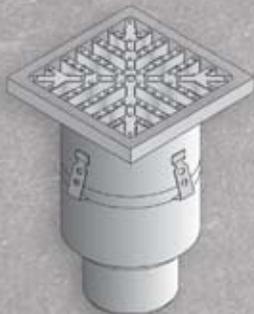


## hygiene from start to finish...

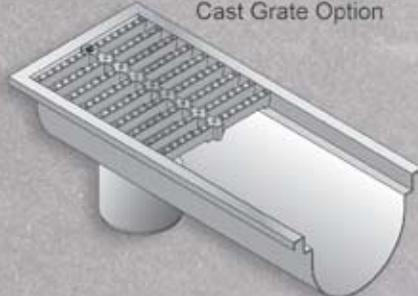
STAINLESS STEEL INDUSTRIAL DRAIN & CHANNEL PRODUCTS

[www.blucher.com.au](http://www.blucher.com.au)

Blucher Hygiene Channel with Hygiene Cast Gate Option



Blucher Industrial Drain with Hygiene Cast Gate Option



Ensure you specify a floor drain solution that is easy to maintain, reliable for years and a leading self-cleansing design.

- Over 24 years of experience.
- Local Australian channel fabrication.
- Bacteria resistant design.
- WaterMark approved components.
- Removable Water Trap option.

**BLUCHER** Australia

Supplied With Experience...

# The Juggler

**‘Good bye’ to bottles  
and ‘Hello’ to efficiency!  
Faster service, reduced cost  
and hygienic**

**R**eally busy cafés can go through 150 litres of milk each day! That’s a lot of 2 litre bottles. Every bottle is purchased, received, moved, stored, retrieved from storage, opened, poured, poured again, left on the bench, poured again and finally discarded. Waste, employee handling, bench space and storage space are all impacted.

However some cafes are swapping their manual bottle systems for a milk storage and dispensing system that is revolutionising the café industry and bring joy to its baristas. Using this system, milk is stored in bladders within a chiller cabinet under the bench and dispensed from taps right at the coffee machine.

*The Juggler* is the first milk dispensing system designed specifically for use in a busy café environment.

It reduces waste, speeds up service and helps café staff to focus more of their attention on providing a great customer experience – and a great cup of coffee.

Milk is supplied in 10-litre bladders that can be loaded into the chiller system, so that up to 120 litres of milk can be dispensed from the taps without the need to reload the fridge. Most of the country’s milk companies now offer their customers milk in bladders that are compatible with *The Juggler*.

Once the milk is loaded, *The Juggler* helps to streamline the coffee making process and speeds up service. Time-saving features include hands-free volumetric dosing which enables a barista to activate a dose and then return to other tasks while the dose is automatically poured. This means less time is wasted opening, pouring from and crushing empty milk bottles.

Six Simple Machine’s Ross Nicholls explains “We take our product development and testing very seriously. Initially we spent 15 months in R&D, testing and achieving compliance and certifications before we were ready to publicly show and sell our first machine. Even now when making a design change, we test components to at least one million cycles on specially-designed testing rigs before extensive field trials begin in operating cafés. Only then do we consider making a permanent change.”

Charles Cameron, a Sydney barista with more than 4 years’ experience using *The Juggler* has declared that for him the presence of a Juggler in his workplace is non-negotiable. “*The Juggler* has helped revolutionise milk usage in the café and specialty coffee industry. I believe *The Juggler* will one day become a universal standard, which will drastically reduce milk wastage.”

From personal experience, Charles says *The Juggler* not only helps improve workflow, but provides a much cleaner



environment for busy café staff. “It’s the complete package; it delivers consistent doses, maintains temperature, can be used to rinse pitchers, it has a drain, keeps everything clean and is in line with environmental values,” Charles says. “*The Juggler* is evidence of how the industry has evolved.”

Close to 400 cafés and restaurants across Australia and New Zealand are now using *The Juggler*. For these cafes, *The Juggler* provides savings opportunities that are easily quantifiable in terms of waste reduction, but it also adds value to businesses in many ways that are less measurable. This includes a range of OH&S benefits, positive comments from café customers and improvements in the speed of service, all resulting in more coffee sales.

## **Easy Line Flushing and Sanitisation:**

The milk lines are cleaned daily by flushing and sanitising with special solutions developed especially *The Juggler*. The CIP (clean in place) system is simple to set up and runs automatically for 15 minutes. This is complemented by periodic dismantling and inspections from Six Simple Machine’s service engineers.

## **HACCP Certification:**

*The Juggler* has achieved HACCP International’s Food Safe Equipment, Materials and Services Certification. Ross Nicholls of Six Simple Machines reports that “Achieving



this certification was an extremely important factor in our initial R&D process. Throughout the initial design phase, we worked extremely hard to develop an easy-to-use and effective CIP (clean in place) system. As part of this, we worked with the Australian cleaning chemical manufacturer, Cafetto, to develop a milk line cleaner that would complement our CIP system and guarantee ongoing hygiene of the system without physically degrading internal components of the machine.

“Despite being confident in our CIP and cleaning chemical, we felt that we needed an independent and respected authority to verify our own findings and to help promote this aspect of *The Juggler* to prospective customers. Because HACCP Australia is widely regarded as an authority on food safety and hygiene throughout the café industry, their certification was the obvious choice.”

#### Final thoughts:

“What’s been most rewarding is that *The Juggler* has proven that the milk on tap concept is not only viable, we hear it being described as ‘the way of the future,’” Six Simple Machine’s Ross Nicholls. ✨

Contact details:  
P 02 9666 5126  
[www.thejuggler.com.au](http://www.thejuggler.com.au)



SIX  
SIMPLE  
MACHINES

**the juggler™**  
cafe milk tap system



  
**the juggler™**  
cafe milk tap system



Reduce  
waste.  
Improve  
workflow.



SIX SIMPLE MACHINES

[www.thejuggler.com.au](http://www.thejuggler.com.au)

[info@sixsimplemachines.com.au](mailto:info@sixsimplemachines.com.au) | (02) 9666 5126

Australian Ingenuity. Australian Built.

# Testing is a tool: Improved microbial food safety assurance: tools and technologies to reduce the guesswork.



**Most people know  
the basic rules of  
food hygiene,  
don't they?**

**By Dr Tom Ross**

**W**e teach our children to wash their hands after going to the toilet, we know to keep left-overs in the fridge and to cook, or at least wash, raw foods because they might be contaminated with 'germs'. We cover foods, we avoid mixing cooked and raw and, if the food is old or we're not sure about how it's been stored, we apply the old adage of "if in doubt, throw it out". They're really simple rules that reflect our awareness that invisible microbes might make us sick, and ways to minimise the risk. It's hardly rocket science, is it? And if these are simple rules that ordinary people apply, how much safer must it be when food professionals prepare and process foods?

If it is that easy, then it's hard to understand why – particularly given the enormous advances in biological science and technology over the last few decades – that there seems to have been no reduction in the incidence of microbial food-borne illness in decades.

Our foods, at source, are not free from microorganisms. Irrespective of technological advances, foods are still produced in natural environments that can harbour pathogenic microbes. Common food animals have a gut microbiota that can also harbour pathogens. Cows udders can become infected and contaminate milk with pathogens like *Staphylococcus aureus* or *Listeria monocytogenes*. Microbial hazards arise from myriad sources, often without signs that contamination has occurred.

The problem is compounded by expectations that fresh food is inherently 'healthier', and by longer food supply chains that can extend across continents. Longer supply chains with more handlers involved, and reduced use and choices of food preservatives, increase the chance of contamination and for microbes to grow to hazardous levels before consumption. Put simply, much higher standards of food hygiene are expected, and needed, but with fewer 'weapons' in the arsenal.

'End product' testing is useful only for batches of product that contain a high proportion of defective units, i.e., units that fail to meet relevant food safety criteria. If we assume that a just tolerable foodborne illness risk is one per 100 meals, to assure



this incidence by testing we would need to be able to detect batches of product that have  $\geq 2$  contaminated units per 100. We have the methods, particularly those involving enrichment and/or signal amplification (e.g. PCR), to detect a few microbes in a large volume (e.g. 125g) of food, but only if we know where to look. The problem is finding those one or two contaminated units among 100 with confidence. The probability of detection can be estimated using the "binomial distribution"<sup>(1)</sup> equation, that tells us how many samples are needed to be 95% certain that the batch as a whole has less  $\leq 1$  in 100 unacceptable units.

The binomial distribution tells us we'd need to take 299 samples, and they'd all have to test negative, to provide confidence that the frequency of contaminated units was less than one in 100. However to be confident that the frequency of contamination was less than one in 10,000 (essentially the estimated status quo), we'd need to take nearly 30,000 samples and all of them would have to be "clear"<sup>(2)</sup>. Those sorts of sampling numbers are simply not feasible.

## So, what is the answer?

On May 25, 1961 then US President John F Kennedy set a vision for his nation, that USA should "commit itself to achieving the goal... of landing a man on the moon and returning him safely to the earth." That speech started the 'space race', but the race was not without drama. The US space

(1) To be strictly correct, we should use another, related, equation called the 'hypergeometric distribution', but for almost all practical purposes the binomial distribution gives the same result.

(2) Reliable on-line tools that can perform these calculations to design or assess the reliability of sampling plans can be found at: [http://www.icmsf.org/main/software\\_downloads.html](http://www.icmsf.org/main/software_downloads.html), or <http://www.ftools.org/samplingmodel/>



The Expedition 20 crew members share a meal in the Unity node of the International Space Station. Image Credit: NASA

program had many spectacular explosive failures and the rocket scientists realized there was a weakness in the way that the rockets were assembled and constructed. Through those failures it became clear that new techniques for assuring the quality of individual components and their final integration were needed.

A technique called Failure Mode, Effects, and Criticality Analysis (FMECA), first developed by the US Army in 1949 was applied to the Apollo program. That analysis focused attention on ensuring the absolute reliability of ‘mission critical’ components, including the astronauts themselves. Thus, the

safety of the astronauts’ food supply was regarded as critical which led to the application of FMECA to food production, eventually spawning the Hazard Analysis Critical Control Points (HACCP) system. HACCP is now the most widely endorsed approach to food safety management in the world.

The basic principle of HACCP is that by understanding where hazards arise in food processes and by putting in place procedures to prevent, control or remove them, those hazards can be controlled in the end product to ensure the safety of the food and to minimise reliance on “end product” testing. Indeed, before HACCP, quality assurance for space foods initially consumed most of the food through testing.

Sooner or later, if you perform HACCP properly, you end up asking questions that need quantitative answers, like “how much control is needed” and “how can it be achieved”?. For instance what times, and temperatures, or product formulations are needed to control specific microbial hazards?

To answer those questions requires a high level of expert knowledge because of the diversity of behaviour and environmental limits of different microbial hazards. Thus, while HACCP is founded on a logical a system that allows for the early detection and elimination of specific hazards the correct application of the concept requires comprehensive expert knowledge.

Fortunately, food microbiology is predictable and the reproducibility of microbial behaviour in foods does offers great potential to food safety managers.

### Microbes can’t think, ergo Predictive Microbiology

Bacteria and fungi can’t think. They don’t have free will. As such, they tend to behave reproducibly in response to their environment, which has led to the development of the discipline of predictive food microbiology.

The basic premise of predictive food microbiology is that the behaviour (growth potential, growth rate, inactivation) of microorganisms is deterministic and able to be predicted from:

- specific characteristics of the micro-organism itself
- the immediate environment of the micro-organism (i.e., food composition and storage conditions)
- time the organism is in those conditions and – sometimes –
- the previous environment (because it affects lag time, and may affect resistance to inimical conditions).

In practice, the information about those responses is derived from systematic studies in research laboratories or gleaned and collated from the published scientific literature. The patterns of response are characterised and the data and patterns summarised as mathematical equations, called “predictive microbiology models”. In essence, these equations represent condensed quantitative knowledge of the microbial ecology of foods.

No matter how much a researcher knows, or how well that knowledge can be summarised in a mathematical model, to be useful that knowledge still needs to be communicated and made accessible to people in the food industry in a form that they can use to improve food safety or shelf life. Accordingly, the equations are usually integrated into computer software that automates the calculations to enable quick predictions of microbial changes in foods over time.

Many of these models are publicly available and can be downloaded, or used, for free. As an example of the depth of

information, ComBase, which is the most developed predictive microbiology application in the world, is based on ~ 50,000 determinations of microbial growth, or inactivation rate, or survival, relevant to foods.

Australia is an international leader in the use of predictive microbiology, having adopted the “Refrigeration Index” (RI), a predictive microbiology model, into legislation. The RI evaluates the effects of temperature and time on the safety of red meat by converting that data into the potential growth of *E. coli*.

Recently, Australia adopted Codex Alimentarius Commission (CAC) criteria for *L. monocytogenes* in foods. Those regulations differentiate between foods that do, or do not, support the growth of *L. monocytogenes*. For foods, that do not support growth, tolerance for *L. monocytogenes* is much higher ( $\leq 100$  CFU/g) than in products that do support growth ( $< 1$ CFU/25g), greatly reducing the probability of product recalls and the burden of microbiological testing. In the guidelines the use of predictive microbiology models to differentiate foods that do, or do not, support the growth of *L. monocytogenes* is specifically endorsed.

There are limits of application of predictive microbiology. Predictions about the number of bacteria in a specific food after a certain amount of time, and under given storage conditions, requires that we know the initial number, and also how the storage conditions fluctuate over time. Low-cost data logging technology now exists that can wirelessly communicate details of product storage conditions over time. But sources of variability might include differences between strains, and inhomogeneity in the foods that might be enough to allow some cells to be able to grow, while others of the same population cannot. For these reasons, models usually make predictions that take this variability into account and can provide predictions that include the probability of different responses occurring in different environment.

## Conclusions

Both theory and experience show that end-product testing isn't practical for food safety assurance, particularly for the low incidence of contamination that consumers expect. The HACCP philosophy approach provides the most reliable means of food safety assurance, but for that approach to be practical it's necessary to prioritise among potential hazards and understand how to control them. This challenge requires expert knowledge of the physiology of individual microbial hazards. That knowledge is increasingly being made available through the development of predictive microbiology mathematical models and software.

While basic principles of food safety aren't rocket science, the complexities of the modern food industry mean that food safety managers can gain much from lessons learnt and technologies developed in the space program. The HACCP concept had its genesis in the USA space program. The modelling approaches and software now being used to optimise food safety management rely on high level mathematics to develop tools and strategies to best satisfy the paradoxical consumers expectations of minimally processed foods with maximum levels of safety. ❄

**Dr Tom Ross is Associate Professor in Food Microbiology in the Food Safety Centre at the University of Tasmania**

© food australia, official journal of the Australian Institute of Food Science and Technology (AIFST). Republished with permission.

## RUN YOUR PLANT WITH CONFIDENCE



**With our commitment to Service Excellence, Ecolab inspires confidence your business is protected from pests, so you can focus on your business.**

- ▲ Proactively eliminate the pests you are concerned about
- ▲ Understand your business and care about your success
- ▲ Educate your staff to prevent pest problems before they occur
- ▲ Communicate with you regularly, providing information you need

Call now for an obligation free survey and assessment of your current Pest Prevention program **13 62 33**

# Sensors that exceed IP69k - for extreme applications

Inductive and Optical Sensors for the harshest Food & Beverage industry requirements

**THE ONLY  
HACCP  
ENDORSED SENSORS  
ON THE MARKET**

- Simplify HACCP compliance
- Reduce machine downtime
- Save money



**SICK**  
Sensor Intelligence.  
Tollfree 1800 334 802 [www.sick.com.au](http://www.sick.com.au)

## FOOD SAFE STORAGE AND SERVING SOLUTIONS



- **FOOD GRADE COLOUR CODED CRATES**  
Colour coding reduces the risk of cross contamination in your catering areas. 13 to 68 litre available with lids.
- **HIGH TEMPERATURE PLATE COVERS**  
Assorted colours, clear salad covers in two sizes.
- **HIGH TEMPERATURE MUGS, BOWLS & LIDS**  
Assorted colours, bowls in two sizes, lids flat or dome.
- **HI TEMP HEAVY DUTY DIVIDER TRAY**  
Assorted colours.
- **COLD DRINK STACKABLE TUMBLER**  
Clear colour two sizes reusable or disposable lids.  
Also available Sporks and Gelato Spoons in assorted colours.

Aclaim Quality Sales have been manufacturers and suppliers of catering and commercial cleaning products reusable and disposable for hospitals, age care facilities and the hospitality industry for over 25 years.

**AQS** Aclaim Quality Sales  
& MIRANDA PLASTICS PTY LTD

T : 02 9525 1049 F : 02 9525 9114 E : [info@aaclaim.com.au](mailto:info@aaclaim.com.au)  
[www.aaclaim.com.au](http://www.aaclaim.com.au)

# Rentokil

The Experts in Pest Control

## ONLINE PEST MANAGEMENT REPORTING AND ANALYSIS SYSTEM



# You're in control.

myRentokil delivers real-time information and analysis that enables a proactive approach to pest prevention and control. Work with your Rentokil expert to develop a pest management plan to suit your needs.

1300 RENTOKIL

rentokil.com.au



Exceptional Workplaces\*

## Safe hands - safe food.



At Kimberly-Clark Professional we keep a sharp eye on hand hygiene and food safety standards. Our HACCP approved range of personal safety, wiping and hand care solutions will help keep your facility operating to the highest levels of compliance & efficiency.



**WYPALL\* WIPERS:**  
For effective removal of surface contaminants to help keep hygiene levels high. Ideal replacement for rag & tea towel.



**G10 NITRILE GLOVES:**  
Latex & powder-free hand protection with exceptional tactile sensitivity. Ideal for food handling.

FOR FOOD PROCESSING SOLUTIONS: <http://www.kcprofessional.com.au/industries/food-processing>

\*Trademark Kimberly-Clark Worldwide, Inc. © KCWW

# Why a top US food poisoning expert won't ever eat these foods

by Roberto A. Ferdman

**A**merican lawyer, Bill Marler, who specialises in food-borne illness, has been involved in many high profile outbreaks over the past 30 years, including the 1993 E. coli outbreak at American chain Jack in the Box, which killed several children and forced the US government to administer a zero tolerance for the presence of the pathogen in food.

Food recalls, of which there are many, frequently fly under the radar. In 2014, the most recent year for which US data is available, more than 8000 food products were recalled by the Food and Drug Administration and nearly 100 were recalled by the US Department of Agriculture (the figure in Australia is much lower, with FSANZ reporting 586 food items recalled in 10 years). The problem touches organic foods, too.

The industry, Marler says, does a good job of nudging people to forget about recalls, and we all do a good job of obliging, because food safety isn't the sort of thing anyone likes to think about.

In a recent piece, published in Bottom Line Health, he lists six foods he no longer eats, because he believes the risk of eating them is simply too large. The list includes raw oysters and other raw shellfish, raw or under-cooked eggs, meat that isn't well-done, unpasteurised milk and juice, and raw sprouts.

"You wouldn't believe some of the things I have learnt over the years," he said. "I have some crazy stories."

I spoke to Marler to hear some of these stories, learn about the things we might want to think twice about eating, and better understand what exactly it is that people don't understand about food safety. The interview has been edited for length and clarity.

## **Would the average person be horrified if they knew what you know about the food system?**

I think there are a lot of things about the food system that the general public would find completely nonsensical - not necessarily frightening, but definitely nonsensical. Like how E. coli is considered an adulterant in hamburgers, but salmonella and many other pathogens are not. How salmonella is allowed on chickens, which the USDA oversees, but salmonella is not allowed in any product that the FDA oversees.

In Australia, there is a national E. coli and Salmonella Monitoring program for the microbiological monitoring of carcass surfaces. As the recent salmonella outbreak in Sydney from chicken rolls and the 2014 outbreak in Melbourne from eggs show, the program is not flawless.

## **Why is it that the US government has acted on E. coli, but not on other pathogens, namely salmonella?**

Where we are now is kind of where we are with vaccine and people, where you have some people questioning the necessity of a system that works, without question. You know, when was the last time you saw someone with polio? But you hear people in certain parts who take that reality and then

wonder whether they need to vaccinate their children since polio hasn't really been around. We see places advertising that they're undercooking hamburgers, because it tastes better. I find that worrisome. Even though we've pushed a lot of E. coli out of hamburgers, they're playing with fire by not cooking their hamburgers thoroughly.

## **Is the presence of salmonella any less dangerous?**

No. In my view, what the US government did in 1994 with E. coli, was they knew what they wanted to do, which was to get it out of hamburger meat. They justified it by saying that the infectious dose was low, that people don't necessarily cook hamburgers the way they should - it's difficult to cook them thoroughly, and there's a high risk of cross contamination. They had a long list of arguments as to why they needed to take that action.

But frankly all of that applies to salmonella. The infectious dose for salmonella is higher, but we're talking about infinitesimal, invisible quantities of bacteria. 100,000 bacterium of salmonella would fit on the head of a pin. So you're not really looking at a product that is grossly contaminated; you're looking at a product that is a little contaminated, and that little bit of contamination is enough to get people really sick. Salmonella kills more Americans every year than E. coli does, and can cause severe long-term complications.

About 5.4 million Australians suffer from food poisoning each year resulting in an average of 120 deaths.

## **You were trending on Facebook recently, because you listed a handful of things that people love to eat but you refuse to eat for safety reasons.**

It depends on how you look at it. I mean, if I went back and looked at all the foods I have been involved in that have poisoned people, you could make a very long list - the things you would be left with would be very short. When I made that list, I stuck a couple things together, like unpasteurised milk and juice. It's based on more than 20 years of experience, that has taught me that these are the food items that are, from my perspective, the ones that have caused more issues, and, especially in a restaurant setting, where you're not controlling the handling of your food, are best left alone. This doesn't mean that other things, like rockmelon (more on page 26) couldn't find their way onto the list. But these are the ones that I have had to deal with the most often over the years.

## **You keep telling me that you have all these crazy stories - all these things I wouldn't believe. Can you share one of them?**

I actually have the perfect one, which I told at a recent conference, and really floored people.

Do you know the juice Odwalla? Well, the juice is made by a company in California, which has made all sorts of other juices, many of which have been unpasteurised, because it's

more natural. Anyway, they were kind of like Chipotle, (more on page 26) in the sense that they had this aura of good and earthy and healthful. And they were growing very quickly. And they had an outbreak. It killed a kid in Colorado, and sickened dozens of others very seriously, and the company was very nearly brought to its knees. (The outbreak, which was linked to apple juice produced by Odwalla, happened 20 years ago).

If you look at how they handled the PR stuff, most PR people would say well, they handled it great. They took responsibility, they were upfront and honest about it, etc etc. What's interesting though is that behind the scenes, on the legal side of the equation, I had gotten a phone call, which by itself isn't uncommon. In these high profile cases, people tend to call me - former employees, former government officials, family members of people who have fallen ill, or unknown people giving me tips. But this one was different. It was a Saturday - I remember it well - and someone left me a voicemail telling me to make sure I get the US Army documents regarding Odwalla. I was like 'what the heck, what the heck are they talking about?' So I decided to follow up on it, and reached out to the Army and got something like 100 pages of documents. Well, it turned out that the Army had been solicited to put Army juice on Army PX's, which sell goods, and, because of that, the Army had gone to do an inspection of a plant, looked around and wrote out a report. And here's what's nuts: it had concluded that Odwalla's juice was not fit for human consumption.

### Wow.

It's crazy, right? The Army had decided that Odwalla's juice wasn't fit for human consumption, and Odwalla knew this, and yet kept selling it anyway. When I got that document, it was pretty incredible. But then after the outbreak, we got to look at Odwalla's documents, which included emails, and there were discussions amongst people at the company, months before the outbreak, about whether they should do end product testing - which is finished product testing - to see whether they had pathogens in their product, and the decision was made to not test, because if they tested there would be a body of data. One of my favourite emails said something like "once you create a body of data, it's subpoenaable".

### So, basically, they decided to protect themselves instead of their consumers?

Yes, essentially. Look, there are a lot of sad stories in my line of work. I've been in ICUs, where parents have had to pull the plug on their child. Someone commented on my article about the six things I don't eat, saying that I must be some kind of freak, but when you see a child die from eating an undercooked hamburger, it does change your view of hamburgers. It just does. I am a lawyer, but I'm also a human.

That Odwalla story is one of the crazier stories I can think of, but there are many others, and there would be many fewer if the way we handled food safety here made more sense. ❄

The Washington Post with Fairfax Media

GT DINNER LUNCHEON COCKTAIL

LIVI

LIVI

LIVI

1300 832 883  
www.livitissue.com.au

GUESTS' CHOICE  
LIVI PREMIUM NAPKINS

Livi® is a registered trademark in Australia. PEFC/21-31-29.



### Providing knowledge, not just ingredients

The Hawkins Watts Group represents many of the world's leading ingredient companies with a broad product portfolio specialising in Hydrocolloids, Emulsifiers, Flavourings, Colours, Fortificants and more...

We are a proud family business, 100% Australian and New Zealand owned and operated. Focused on these two geographic markets, our team of highly experienced food technologists work collaboratively, sharing knowledge and experience, to find the best solution for you.

Hawkins Watts was founded in Auckland in 1992 by Peter Hawkins. He was determined to do more than just trade ingredients. Dedicated service, great technical support and good relationships were his vision. In 2001, Hawkins Watts expanded its reach to Australian shores, and have never looked back.

Our core values of Respect, Teamwork, Responsibility and Service, form the basis of how we operate and set the grounds for nurturing long-standing relationships. They also support the growth and evolution of new ideas. Ideas that have kept us engaged, excited and absorbed in what we do, for the last 24 years.

Today, the Hawkins Watts brand is synonymous with Trust, Service, Quality and Technical Competence. The below are fundamental to the way we work:

- **Choosing ethical partnerships**
- **Adding value by sharing technical knowledge**
- **Giving back to our wider community**
- **Providing outstanding service**
- **Maintaining high quality standards**

At Hawkins Watts we believe everyone has the right to safe and good quality food. As part of our commitment to providing food manufacturers with top quality ingredients, we first achieved HACCP certification in 2005.

We have found the HACCP Audit and

At HACCP Australia we really value our customers and seek to build long term, consultative relationships with each of them. We are thrilled to showcase a selection of our food clients who have achieved certification for 10 or more years. Here, the business owners, in their own words, highlight features that have contributed to their operation's success. Each of these clients clearly has a common characteristic; a HACCP Food Safety Management Programme that is completely integrated into their everyday business activities. Congratulations to all who make this milestone, we hope to be working with you for another decade!

Certification process to be straight forward, providing a good platform for questioning business processes. The preventative approach of HACCP has aided us in controlling food safety for our imported ingredients from receipt, right through to storage and distribution.



#### Contact: Hawkins Watts Australia

+61 3 9561 3710  
sales@hawkinswatts.com.au  
www.hawkinswatts.com.au

#### Contact: Hawkins Watts New Zealand

+64 9 622 2720  
sales@hawkinswatts.com  
www.hawkinswatts.com

### Leaders in packaging focus on high quality customer service

For more than 40 years, FPS has been a leader in flexible packaging solutions.

Formed in Brisbane in 1970 as FlexPack, the packaging company has grown from strength to strength, with loyal customers coming back time and time again. The past four decades have seen FPS continually upgrading and expanding its products and services to allow for new, innovative developments.



With a team of experts on board, FPS is renowned for excellent customer service. Customers who purchase their packaging products from FPS know they are guaranteed to receive the highest standard of products and service. The team at FPS is proud to deliver quality products in full, on time, every time.

Craig Ralph, Chief Executive Officer, says "great customer service is at the forefront of the team's mind. The staff at FPS treat

customers like family, rather than business partners." Mr Ralph adds, "The culture of the company really is built around customer service, and we pride ourselves on delivering in full, on time, with a quality product."

For FPS, it is imperative that the quality of their products is exceptional. Using only the best suppliers, the company provides a huge variety of packaging solutions for both perishable and non-perishable foods. FPS now marks 10 years of HACCP certification, continuing to manufacture products their customer can trust and rely on.

These include both printed and unprinted:

- **Laminated and unlaminated rewind**
- **Lidding films**
- **Stand up pouches**
- **Flat pouches, and**
- **Sleeves and bags**

FPS' unique, integrated printing and converting facilities are housed under one roof, allowing its customers to benefit from short turnaround times. The team is also able to accommodate short run orders for niche or small volume printing.

The company has grown with its customers. As their customer's business increases, FPS has been able to accommodate the increasingly larger orders with the same speed, efficiency and quality that they are known for.

This is shown in the development and growth FPS has undergone. Moving to a new site in Richlands in 1998, the company continued to add to its extensive list of products and services. Over the years, FPS has continued to invest in new, innovative technology and machinery, and has established a warehouse and dispatch facility to effectively support their customers' growth.

The FPS team prides itself on listening to its customers, and responding to their needs for example FPS invested in a sleeve machine, installed in March this year, which allows FPS to manufacture eye-catching, high quality, eight colour printed herb and flower sleeves and bread bags.

Technical support is another area of expertise for the FPS team. With an in-house Technical Manager, FPS can provide customers with solutions to any potential technical

problems or issues they are faced with. From specifying film, all the way to learning how their machinery works and customising the product to maximise efficiency, the FPS team prides themselves on their technical support.

**Contact details:**

**www.fpspack.com.au,**  
**E: sales@fpspack.com.au**  
**P: 07 3710 3300.**



**ProPortion Foods**

ProPortion Foods is proud to be celebrating the tenth anniversary of our inaugural HACCP certification. An Australian company, we have been supplying the food service and retail markets with high quality specialist foods for more than 15 years.

One of our core markets is institutional health care. We are now privileged to be one of the leading government-contracted suppliers of food for hospitals in Australia. Hospitals cater to the most vulnerable members of our population: the elderly, children, pregnant women and those recovering from illness. Food safety is rightly one of their highest priorities. Protecting vulnerable populations from food-associated risk factors is vitally important and there is no doubt that patient safety is of the highest concern to healthcare and foodservice staff.

The onus is on the food manufacturer to establish and maintain adequate and appropriate policies and procedures covering all risk elements relating to procurement, production, storage and distribution of the food. ProPortion Foods obtained its initial HACCP certification ten years ago; this, together with our dedication to continual improvement in quality assurance and food safety, provides our customers with the comfort they seek. Without HACCP certification we would be unable to supply our range of desserts and mid-meal snacks to the healthcare industry.



Our company's mission is to create great tasting, nutritious foods for active and healthy aging. Each of us wishes to enjoy life as best we can and diet can play an important role in maintaining good health, or in recovery from illness. Our approach is to adopt a partnership strategy with our customers and the insights provided into their needs and challenges helps direct our product development. In the case of healthcare institutions, consultation with dieticians, nutritionists and food service staff was a key element in the development of our two food service product ranges, Smartserve™ and Perfect Portions.

To assist with the varied needs of institutions we now cater for:

- **those with food allergies,**
- **those who experience difficulties with chewing and swallowing and require texture-modified foods or thickened fluids,**
- **those requiring high protein snacks and additional calcium, as well as**
- **those needing to control blood glucose levels (diabetics).**

In addition, our packaging has been designed to provide increased ease of accessibility, a feature that is especially important for those with limited dexterity. Each of our products is individually-portion controlled and this convenient format helps reduce food handling and increase efficiency. Furthermore, our portion control has significantly reduced food waste.

HACCP certification means more to us than just a certificate representing our demonstrated food safety procedures. It also connects us with a network of reliable expertise in international food safety and a sound source of advice and counsel. This is important for a company that seeks to continually upgrade its performance and to keep itself informed of the latest best practise. Many thanks to our auditors, HACCP Australia, for their support in assisting us to achieve this objective.



**Contact details: www.proportionfoods.com.au or phone 1300 302 162.**

**CTC Australia**

CTC Australia's winning formula is to continuously lift our game by setting higher standards.

10 years ago we entered into a partnership with HACCP Australia to gain certification of our warehouse premises and distribution business.

Together we have worked hard to improve every aspect of our business and we appreciate all the help and suggestions which HACCP Australia have provided...cleanliness, orderliness, safety issues, work practises, records, consumer awareness, maintenance

and attention to detail, to name a few.

Today we are a significant supplier of confectionery to both retail and route outlets.

We have an extensive, exclusive range of local and imported lines we proudly, and confidently, thanks to the exacting standards set by HACCP Australia, market to Australian consumers.

Our Aussie Drops mentholated range is very high profile through the trade and loved by young and old, Joojoo's, a colourful, exciting range of adventurous fun food experiences is growing exponentially, Fini licorice lines such as Fantasy Belts, Fizzy Worms and Yogurt Bars continue to sell in real volumes and our novelty ranges, including licensed lines, are making their mark rapidly especially in the p&c channel.

We are a proud Australian company, and we are indeed proud to be associated with HACCP Australia and their influence on the quality of our organisation.

**Contact details:**  
**+61 2 9743 8631**  
**www.ctcaustralia.com**



**The Rainbow Syrup Company Pty Ltd**

Founded in Brisbane in 2006 The Rainbow Syrup Company has made steady progress as a force in the Australian flavoured syrup and granita concentrate markets, building success based on quality of products and service in an increasingly competitive marketplace.



Together with strategic partner Frosty Boy Australia, The Rainbow Syrup Company has secured supply contracts with leading food service, coffee roasters and retail companies throughout Australia, with products also now being exported to China and South East Asia.

Offering a combination of house brands and exclusive "own label" branding we have continually worked closely with our customers to help develop a bespoke range of innovative products. These include:

- **"All Natural" Flavoured Fruit Juice based Slush concentrates primarily for the ever more discerning schools' market.**
- **A wider range of Juice and Sugar based Granita (frozen beverage) concentrates**
- **Coffee Syrups used for your favourite flavoured Latte**
- **Milk Shake flavourings and smoothie bases**

Across the diverse range produced, there are now more than 120 lines of product, filling



a variety of bottle sizes including 375ml, 750ml, 1, 2, 3, 4 and 5 litres, 20 and 25 litre drums and up to the 200 litre bulk pack.

All our products are manufactured in our purpose built production and filling facility in Brendale on Brisbane's Northside, giving easy access to major freight route services to all States throughout the country.

As our business continues to grow, so does the importance of the food safety systems that we have in place. We are continually updating and adapting our HACCP programme to suit the expansion of the business and the advice and help from HACCP Australia is always a reassuring confirmation that we are keeping 'ahead of the game'.

Contact details: P 07 3205 4931  
www.rainbowsyrup.com.au



**BrandM8.**  
Food Safety & Checklist Management System.

**You can't expect what you don't inspect.**

Operating on a Smart Device (iOS/Android), BrandM8 is an intelligent digital checklist management tool for the completion of food safety (HACCP) and operational checklists within retail and food service organisations. BrandM8 lets you know what is actually being done!

- Integrated Bluetooth temperature probes, barcode scanning
- Photo upload and additional comments for evidence elements
- Supporting Text assists users in how to answer questions
- Inbuilt workflow guides users through checklists/triggers actions
- Dynamic creation of follow-up checklists when standards fail
- Web-based management and reporting for easy auditing
- Immediate notification of non-compliance of critical checks
- And much, much more...

**Innovative Checklist Management.**

T: +61 3 8445 5500 E: accounts@brandm8.com W: www.brandm8.com

**NEW INNOVATION**

**Advanced cool room hygiene & mould reduction**

- Reduce Bacteria
- Reduce Moulds
- Reduce Excess Ethylene
- Improve air quality
- Improve odours

**ChillSafe**  
Advanced Refrigeration Hygiene Technology

ChillSafe® provides the food industry a proven method to effectively control surface based and airborne bacteria and moulds within their commercial cool rooms and refrigerated transport, assisting businesses to better manage quality, costs and risks associated with their refrigerated spaces and the products stored within them.

**ChillSafe's patented technology:**

- HACCP Australia certified
- Requires no power
- Environmentally activated
- Has no moving parts
- Active 24/7
- Lasts 30 days
- Cost effective

Developed by:  
**coolsan**  
Refrigeration Sanitation Technology

1300 390 811 | coolsan.com.au

# Allergens- practical control measures in the food industry

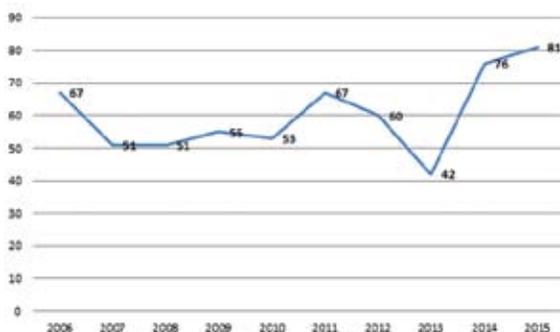
The presence of allergens is the most common reason for triggering a product recall in Australia and data shows a disturbing trend. This trend is occurring at the same time as an increase in the number of allergen-susceptible individual. A study released in 2013 by the Centres for Disease Control and Prevention, showed that food allergies among children increased approximately 50% between 1997 and 2011. These two trends, an increase in allergen recalls and an increase in susceptible individuals pose a concerning scenario for regulators and the food industry.

Recently released figures by the Australian Bureau of Statistics reveal that almost 4 million people in Australia reported avoiding a food type because of allergy or intolerance. Of those, about 560,000 were children aged between two and 18 years. In this group, girls were more likely than boys to be susceptible. The Australasian Society of Clinical Immunology and Allergy (ASCIA) reports that food allergy occurs in around 1 in 20 children and in about 2 in 100 adults.

Figures compiled by Food Standards Australia New Zealand (FSANZ) over the last 10 years indicate an average of 60 food safety recalls per year. Of these, approximately one third on average are due to the presence of undeclared allergens.

The graph below shows the trend in product recalls over the last 10 years.

Number of recalls per year (2006-2015)



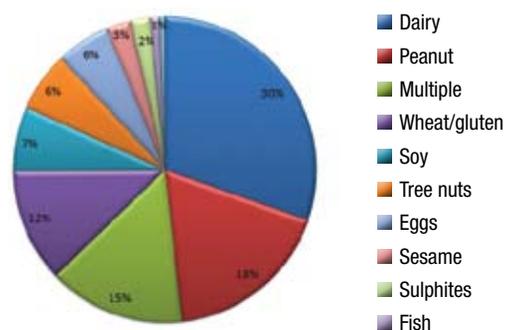
A closer look at the data shows a significant increase in recalls over the last three years to a position exceeding the average by some 30%. Possibly more alarming is the role of allergens in this increase as shown below;

	10 Year Average	2013	2014	2015
Total No Recalls	60	42	76	81
Allergen Recalls	19	16	27	39
% Allergen Recalls	31%	38%	35%	48%

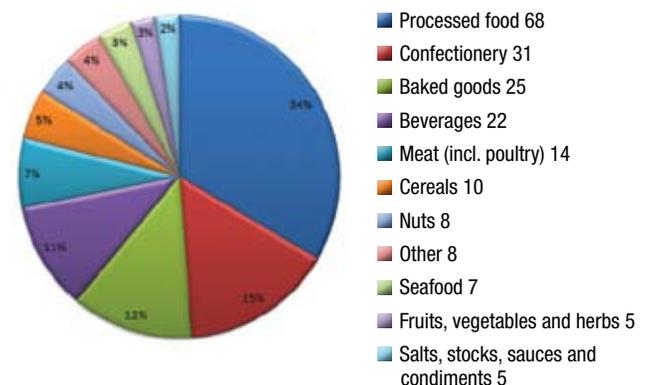
In 2015, allergens accounted for nearly half of all product recalls at a frequency of over three per month on average.

Over 10 years, the most common allergens responsible for a product recall were dairy (30%), peanuts (18%), multiple allergens (15%) and wheat/gluten (12%). Approximately three quarters of all allergen recalls are caused by allergens represented by these four groups. The graph below shows the breakdown of allergens.

Undeclared allergen recalls



Not surprisingly, the majority of allergen based recalls come from complex foods including processed foods (34%), confectionery (15%), baked goods (12%) and beverages (11%). Again, these four groups account for nearly three quarters of all recalls. This indicates a clear relationship between the complexity of the food and process and the likelihood of a product recall due to the presence of undeclared allergens.



A similar picture has emerged in Europe where, according to the European Academy of Allergy and Clinical Immunology (EAACI), about 17 million Europeans have a food allergy. The figures here are perhaps surprising considering the legislative pressure that has been applied to food processors by the European Union, requiring, back in 2005, the mandatory labelling of 12 specified food allergens.

That list has now extended to 14, as specified in the Food Information for Consumers (FIC) Regulations and more are potentially on the horizon.

The issue is also tackled by the GFSI benchmarked Global Food Safety Standards including the British Retail Consortium's (BRC) Global Standard for Food Safety, adopted by approximately 20,000 food processors worldwide, with other standards such as IFS and FSSC 22000 not that far behind.

Within these standards there are stringent, mandatory clauses requiring a processor to perform risk assessment, taking into account the nature and source of allergen and adopt appropriate allergen controls, normally, through a pre-requisite control-based allergen management process.

The aim is to reduce the number of allergen related incidents that require withdrawal or recall from the market.

### Practical allergen controls

A HACCP based allergen risk assessment programme is key to allergen management and control. As an example of this approach, the BRC Global Standard for Food Safety requires a risk assessment to establish the presence and likelihood of contamination by allergens plus the implementation of controls taking into account the nature of those allergens (dusts, liquids, solids).

Systems must be implemented to ensure integrity and compliance with specification throughout the supply chain. The following areas, managed as HACCP pre-requisite procedures, can all help to reduce the potential for allergen misinformation or contamination:

- Supplier and ingredient control requires the review and management of supplier ingredient specifications to identify those which intentionally contain allergens and those which may, unintentionally, be contaminated. One of the potential pitfalls here is reformulation of the ingredient by the supplier without the provision of amended and updated specifications. Knowledge of the supplier's allergen management procedures is a factor and can be facilitated by something as simple as an allergen management questionnaire to determine allergen control procedures on the supplier's site and therefore the overall risk of allergen cross contamination by the supplier. This can be followed, as necessary, or where information is scarce, by a formal on-site allergen audit.
- Controlled on-site food storage by the processor requires segregation or other validated control to ensure contamination of non-allergenic foodstuffs or ingredients by allergens is eliminated or reduced to a safe level. For very high risk, low threshold allergens such as nuts this might require entirely separate storage areas. For foodstuffs more likely to be the cause of intolerance, rather than severe anaphylactic shock, such as gluten-containing foods, it may be sufficient to use separate shelves or racks within common storage areas.
- Segregated handling or processing of foods, during production, may require entirely separate processing halls or even factories, especially in the case of high risk allergens such as nuts.

Otherwise, and where risk assessment allows, the processor can employ time separation, so that allergen containing foods are made at the end of the production day and this activity can be followed by a deep "allergen clean down" which might not be possible during shorter, between-batch production breaks. Test kits and methods are quite widely available to measure residual allergen traces following clean down and to help with validation of this control. It is worth remembering that these test kits themselves, when used in-house require validation. Alternatively allergen residual swabs can be tested by an accredited laboratory, having first checked that the scope of accreditation covers such testing.

Nearly one half of recalls are due to undeclared allergens."

- Staff awareness and staff movement control is a key area to consider. Higher risk allergens such as nuts may have to be handled, not only in separate areas, but by separate, visibly identifiable staff, wearing specific, often colour-coded protective clothing. Staff training should always now encompass an element of allergen awareness and competence with regard to allergen management procedures. This training must be provided before food handling duties commence. Staff should be made aware of the types of food allergens that exist and that are legislated for. They should be made aware of potential sources of allergen cross contamination and misinformation such as use of the wrong labels or packaging.
- Control of labels and packaging, especially during product change-over, can prevent a foodstuff entering the market with incorrect or absent allergen warnings. This is a supervisory issue requiring a check that labels and packaging have been correctly changed over when a new product is being packed. The information that must be placed on labels and packaging, with regard to allergens, is a technical management and new product development issue. Common pitfalls are the use of a new or reformulated ingredient, new allergens being handled on site, new equipment being used, new layouts implemented, new production schedules drawn up or new cleaning regimes being put in place. Just as in Principle 6 of Codex HACCP, a review of the allergen risk assessment is crucial to ensure that changes to the allergen status of a product is identified and reflected on the label and packaging.
- Allergen audits can be implemented as part of the internal auditing process. The audit should ideally pick a final, packaged product and trace back through all storage, formulation, processing and packaging steps to the ingredients used, ingredient specifications held and the information supplied by the supplier in regard of their allergen controls. In this way the risk of allergen

contamination and inclusion of intentional allergens can be validated against the allergen declaration and “may contain” information provided on the label or packaging of the chosen product.

- **Supplier understanding.** Suppliers of ingredients, in particular those which are imported, may not have a clear understanding of allergen requirements in the Australian market. A recent example involved a grade of sugar that contained high levels of sulphur dioxide which was substituted into a blended product resulting in a recall of the finished product. In this case, it appears likely that the supplier was not aware of the intended use of the product or the significance of this allergen under the Australian Food Regulations. Therefore, when considering the use of imported ingredients, it is strongly recommended that the supplier is made aware of the allergen issue and should be encouraged to conduct an allergen review within their operation. Routine verification of imported ingredients and products conducted by the importer is also appropriate and can avoid costly surprises when a product ends up in the marketplace.
- **Equipment selection and use,** together with materials of construction and design of surfaces such as floors and walls is often overlooked, even when all other allergen management controls are in place. Yet this control is just as important as the others. For instance, as a rough

guide, the higher the IP rating on equipment the less likely it will be for particles of food, some of which may be allergenic of course, to become trapped. In more general terms equipment and materials selection must be influenced by cleanability and accessibility. Ask yourself the following question – Can I access all surfaces easily and are they designed to facilitate a deep “allergen clean down” to prevent them becoming a source of allergen cross contamination.

- The same principle extends to cleaning equipment. In general, those surfaces and pieces of equipment which can be cleaned and then disinfected to reduce to safe levels bacteria such as *Listeria monocytogenes* should be at minimal risk of being a source of allergen contamination. ❁

All statistics and graphs; Food Standards Australia New Zealand web page; ‘Food recall statistics’, <http://www.foodstandards.gov.au/industry/foodrecalls/recallstats/Pages/default.aspx> , referenced 15 July 2016.



Martin Stone,  
Technical Director,  
HACCP Australia



*Re-inventing the world of beverage dispensers*



**I-PRO 2E**

The most advanced slush machine in the world

SPM Drink Systems, one of the most innovative equipment manufacturers in its field, offers a wide range of high quality, small footprint, hot and cold beverage dispensers made in Italy.

Equipment such as the I-Pro 2E with an insulating bowl powered by I-TANK™ technology and electronic control systems, assure optimum performance and energy efficiency, making it ideal for Australian conditions.

The introduction of the latest NINA range highlights SPM's commitment to innovation and exciting new opportunities to expand your product offerings.

The SPM range of equipment is ideal for, but not limited to, convenience stores, bars, fast-food chains, kiosks, restaurants and hotels.



GT Touch



NINA Cold



U-GO

**SPM DRINK SYSTEMS AUSTRALIA**  
 3/107 Stephen Road, Botany NSW 2019 Tel. +61 2 9316 7878 • Fax +61 2 9316 7979  
[www.spmdrinksystems.com.au](http://www.spmdrinksystems.com.au) • [info@spmdrinksystems.com.au](mailto:info@spmdrinksystems.com.au)






**When You Need  
Gloves...  
Ask the Experts!**

*iSense<sup>®</sup>  
Microlite<sup>®</sup>*

100% Nitrile Disposable Gloves  
(now available in 300 Gloves  
MaxPack at amazing prices)

**TGC<sup>®</sup> NITRILE GLOVES**  
**ORANGE<sup>HI-VIS</sup>**  
WORK GEAR

100% Nitrile Disposable Gloves  
Hi-Vis Orange  
(also NSN Nato Codified)

**VINYL GLOVES**  
**Premium Powdered**

Blue or Clear  
Economical Vinyl Gloves

Email to request a free sample of  
our HACCP certified gloves  
[sales@theglovecompany.com.au](mailto:sales@theglovecompany.com.au)



[www.theglovecompany.com.au](http://www.theglovecompany.com.au)  
+61 2 4916 3000



**HOT  
LINKS**

**National allergy strategy**

[www.allergy.org.au](http://www.allergy.org.au)

Essential reading in this environment of increasing allergy incidence, given the weekly recalls experienced due to undeclared allergens. Three out of ten Australians believe they have an allergy or intolerance!

**World food day**

[www.fao.org/world-food-day/2016/home/en/](http://www.fao.org/world-food-day/2016/home/en/)

Feeding the world and toasting farmers ! Big issues here that will directly impact this and future generations.

**USA food safety portal**

[www.foodsafety.gov/](http://www.foodsafety.gov/)

A food safety treasure trove supported by The Food Safety and Inspection Service (FSIS) of the U.S. Department of Agriculture, the U.S. Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC).

**Chicken food safety**

[www.chicken.org.au/foodsafety/](http://www.chicken.org.au/foodsafety/)

Tastes like chicken, yep ! But is it safe ? The Australian Chicken Meat Federation tells you what you need to know in regard to chicken food safety.

**The science of food**

<http://psufoodscience.typepad.com/>

Our friends at Penn State University have a great web log that serves as a forum for news, views and discussion about all things related to the science of food: food chemistry, microbiology, engineering, process technology, and nutrition. Check it out!

**The science of cooking**

[www.scienceofcooking.com/](http://www.scienceofcooking.com/)

And whilst on science, this page seeks to explain all in regard to cooking. Why do cooked foods brown? What is flavour and Umami? The answers to these questions and more here. \* ❄️

High Efficiency Solutions.

CAREL



When energy saving meets food safety  
Complete control solutions for cold chain.



ADM/JA/01/1 - 2016

CAREL Australia Pty Ltd

PO BOX 6809, Silverwater Bus. Ctr. N.S.W. 1811 - Unit 37, 11-21 Underwood Rd Homebush N.S.W. 2140  
Tel. (+61) 2 8762 9200 - Fax (+61) 2 9764 6933 - sales.au@carel.com

carel.com

www.pro-val.com.au

Lab Coats

Aprons

Hair Caps

Gloves



pro-val  
by RCR



Buy online  
Fast delivery  
Australia wide

Shoe Covers

Wipes

Sleeve Protectors

RCR International Pty Ltd  
PO Box 148, Braeside VIC 3195  
Tel: (03) 9558 2020  
Fax: (03) 9558 3030  
Email: sales@rcr.com.au

## THE REJUVENATORS

Complete Health Compliance Specialists

The Rejuvenators provide a fully guaranteed health and safety maintenance program. Sanitizing and cleaning all refrigeration to certified health and safety standards.

We have been servicing the Hospitality Industry for over 35 years. Our eco-friendly product has distinct anti-microbacterial characteristics, when incorporated with our six monthly maintenance program, you won't have to worry about the health authorities again.

CALL FOR A **FREE** APPRAISAL TODAY!

Terry Burns 0413 333 348  
Jake Vado 0417 191 192

The Rejuvenators



NUMBER ONE IN CLEANING  
KITCHEN EQUIPMENT



Ask us how to save thousands of dollars per year in your equipment cleaning cost of chargrills, stove tops, extraction filters etc.



Oz-Tank Qld

1300 66 88 66

[www.oztank.com.au](http://www.oztank.com.au)

# FACTERIA

## Norovirus

Unlike previous editions of Facteria, this issue does not describe a pathogenic bacteria but rather a virus group known as Norovirus.

Other names have previously been used to describe this agent including 'stomach flu', 'Norwalk (like) Virus' and the descriptive 'viral gastroenteritis'. It is probably the most highly contagious infector known which causes food borne illness with an infective dose as low as one virus.

It is likely that 90% of all viral gastroenteritis outbreaks and perhaps 50% of all food borne illness are due to infection by Norovirus. The cost associated with the disease is obviously massive. Infection occurs when Norovirus enters the mouth through either infected food, contact of infected surfaces with hands which then touch the mouth, by breathing the aerosol virus or contact with an infected person. The virus travels to the small intestine where it multiplies rapidly causing an onset of symptoms in around 24 hours (range 12 – 48 hours).

Symptoms include vomiting, diarrhoea, stomach cramps, fever like symptoms and general lethargy. Onset is rapid and it is not unusual for patients describing being fine one minute and violently ill the next. Symptoms persist for 24 – 48 hours and most make a full recovery after this time. Vulnerable populations can demonstrate more severe symptoms and outcomes.

Outbreaks of Norovirus are often observed in closed populations such as nursing homes, cruise ships, overnight camps and prisons where infected persons rapidly pass the illness onto others. One study suggested that a person carrying the virus infected an average of 14 others so the potential to overwhelm a closed population in a short period of time as an epidemic outbreak is significant.

The virus is easily killed with heat and chlorine based sanitisers. Alcohol based sanitisers (like some hand cleansers) are not effective. High levels of hand hygiene and personal hygiene are required to limit the spread of the disease. Those suffering the symptoms should not prepare or handle food for others for at least 48 hours after symptoms cease. After this time, the virus is still present in low numbers for several weeks, so control can only be affected by high levels of personal and hand hygiene.

Norovirus...the number one individual cause of food borne illness outbreaks and an agent that we will hear a lot more from as our knowledge of viruses deepens. ❄



**In this section there are a few food safety and food industry news snippets from around the country and overseas.**

## From The USA

### QSR chain disaster - Chipotle food poisoning story runs and runs



Many in the fast food market will be very familiar with the recent woes of the US 'Quick Service Restaurant' giant, Chipotle, in recent months. The damage to the brand, stock value and customer loyalty runs to hundreds of millions of dollars and still climbs. It's a story which won't stop running, as the creator of 'the new Jason Bourne', Eric Van Lustbader, adds to the tale with recent tweets of his concern for the health of his editor, who ate at one of their stores.

Chipotle has seen the huge consequences of a lack of investment and focus on an area which has little publicity until something goes wrong – and it certainly went wrong in a big way here.

The company's stock value continues to tumble as lingering concerns by once-loyal customers continue to defy the tens of millions of dollars spent on rectification expenditure and incentives

If you want to learn how not to manage food safety in a branded, multi outlet chain, just google Chipotle Food Poisoning to find out what that under-investment and a lack of focus might cost.

It's no coincidence that 'the 'chains that care have the safest fare. '

## From Australia

### Rockmelon salmonella hits Australia again

Rockmelons have hit the food poisoning headlines once again as State and Territory food enforcement agencies investigative recent cases of Salmonella, associated with rockmelon from The Northern Territory, following an increase in cases in a number of states in Australia.

The outbreak was first discovered in South Australia and has seen more than eighty five people suffering food poisoning as a consequence.



Food Standards Australia and New Zealand have once again advised that infants, the elderly, pregnant women or people with compromised immune systems, should not consume rockmelon. FSANZ are continuing to work with the state and territory enforcement agencies and the Federal Department of Health and update its advice to consumers.

### Investors urged to call for more clarity on food safety risks

According to a recent report in The Australian by Glenda Korporaal, investment bank, Citi, has urged investors in some ASX-listed food businesses to question their policies on safety risks given the potential damage that could be caused by food scares.

The recently released Citi report on food safety praises Fonterra, Bega, MG Unit Trust and Patties Foods for providing detailed information on food safety issues in their annual reports.

But it names a2 Milk Company, Dongfang Modern Agriculture Holdings, Freedom Foods, Treasury Wine Estates, Collins Foods, Domino's Pizza and the Retail Food Group as having the least detail on potential food safety risks in their reports, in its survey of 30 ASX-listed food companies.

"Where information is sparse," it notes, "investors may like to discuss the topic

with companies to better understand their approach to food safety risk."

The report looks at the exposure of the 30 companies to food safety risks and their exposure to the Chinese consumer market, where food safety has become a major issue.

The report notes the growing risk of food safety issues that could affect food companies, such as one involving New Zealand dairy group Fonterra in China and Patties Foods' link to hepatitis in its frozen berries imported from China.

The report says that only half the 30 companies surveyed had identified food safety in the risk section of their annual reports, with more than 25 per cent not mentioning that they held food safety accreditation.

Three-quarters of the companies surveyed reported they had a direct exposure to the Chinese market.

"The reputation of Australian food exports for being safe and high quality has contributed to the significant growth in Australian food exports to China," it says.

"Accredited food safety systems can provide a framework to minimise risk and respond to incidents."

The report notes that Fonterra's report "shows more granular information than most companies" on food safety issues while Patties Foods "provides detailed information on its testing process for products imported from China". But it notes that with these two companies, the relatively comprehensive information they've provided may be a response to the food safety problems they have had to deal with.

The report notes that four of the 30 companies surveyed had systems in place to trace their ingredients and products. These included Blackmores, Bega, Vitaco and Fonterra.

### Brisbane restaurant fined after customer finds piece of metal scourer in rice

The risk in using inappropriate material and equipment was realised by a Brisbane Chinese restaurateur with a piece of a metal scourer lodging in the throat of a female customer. It has resulted in a hefty \$23,000 fine.

Last year, a customer, Maxine Dosen



coughed up the piece of metal from the scourer and was rushed to a hospital emergency to check that she had not swallowed more.

The Brisbane magistrate, Judith Daley said 'while it was not known how the piece of metal got into the food, a chef was in the habit of using the scourer to clean a wok during cooking'.

After the incident the chef continued to use the metal scourer, despite staff being told not to do so.

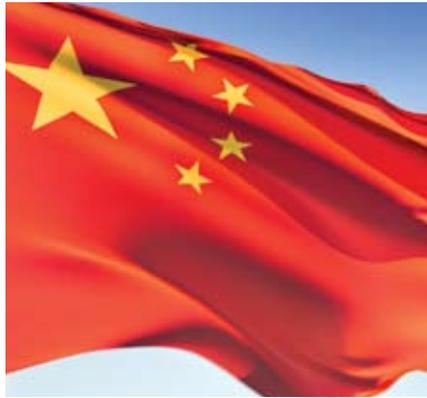
Ms Dosen said she 'I put this fried rice in my mouth and suddenly felt something sharp, like a prawn shell, go down my throat' She continued 'I tried to bring it back up my throat and pulled this long, curly thing out of my mouth.'

Felix Ip, a director of family-owned business pleaded guilty to five charges which also included the selling unsafe food, as well as charge relating to hygiene, failing to take precautions to prevent pests and having live cockroaches in the restaurant.

## From China

### Chinese investment company to establish a billion dollar food industry fund in Australia

Beijing-based investment management company, Tsing Capital, plans to establish



an AU\$1 billion (US\$752.3 million) fund for specialist food and agriculture investment in Australia.

The funds, under the Food and Agritech Fund, would invest in Australian food and agriculture services for export to China. These will include high tech fermentation and extraction of grains, cane and vegetables, with the intention on supplying the market for health foods and dietary supplements to the Asian country.

The plan is to invest in the entire supply chain, from paddock to consumer, and will therefore include founding processing factories in Victoria's Wimmera region.

Tsing Capital founder and managing partner Don Ye and Australian Charles Hunting plan to raise between AU\$500 million to AU\$1 billion in capital, with the possibility of increasing that amount to AU\$2 billion through loans.

Mr Hunting said that about a third of the funds will come from Australia. He also added that the investment is driven by Chinese demand. "We're not creating the food products for the sake of hopefully getting that food into the Chinese market," he said. "The plan is to bring strategic Chinese investors who have distribution networks in China so that we can create an end-to-end opportunity that is demand driven, not supply driven."

The end products for export to China are likely to include high-protein health supplements, tonics, pills and sports drinks, as well as vitamins and nutraceuticals.

Mr Hunting said the investment will need to fit the company's stance on sustainable ecosystems. "In food and agriculture, we are looking at high-quality food, high-quality agriculture," he said. "We believe in vertical integration but there must be focus on ecosystems."

Providing examples, Mr Hunting said: "We want to bring in biomass solutions, bring in solar solutions and electronic vehicles (to those investments in food businesses)."

The Food and Agritech Fund would be managed by Tsing Capital. The company, which has offices in Beijing, Shanghai, Hong Kong, Silicon Valley in the US and Belgium, has put together eight similar funds with investments totalling AU\$1 billion since Tsing Capital was set up in 2000. ❄



Universal Foodservice Designs  
Design consultants specialising in  
the design of Aged Care, Hotels,  
Clubs, Resorts, Corporate &  
Government  
foodservice operations

Phone: 02 4329 0630

Website: [www.ufd.net.au](http://www.ufd.net.au)

# DISPOSABLE GLOVES

- **Vinyl:**  
Disposable Clear or Blue
- **Latex:**  
Disposable White
- **Nitrile:**  
Disposable Blue
- **Silverlined:**  
Latex with Nitrile Blend
- **Flocklined:**  
Nitrile Chemical Gloves



**PRO**  
[choice]  
prosafetygear.com

**SAFETY  
GEAR**



## HOW BAITSAFE® HELPS YOU TO ELIMINATE THE RISK.

There is a hidden danger either in or on almost every single roof in the world; this enemy cannot be controlled with sprays, powders, baits or any of the most sophisticated pest control equipment ever designed.

This infestation can affect even the most seasoned pest control professional. Most often it strikes when we have no idea it's there. You may feel completely in control and when everything seems safe it strikes. Men and women are often seriously hurt while some skate by with just a scratch and a scare. The danger in the roof is not an insect or vicious animal lurking in the shadows but it can be just as surprising.

Every year 1,000's performing pest control around the World either in or on roofs fall because they are unfamiliar with how to safely traverse its dangers. Some fall all the way to the surface below while others might just stick a foot through the ceiling or a roof tile before they catch themselves.

Most ceilings aren't made to walk in, and insulation, duct work and low clearances just increase the difficulty. Damp iron or roof tiles are extremely dangerous to cross or climb and if those aren't bad enough, add to it the fact that a roof space can reach temperatures of 120 degrees on a hot summer day. If you have to go in or onto roofs all the time it is not something not to look forward too.

At MakeSafe® we believe that the focus should always be on the safety elements most important for the type of work you perform so maybe you will consider BaitSafe® in your next safety audit.

**For more information please visit [baitsafe.com.au](http://baitsafe.com.au).**

# The fridge laser that detects bacteria crawling all over food

Spotting the bacteria that causes food poisoning has always been a time-consuming and expensive business. **Until now.**

by **Emerging Technology** from the arXiv

**F**ood poisoning is a potentially lethal condition and therefore a serious problem for the food industry.

Each year, some 50 million people suffer food poisoning in the U.S. alone, including more than a million cases of potentially lethal salmonella poisoning.

So finding ways to prevent the spread of this and other kinds of bacteria is an important goal. But it is hard to detect bacteria in food products. The most common detection methods involve techniques such as microbiological culturing, polymerase chain reactions, high-performance liquid chromatography, and mass spectrometry, to name just a few.

These methods are complex, expensive, and time-consuming. And they require highly trained technicians to perform them. Consequently, few food companies and outlets have access to this kind of technology, and consumers have to take the hygiene of most foods they buy on trust.

Now that looks set to change thanks to the work of Jonghee Yoon and pals at the Korea Advanced Institutes of Science and Technology in South Korea. These guys have found a quick and cheap way to spot bacteria on the surface of foods in just a few seconds. They say their technique could be easily used in food processing lines and even fitted to standard home fridges.

The new technique is simple in principle. Bacteria such as salmonella have hair-like flagella that they use to propel themselves across surfaces. This movement turns the surface of contaminated food into an ocean of writhing microorganisms. It is this movement that Yoon and co have worked out how to spot.

Their method is straightforward. When a red, coherent laser beam hits biological tissue, it is scattered through the material. This scattering causes the light to interfere, creating a random pattern called laser speckle.

Since bacteria on the surface of food also scatter light, this influences the speckle. And as the bacteria move, the speckle pattern changes. "By detecting the decorrelation in the laser speckle intensity patterns from tissues, the living activities of microorganisms can be detected," say Yoon and co.

All that is needed to monitor this change is a camera that can record the change over a few seconds. Yoon and co use one that takes images at a rate of 30 times a second and then

process the images by subtracting one from another to reveal any difference.

They've put their gear through its paces with a set of experiments on chicken breast. They began by contaminating samples of chicken breast with the common bacteria *Escherichia coli* and *Bacillus cereus*, which are common causes of foodborne illness. They then zapped each of the samples, and a control, with a laser while recording the speckle with a camera.

The results clearly show the utility of the technique. The image subtraction technique quickly reveals which samples are contaminated and to what degree. The technique picks up both types of bacterial contamination, although it cannot distinguish between them. It also demonstrates that uncontaminated meat shows little or no change in the laser speckle pattern over time.

That's an interesting result. Monitoring laser speckle is quick and easy to do with cheap equipment that can be retrospectively fitted to food processing lines. And it requires little specialized expertise.

Crucially, the technique does not require contact with the meat and so can be done at a distance. It can also see through transparent plastic packaging, which does not influence the speckle pattern.

That could have an important impact in many parts of the world, particularly in developing countries that do not have easy access to

microbiology laboratories. And the equipment is so cheap and simple that it could easily be fitted to ordinary refrigerators designed for the home.

There are limitations, of course. Although the technique detects different types of bacteria, it cannot distinguish between them. And of course, it cannot spot contaminants that do not change the laser speckle over time. So it wouldn't pick up viral contaminants, such as norovirus, which is responsible for five million causes of foodborne illness a year in the U.S. Neither does it detect the toxins produced by bacteria, which can cause illness even when the bacteria have been killed off.

Nevertheless, the new technique has the potential to significantly improve food hygiene and thereby reduce the number of cases of food poisoning each year. And that can't be bad. ❄️



## FOOD FLOORING SPECIALISTS

Specialist applicators with over 40 years experience in Food Processing environments

- HACCP accredited
- 24/7 installation
- Anti-slip
- Chemically resistant
- Heavy duty
- Food Grade Approved
- Seamless designs



02 4655 1042

0409 555 695

admin@cliffordflooring.com.au

www.cliffordflooring.com.au



# LANCER

*Who's behind your bar?*

**Lancer is Australia's largest beer system maintenance and repair service provider.**

The Lancer team can help you with:

- > Quotation on your new tailor made system
- > Preventative maintenance programs
- > Beer line cleaning detergents
- > Reactive service
- > AS5034 compliant LogiCO<sub>2</sub> Monitors
- > After hours support



The only Australian company in our industry to hold three **ISO certifications** for **Quality, Safety and Environmental standards.**

**Contact us**

**E** [lancerservice@lancerbeverage.com](mailto:lancerservice@lancerbeverage.com)

**W** [www.lancerbeverage.com](http://www.lancerbeverage.com) **P** 1300 551 361



# FSANZ reports on the use of nanotechnology in food additives and packaging

In June, FSANZ commented on two reports prepared in 2015 on its behalf by an expert toxicologist on the potential use of nanotechnologies in existing food additives and food packaging. The reports were then peer reviewed by an expert pharmacologist and toxicologist to evaluate whether the conclusions for each of the reports were supported by the weight of evidence in scientific literature. The peer review agreed with the overall conclusions of the reports.

Nanotechnology describes a range of technologies used to manipulate materials that are generally less than 100 nanometres (nm) in size in one dimension. One nm is one billionth of a metre. Nanoscale materials are not new. Food is naturally composed of nanoscale sugars, amino acids, peptides and proteins, many of which form organised, functional nanostructures.

Some materials when produced in the nano scale do have different properties. Therefore, in responding to nanotechnologies, the focus of FSANZ's work is not on the size of the material, but on materials that are likely to act in a different way biologically or chemically if present in the final food.

## Scope of the work

The consultant was asked to review publically available scientific literature on whether there is reasonable evidence of health risks associated with oral ingestion of titanium dioxide, silicon dioxide and silver in food. These food additives may contain a proportion of material with at least one dimension in the nanoscale range.

As an extension of this work, evidence of risks to health from nanomaterials used in food packaging was also investigated.

## Key findings

- The consultant reviewed the evidence on nanoscale silicon dioxide, titanium dioxide and silver in food and found the weight of evidence does not support claims of significant health risks for food grade materials.
- Titanium dioxide and silicon dioxide are used internationally in a range of food products and have been used safely for decades. They are approved food additives in Australia and New Zealand. Silver is also an approved additive in Australia and New Zealand but is permitted in very few foods.
- Overall, the findings of the report are consistent with recently published information in the OECD's Working Party on Manufactured Nanomaterials Sponsorship Programme for the Testing of Manufactured Nanomaterials toxicological dossiers on silicon dioxide, titanium dioxide and silver.
- There is no direct evidence to suggest novel

nanomaterials are currently being used in food packaging applications in Australia or New Zealand, with most patents found from the United States.

- From the case studies on the use of nano-clay and nano silver in packaging, the report concludes that there is no evidence from the literature of migration of nano-clay from packaging into food. The nanoscale nature of nanosilver (whether used in packaging or food) is also not likely to be dangerous to consumer's health.
- An independent peer review agreed with the overall analysis and conclusions of both reports stating that they were appropriately balanced in their reporting and that none of the nanotechnologies described are of health concern.

## What are the implications of these reports for our food supply?

The current regulatory approach for food additives and food packaging relating to the use of nanotechnology in the manufacture of new or novel food products is considered valid by FSANZ and is consistent with international best practice.

FSANZ recognises that this is a rapidly evolving science and conclusions may need to be reviewed as the sophistication and application of nanotechnologies to

food and food packaging advances.

FSANZ continues to monitor this rapidly evolving science and will amend its regulatory approach as appropriate.

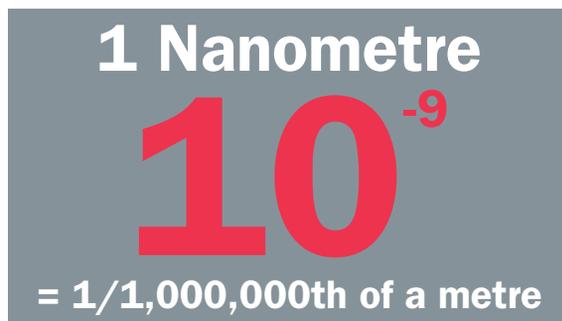
## Where is nanotechnology found in the food industry?

Common applications include:

- **Anti-microbial packaging** - incorporation of nanoparticles that kill bacteria
- **Nutrient Manufacture** - improvement to solubility of vitamins, antioxidants, healthy omega oils and other 'nutraceuticals'.
- **Texture design** - improvement in spreadability and stability using nano-sized crystals and lipids
- **Flavouring** - tricking the tongue with bitter blockers or sweet and salty enhancers
- **Storage qualities** - nano-enhanced barriers to keep oxygen-sensitive foods fresher

## Expert advice

FSANZ has set up a Scientific Nanotechnology Advisory Group (SNAG) comprising experts in the fields of nanosafety, pharmacology, nano-food technology, toxicology and nanometrology. The SNAG will advise on the development of guidance for a range of stakeholders, future uses of nanotechnology in food and food packaging and national/international legislation and policy. ❁



# FACT



## These products are food safe

The HACCP Australia product certification scheme is particularly aimed at those organisations that are required to supply 'food safe', 'compliant' or 'HACCP approved' products and services to their food safety conscious customers. Such products or services are usually those that have incidental food contact or might significantly impact food safety in their application. Food safety schemes, particularly the leading ones which are GFSI endorsed, require food businesses to subject many such products to a 'due diligence' process and the HACCP Australia certification is designed to meet this. This independent assessment and verification of fitness for purpose offers assurance to the buyer or user that HACCP food safety protocols will not be compromised in using such a product or service correctly and that such a product is 'fit for purpose' in the food industry.

Certified products have been rigorously reviewed by HACCP Australia's food technologists and, in their expert estimation, are manufactured and designed to meet all the appropriate food safety standards. In performing the assessment, they look for 'world's best' in terms of food safety features and characteristics. The food technologists undertaking these reviews all have extensive industry and manufacturing experience. Only products that are assessed as meeting the criteria can carry the mark. Quite often, organisations are required to make modifications to the product, design, delivery, literature or recommendations in order to comply. This process is therefore particularly useful for products that are designed for many industrial applications.

The companies listed below carry a range of excellent food safe products or services certified by HACCP Australia. **For more details, phone 02 9956 6911**

CATERING EQUIPMENT	CHAMPION	Manufacturers of industrial dish and glass washers	02 9956 6911
	ED OATES PTY LTD GOLDSTEIN ESWOOD COMMERCIAL COOKING MACKIES ASIA PACIFIC TOMKIN AUSTRALIA	Oates utensils and cookware accessories Manufacturers of industrial dish and glass washers Food safe bread loaf pans and bakery trays Food safe kitchen equipment and serving ware	1800 791 099 1800 013 123 02 9708 2177 02 8665 4675
CLEANING EQUIPMENT	ABCO PRODUCTS	Wet and dry floor cleaning equipment	1800 177 399
	BAXX AUSTRALIA	Equipment for the elimination of airborne pathogens	02 9939 4900
	EDCO (EDGAR EDMONDSON)	Food safe cleaning aids and equipment	02 9557 4411
	ED OATES PTY LTD	Full range of food grade cleaning equipment	1800 791 099
	HYDRO ECOTECH	HeKleen Super Alkaline Ionised Water (SAIW)	0416 868 777
	MAGIC TANK	Soak tank and cleaning solution for catering equipment	0421 669 915
	OZ TANK	SS deep cleaning tanks and systems for pans and trays	1300 668 866
CLEANING AND MAINTENANCE SERVICES TO THE FOOD INDUSTRY	POWER CLEAN TANK/SUPER CLEAN TANK	Stainless steel soak tank and consumables	02 8338 1891
	SABCO	Wet floor cleaning equipment	1800 066 522
	SOAKTANK AUSTRALIA	Soak tank and cleaning solution for catering equipment	1300 427 625
	TERSANO AUSTRALIA	Aqueous Ozone solution for cleaning and sanitising	02 8197 9929
	ACE FILTERS INTERNATIONAL	Food grade cooking oil filters	1300 555 204
	BORG CORPORATE PROPERTY SERVICES	Specialist contract cleaning services for food premises	03 9463 1300
	CHALLENGER SERVICES GROUP	Specialist contract cleaning services for food premises	1300 248 249
	ECOWIZE HOLDING PTY LTD	Hygiene and sanitation service providers to the food industry	1800 808 727
	FLICK ANTICIMEX	Washroom services for the food industry and premises	1300 656 531
	GLENN PETERS SERVICES	Specialist contract cleaning services for food premises	02 9580 4422
CLOTHING - DISPOSABLE GLOVES AND PROTECTIVE WEAR	INITIAL HYGIENE	Bathroom services for the food industry and premises	1300 731 234
	IPS CLEANING AUSTRALIA	Specialist contract cleaning services for food premises	1800 651 729
	LOTUS FILTERS	Filters and filter services for range hoods and food facilities	1300 653 536
	TOTAL EXHAUST CLEANING CONTRACTORS	Specialist cool room, hoods and kitchen cleaning services	0418 192 025
	THOR MOBILE TRUCK WASH	Truck and container washing services	0437 336 344
	TOTAL VENTILATION HYGIENE	Specialist cleaning services for the food industry (Sydney region)	1300 557 999
	WASH IT AUSTRALIA	Food transport vehicle cleaning & sanitation services	1300 927 448
	BASTION PACIFIC	Disposable gloves and protective apparel for the food industry	02 9714 1110
	BUNZL	Disposable gloves for the food industry	03 9590 3000
	CLOROX AUSTRALIA	Chux® and Astra® disposable gloves for the food industry	02 9794 9600
	ED OATES	Reusable gloves for the food industry	1800 791 099
	EDCO (EDGAR EDMONDSON)	Reusable gloves for the food industry	02 9557 4411
	ELINE FOOD PROCESSING SUPPLIES	Protective clothing for the food industry	02 9804 0757
KIMBERLY - CLARK PROFESSIONAL	Kleenguard disposable gloves for the food industry	1800 647 994	
LALAN GLOVES SAFETY CARE	Disposable gloves and protective apparel for the food industry	03 9706 5609	
LIVINGSTONE INTERNATIONAL	Disposable gloves and protective apparel for the food industry	1300 727 203	
MCP NEWCASTLE	Disposable gloves for the food industry	02 4966 8898	
MEDLINE INTERNATIONAL TWO AUSTRALIA	Disposable gloves for the food industry	1800 110 511	
PARAMOUNT SAFETY PRODUCTS	Disposable and reusable gloves for the food industry	03 9762 2500	
PREMIER SUPPLIES	Disposable gloves for the food industry	1300 880 051	
PRO PAC PACKAGING	Disposable and reusable gloves for the food industry	02 8781 0600	
RCR INTERNATIONAL	Pro-Val disposable gloves and protective apparel for the food industry	03 9558 2020	
STEELDRILL HEALTH AND SAFETY	Disposable gloves and protective apparel for the food industry	03 9790 6411	
THE GLOVE COMPANY	Disposable gloves for the food industry	02 4916 3000	
UNIVERSAL CHOICE WHOLESALER	Disposable gloves and protective apparel for the food industry	1300 727 203	
YAP TRADING COMPANY	Disposable and reusable gloves for the food industry	02 9826 8299	
FACILITY FIXTURES AND FIT OUT	AERIS ENVIRONMENTAL	AerisGuard - removable film for coating rangehoods	02 8344 1315
	ASSA ABL0Y ENTRANCE SYSTEMS	Automatic rapid close doors	1300 131 010
	BLUCHER (AUSTRALIA) PTY LTD	Stainless steel drainage hardware	08 8374 3426
	CARONA GROUP	Coldshield's thermal doors for food premises	02 4702 6655
	DYSON LIMITED	Suppliers of food safe hand dryers	1800 426 337
	ELECTROLUX PROFESSIONAL	Washers, ironers and finishing equipment	1300 888 948
	ELPRESS	Hygienic entrance equipment	1800 882 549
	HALTON	Suppliers of extraction hoods and ventilation devices	0412 702 145
	JET DRYER	Suppliers of food safe hand dryers	1300 071 041
	LUXURY PAINTS	Specialist coating materials	07 3375 3199
	MANTOVA	Food grade shelving and storage solutions	02 9632 9853
	PHOENIX	Suppliers of Gif Activent demountable ventilated ceilings	1300 405 404
	THORN LIGHTING	Food safe lighting and fit out solutions for food handling facilities	1300 139 965
	WURTH AUSTRALIA & NEW ZEALAND	ORSY - organisation system	1300 657 765
	FACILITY DESIGN AND OPERATION SERVICES	ENERGY AND CARBON SOLUTIONS	Food safe energy efficient solutions
UNIVERSAL FOODSERVICE DESIGNS		Design services for production facilities	02 4329 0630
FLOORING WALLS AND MATTING	3M	Specialist safety matting for food and beverage areas	136 136
	ALTRO SAFETY FLOORING AND WALLING	Specialist food premises flooring and wall panels	1800 673 441
	BASF CONSTRUCTION CHEMICALS	UCRETE® Flooring System	1300 227 300
	BETHELL FLOORING	Supplier and installers of specialist food premises flooring	07 3865 3255
	BLUESCOPE STEEL	Colorbond® Permagard® Anti-bacterial Coolroom Panelling Products	1800 022 999
	CLIFFORD FLOORING	Flooring installation and maintenance services	02 4655 1042
	DEFLECTA CRETE SEALS	Anti-bacterial flooring product and services	03 9318 9315
	FLOWCRETE	Industrial flooring and commercial resins experts	07 3205 7115
	HYCHEM	Supplier of specialist food premises flooring	02 4646 1660



PEST CONTROLLERS (NSW/ACT) CONT. EQUIPMENT   CHEMICALS   PEST ACILITY FIT OUT   REFRIGERATI NSUMABLES   FLOORING   CLE RUBRICANTS   UTENSILS   HYGIE ODUCTS   THERMOMETERS   PORTING SYSTEMS   CLOTHING EARNING PRODUCTS   PROCESS PEST CONTROLLERS (QLD) UBRICANTS   UTENSILS   HYGIE ODUCTS   THERMOMETERS   PORTING SYSTEMS   CLOTHING EARNING PRODUCTS   PROCESS PEST CONTROLLERS (SA) ACILITY FIT OUT   REFRIGERATI NSUMABLES   FLOORING   CLE PEST CONTROLLERS (VIC/TAS) IGHTING   LUBRICANTS   UTENS GIENE PRODUCTS   THERMOMI EPORTING SYSTEMS   CLOTHIN EARNING PRODUCTS   CLEANING ODUCTS   PROCESSING EQUIP HEMICALS   PEST CONTROL   CILITY FIT OUT   REFRIGERATIO NSUMABLES   FLOORING   CLE RVICES   STORAGE ITEMS   LIG HEMICALS   PEST CONTROL   PEST CONTROLLERS (WA) NSUMABLES   FLOORING   CLE IGHTING SERVICES   STORAGE IGHTING   LUBRICANTS   UTENS GIENE PRODUCTS   THERMOMI E REFRIGERATORS – EQUIPMENT, GOVERNORS AND DATA. LEARNING PRODUCTS   CLEANIN ODUCTS   PROCESSING EQUIP HEMICALS   PEST CONTROL   FA OR REFRIGERATION   CONS LOORING   CLEANING SERVICES OR THERMOMETERS, ANALYTICAL EQUIPMENT AND SCALES NSUMABLES   FLOORING   CLE IGHTING SERVICES   STORAGE EATING PRODUCTS   UTENS TRANSPORT CONTAINERS AND PALLETS	RENTOKIL SCIENTIFIC PEST MANAGEMENT STOP CREEP PEST CONTROL TERMITRUST PEST CONTROL	National pest control services for the food industry National pest control services for the food industry Regional pest control services for the food industry Specialist pest control services for the food industry	1300 736 865 1300 139 840 02 9371 3911 13 73 78
	AMALGAMATED PEST CONTROL ECOLAB FLICK ANTICIMEX RENTOKIL SCIENTIFIC PEST MANAGEMENT SIVTECH COMMERCIAL SERVICES	Specialist pest control services for the food industry Specialist pest control services for the food industry Specialist pest control services for the food industry National pest control services for the food industry National pest control services for the food industry Specialist pest control services for the food industry	13 19 61 13 62 33 13 14 40 1300 736 865 1300 139 840 1300 723 229
	ADAMS PEST CONTROL ECOLAB RENTOKIL	Specialist pest control services for the food industry Specialist pest control services for the food industry National pest control services for the food industry	08 8297 8000 13 62 33 1300 736 865
	ADAMS PEST CONTROL AMALGAMATED PEST CONTROL AVION SERVICES AUSTRALIA DAWSON'S AUSTRALIA ECOLAB FLICK ANTICIMEX HAYES PEST CONTROL PESTAWAY AUSTRALIA PESTOFF PEST CONTROL PROTECH PEST CONTROL RENTOKIL SCIENTIFIC PEST MANAGEMENT STATEWIDE PEST TRAPS PEST CONTROL	Specialist pest control services for the food industry Specialist pest control services for the food industry National pest control services for the food industry National pest control services for the food industry Specialist pest control services for the food industry	03 9645 2388 13 19 61 1300 253 799 03 9222 7378 13 62 33 13 14 40 1300 553 365 1800 330 073 03 9844 4037 1300 780 980 1300 736 865 1300 139 840 1800 136 200 03 9390 6998
ECOLAB PEST-A-KILL RENTOKIL ROLLINS AUSTRALIA TRADING AS ALLPEST WA SCIENTIFIC PEST MANAGEMENT TERMITRUST PEST CONTROL	Specialist pest control services for the food industry Specialist pest control services for the food industry National pest control services for the food industry Specialist pest control services for the food industry National pest control services for the food industry Specialist pest control services for the food industry	13 62 33 1800 655 989 1300 736 865 08 9416 0200 1300 139 840 13 73 78	
CAREL COOLSAN HOSHIZAKI IGLU COLD SYSTEMS (AUSTRALIA) MISA	Temperature controllers and supervisors for refrigeration Manufacturer's of the ChillSafe® sanitation sachet Refrigerators and freezers for hotels, restaurants and catering outlets Refrigerators and freezers for hotels, restaurants and catering outlets Modular cool room and freezer room solutions	02 8762 9200 1300 390 811 1300 146 744 02 9119 2515 1800 121 535	
REJUVENATORS (THE)	Specialist cool room cleaning and rejuvenation services	0407 292 826	
3M IDEXX SCALE COMPONENTS TESTO	TL 20 Temperature logger for logistics Test kits and equipment for microbiological testing of water and ice Weighing equipment for the food industry Specialist thermometers and oil testers for use in the food industry.	136 136 1300 443 399 07 3808 9644 03 8761 6108	
SCHUETZ AUSTRALIA VIP PACKAGING	Plastic composite intermediate bulk containers (IBCs) and plastic drums Food grade intermediate bulk containers	1800 336 228 02 9728 8999	

**Buy Direct  
from the  
Manufacturer**

No Orders  
Too Small  
Save \$\$\$



**CHECK  
OUT OUR  
QUANTITY  
BUY PALLET  
PRICES**

**FREE  
SAMPLES**

Phone or fax for  
a free sample,  
a quote or to  
see a sales  
representative.



Phone: 1300 133 531 Fax: 1300 883 302  
AUSTRALIA WIDE DELIVERY



*"A clean fleet is a clean image"*

**Mobile truck and fleet washing solutions  
LOCAL and NATIONAL**

**BRISBANE**

Wash It Australia truck and vehicle washing is a convenient, unique and environmentally complete washing system that comes to your site at a time and place that suits you.

**SYDNEY**

Fully self-contained (leaving a clean site on departure)

**MELBOURNE**

Environmental boom system to capture the water.

**ADELAIDE**

HACCP approved with a commitment to providing safety requirements for food transport vehicles.

**PERTH**

Services include: Prime Mover Washing, Trailer Washing, Rigid's Washing, Truck and Dog Washing, Bus/Coach Washing, Container Washing, Forklift Washing and Motor Home Washing.

Wash It Australia Mobile truck and fleet Washing will boost productivity within your wash bay and will save you three precious commodities - time, money and water

**Call NOW 1300 washit**



# FOOD SAFE SOLUTIONS

Consumables & C-Parts



- **400 Sales Representatives**
- **ISO 9001:2008**
- **HACCP certified range**
- **Full MSDS chemical compliance**



## Powerful Stainless Steel Cleaner

For preliminary cleaning of contaminants such as boring and cutting oil, greasy dust and processing residue.



Art. No. 0893 121 2



## Stainless Steel Care Spray

Cleaning care emulsion removes dirt and streaks. Creamy emulsion suitable for application on vertical surfaces.



Art. No. 0893 121



## Stainless Steel Care Oil

Removes light dirt, dust, streaks and greasy fingerprints. Suitable for daily care and visual enhancement.



Art. No. 0893 121 0

**Call our National Sales Manager  
Andre Vlcek on 0439 497 121  
today for a personal solution!**

**Visit our Website:  
[www.wurth.com.au](http://www.wurth.com.au)**

**Follow us...**





# How do you know

whether equipment, materials and services are suitable for use in food processing and handling?

Only one mark truly confirms a non-ingredient product is food-safe. If it's not food-safe in every respect, it can't carry this mark – simple.

The HACCP Australia certification mark is aligned with the due diligence requirements of the world's leading food safety standards and quality systems. Ten key criteria are examined to give you that full assurance. Certified products need to satisfy ALL criteria – not just individual components. It's either completely fit for its purpose or it's not!



**No ifs, no buts, it is or it isn't!**

That's why products from these well respected manufacturers and many more carry the mark.



[www.haccp.com.au](http://www.haccp.com.au)