

### **DEB'S OXYBAC™ –**

The new antibacterial hand wash

### **TRAINING & COMPETENCE –**

A food industry priority

### **LISTERIA –**

Requires special  
consideration

### **GENETIC MODIFICATION –**

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# Welcome

I thought I might use this introduction page to give readers some more information about our organisation and its product certification scheme.

HACCP International had its beginnings in Australia in the nineties and since then its mark has become one of the most recognised in food safety around the world. Its accredited, product certification scheme now plays a vital role in minimising food safety risks in products and services commonly used in processing and handling. Its mark is commonly carried by many of the world's best known and food safe materials, products and equipment used by industry in America, Asia, Europe and Australasia.

Contamination risks in food handling come from four main sources – the environment, the ingredients, the process and, lastly, the equipment and materials used in that process. The last one is the focus of our certification scheme. Products that have incidental food contact or a significant impact on food safety are often the least considered. Most HACCP based food safety programmes address the first three well, however the latter category, which often presents a high risk profile, can get less attention and is frequently ignored completely.

More recently, GFSI endorsed food safety schemes and many quality standards have begun to address this – now looking for auditable, due diligence processes in the selection of materials, consumables and equipment that present such risks.

## Our certification scheme is designed to meet that precise requirement.

Products such as gloves, cutting boards and cleaning consumables have significant food contact and high risk profiles. A well made, well designed and food safe cutting board, for example, may cost a few cents more than other less appropriate, competing products but, as with most things in life, you get what you pay for. The articles on pages 8 and 10 are well worth a read, explaining what we look for in evaluating products as part of our certification process.

In another sector, cleaning and pest control chemicals often present very high risk profiles. However, because they are often selected by the contractor, they almost always bypass the usual assessment systems that food businesses employ. A 'certificate of conformance' for such products is a valuable check in ensuring contractors use appropriate materials in food facilities and mitigate significant risks from this quarter. Many of the world's leading brands, such as **DEB** and **3M**, have gone to significant effort to ensure certain chemicals are particularly appropriate to the food industry.– it's worth checking with your contractor as to how they manage chemical selection.

In cleaning or pest control activities, food businesses are, to a greater extent, actually sub contracting the performance of part of their HACCP programme. Service providers that carry our mark have been evaluated and audited in terms of competence, HACCP awareness, food safety training, material selection, reporting and on site operations - giving confidence to the buyer and seller alike as to their ability to deliver a compatible service. Service providers that do not demonstrate a real commitment to providing a high standard of food safety capability generally fail to meet the certification requirements.

In recent months, we have been very active in event participation in Europe, Asia and Australia. Earlier this year, we worked closely with the BRC at their annual London convention, exhibited at the FHA conference in Singapore, undertook educational seminars for 'Yum' group in China and BRI Camden in the UK. In Australia, we were proud to sponsor the 'Food Safe equipment and materials' category at the prestigious food awards and congratulate '**BaitSafe®**' on their taking first prize (see page 23). We will be 'on show' at many industry events around the globe in coming months. Please do come and say 'hello'.

A number of truly excellent products that offer effective and safe solutions have gone through our certification process. One in particular that caught our eye recently is the truly innovative **OxyBAC™** from **Deb** which is the subject of our front page feature. **Deb** has developed an excellent antibacterial hand wash which merits consideration by all food handlers. I also urge you to consider those listed in the index on page 25, all of which are food safe and compatible with industry needs.

Thanks for subscribing. Let us know if there is a topic you would like featured in forthcoming issues. ■



*Clive Withinshaw - Director,  
HACCP International*



For more information on any article in this magazine or to submit editorial or a comment please email to : [ifsb@haccp.com.au](mailto:ifsb@haccp.com.au)

For more information about HACCP International's services, please email : [info@haccp-international.com](mailto:info@haccp-international.com) or contact one of our regional offices

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# TRAINING & COMPETENCE

Richard Mallett, Director of the HACCP Europe Division provides an insight into effective training methods which are so vital to food safety in our industry.

Speaking from a background in food safety auditing, one of the issues constantly faced by the auditor is the evaluation of training and training records to ensure effectiveness. Let's imagine this scenario:

"I can see in front of me some certificates of food safety training, which clearly show the date of training and duration of the course. The trainer is qualified in the subject area. Therefore the staff which hold these certificates are fully trained and competent in food safety."



*Richard Mallett, European Director  
of HACCP International*

This is, of course, a dangerous assumption and the presence of a certificate alone does not necessarily ensure competence, a fact of which most auditors are aware. Training courses have to be developed and run according to need and expected outcome. They should take into account different learning styles and effectiveness should always, always be validated. So what might the experienced auditor look for?

A useful start, adopting a method devised by the educational theorist and founder of the 4MAT teaching method, Bernice

McCarthy, is to consider the underlying needs of candidates to ensure a balanced training style. Broadly speaking, people can be categorised into 4 different types based on what they want to get out of training:-

- **Type 1: Why?** People; these people attach personal meaning to training. They consider the reasons for training, often connect it with personal experiences and have a need to establish how useful the information or message will be in real life.
- **Type 2: What?** People; these people enjoy facts, opinions from experts, data and are capable of thinking through ideas based on what the concept of the message is. They enjoy detail.
- **Type 3: How?** People; these people like to be hands on. They like to try things out, to practice things and ideas and enjoy solving problems.
- **Type 4: What If?** People; these people want to try out variations. They enjoy a voyage of self-discovery, relying on their intuition to research ideas and explore possibilities. They enjoy role play, simulations and games.

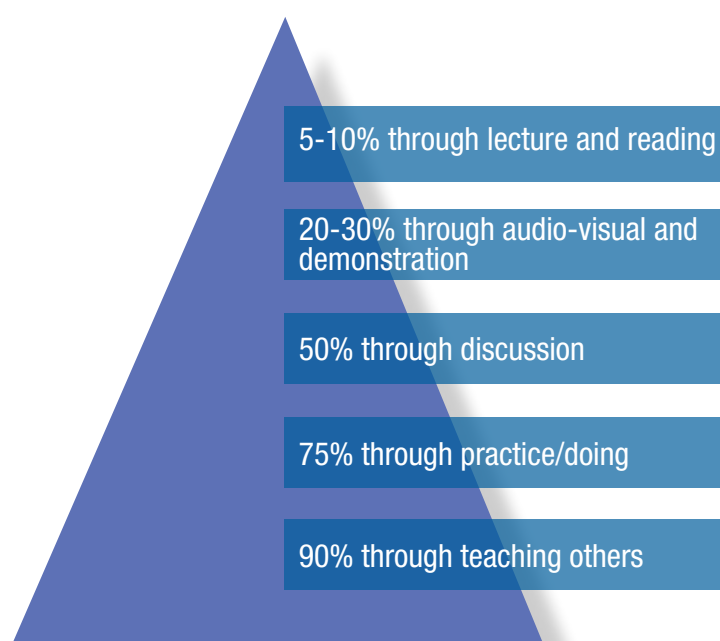
The well-developed training package will take these different types of people into account, highlighting the importance and current issues surrounding the topic - for instance the latest food poisoning statistics and the socio-economic outcome. It will cover the key knowledge areas of the topic and then engage the candidates, perhaps through an interactive or creative activity. It will promote discussion, debate, exploring different situations. It will draw on applying the theory in practice, in real life daily tasks to promote improvement, or in the case of food safety training, better and consistently applied controls.

## Applying these principles in practice

It is helpful to know of some useful facts and rules concerning learning and learning styles:

- **People will almost certainly never learn effectively when under stress.** Those elements of stress, or fear of the training course, can be addressed by considering the principles outlined above. Work-place stress is another thing altogether and stress within the workforce should be considered as an occupational health risk and steps taken to mitigate this risk through management of people, time and the promotion of a stress free culture.
- **Eat to think!** The brain uses up a considerable amount of extra energy when active. Protein and water (protein is linked to an increase in alertness and brain activity, as opposed to carbohydrates which, although a useful provider of energy, are mildly sedative in nature) are required for the brain to function effectively.
- **People learn well at the beginning and end** but learning ability drops off during the middle of a training session
- **Adults cannot concentrate for much longer than 30 minutes** at a time. Regular short breaks and exercises are more useful than one or two long breaks.
- **People remember context** better than content.
- **Recall is improved dramatically** if a training course encourages the reviewing of information taught.
- **People learn better when the whole brain is engaged** and when they learn in a variety of different ways.

This last point in particular raises the question of how to engage the whole brain and how to capture different learning methods. An interesting fact emerges when you consider learning as a pyramid with different sizes of segments equalling different retention rates from different learning styles:-



From the diagram above it is clear to see why as many learning styles as practical should be incorporated into the

**Competency cannot be assumed, but rather must be demonstrated.**

training session. A training session so developed will ensure that the different learner types are all accounted for and all given a chance to assimilate knowledge. The key learner types are:-

- **Visual Learner** – Learns best from images, colour and movement
- **Auditory Learner** – follows verbal information and instruction
- **Kinaesthetic Learner** – prefers the hands-on approach with demonstrations and the chance to practice
- **Academic Learner** – takes notes and enjoys having the facts written down.

Whilst it is true that each individual will have an overall preferred learning style it is also fair to say that we all do respond to each learning style and that a mixture of learning styles will boost information retention rates.

The job of the trainer, whether an internal company trainer or a contracted in provider, is to adopt practices, perhaps based on those above, to ensure an enhanced learning experience.

The job of the auditor, whether an internal or external auditor, is to be aware of training styles, training preferences and to explore this during the audit. A good start would be to ask to see the training plan or training programme behind the certificate. What is the basic style of the course? For instance how much of the training is based on verbal briefing, PowerPoint presentation, demonstration, role play or a mixture of these, or other methods? What training aids are used? Are group exercises, games, quizzes, displays, DVD's, posters, the internet, books or hand-outs used to catch the attention of the visual and kinaesthetic learners? What is the proportion of the lecture elements - discussion, demonstration, DVD shows, quizzes etc? Is the proportion of each element in balance to engage all learner styles?

The auditor should also question, and test, competency. Competency cannot be assumed, but rather must be demonstrated. It is a good idea, where practical, to ask a member of staff to demonstrate a task and to explain how they know they are doing it right and how they would know if they weren't managing the task very well. This lends itself to further questioning to explore if they would know what to do if the task went wrong and, in the context of this article, could put food safety at risk. It is useful to explore if they know why doing the task wrong might jeopardise food safety.

The required outcome of effective training is simple – training is not merely showing someone how to do something but is the method by which we can be certain that the task itself is understood, the concept behind the task is understood, the reason for doing the task correctly is understood and the consequences of not doing it right are clearly understood. ■



# OxyBAC™

## The safest and most effective antibacterial hand wash

The world's leading occupational skin care company, Deb Group, has announced the launch of OxyBAC™, which they claim to be the safest and most effective antibacterial hand wash for use in any food handling, general workplace, public facility or social care environment where higher standards of hand hygiene are required.

Professional use, liquid antibacterial hand washing soaps have been available for over 50 years. Their use has increased in response to public concerns over the spread of infectious diseases and the need for greater vigilance in hygienically sensitive environments, such as where raw and uncooked foods are being handled. This has led to greater emphasis on germ-kill performance and the introduction of stronger biocides. With this change, more has been learned about the impact that the biocidal agents used in antibacterial soaps have on hand hygiene, human health and the environment.

Today, varying concerns exist over all current biocidal agents used in hand wash products. The first main concern is environmental toxicity, as all existing biocidal agents used in hand wash products are characterised by having residual environmental toxicity that can be harmful to the environment and aquatic life.

The second concern is human toxicity, as many biocidal agents are known irritants and sensitisers; their frequent use can lead to skin irritation, allergic reactions and sub-optimal hand hygiene compliance.

Finally, the third concern is anti-microbial resistance, where the mode of activity, residual toxicity and wide use of some biocidal agents has led to concerns of micro-organisms building-up resistance against them.

OxyBAC™ combines Deb Foam Technology™ with Accelerated Hydrogen Peroxide® (AHP) to create a unique, patented non-ionic surfactant based rich-cream foam that addresses the concerns of all existing biocidal actives. Dr John

Hines, R&D Director at Deb explains "the active power of OxyBAC™ is hydrogen peroxide which, unlike all other biocidal actives, has the unique benefit of simply breaking down into water and oxygen after use with no environmental or human toxicological impact. Also, when AHP® comes into contact with germs it releases free-radicals which act non-specifically on multiple cell targets to kill germs in such a manner that prevents antibacterial resistance".

Deb's R&D team have been working for over 8 years to perfect the science of incorporating AHP® into a foaming hand wash formula that apart from being highly efficacious also has an excellent physical cleansing performance, with good skin feel during and after use.

Dr Pierre Grascha, Chief Scientist at Deb explains "the powerful oxidising action of hydrogen peroxide has long been known for its antiseptic germ-killing properties, but the challenge has been to stabilise it in a synergistic blend of commonly used, safe ingredients that both kills and cleans whilst being safe for the environment and the user. Using internationally accepted protocols, independent test laboratories have shown that OxyBAC™ will kill 99.999% of many bacteria in just 30 seconds, which is truly exceptional for a hand wash product."

OxyBAC™ is available in a perfume-free format which is has been tested to be non-tainting to food. ■

Contact: Deborah Gobey  
MCIPR - PR & Corporate  
Communications Manager,  
debora.h.gobey@deb.co.uk



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# A CUT ABOVE

By Karen Constable - HACCP International

Every home has one or two, commercial kitchens may have ten or twenty, industrial food processors sometimes have hundreds; cutting boards are one the most common pieces of equipment for food preparation.

What makes a good cutting board? A good cutting board is first and foremost a good surface for cutting, chopping and dicing food. It is solid and firm enough to resist a knife's pressure without being so hard as to dull the blade of the knife. Many materials make great surfaces for cutting, but not all materials are suitable for use in commercial food preparation. Wooden cutting boards have porous surfaces which can remain damp, are difficult to sanitise and which have been shown to harbour bacteria. For this reason, most national food safety authorities, both government and industry standards bodies, disallow the use of wooden cutting boards in commercial food handling premises.

Glass cutting boards are also unsuitable for commercial kitchens, despite being popular in homes for their aesthetic appeal and heat-resistant properties.

A better alternative for commercial kitchens are polymer (plastic) cutting boards. Polymer cutting boards are impervious, non-absorbent and non-contaminating. In addition, they can easily be cleaned and sanitised.

Polypropylene and polyethylene are the polymers most commonly used to make cutting boards, but it is also possible to purchase rubber, nylon and silicon cutting products.

When choosing a cutting board, shape and size are important. A cutting board which fits in the dishwasher is much easier to clean and sanitise. The shape is important because cutting boards with unusual shapes, such as 'built-in' hooks, ridges or patterns can be more difficult to clean than simpler shapes. Cutting boards which are made from a single contiguous piece of material are best, since boards which are laminated, veneered, inlaid or have handles or hooks attached can be too difficult to clean.

Polymer cutting boards can be made in a huge range of colours. However, some pigments used to colour plastics are toxic and could contaminate food that come into contact with coloured boards. Not all coloured boards are equal in this respect.

Coloured boards provide a great tool for controlling cross-contamination in a commercial environment. Colour-coding of cutting boards and other utensils designates specific colours to particular food types which can prevent bacteria from raw foods contaminating cooked foods. It also minimises incidences of food tainting, in which strong flavours, such as fish are transferred to more delicately flavoured foods.

There is no formalised standard for colour coding of food preparation equipment. HACCP International recommends the following colour codes which are widely accepted in modern food handling facilities:

<b>Green</b>	<b>Vegetables and Fruit</b>
<b>White</b>	<b>Bakery and Dairy</b>
<b>Yellow</b>	<b>Poultry</b>
<b>Red</b>	<b>Raw meat</b>
<b>Brown</b>	<b>Cooked meat</b>
<b>Blue</b>	<b>Seafood</b>

Another tool to improve hygiene is the incorporation of anti-microbial additives into polymer cutting boards. A number of antimicrobials have been used for this purpose, the most popular being silver-based technologies including silver-zeolite and nano-silver and triclosan. A number of effects are claimed for cutting boards containing antimicrobials, however, the scientific evidence is scarce for some of these claims. Again, not all antimicrobials are equal. They are particularly unlikely to have



We have evaluated a number of cutting boards against this standard and, to date, only Chef Inox colour coded cutting boards have been certified as conforming to our standard. They definitely represent the best in terms of hygienic design and materials.

any germicidal or growth-inhibiting affects on surfaces which are soiled with food particles. Proper cleaning of the cutting board is still the number one defence against micro-organisms.

Cleaning and maintaining a cutting board is simple. First remove large pieces of food from the surface by scraping or wiping. Next, scrub all surfaces with a firm-bristled brush under warm running water with detergent. Inspect the surface to make sure there are no signs of food materials, fats or oils. Finally, sanitise the cutting board by putting it through the longest cycle of a commercial dishwasher or by immersing it in a mild bleach solution for 30 minutes. Inspect the cutting board regularly for chips, cracks and rough edges. Discard the cutting board if it is chipped or cracked and when it becomes heavily scored and/or stained.

HACCP Australia, the Australian arm of HACCP International has developed a standard to assist designers, manufacturers, purchasers and users of cutting boards for use in food preparation in commercial premises.

The purpose of the standard is to provide guidelines and to describe best practice with respect to the food safety aspects of cutting boards specifically for commercial use. Design, materials of construction, suitable colourants, heat resistance, impact resistance, microbial inhibitors, marketing and labelling requirements are specified.

Clive Withinshaw of HACCP International says, "We have evaluated a number of cutting boards against this standard and, to date, only Chef Inox colour coded cutting boards have been certified as conforming to our standard. They definitely represent the best in terms of hygienic design and materials."

The Chef Inox colour coded cutting boards are manufactured using hygienic, tough polypropylene. Polypropylene provides an autoclavable product with high chemical, stain and aroma resistance. These cutting boards will do not dull knives, chip, splinter nor warp. They are colour coded, dishwasher safe, non-absorbent and have a temperature range of 20°C to 105°C. They represent the high standard that busy commercial food handlers demand – especially those which need to meet the exacting standards of modern food safety standards – particularly important for such products that have frequent food contact. ■

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# The A - Z

## of supplying non-food materials, products and services to the food industry

By Karen Constable - HACCP International

**A** is for apple pies. Should 'Simple Simon' want to sell his pies to a large chain of stores, that chain of stores, in the interests of customer safety and brand protection will require the manufacturer to have a HACCP-based food safety programme. The manufacturer's HACCP programme requires him to purchase safe ingredients, so he, in turn, will require his ingredient suppliers to have their own HACCP programmes. In this way, food safety becomes integrated all the way from 'farm to fork'.

**B**ut if the food manufacturer is required to buy ingredients which are safe, what about the goods and services he purchases which are not food ingredients? How does the food manufacturer know that they are safe and suitable? He can perform his own evaluation or rely on declarations from the supplier of a product or service. Alternatively he can seek evidence of an independent assessment. HACCP International offers certification for products and services that are food-safe and suitable for use in food businesses that operate a HACCP-based food safety programme.

**C** is for chemical hazards to food safety. Chemical hazards include cleaning chemical residues, pesticide residues, and machinery lubricants. If these chemicals get into food, they can cause illness and injury.

**D** is for direct food contact. Equipment and materials which come into direct contact with food includes; conveyor belts, magnetic separation devices, utensils and pans, cleaning materials, chemicals and gloves. Such products for direct contact have the potential to contaminate food. It must be made from suitable materials, be clean and cleanable and be free from parts and pieces which could break off and contaminate food.



*Chef Inox certified cutting boards*

**E**valuating products and services for the food industry is what HACCP International's Certification Programme is all about. All evaluations are performed using a risk-based methodology, based on the principles of HACCP as codified by the Codex

Alimentarius of the World Health Organisation. Hazards to food safety which could arise from the use of the product or service in a food handling facility are identified, and methods of controlling hazards are analysed.

**F** is for food-safe and "Fit for Purpose". Food-safe products are free from chemical, physical and microbial hazards which could cause injury or illness if they got into food.

**G** is for good manufacturing practices, an essential requirement for manufacturers of items that will come into contact with food.

**H**ygienic design is very important for equipment and machinery used in food handling areas. There have been a number of high profile outbreaks of food-borne illness associated with microbial growth within machinery. A camp full of children was sickened from a pudding contaminated with Salmonella which came from inside a blender with a damaged shaft seal in 2009. Last year thirty people died from eating cantaloupes (rock melons) contaminated with Listeria from an unclean and un-cleanable produce-washing tank. Others have been sickened and died from contamination of cold sliced meats from unclean slicing equipment.

**I** is for icemakers, soft serve machines and ice vending units. HACCP International certifies a number of these machines that are well-designed, made from suitable materials and easy to keep clean.



*A Hoshizaki certified icemaker*

**J** is for 'Julian Date codes', which are commonly used for identifying batches or lots of product in the food industry. Traceability is an important characteristic for many non-food items as well - particularly high risk products such as cleaning chemicals.

**K** is for killing germs. In the food industry it is known as 'sanitising'. Sanitising reduces the number of micro-

organisms on a surface. It can be done with chemical agents, such as bleach, or with hot water. Disinfection also means killing germs, but is usually more rigorously defined and typically refers to a greater reduction in microbial load than 'sanitising'.

**L**ighting can be a source of hazards in a food handling environment, the most obvious being broken glass from a shattered light bulb or tube. Proper lighting is also crucial for cleaning processes, since many cleaning processes rely on visual inspection.

**M**icrobial hazards to food safety include bacteria, viruses, moulds and their toxins.

**N**is for non-conformance. All certified food-safety programmes require regular audits to verify conformance to the requirements of the programme. Unsuitable fit-outs, fittings and contracted services are common sources of non-conformances from food safety auditors. Typical examples are; unfinished (raw) concrete floors in cool-rooms, uncovered or unsuitable lighting and sub-standard pest control services.

**O**range coloured bags, bins, tubs and cloths are sometimes coloured with pigments containing heavy metals such as cadmium and barium. These colourants can pose a risk if they migrate into food.

**P**is for physical hazards, which include fragments of glass, pieces of metal and rigid plastic, stones and wood. Common sources of physical hazards in food handling areas are; broken equipment, loose screws and wooden pallets.

**Q**uestions about food-safe products and services? Call HACCP International in Europe Asia or or Australasia – look us up on the web [www.haccp-international.com](http://www.haccp-international.com).

**R**educe the risk. Difficult-to-clean equipment which provides a harbourage for dangerous bacteria can significantly increase the risk of contamination in a food handling environment. Choosing equipment, that is made from smooth, impervious, corrosion-resistant materials and which can be easily cleaned and or dismantled if necessary will reduce the risk.

*A Testo certified thermometer*



**S**ervice providers including providers of cleaning services, pest control services and specialist consulting services such as compressed air consultants and kitchen designers are among the many businesses certified by HACCP International.

**T**is for temperature. Temperature monitoring is part of almost every food safety programme. Product temperatures are very common critical limits in food safety programmes. Thermometers, sensors, data loggers and refrigeration control devices all play important roles in food safety.

**U**ltraviolet light is commonly used in the food industry. The lamps in insect control units emit ultraviolet light which attracts some flying insects. Ultraviolet light is also used for sanitising and disinfecting, particularly in water treatment plants.

**V**erification is one of the seven principles of HACCP. Verification processes are used to check that the food safety programme is working properly.

**W**is for ware-washers, which include dish-washers and glass-washers. Ware-washers are often identified as a critical control point in food safety programmes for businesses which cater to vulnerable populations, such as Aged Care Facilities. Many ware-washers do not meet best practice in terms of hot rinse times and temperatures.



*A Champion certified ware-washer*

**E**xpensive recalls can be avoided by reducing the risk to food from materials, equipment and services used during food manufacturing processes.

**Y**ersinia enterocolitica is a bacterium which causes food-borne illness, especially from undercooked pork products. It can be carried into food facilities by rodents, which are also carriers of Yersinia pestis, the pathogen responsible for bubonic plague. Rodent control is a key role for pest control providers to the food industry.

**Z**oom in, zoom out. A great food safety programme is one that has been made written with attention to detail; 'zooming in'. An example is a HACCP programme which acknowledges that compressed air comes into contact with food packaging, and controls the hazards that could arise from contaminated air. Zooming out is also important: all food manufacturers aim to make safe food and that takes an integrated approach. ■



dyson airblade

# The only hand dryer certified for use in the food industry.

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"HACCP International certifies the Dyson Airblade™ hand dryer as appropriate for use in food facilities that operate in accordance with an HACCP based Food Safety Programme. The only hand dryer that's HACCP International approved."

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The only HACCP International approved provider of antimicrobial technology



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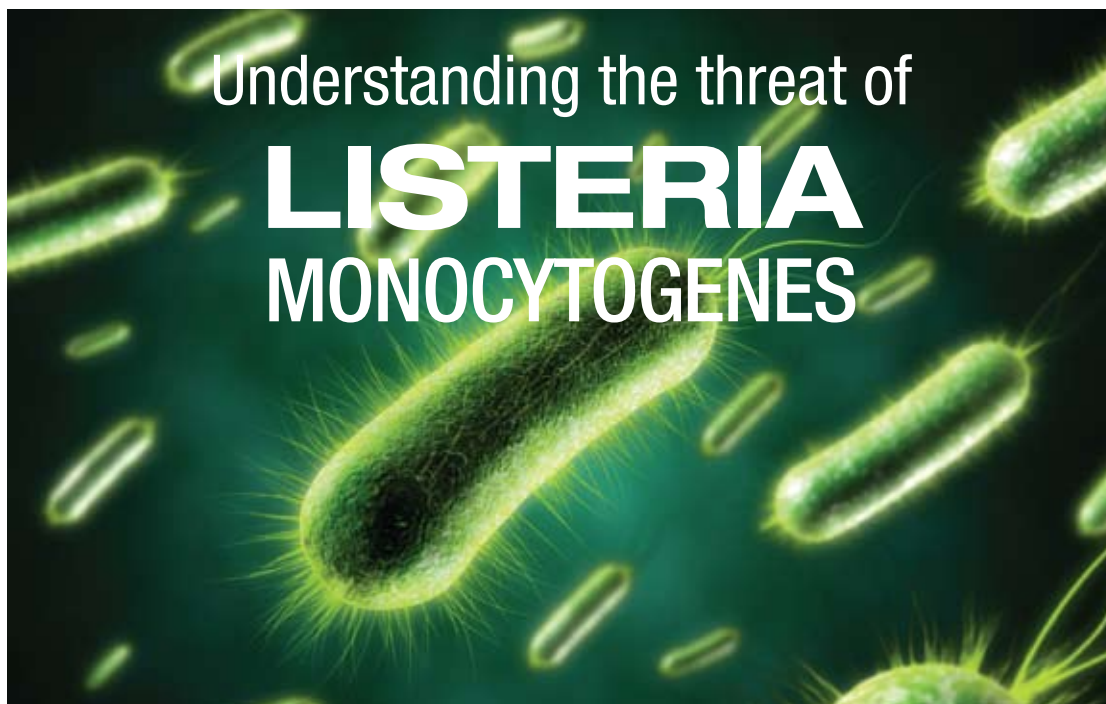
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Once integrated BioCote additives provide a permanent antimicrobial protection which reduces microbes by up to 99.99%.

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If you ask a member of the public to name a hazardous bacterium, chances are they will name E.coli or Salmonella or perhaps MRSA. Although it may not grab the headlines as much as these potentially dangerous bacteria, Listeria is an organism that requires and is receiving some special consideration. Listeria's capacity for disease is dependant on a number of factors and historically associated with certain food groups and at risk groups of the population. The UK's Food Standards Agency identified Listeria monocytogenes as an organism of concern in its five year plan for the reduction of food borne disease in the UK along with the more prevalent but comparatively less deadly Campylobacter.



*Dr Andrew Summerfield,  
Microbiologist, BioCote*

It is interesting to contrast the figures between these two organisms. In England and Wales (2008) a total of 321,179 cases of Campylobacter were reported, with 76 associated deaths. A significant contrast with the relatively small number of Listeria associated cases were reported (358) however 126 resulted in death. The FSA have thus chosen to address these two organisms for very different reasons, but with the overall goal of reducing infectious intestinal disease. The FSAs strategy with

regards to preventing listeriosis appears to be working.<sup>(1)</sup>

Between 1990 and 2000 listeriosis cases in England and Wales were relatively stable, with an average of 109 cases per year. From 2001 to 2009 there was an increase in the average of reported cases to 191. In 2010 there was a 13.6% decrease in number of reported cases, a total of 159 cases in England and Wales. Decline continued in 2011 with a further 7.5% decrease in reported cases of listeriosis.<sup>(2)</sup> The global Mortality rate is broadly considered to be around 20-30% for all cases of listeriosis. Listeriosis is characterised by bacteraemia and meningoencephalitis in individuals with impaired immune systems and is a clearly rare, but potentially deadly disease.<sup>(3)</sup>

### So what is Listeria and why is it such a problem?

Listeria monocytogenes is a Gram positive facultative pathogen that is ubiquitous in a diverse range of environments including soil, water, various food products, animals and humans.<sup>(4)</sup> Discovered in the 1920's and originally named Bacterium monocytogenes because one of the first manuscripts describing this infection noted the increased number of monocytes in the infected tissue.<sup>(5)</sup> It was renamed Listeria monocytogenes to honour Joseph Lister, considered to be the father of antiseptic theory.<sup>(6)</sup> The organism is well adapted to life within the harsh conditions of the host's gastrointestinal tract and possesses measures to counteract changes in oxygen tension, acidity, the presence of bile and antimicrobial peptides.<sup>(7)</sup>

L. monocytogenes can cause a variety of symptoms ranging from mild flu-like, fever and gastroenteritis which can progress to the symptoms associated with the severe disease listeriosis. Infection occurs almost exclusively from the consumption of contaminated food stuffs. The bacterium is inactivated by heat so standard cooking and pasteurisation procedures will protect consumers from the possibility of infection. The individual danger posed by Listeria depends very much on the status of the patients' immune system, linked to illness, age, cytotoxic drug use, pregnancy or any other factors affecting the immune system.

CONTINUED ON PAGE 14

The immune system can be broadly broken down into two parts. The innate immune system has no “memory” and is the first line of defence from infection. It is considered the more ancient element of immunity and analogous systems exist in plants, fungi and other lower animal species. The adaptive immune system “remembers” surface markers (antigens) from pathogens and responds via various means to eliminate these organisms. This memory will last for the lifetime of the host. Within these two systems are two further divisions, cell mediated immunity and humoral immunity. The former involves specialised white blood cells (leukocytes) which are active in different forms in the adaptive and innate immune response, but with the broad aim of killing invading organisms. The humoral immune system plays a role in both the adaptive and innate response and is primarily associated with the release and action of antibodies, but also includes elements of the innate immune system such as complement.

The innate immune response is critical for the control of early listeria infection and evidence suggests the cell mediated immune response is the most important arm of the body's defences in response to exposure to pathogenic *Listeria* species.<sup>(8)</sup>

The actions of phagocytes, natural killer cells and cytotoxic T-lymphocytes help to fight off potential *Listeria* infections. The humoral immune system involves the production of antibodies which are considered less effective against *Listeria* infection, although the exact reasons as to why this is are somewhat unclear. *Listeria* is shown to exhibit an antibody response even in the absence of clinical symptoms.<sup>(9)</sup>

## The UK's Food Standards Agency identified *Listeria monocytogenes* as an organism of concern in its five year plan.

Potential hosts with reduced capacity of their cell mediated immune system are more vulnerable to the deadly form of listeria infection. This is due to a host of virulence genes available to the bacterium. Utilizing its range of virulence factors, *Listeria* is able to bind to and invade host cells and once internalized in the host cytoplasm, will hijack elements of the invaded cell to facilitate intracellular motility. Once motile, *Listeria* is able to push up and through the host cell wall into neighbouring cells. Through this action *Listeria* is able to quickly spread from cell to cell and cause serious disease, whilst avoiding much of the host's immune response. *Listeria* is an interesting organism from this point of view, as it has a true intracellular life cycle.<sup>(10)</sup>

Treatment of listeria infection must take into account the intracellular environment of the organism. Drugs must be able to penetrate the host cell and remain active in the potentially harsh conditions of the host. Typical treatment involves antibiotics such as penicillin, ampicillin and amoxicillin.<sup>(11)</sup> In cases of severe listeriosis treatment with antibiotics will normally improve the patient's chances of survival, but death is still a considerable risk.<sup>(12)</sup> Bearing this in mind it seems that prevention is far better than

Considering *Listeria*'s ubiquity in the environment it is fairly easy for the bug to enter the food chain and persist in food production environments.

cure. Considering *Listeria*'s ubiquity in the environment it is fairly easy for the bug to enter the food chain and persist in food production environments. Its ability to grow at typical refrigeration temperatures makes it a more considerable risk in foods that have been minimally processed. High risk food groups would historically include soft cheese, meat spreads and pates; although a famous and deadly case in the US involved contaminated cantaloupes. Ready to eat foods are a concern worldwide. The other side of managing the risk posed by *Listeria* is therefore to consider the at risk population groups. This is why, for example, pregnant women are advised not to eat soft cheese. The largest population group of concern is the over 60s, and with the rising age of the population it is important that the problem of *Listeria* is addressed.

In conjunction with the revised plans for tackling *Listeria* at a national level, within the food production industry the care must be taken to minimise the chances of introducing the organism into the production process by ensuring good hygiene and general food safety principles remains. Although *Listeria* can be considered a hardy organism when compared with other bacteria the comparison is relative and the hazard posed by this potentially dangerous bacterium can be readily mitigated.

Dr Andrew Summerfield is a Microbiologist at BioCote®; a provider of the only HACCP International certified antimicrobial technology. ■

For more information about BioCote visit [www.biocote.com](http://www.biocote.com).



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# The GFSI benchmarked standards

by Richard Mallett – HACCP International

The latter part of the twentieth century and first part of this century saw some serious food safety issues arise, including high profile recalls and negative publicity about food safety within the industry. Clearly, something had to be done and this was recognised by the CEOs of global food manufacturing companies and retailers who came together at The Consumer Goods Forum and agreed that measures had to be taken to strengthen consumer trust. And so the GFSI (Global Food Safety Initiative) was born as the organisation to promote the harmonisation of food safety standards used throughout the supply chain. GFSI are responsible for benchmarking the Global Food Safety Standards to ensure equivalency and in so doing promoting both choice and audit consistency. They can be considered as the quality assurance step between writing a food safety standard and that standard being used to conduct actual audits on a global scale.

The strategy behind this is clear and to quote directly from their current website "GFSI encourages buying companies to accept certificates issued during third party audits against the GFSI recognised schemes, thus enabling their suppliers to work more effectively through less audits. As a result, resources can be redirected to continually ensure the quality of food produced and sold worldwide".

Many global retailer, manufacturer and foodservice companies

now accept audit of food safety standards against one of the benchmarked (recognised) schemes. The GFSI recognised schemes all operate within a wider certification and accreditation context and this provides the framework for assessing the pertinence and compliance of food safety management systems.

As this edition of the HACCP International Bulletin goes to press, it is useful to look at which of the global food safety standards have successfully passed the benchmarking test and which have been submitted into the benchmarking scheme:-

Those that have successfully passed the benchmarking scheme:

- SQF Code 7th Edition Level 2, replacing the SQF 2000 Code Edition 6 and SQF 1000 Code Edition 5
- The BRC Global Food Safety Standard, Issue 6, which replaces Issue 5
- The BRC/loP Global Standard for Packaging and Packaging Materials Issue 4
- FS Food Version 6, replacing Version 5

Those submitted for the benchmarking scheme, at the time of going to press:

- CanadaGAP
- FSSC 2000
- The Global Aquaculture Alliance Seafood Processing Standard
- Global G.A.P.
- Global Red Meat Standard
- Primus GFS

We encourage all to visit the GFSI website ([www.mygfsi.com](http://www.mygfsi.com)) to find out more, to remain up to date as some of those standards submitted pass the benchmarking scheme, and to see the scope of recognition for each standard. ■




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# THE NON-GM ROUTE GIVES CONSUMER CHOICE

The development of new GM crops and claims that GM can solve global food problems are now common place. However, while consumers and retailers alike demand Non-GMO products, there is a global challenge to food manufacturers to protect the supply chain from GM contamination.

A survey carried out in the UK by the polling firm GfK/NOP found that 89 per cent of shoppers want labels on food from GM-fed animals and 72 per cent would pay extra for non-GM food (1). In addition, a study of consumer attitudes towards GM foods, again based in the UK, concluded that male shoppers were willing to pay an extra 26% to avoid GMOs and female shoppers were willing to pay an extra 49% (2).

While soy is one of the best known forms of genetically modified commodity foods (the protein content of soya is comparatively high compared to its price per tonne which explains its extensive use throughout the world for its use in feed and food), other genetically modified crops are creeping into the European market place from rice to fruit, honey to maize.

In parts of Europe such as the Netherlands, France and Germany there is zero-tolerance for GM foods and recent protests against GM trials on wheat demonstrate that there is growing concern about the implications of GM in the food-chain from UK consumers too. From farm to fork, suppliers are realising that non-GM is the route to take to meet consumer demand for quality food with many leading the market by undertaking voluntary third party independent certification to verify the non-GM status of their products.

The Cert ID Non-GMO Standard is recognised within the European food industry as the benchmark for Non-GMO identity preservation. v1.0 of the Standard was formally launched in 1999. Its approach was ground-breaking because it moved stand-alone Identity Preservation systems based upon testing

into a quality assurance approach integrating HACCP with PCR testing as validation throughout the whole supply chain. Since its launch, the Standard has been expanded and is now on version 5.1, the most robust standard of its kind trusted, by all major retailers and brands worldwide.

"The aim of the standard is to provide organisations with independent, third-party certification verifying that their production and handling systems, quality systems, internal controls and products are Non-GMO", explains Richard Werran, Managing Director of Cert ID Europe. "Cert ID Non-GMO certification is an elegant means for food and feed businesses to support a Non-GMO policy and communicate the same to both clients and suppliers".

Cert ID lists all clients certificated against its Non-GMO and EU Regulatory Compliance standard on the Cert ID Non-GMO Directory as a tool for connecting buyers with Non-GMO suppliers and assisting clients with raising their profile in the industry. The directory is accessed via Cert ID's online secure area and allows buyers to browse certificated suppliers by product, country and scope and to check a site's certification. Clients have access to their own profile and are able to edit certain information themselves. Once a client's certification expires they are removed from the directory. ■

**For more information on  
Cert ID Non GM certification  
visit [www.cert-id.eu](http://www.cert-id.eu)**



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## HOSHIZAKI'S COOL AND CLEAN WORLD

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# FACTERIA COLIFORMS

By Martin Stone - HACCP International

In this edition of facteria we examine not a single species or genus of bacteria, but a group known as coliforms. Various microbiological standards exist with coliforms specified and they are commonly assessed by the food industry to indicate the microbiological quality of food. Today, questions are being asked as to the relevance or usefulness of assessing the coliform levels in food.

Let's start with what they are. Traditionally, coliforms are bacteria capable of fermenting lactose, producing acid and gas. They gram stain negative and are non-spore forming rods. Under this definition, they include genera *Escherichia*, *Enterobacter*, *Klebsiella* and *Citrobacter*. These 4 types of bacteria can be isolated from the gut of warm blooded animals which is why coliforms are often evaluated.....as an indicator of potential faecal contamination.

A few key points in regard to coliforms;

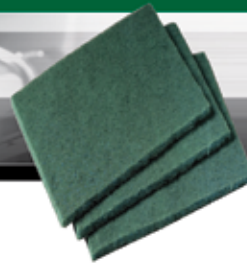
- Coliforms are not necessarily pathogenic and most coliform species typically will not cause illness.
- Only one coliform species (*E. coli*) is found exclusively in gut flora. All other coliforms can and do survive in the environment (soil and water)
- Newer tests based on acid production only or on the presence of specific enzymes, enlarge the representative species list with additional species that are primarily environmental.
- Coliforms are tested via a statistical method and results are reported as a MPN – Most Probable Number. Low counts are therefore reported as being less than (<) the limit of detection.

With this in mind, a high coliform count may not indicate faecal contamination and may be safe to consume. A high count is an indicator that unsanitary conditions may exist and the potential for faecal contamination. To confirm faecal contamination it is necessary to do further tests and evaluate for specific bacteria such as *E. coli*.

Coliforms have traditionally been a quick and easy test to perform relative to specific bacteria tests, however, with modern tests being developed that provide rapid and accurate *E. coli* evaluation, some are questioning the benefit of coliform analysis for the future. ■

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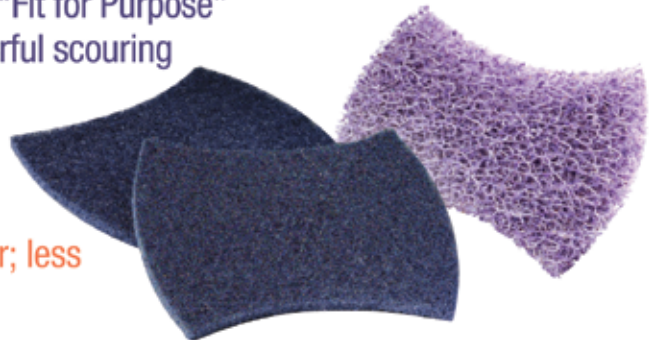
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In this section are a few food safety and food related news snippets from around the world. Keep up to date with trivia as well as news!

## From the USA

### USDA releases electronic consumer complaint tool

The U.S. Department of Agriculture (USDA) has released a new online Electronic Consumer Complaint Form where consumers can report issues and problems with meat, poultry, and egg products. The form can be used to report illnesses, injuries, allergic reactions, improper labeling, and contamination with foreign objects to the Consumer Complaint Monitoring System (CCMS).

Dr. Elisabeth Hagen, Under Secretary for Food Safety for the agency, said, "consumers are an important source of information that FSIS needs to ensure that America's supply of meat, poultry, and egg products is safe. This new tool empowers consumers to report problems directly to FSIS, enhancing our current surveillance of the food supply and our ability to prevent foodborne illness."



After a report, the USDA will investigate to see if there are any public health implications the government needs to act on. If others report similar issues, an outbreak or recall could be identified. The system was created in 2001, although cases have been reported through the USDA's Meat and Poultry Hotline, which is open Monday through Friday from 10:00 am to 4:00 pm ET. The predefined fields of the report make complaints easier to report, especially after business hours and on weekends.

Consumers can still talk to a representative through the Hotline, or they can "Ask Karen", the virtual food safety representative available 24 hours a day at <http://AskKaren.gov>.

### US airline meals subjected to insidious tampering attack

Airline meals are an easy target when it comes to food commentary however a spate of recent incidents on Delta Airlines and more recently on an Air Canada flight are deserving of more serious consideration. A sewing needle was discovered in an Air Canada's passenger's meal

during a flight in August, being the seventh such incidents in a matter of weeks after Delta suffered similar contamination attacks in July.

Flight Caterers have a difficult security profile. While random inspections are commonly carried out, metal detection is rare, if non-existent and the cost of such a process would bring a huge impost to the airlines.

In addition to the food spot checks, caterers are supposed to subject their staff to criminal background checks. However, one commentator said 'Screening procedure has its own weaknesses. It can take months to complete a background check, and some companies reportedly allow their employees to work during that time. During high-travel seasons in summer months and around holidays, many caterers hire temporary employees who don't stay at the company long enough to complete a thorough check'.



One passenger, James Tonges, told the US ABC network how he discovered a needle in his food.

"I thought at first that it was a toothpick, I mean sometimes you have a club sandwich that has a toothpick in it that you don't see," he said.

"When I pulled it out I found a needle. It was about one inch long, straight needle."

Mr Tonges has been put on antiretroviral drugs used for the treatment of HIV.

It is thought that the sabotage took place in the Gate Gourmet kitchen in Amsterdam. Gate Gourmet provide airline meals at many airports throughout the world. The Transportation Security Administration, the US government agency that oversees such incidents, said it had notified all American air carriers with flights from Amsterdam's Schiphol airport to "ensure awareness". Peter Fitzpatrick, a spokesman for Air Canada, said that the airline is "working closely" with its caterer, which he didn't name, to "ensure heightened security measures have been put in place."

### HACCP International determines the world's largest food companies

Non-foodies often ask us which are the world's largest food businesses and do you work for any of them? Recent surveys suggest different orders depending upon criteria, inclusions, currency values and so on. From our very little research, we have distilled those surveys to generate the following as making up the world's first XI and 12th man.





Tyson make it in  
HI top ten

- |                                |                      |
|--------------------------------|----------------------|
| 1. Nestle (Switzerland))       | 7. ADM Co (USA)      |
| 2. PepsiCo (USA)               | 8. JBS (Brazil)      |
| 3. Kraft (USA)                 | 9. Mars (USA)        |
| 4. Coca Cola (USA)             | 10. Tyson (USA)      |
| 5. AB InBev (USA)              | 11. SAB Miller (USA) |
| 6. Unilever (UK/ Netherlands)) | 12. Cargill (USA)    |

Danone and Heineken would make the cut on several scales. Anyway, if you want a definitive list, ours is as good as any - even though it might be inaccurate by the time its published. Using our sophisticated 'BOE' (back of envelope) methodology, we will keep you abreast of changes every year! Yes, we do work for a number but that did not form part of the criteria!

## From Singapore

### IFF opens new manufacturing facility in Singapore



Singapore continues to be a centre for food industry investment as International Flavors & Fragrances Inc. a leading global creator of flavour, has announced the opening of a new state-of-the-art liquid flavours and fragrances manufacturing plant in Jurong, Singapore. The higher-capacity, 12,000 square meter facility is part of a US\$100 million investment in Greater Asia and replaces the Company's existing plant in the same area.

"Our continued investment in the region reflects our confidence in the future growth opportunities in this market both for our customers and for IFF," said Doug Tough, IFF Chairman and Chief Executive Officer. "We are committed to providing our customers with world-class support – the finest flavours and fragrances created under the most demanding quality standards to better serve our Asian customers. We are honoured to further build on our over 40 year history in Singapore as an active supporter of its economy," he continued.

The new plant, has a production capacity of up to 20,000 metric tons over time, and was designed using industrial best practices in all aspects of its operation, allowing the Company to maximize productivity and efficiency while maintaining high product quality. In keeping with IFF's commitment to reduce its impact on the environment,

## From the UK

### Dragons' Den reject proves they are not all knowing

We at HACCP International really appreciate innovation in the food industry and no more so when expert opinion is proved wrong – who doesn't. With that in mind, we couldn't resist reporting the news of packaging expert, James Nash's success with his cup-a-wine concept. James submitted his unique packaging idea to the hugely popular TV panel of the "Dragon's Den Show in 2009 only to have it trashed by the experts as being, 'tacky, ridiculous, too risky, and having 'little chance of success' and 'little chance of a patent.'"



Since then the concept has been adopted with huge success by Marks and Spencer who were happy to confirm the popularity of the concept with their customers. M and S used James product to offer various wine products including the 'Le Froglet' range, the rose version of which has now won the prestigious International Wine Show's Top Value Award in 2012– the wine equivalent of an Oscar. According to reports, Marks and Spencers have already sold 250,000 units as they fill a great market gap for outdoor events, concerts, picnics and food on the move shoppers.

### Robots on the production line establish meat quality standards

Farmers, meat processors and red meat eaters will all benefit from a pioneering research project aimed at determining the eating quality of meat which is now coming to fruition, according to Jim McLaren, the chairman of Quality Meat Scotland. The ground-breaking Integrated Measurement of Eating Quality project, currently under trial at the Scotbeef plant at Bridge of Allan, uses a range of high technology equipment that should take uncertainty and human error out of assessing meat quality.

Now, after two years of the £1 million project, the successful testing of the test robot linked into the line at the meat processing plant means that it is moving towards commercial reality, according to QMS. QMS estimated the red meat industry could benefit by up to £5m a year, based on current prices and throughput levels, as a result of added revenue and efficiency gains generated by the future commercialisation of this type of automated approach.

The initial focus of the project is on beef, with the aim to extend the technology to lamb and pork at a later date. Central to the research is the use of robotic technology similar to that utilised by the high precision motor industry. A robotic manipulator, with special end-of-arm tools, is being used to provide automated measurements at line speed at the meat plant. The camera scans the carcass allowing the robot to place the pH/temperature probe into the target muscle in the half-carcass on-line, which allows automatic, rapid measurement of subcutaneous fat. Already this technology is showing that it may be possible to select out the tough meat. ■



# PRODUCTS

Detailed in this section are some new products that are which are particularly appropriate for the food and beverage industries. Like all products that carry the HACCP International certification mark, they are well designed and demonstrate the highest standards of food safety and industry compatibility. There are many others and readers are more than welcome to contact our office for assistance if they are looking for food safe product or services for particular tasks.  
Email : [info@haccp-international.com](mailto:info@haccp-international.com)

## Hygienic Cold Storage – A cool idea



Cold storage is one of the most important of the food safety controls, practiced in most sectors of the food industry from farm to food processing to storage and distribution, retail and food-service. Without effective cold storage most of us would become ill with food poisoning at an alarming frequency, as being unable to cope with 19th century techniques and failing to control and slow growth of pathogens in food. Our waste costs would rise dramatically too, as food spoilage organisms would proliferate unchecked.

Such an important control demands the most stringent levels of design, performance and hygiene of cold storage units to satisfy the demands of a food industry that is risk averse and determined to take all measures to assure food safety control. There is a need for excellent thermal performance and minimisation of contamination risk through sound design principles. Units should be designed and finished to promote effective cleaning and disinfection and certainly should not pose any risk of toxicity, through migration of toxic chemicals, to the foods stored within.



This has been recognised by Misa, a brand of the Epta group which specialises in the design and manufacture of commercial/industrial cold-rooms. Established in 1969, Misa is a leader in the refrigeration sector, offering state-of-the-art quality and safety food preservation technologies. With the Misa range of products, customers can build up from a small modular cold-room to large areas used as a logistic base.

The company is focused on researching and developing innovative technological solutions to provide the customer with a product that is of exceptional quality, environment friendly, reliable and with excellent food safety characteristics. In order to achieve these aims the company has developed many patented systems, such as "Fast Fit" - a quick way

to install modular cold-rooms, "Fastener" - an intelligent inter-locking system for structural panels and "MVS" (Misa Vacuum System) – an innovative way to ensure the complete fill of foam panels to provide for first class insulation qualities.

HACCP International Certification has now been awarded for the K1 series of cold-rooms and represents proof of one of the "Eptology" driven goals of proving excellence in food safety characteristics. The award was presented to the Research and Development Manager Simone Salani, based at the Pomezia, Rome factory. Simone said "I am delighted that we have been awarded this important certificate of conformance because we can prove to the customer that the K1 series fully meets the needs and demands of food businesses managing food safety according to HACCP principles, in an era of ever tightening European and global food safety legislation".

Misa has made a name for itself throughout the world, with a wide range of customers including a large number of 5 star hotels and large sized projects from the Middle East to Africa, from Europe to South America. As part of Epta group, the company is increasingly devoting itself to the retail market segment and many important projects have already been accomplished in various countries. HACCP International Certification will support this continued venture amongst a customer base that increasingly seeks assurance from its non-food suppliers as well as its food suppliers. ■

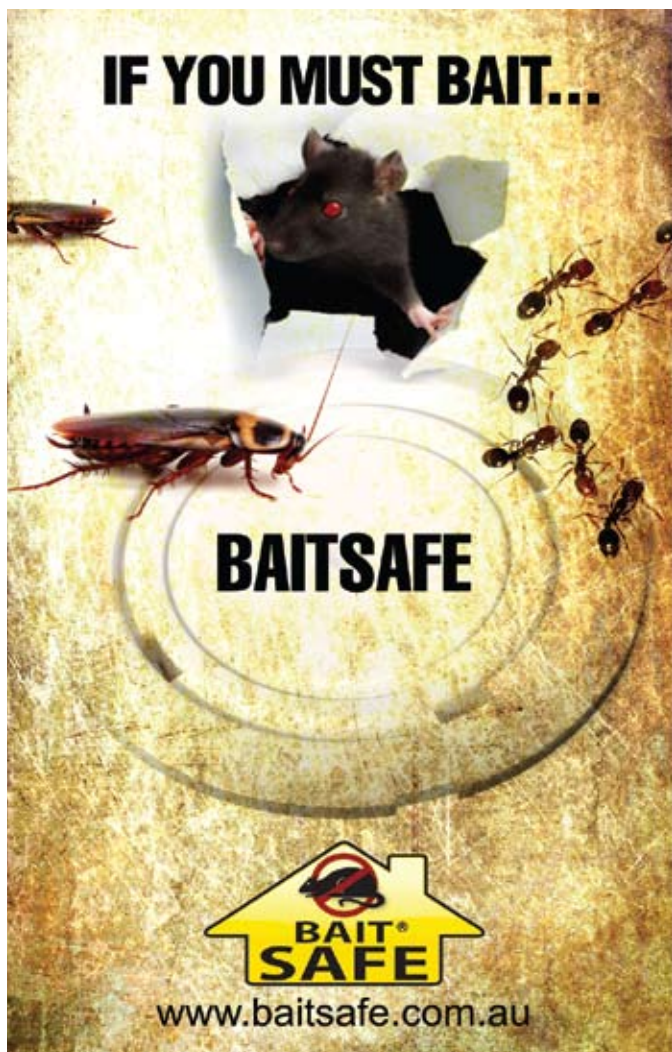
For more information about the K1 series cold rooms visit [www.misa-coldrooms.com](http://www.misa-coldrooms.com)

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## 'BaitSafe®' - a new food safe pest control product is certified by HACCP International

HACCP International has certified an innovative product called 'BaitSafe®' which is particularly suitable for installation in food premises. The 'BaitSafe®' product, manufactured by "MakeSafe® Pty Ltd, is designed to be installed in ceilings, eaves, external stud walls, sub floors - virtually anywhere that rodents and insects live and breed. When used as an applicator for rodent control the bait itself is contained within a lockable unit and discouraging vermin from moving to bait stations in open production or storage areas in search of food, it lends itself particularly to food industry application.

Bill Simos, Managing Director of HACCP International's operations in Asia says. "BaitSafe® is an "out of the box" invention that is simple to use and brings many advantages to controlling rodents and insects in tight spaces. The food industry is always looking for pest control solutions and this will be a very useful product in managing this difficult task" BaitSafe® was first launched in July 2012 at the FAOPMA Pest



Conference in Australia and has since gone on to win the 2012 Australian Food Magazine Award for Food Safety & Innovation in Non-Food.

Mr Gary McMahon, CEO and Co-inventor of BaitSafe® added "The Company and its partners are delighted to gain HACCP International certification but to also achieve dual rodent and insect approval was the icing on the cake. This has certainly stamped BaitSafe's® ability globally, as a versatile and reliable product for the food industry. The applications of BaitSafe® are only limited by the imagination of the user. Innovation is hugely important because customer expectations change; technologies changes and our own capabilities evolve and change. It's important that we continually look forward to see where our users are going so that we can meet our users at that change point." ■■  
For more information about 'BaitSafe®,' please visit [www.baitsafe.com.au](http://www.baitsafe.com.au) or call 1300 065 467

## Altro Unity™ 25 combines durability with PUR technology for the best of both worlds



the future is safer with altro

Altro has announced the launch of Altro Unity 25 – a new generation, heavy-duty 2.5mm safety floor with a fresh palette and all the benefits of Altro Easyclean Maxis PUR™ Technology.

Available in 18 plain and chipped modern colours, Altro Unity 25 is ideal for front of house locations that need to look good and work hard. With aluminium trioxide and coloured quartz, Altro Unity 25 offers long lasting slip resistance, and at 2.5mm thick, it's durable and hard wearing enough to be used in areas of high foot traffic with constant dirt. Altro Unity 25 is the ideal choice for areas such as exhibitions, football stadia, supermarkets and retail where flooring needs to stay looking attractive.

Altro Unity 25 is the latest addition to Altro's Xtreme Heavy Duty range of flooring. 2.5mm safety flooring is significantly more robust than 2mm. Where the situation calls for extra resilience and resistance to mechanical or physical damage that will last 15 to 20 years, 2.5mm safety flooring is the answer. Altro Unity 25 combines this durability with enhanced aesthetics and unrivalled PUR technology that can reduce cleaning and maintenance costs throughout the product's life by up to 60%.

In independent laboratory tests, Altro Easyclean Maxis PUR technology demonstrated industry-leading ease of cleaning, excellent resistance to staining and chemicals, ground-breaking long-term dirt pick-up performance and colour retention. Pristine appearance can be retained with a less stringent cleaning regime, less water, and fewer chemicals, resulting in significant reductions in lifecycle costs. The advanced PUR technology is incorporated throughout the wear layer, meaning that these benefits are retained throughout the product's lifecycle – offering levels of performance surpassing other available PURs.



Altro Unity 25 offers enhanced chemical resistance and a bacteriostat for MRSA resistance, reducing the risk of infection in healthcare environments. It also copes well with moisture and temperature extremes making it perfect for public walkways that need to work hard under a variety of conditions.

Altro's Xtreme Heavy Duty range comprises Altro's most durable safety flooring suitable for a wide range of applications. In addition to the new Altro Unity 25, the range includes the updated Altro Classic™ 25, with an enhanced R11 slip resistance rating, and Altro Designer™ 25 for designer looks. Altro Atlas™ 40 is ideal for industrial applications. ■■

For more information: Danielle Ashton, Altro

Tel: 01462 489308 or [dash@altro.com](mailto:dash@altro.com) or visit [www.altro.co.uk](http://www.altro.co.uk)



# FACT

## This product is food safe



The HACCP International certification and endorsement process supports organisations achieving food safety excellence in non-food products, material, consumables and services that are commonly used in the food industry. The HACCP International Certificate of Conformance (often referred to as a 'CoC') is particularly aimed at those organisations that are required to supply 'food safe', 'compliant or '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 International certification is designed to meet this. This independent assessment and verification of fitness for purpose offers assurance to the buyer or user that food safety protocols and processes will not be compromised in using such a product or service correctly, that such a product is 'fit for purpose' and that it makes a contribution to food safety in its application.

Certified products have been rigorously evaluated by HACCP International'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, as well as being highly qualified, also 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.

There are 10 key components reviewed in this process and certified products need to demonstrate their conformance in all the relevant facets. The ten key components are:

- 1** *Materials and specifications*
- 2** *Toxicity*
- 3** *Contamination risks*
- 4** *Ease of cleaning*
- 5** *Operating instructions*
- 6** *Consequences of error*
- 7** *Batch and process controls*
- 8** *Claims*
- 9** *Packaging and labelling*
- 10** *Contribution to food safety*

In addition to these, service providers are also assessed, through an audit process, in terms of:

- HACCP and food safety awareness
- Food Safety Training
- Documentation and reporting
- On site service delivery
- Standard Operating Procedures

HACCP International is accredited by JAS-ANZ, as a 'Conformity Assessment Body' (CAB). JAS-ANZ is member of, and signatory to, The International Accreditation Forum (IAF). HACCP International's product certification scheme is titled 'Food Safe Equipment Materials and Services'. (Accreditation No: Z4621010AN)

The companies listed on page 25 carry a range of excellent food safe products or services certified and endorsed by HACCP International. For more details, please visit [www.haccp-international.com](http://www.haccp-international.com) or email [info@haccp-international.com](mailto:info@haccp-international.com). The contact numbers for our regional offices can be found on the back cover of this bulletin. ■

[www.haccp-international.com](http://www.haccp-international.com)

<b>CATERING AND FOOD SERVICE EQUIPMENT</b>	BREMA - ICE MASTER SYSTEMS CHEF INOX (I) HOSHIZAKI (I) KENCAN AUSTRALASIA MACKIES ASIA PACIFIC (I) S.P.M. DRINK SYSTEMS S.r.l. (I)	<b>FACILITY FIXTURES, FLOORING AND FIT OUT</b>	PHILIPS LIGHTING ROXSET
<b>CLEANING EQUIPMENT</b>	CARLISLE CLEANING EQUIPMENT CHAMPION MACHINERY HK LTD (I) ESWOOD GLOBAL CHAMPION (Shanghai) LTD (I) OATES CLEAN SABCO STEAMASTER AUSTRALIA	<b>FACILITY FIXTURES, FLOORING AND FIT OUT</b>	THORN LIGHTING (I) UNIVERSAL FOOD SERVICE DESIGN
<b>CLEANING CHEMICALS KITCHEN MATERIALS AND SANITATION PRODUCTS</b>	3M (I) ACTIVEION (I) BAXX (I) BUNZL CHAMPION CHEMICALS LTD CLOROX (I) CONCEPT LABORATORIES DEB GROUP (I) EDCO (EDGAR EDMONDSON) KIMBERLY-CLARK (I) LALAN SAFETY CARE OATES CLEANING PREMIUM PRODUCT SOLUTIONS (I) TORK	<b>FOOD INDUSTRY SERVICES</b>	SHADOW GROUP SKILLED GROUP
<b>CLEANING &amp; MAINTENANCE SERVICES TO THE FOOD INDUSTRY</b>	ACE FILTERS AERIS HYGIENE SERVICES (I) BORG CLEANING CHALLENGER CLEANING SERVICES ICE CLEAN INDUSTRIES INTEGRATED PREMISES SERVICES ISS HYGIENE SERVICES METROPOLITAN FILTERS OZ TANK PINK HYGIENE SOLUTIONS	<b>FOREIGN BODY IDENTIFICATION</b>	SMITH HEINMANN WJB ENGINEERING (I)
<b>CLOTHING, DISPOSABLE GLOVES AND PROTECTIVE WEAR</b>	KIMBERLY-CLARK (I) LALAN GLOVES SAFETY CARE LIVINGSTONE INTERNATIONAL PARAMOUNT SAFETY PRODUCTS RCR INTERNATIONAL STEELDRILL WORKWEAR & GLOVES SCA HYGIENE	<b>LABELS - FOOD GRADE</b>	OMEGA LABELS W W WEDDERBURN
<b>FACILITY FIXTURES, FLOORING AND FIT OUT</b>	ALBANY DOORS (I) ALTRO SAFETY FLOORING & WALLING (I) BASF CONSTRUCTION - UCRETE BLUE SCOPE STEEL (I) CARONA GROUP DEFLECTA CRETE DYSON AIRBLADE (I) GENERAL MAT COMPANY HALTON (I) HIDRIA GIF (I) MANTOVA	<b>MANUFACTURING EQUIPMENT COMPONENTS &amp; CONSUMABLES</b>	BIOCOTE (I) BSC MOTION TECHNOLOGY ENMIN (I) FCR MOTION HARRINGTON ELECTRICAL MOTORS (I) ITW POLYMERS & FLUIDS LANOTEC (I) SICK SMC PNEUMATICS (I)
		<b>PEST CONTROL EQUIPMENT AND MATERIALS</b>	BAITSAFE(I) BASF (I) BAYER (I) BELL LABORATORIES INC (I) PEST FREE AUSTRALIA (I) STARKEY PRODUCTS (I) WEEPA PRODUCTS
		<b>PEST CONTROL SERVICES</b>	AMALGAMATED PEST CONTROL ARREST-A-PEST CPM PEST & HYGIENE SERVICES ECOLAB ISS ORIGIN EXTERMINATORS RENTOKIL SCIENTIFIC PEST MANAGEMENT
		<b>REFRIGERATION GOVERNORS, EQUIPMENT AND DATA SYSTEMS</b>	AERIS HYGIENE SERVICES (I) CAREL DIGINOL (I) MISA(I) REJUVENATORS
		<b>STORAGE EQUIPMENT &amp; PACKING MATERIAL</b>	ACHIEVE AUSTRALIA DALTON PACKAGING NETPAK RCR INTERNATIONAL SCHUETZ DSL
		<b>THERMOMETERS, PH METERS AND DATA LOGGERS</b>	3M FLUKE TESTO (I)

(I) indicates that the company offers products or services with global compliance or registration. Others have a national registration in one or more countries



# HOT LINKS

## Bad Bug book 2nd edition

<http://www.fda.gov/Food/FoodSafety/Foodbornellness/FoodbornellnessFoodbornePathogensNaturalToxins/BadBugBook/default.htm>

The 2nd edition is here and we are excited! This document is brilliant and provides information on all that we worry about in regard to food poisoning agents. Technically robust with excellent 'consumer' sections also, this is a must download for all interested in food safety.

## Take tasty photos

<http://www.photoble.com/photography-tips-tricks/10-food-photography-tips-to-make-it-look-tasty>

Food photography is an art form that many have not mastered. Here are some tips for those interested in food photography as either a hobby or if you want to make DIY brochures for your products.

## Even tastier photos

<http://www.learnfoodphotography.com/>

This site provides the masterclass of food photography with blogs and articles from leading photographers and stylists. Follow this page and watch your snaps improve!

## Can I still eat this?

[http://www.foodsafety.govt.nz/elibrary/industry/guide\\_calculating-contains\\_background.pdf](http://www.foodsafety.govt.nz/elibrary/industry/guide_calculating-contains_background.pdf)

The food industry has a duty to declare shelf life on packaged foods and this guide gives an overview of how it all works. Shelf life determination is very important.... Don't get it wrong!

## US food illness outbreaks

<http://www.foodsafetynews.com/sections/foodborne-illness-outbreaks/>

Absolutely frightening information where details of outbreaks are listed in the USA. Multiple deaths and hundreds ill are certainly not rare occurrences reported. With over 75,000,000 illness events leading to some 5000 deaths in 1999, this site tracks current events as they unfold across the US. To compare population apples with apples for Australia, simply divide by 14.

## Pro Terra Foundation

<http://proterrafoundation.org>

GMO and sustainability are among the biggest issues facing the food industry and consumers today and will only increase in significance as time goes on. The Pro Terra foundation seeks to support organisations at all levels of the food chain in improving their sustainability performance. ■

# PLUG-IN Pest Free®

Australian Designed and Patented

Pest Free Australia has received Multiple Exporting Grants from the Australian Federal Government.

**DON'T  
let this  
happen  
to your  
building!!**



Plug-In Pest Free's Innovative technology also protects the electrical wiring in a building



**DOMESTIC**  
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- ✓ No Chemicals
- ✓ No Smell
- ✓ No Mess
- ✓ No Fumes
- ✓ Non Toxic



**COMMERCIAL UNIT**  
For Business Premises

- ✓ Workplace safe
- ✓ Staff Safe Food Safe
- ✓ Maintenance Free
- ✓ ENVIRONMENTALLY RESPONSIBLE

*The Innovative Chemical Free Pest Management System for Businesses who set high standards for their staff and customers without the use of Toxic and poisonous chemicals.*

**Designed to last for MANY YEARS**  
**Save \$\$\$\$\$\$ OF DOLLARS**  
From ongoing expensive toxic chemical treatments by Pest Controllers.



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**Pest Free Australia Pty. Ltd.**  
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- ✓ Scientifically Proven
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# NOBLE IDEAS FOR NOBLE KITCHENS



follows HACCP standards



The tailor-made, highly efficient systems from Hidria GIF represent a complete system for large catering establishments which is flawless in terms of ventilation, air-conditioning and hygiene.

Insufficient ventilation and air-conditioning, poor room air quality or insufficient structural conditions can lead to contamination of food products in the same way as insufficient cleaning of the kitchen equipment or dirty cooking appliances and cooking equipment.

The Hidria GIF system supports the HACCP standards providing 100% hygiene by cleaning the interchangeable system components (active cassettes) in the dishwasher. All elements can be inspected and are made of high-quality and durable AISI stainless steel.



The large-scale, uniform capture of exhaust air with only a small proportion of inactive areas enables the best possible discharge of contaminated air and, as a result, prevents fat and harmful substances from being deposited.

The fresh air is supplied on a large scale and uniformly due to the principle of layered flow. In this way, it is possible to ensure the best possible ventilation without draughts.

**As part of the entire kitchen fittings the HACCP-certified GIF Modular Ventilated Ceiling provides you with the opportunity to design your entire kitchen according to HACCP standards!**

Hidria GIF – Modular Ventilated Ceilings made in Germany as part of a system:

- **Modular ventilated ceilings**
- **Sound absorption ceilings**
- **Individual lighting**

All processes are geared to the HACCP concept, i.e. from purchasing to manufacture to installation and operation / after sales service. Any risks are therefore systematically avoided.

**Hidria GIF GmbH**  
Company of Hidria Corporation

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## WHAT ALL THE BEST, FOOD SAFE EQUIPMENT IS WEARING



For more information on the non food product  
certification scheme and its benefits  
or  
to find food safe products, materials and equipment  
that best support the food industry, visit :

**[www.haccp-international.com](http://www.haccp-international.com)**

or call us :

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**HACCP INTERNATIONAL**  
eliminate the hazard - reduce the risk