HACCP INTERNATIONAL FOOD SAFETY PROGRAMME CERTIFICATION

HACCP INTERNATIONAL

FOOD SAFETY BULLETIN

ISSUE 8 2014

EU FOOD REGULATIONS
Summary Part 2

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Welcome

HACCP International's Certification of Food Safe Equipment Materials and Services has been adopted by many of the world's leading suppliers to the food industry. Their certified food safe products have been throughly examined to confirm their 'fitness for purpose' for use within facilities governed by HACCP based food safety systems. Many companies, both suppliers and industry buyers alike, have commented to me on the usefulness of the programme and the mark. Such products are most usually subject to a 'due diligence' process in their purchase and our programme ticks all the boxes in terms of this.

There are one or two certifications available to manufacturers and suppliers in various markets which confirm suitability in terms of design, cleanability, material, or toxicity, some of which are, in themselves, pre-requisites. The HACCP International certification is rigorous. It not only includes the aforementioned but also includes an assessment of the 'consequences of error,' 'contamination risks', 'operating instructions' as well as 'batch and process controls'. It is this holistic (a much overused word, I know, but in this case it is apt!) approach which differentiates our scheme, meeting the real expectations of food industry buyers who are looking for a full, risk based assurance.

Clive Withinshaw - Director, HACCP International

HACCP International continually strives to ensure that its certification programme exceeds the due diligence requirements of the world's leading food safety standards.

For example, a dishwasher might well meet design and cleanability criteria but it is hardly 'food safe' if it is compromised by the need to follow instructions which are clearly beyond the average operative or installation instructions are insufficient.

HACCP International continually strives to ensure that its certification programme exceeds the due diligence requirements of the world's leading food safety standards and where thoughtful, clever design and innovation lifts the bar in terms of food safety, we are happy to campaign for its acceptance. This has been conducted in the fields of hand-drying and ice machines in recent times. We cannot change the world but we are proud to have championed some excellent innovative products whose former incarnations were unacceptable.

While our organisation's origins are proudly Australian, a country recognised for its rich pedigree in food science, our mark is globally recognised by industry. Over the years, we have moved our representation westward with centres now well established in Asia and Europe. We are very pleased to announce that 2014 will see us establishing an office in the USA in support of clients and applicants based in that region. HACCP International will be represented in the Americas by 'Newslow' in Orlando (FL). The Newslow technical team bring an enviable team resource of food scientists with deep industry knowledge and expertise in food equipment and materials as well as industry process. We look forward to servicing our clients in Canada, The USA and South America more closely in the coming years. A profile of Newslow and our American office will appear in our next bulletin.

In recent months, our team have enjoyed catching up with industry leaders in Europe - particularly at the BRC Conference (see page 18) in Amsterdam and the HOST exhibition in Milan (it would be a shorter walk from Sydney to Perth than getting round all 18 exhibition halls but we did what we could! – see page 8). Our technical and marketing support for products bearing our mark is extensive at many such events as articles in this edition attest.

Please feel free to contact any of our staff for more information on our scheme or indeed any matter relating to food safe equipment of materials.

Here's hoping for a 'bumper crop' for the food industry in 2014. Thank you for subscribing and do let us know if we can help in any way at all. Best wishes.

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

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European Food REGULATIONS

It's time to get ready for the 2014 deadline

By Richard Mallett, Microbiologist and Director of HACCP Europe

PART 2

Here we revisit and finish our summary of the New Food Information Regulations which we began in the previous edition (Issue 7) of the HACCP International Food Safety Bulletin. We are not that far away from the start of implementation of part of these regulations, so this is definitely the time to be prepared!

- Information relating to substances in foods causing allergies or intolerances is tightened up and information will now be made available to non pre-packed foods and foods sold by caterers, with flexibility on how businesses provide this information to consumers. These substances must still, as has been necessary for a few years now, be indicated with a clear reference to the name of the substance as laid down in Annex II. This Annex contains the same 14 base substances, and products composed of, cereals containing gluten, crustaceans, egg, fish, peanuts, soybeans, milk, nuts, celery, mustard, sesame seeds, sulphur dioxide and sulphites at concentrations of more than 10mg/kg or 10mg/Litre, lupin and molluscs. The name of the substance as it appears in the list of ingredients, must be emphasised through a clear distinguishing type-set, by means of font, style or background colour.

The key aim here is to make the presence of a substance causing allergy or intolerance unambiguously clear and to ensure that some control is exercised over food sold in a catering or hospitality setting.

- An indication of the quantity of an ingredient is required where the ingredient or category of ingredient concerned:
  - appears in the name of the food, for instance "Chicken and Leek Pie"
  - is emphasised on the labelling in words, pictures or graphics – this has been a bone of contention amongst consumers for some time – the dominant appearance of a very desirable ingredient on the packaging – and a miserable actual content of such an ingredient will be made visible by the requirement to state, for instance 5% chicken, thus owning up to a pie which, to the disappointed consumer, turned out to be mostly gravy!
  - is essential to characterise a food and to distinguish it from products with which it might be confused because of its name or appearance.

- The "use by date" is to become more tightly linked to food safety, applied to foods, which, from a microbiological point of view are highly perishable and are therefore likely to constitute an immediate danger to human health after a short period. Some foodstuffs, such as fresh fruit which has not been peeled or cut, vinegar, sugar and salt, will not require a durability date and the full list is given in Annex X of the Regulations. The commercial freezing, and later defrosting, of certain foods such as meats and fishery products may have an effect on safety, taste and/or physical quality. Therefore where the product has been defrosted the consumer will need to be informed of that condition and a date of first freezing will need to be applied to the label.

- Indication of the country of origin or place of provenance shall be mandatory where failure to indicate this might mislead the consumer. On this point The European Commission is charged with submitting a report to the European Parliament and the Council regarding this mandatory information for beef, meat, milk, dairy products, unprocessed foods, single ingredient products and ingredients that represent more than 50% of a food.

The key aim here is to make the presence of a substance causing allergy or intolerance unambiguously clear

Depending on the outcome of this report, a great deal of care and control in the traceability of origin and provenance, for instance to meet the needs of the BRC Global Food Safety Standard, will be needed by food processors and manufacturers.

- There shall be mandatory nutrition declaration which shall include energy value and the amounts of fat, saturates, carbohydrate, sugars, protein and salt. This may be supplemented with an indication of the amounts of one or more of:-

CONTINUED ON PAGE 06

- Mono-unsaturates
- Polyunsaturates
- Polyols
- Starch
- Fibre
- Any of the vitamins or minerals listed, and present in significant amounts as defined in Annex XIII

By December 2014 The European Commission must submit a report on the presence of trans fats in foods and in the overall diet of the EU population, to assess the impact and need to declare trans fats, generally accepted as an unhealthy dietary component, to the consumer.

By December 2014 The European Commission must submit a report on the presence of trans fats in foods and in the overall diet of the EU population

- Energy values and nutrient amounts will need to be expressed according to measurement units and form of expression as laid out in Annex XV of the Regulations. The information must be included in the same field of vision and with the same "x" character size detailed in point 5 of this article.

In order to alleviate the consumer's confusion, over the currently wide ranging forms of graphical representation of energy values and nutrient content (these forms vary widely and include many different colour combinations and chart types, such as pie charts for instance), the Commission must submit a report to The European Parliament and Council on the use of such additional forms of expression and presentation. The outcome of this would be to further harmonise these forms of expression and presentation – to harmonise the use of colour (for instance red = high fat, yellow = medium fat and green = low fat, according to a specified content ratio) and to promote a particular chart type.

Now is the time to download the regulations and to study the articles and the technical information in the Annex (bearing in mind that Part 1 of this article in Issue 7 and Part 2, this issue, are a broad summary only! REGULATION (EU) No 1169/2011 can be found on the Europa website http://eur-lex.europa.eu. Failure to present the correct information to the consumer from 2014, and for nutrition content from 2016, due to a lack of understanding or appreciation of the finalised regulations will not be a due diligence defence!

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Misa and HACCP International at HOST Milan

HACCP International was delighted to be exhibiting alongside Misa during the International HOST exhibition last October in Milan, Italy. This exhibition, which brings together the best of the world's suppliers to the hospitality, food service and retail industry and those specifying and purchasing that equipment, certainly proved that the world's economic crisis doesn't seem to have impacted these key industrial sectors! In fact, the exhibition organisers collected some very positive data, after the event, including the following:-

- 133 thousand attended over the five days of the event (a 7% increase over 2011)
- 38.7% were international attendees (a 21% increase compared to 2011)
- There were double-digit confirmations from the US (+28%), Russia (+64%), UAE (+141%), Japan (+24%), and Germany (+14%)
- There were 1,700 exhibitors from 48 countries (an increase of 6.5% with 350 new entries), of which 559 were international (an increase of 16.5%)

The HACCP International team at host with Claudio Fabiani and Simone Salani of Misa.

Certainly the 141% increase of confirmations from the UAE reflects the globally important growth that is apparent within this part of the Middle East region and the world should be ready to engage with this growth market! Indeed HACCP International were asked to join Misa (part of the Epta Group and globally important manufacturer of HACCP International Certified cold-rooms) at HOST, in Milan, to meet with specifiers from around the world, but particularly from the Middle East region, to explain the importance and virtue of selecting certified equipment and material suppliers.

As the hospitality, food-service and food manufacturing industry continues to grow in places such as the UAE, so does the need to ensure food safety. Regulatory codes are fast being developed now to ensure food safety and many have been at least partly modelled on the existing and proven framework of food safety regulations implemented within the EU. During September, officials representing each of the Emirates were close to the conclusion of the process to create one federal food safety law, by unifying each of their food safety standards. This unified law, which is expected to be adopted next year, will contain 50 sections and include the standardisation of food testing laboratories, and a federal recall system which will see a unified recall response across the Emirates. Food Hygiene Inspections will also ensure that food handling and storage procedures are followed to reduce food safety risk to the ever growing consumer base.

Whilst at HOST with Misa, HACCP International was introduced to a leading Middle East hotel and kitchen specifier. It was plain to see how food safety controls are influencing their purchasing decisions when it comes to selecting food room equipment and materials. We spoke to Mr. Aiman Joudeh, General Manager of Quality Kitchen Equipment Trading LLC. The company has offices in Dubai and Amman and, employs 45 staff. Aiman Joudeh's experience of growth reflects much of industry within the region right now, with significant growth since the company was formed three years ago.

The company supplies kitchen and laundry equipment to hotels, airports, restaurants and hospitals in The Gulf and Jordan. Clients include global brands within the hotel sector (including "household" names such as Hilton and Sheraton), food-service and catering (servicing Emirates Dubai Airport for instance) and hospitals (including Ghyathi and Zahra). Aiman told us that he has more than 15 years of experience in specifying catering and refrigeration equipment. When asked the main reasons for choosing to represent Misa, within his

Mr Aiman Joudeh, GM, Quality Kitchen Equipment Trading LLC.

Misa's patented failsafe fastener system eliminates panel gaps and food safety risks.

product portfolio, Aiman told us that the Misa cold rooms are designed without sharp edges, grooves or gaps within their structure and that this promotes easy cleaning and sanitation.

This is further supported by the use of fully formed, curved corner pieces and Misa's patented fastener systems which eliminates the potential for any panel gaps to occur during installation, or to appear over the lifetime of the units. Aiman was also impressed by the unique, vacuum based, insulation foam fill system that ensures uniform and efficient insulation properties. In fact, despite Misa's cold room equipment being priced above local suppliers, it's a premium many of his food business customers choose to pay, given the excellent food safe characteristics of these units.

> Misa is very responsive to my needs and their technical expertise sets them apart from the many other suppliers.

Aiman concluded with "Misa having the HACCP International Food Safety Certification mark for its K1 series cold rooms gives trust and confidence to my customers, guaranteeing that food can be stored correctly, remaining safe and meeting local government and international standards. Misa is very responsive to my needs and their technical expertise sets them apart from the many other suppliers."

Colin Clarke of HACCP International said "The outcome from this exhibition was entirely successful in two ways.

- It demonstrated the support we can provide to certified products and the communication of the message 'HACCP International Certified = Food Safe' to the global specifiers, all of whom are now increasingly search for the most appropriate means to reduce food safety risk from equipment and materials.
- It confirmed the growth in demand for the HACCP International Certification Mark, from a number of equipment and material manufacturers exhibiting at HOST and who visited us on the stand.

In years past, equipment and materials for the food room were designed primarily with price in mind and the inevitable outcome of this was an increase of food safety hazards that could have dire consequences within the food industry. The (previously) hidden food safety risk from food equipment and materials has no place to hide anymore!" ∎

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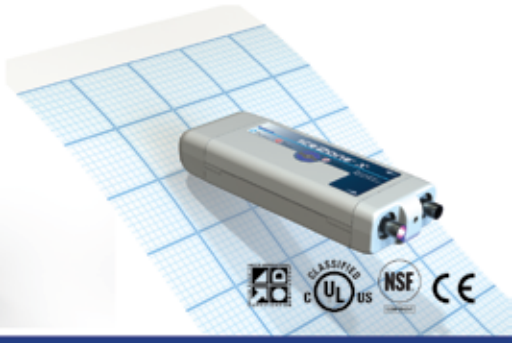

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2013 R&D Survey:

New Products are a top priority for North America in 2013

Food Processing Magazine's 42nd annual R&D Survey reveals new products as a top priority for food manufacturers in 2013 - one more indication companies are ready to resume aggressive growth.

By Dave Fusaro, Editor in Chief, Food Processing – reprinted with permission.

"Get ready for an onslaught of truly new products – not safe line extensions or just "cleaned-up" products – from your product development team… as well as the R&D departments of your competitors".

At least, that's what the numbers seem to indicate in Food Processing's 42nd annual R&D Survey. The 48 percent of respondents who voted truly new products as their top priority for 2013 was up 8 percentage points from last year and was the highest number for that subject since the 2010 survey, and, it's hoped, is one more indication that the nasty recession is behind us and food companies are ready to resume aggressive growth.

"Improving existing products is always mandatory, but new products are our focus," as one respondent put it. Another wrote: "We will continue to look for cost-saving ideas through our research, but this year we will focus more on expanding in a new direction to achieve future growth."

The Food Processing annual Top 100© list shows that, every year, food and beverage processors never stopped making money, undoubtedly because American and Canadian consumers never stopped eating! Maybe it wasn't enough money or maybe things just seemed too dicey to invest, but R&D departments have had to suck it in over the past couple of years. Which doesn't mean the corporate suite is throwing money at your team in 2013. One of the questions we ask every year is, "What's happened to your R&D department's budget this year?" While those answering "It's been increased" went down 2 percentage points from last year, respondents saying "It's been cut" also dropped, by 3 points (meaning more than half said "It's about the same").

So, net, maybe you've got the same amount of funding to work with, but at least you'll be spending it on truly new products. New products as a priority took 2 points away from "cleaning up" current products (10 percent). Improving existing products gained a little (18 percent, up 4 percentage points), while cost control was flat, at 13 percent. Product line extensions dropped the most, down 7 points to 8.6 percent.

Actually, they're all priorities, aren't they? "Although my main focus within the department is new product development, I still spend time on product improvement, cleaner product decs, ingredient consolidation and line extensions," said Teresa Kloch, a food technologist at Perry's Ice Cream, Akron, N.Y. "Continued improvement should never be short changed; you must find ways to service your customer needs without increasing their cost," wrote a guy at a poultry company.

Cleaned-up or simplified ingredient statements were mentioned by several respondents. "Our No. 1 goal is clean labeling; another is reducing carbon footprint," said one respondent in the write-in portion of our first group of questions. "We need to convey the simplicity of our products' ingredients. We have narrowed them down well, we just need to get the word out," said another. "We've had noticeable and worthwhile success with R&D in 2012, which helped us to decide to push it further in 2013," wrote one optimist. Perhaps the real answer to what your priorities are was written-in by No. 391: "It depends on how busy we are."

Before it is forgotten, this year, saw 514 responses to the survey, quite an increase over last year's 409 responses, and the highest number since we went direct to the R&D people, rather than to company spokespeople, in 2006.

Priorities for the year

There's a tiny contradiction in our survey answers – maybe it's the way it was constructed - when it comes to "cost control." While that answer stayed flat in our "prioritise" question, it made a strong showing as No. 2 (behind food safety, see fig. 1) in another question that asks, "How strongly will the following impact your R&D strategy this year?"

FIGURE 1
What will have the most impact on your R&D strategy this year?

	First-Place Votes	Total Score*
Food safety	47%	2805
Contributing to cost reduction	23%	2399
Organic/Natural	10%	2004
Dietary guidelines	7.3%	1837
Palliative health	6.1%	1556
Preventive health	4.0%	1368
Sustainable/Eco-Friendly/Fair Trade	1.6%	1748

*Total score applies 7 points for a first place vote, 1 point for 7th place, etc.

Food safety does tend to overwhelm any discussion of operational priorities. At least in one case, Figure 1 also shows

CONTINUED ON PAGE 12

how a subject (Sustainable/Eco-friendly/Fair trade) can draw fewer first-place votes than other subjects but score higher than them in second- and third-place voting – that's what our "total score" column is about.

As for bigger-picture issues that will impact product development teams beyond the current year, there were two significant changes this year: more concern over staffing and less concern over going global.

FIGURE 2
How long does it take to get your products from concept to shelf?

	This Year	Last Year
Nearly a year	31%	38%
6 months	31%	24%
3 months	21%	17%
13-23 months	11%	14%
24 months or more	7.1%	6.7%

While healthier/better-for-you foods, following consumer trends and regulatory issues kept their same positions as last year, all around 50 percent (respondents could vote for more than one concern), "personnel/labor issues" shot up from 17 percent in 2012 to nearly 28 percent this year. "Going global" moved in the opposite direction, from 25 percent last year to 18 percent this year.

"Labor costs are of vital concern right now, and an increase in the federal minimum wage will be catastrophic," wrote one man, who earlier indicated cost control was his top priority for the year. "We are adding additional R&D resources, both people and bricks and mortar," commented another. "Our company spent more resources in the R&D function and I got more training and opportunities to develop myself," said one appreciative product developer.

On the other hand, one person mentioned "increasing competition from China" as a concern.

Despite the fact the US's dietary guidelines are two years old, they still have an impact: 18 percent – 1.5 points more than last year – said the guidelines are "huge." But those noting they are "reasonably important" to R&D efforts dropped from 58 percent to 53 percent.

> We are adding additional R&D resources, both people and bricks and mortar

As for which ingredients you're most interested in adding or removing, salt/sodium remains public enemy No. 1 with 39 percent – that's 8 points lower than last year, perhaps indicating many of you already have made progress on that front. Reducing sugar was second at 27, about where it was last year. All three suggested additions – fibre, whole grains, fruits and vegetables – scored around 20 percent.

"We've already removed transfat and reduced sodium. Other issues aren't a big deal," wrote one respondent.

There were quite a lot of write-ins and "others" for this question. Top add-ins were protein, probiotics and omega oils, while favorite removals were gluten and other allergens.

Who's calling the shots?

Food Processing's readership is pretty evenly split between larger companies (more than 100 employees at the location to which we mail the magazine) and smaller ones. That diversity is apparent in many of the organisational questions.

62 percent of you have a formal product development team, a number that has been shrinking, perhaps insignificantly, in recent years (it was 70 percent in 2011 and 68 percent in last year's survey). (By the way, 7.5 percent say "sort of.")

FIGURE 3
Top issues for the next few years

	This Year	Last Year
Healthier/Better-for-you foods	52%	54%
Consumer trends	50%	49%
Regulatory issues	50%	47%
Going global	18%	23%
Going "green"	19%	20%
Personnel/labour issues	28%	18%
Outsourcing	13%	14%

Likewise, the dominance of the R&D Dept. on that team shrank a little, too, although it's still powerful at 82 percent. "Who's on that team?" is one of those questions where you can select more than one answer and, ironically, every category except R&D increased. The big gainers were representatives from corporate management (up 12 points), purchasing (up 10), finance (up 7 points) and manufacturing (up 7).

FIGURE 4
Do you have a formal product development team?

	This Year	Last Year
Yes	62%	68%
No	30%	24%
Sort of	7.5%	8.5%

Open innovation is catching on. 23 percent of those surveyed count multiple suppliers as part of food companies development teams (up from 18 percent), and 17 percent include outside consultants (up 6 percentage points).But all the remarkable numbers were merely returns to 2011 levels, so maybe last year's poll was an anomaly.

The same goes for who influences annual goal-setting in product development. The R&D Dept. dropped an insignificant bit, but every other category (top management, mid-level

FIGURE 5
How often do you have formal development meetings?

Weekly or more often	27%
A couple of times a month	20%
Monthly	18%
Less than monthly	11%
Don't have/don't meet	23%
BTW: Most of our meetings are virtual	5.1%

management, and manufacturing/plant operations) made significant gains. Marketing and sales scored the same.

If you have a formal product development team, you've got to have meetings, right? Well, yes, for three-quarters of you. The biggest plurality meets at least weekly (27 percent). 5 percent of you say the meetings are often virtual because of so many offsite folks.

Internal research is still the main element of identifying new product ideas, but here, too, the open door is apparent. 42 percent of you rely somewhat on research provided by suppliers, and 16 percent use an external product development company. 43 percent say you practice open innovation.

So after all the research and meetings and input, how long does it take to get that baby from concept to the grocery store? Looks like the pace is quickening. The longer wait times dropped, but six months picked up 7 percentage points and three months increased 4 points.

The final question was a catch-all: Is there anything we missed or anything you care to add? A couple of the answers are worth noting:

- Reducing product lead times.
- Communicating and measuring performance once the product is commercialised.
- Switching to natural colors and flavors.
- On the manufacturing side, reducing SKUs saves us on changeover times and waste and saves potential customers on cost.
- Self reliance on green power – we're looking at self generation, i.e., solar.
- Instead of looking for diamonds amongst the stones, we need to polish the stones first. We need to catch up and finish."

And maybe the best advice, from a guy at a North Carolina microbrewer: "Focus on core product and values, and don't get sidetracked."

David Fusaro can be contacted at dfusaro@putman.net
Food processing website is www.foodprocessing.com

Leatherhead Food Research's world renowned technical resources now extend to food safety validation.

HACCP International is delighted to announce the development of a working relationship with Leatherhead Food Research. One element of the HACCP International Certification evaluation protocol that can apply, depending on the equipment or material being submitted, is that of cleanability and validation of specific hygiene or anti-microbial claims. In such cases it is extremely useful, for both the certification client and HACCP International to know of a respected, third party research and test facility. We asked Dr Helen Payne to provide us with an insight into the services of Leatherhead Food Research:

Leatherhead Food Research delivers integrated scientific expertise and international regulatory advice to its members across the global food, drink and related industries. We operate a "concept to consumer" approach across the business, supporting clients through our five platforms: Food Innovation, Nutrition, Sensory, Consumer & Market Insight, Global Food Regulations and Food Safety.

Dr Helen Payne,
Senior Food Safety Advisor,
Leatherhead Food Research,
hpayne@leatherheadfood.com

Food safety is essential to consider in food and beverage production. Both pathogenic and spoilage microorganisms are major concerns for the food industry. The Food Safety team at Leatherhead provides a range of microbiological food analyses and expertise to support validations of food products and processes, for example risk assessments, challenge and shelf-life testing. We also assist when things go wrong – our crisis consultancy, troubleshooting, and microbial identification services are all useful tools to our members when microbiological issues arise. Food safety is an ever evolving concept; Leatherhead's services look to the future with our food authenticity testing, HorizonScan software and food-borne virus research.

Leatherhead Food Research laboratory in the UK.

Leatherhead's Containment Facility

In May 2013, Leatherhead's 'Food Safety Day' saw the official launch of our new pilot plant facility with Category II containment capabilities. This facility is an extension to Leatherhead's existing services as it allows us to perform microbiological testing in a situation replicating the factory environment. The benefit of this facility is that hazardous microorganisms can be deliberately added to food, beverages or equipment in an environment directly replicating a production area. This enables the validation of a food or manufacturing process but without introducing risks to the commercial production of food and drinks. There is a huge scope for projects of different natures to be undertaken in this facility with many confidential member projects already undertaken.

Product and Process Validation

One of Leatherhead's key areas of member interest is food processing; we see a large number of requests for advice on heat-based processing across a range of sectors. Processing controls are often linked into HACCP and require critical control points to be established against risk pathogens. The containment facility supports the processing trend by enabling heat inactivation trials to be conducted on a pilot plant scale.

Previous work has included the validation of pasteurisation and hot filling conditions for beverages and sauces, to control lactic acid bacteria, yeasts and moulds. As well as simply validating a heat process, a complex food manufacturing process can also be evaluated. For instance, the manufacture of a charcuterie product, where the process itself is challenged with pathogenic microorganisms to demonstrate robustness of the production process.

Current member-funded research being undertaken in this facility includes a study on the evaluation of the heat resistance

and survival of pathogens such as Salmonella spp. in low moisture foods. A pilot plant facility is beneficial as dry foods can be processed in accordance with typical factory practices using a large scale heated mixer. Results so far indicate Salmonella has the capability to survive for long periods, post-heat treatment, with results varying dependant on the storage temperature.

Parallel to food production, cleaning and disinfection processes for specific equipment can also be validated. For instance, the pilot plant facility has provided a suitable environment for validation projects such as validating cleaning methodology for drinks dispenser units.

www.leatherheadfood.com

Dr Helen Payne, Senior Food Safety Advisor

Helen is a Senior Technical Advisor in Food Safety at Leatherhead Food Research. She has a central role within the Food Safety department answering member enquiries and is involved with a wide range of customer focused projects. She was awarded her PhD studying enteric pathogens and probiotics, and has a first class Microbiology degree, both from the University of Nottingham. She has several years' experience working in the artisan dairy industry; and was recognised for her applied research in dairy microbiology at the 2007 Science, Engineering and Technology Awards. Helen has previously worked as a lecturer at the School of Artisan Food covering the areas of food spoilage, pathogens and preservation methods.

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New standard for **'Delivery of Pest Control Services to the Food Industry'** on the way

Pest control has always been – and will continue to be - a difficult task for the food industry and the world's best known food safety standards have, quite rightly, put significant emphasis on this component.

On our planet, with its huge diversity of pests, climate, population density, and geography, pest control is not something that can be addressed with a simple formula. Common symptoms might require radically different solutions which have to be applied in strict adherence to the food safety and toxicity regulations that legislation, guidelines and HACCP programmes demand. However, solutions can be delivered in accordance with a common standard.

Almost all food businesses sub-contract this component of their work to specialist pest controllers. It seems sensible to utilise the skills of expert operators in such exercises. That said, the overriding responsibility for pest control still rests with the facility's owners or managers and not with the pest controller. While operators can sub-contract the work, the same cannot be said of the responsibility that those food companies have to the consumers. This being the case, the selection of the right pest controller for one's food business is an important decision. In relying on the advice of the contractors', facility managers need assurance that such advice and the service is appropriate to the facility, is backed with expert knowledge and in keeping with the requirements of the food safety programme of the site.

The pest control industry is, in many parts of the world, very competitive and there are often many organisations to choose from. In this environment, price is often a driver and, all too often, the quality of advice, expertise, frequency, training and service get less attention than they deserve when it comes to contract award.

First and foremost, the pest controller must have experience of food premises applications in facilities that operate a HACCP programme. The contractor must be able to demonstrate expertise in the task, food safety and the documentation.

The contractor should have Standard Operating Procedures that address HACCP requirements, food safety training as well as all the documentation that a HACCP programme demands. These forms should dovetail perfectly with the HACCP programme of the premises. It might be necessary for the contractor to use the documentation of the food business. This should not present a problem to a qualified and experienced contractor.

The pest control industry has many professional bodies that can act as points of reference for a contractor. Checking registration and the membership criteria might well be of benefit as is referencing work with other food processors. Make sure that the HACCP team is fully involved in the process and where possible, look for an appropriate certification of conformance.

HACCP International, through its associate organisation in Australia, has developed a standard for the delivery of pest control services to the food industry. Companies that are certified to this standard can demonstrate their ability to offer a pest control service that is compatible with the requirements of the best international food safety standards. Many pest control companies from bases in Europe, Asia and Australasia are certified to this current standard however many businesses are unsuccessful in their application and later in this article we look at the reasons for that.

HACCP Australia's Pest Control Standard has attracted a considerable amount of interest and positive feedback from food businesses and quality organisations over the years. As it happens, the standard is currently under review and a new standard will be issued in 2014. The review process will ensure that it is totally suitable for application in the industry globally and compatible with any recent amendments or reissues of GFSI endorsed food safety standards.

> HACCP International will begin certifying to the new global pest control standard in 2014

The technical committee that oversees this process comprises individuals that represent the food industry (from processing plants to restaurants and retail), pest control companies, food safety auditors as well as institutional representatives. The committee is encouraging participation and contribution from as many industry sources and countries as possible. If any reader representing the food or pest control industries would like to be kept informed of the developments and cares to make comments or suggestions, these will be very welcome indeed. Please email us using the address below to get more details. Alternatively, developments can be followed on the HACCP Australia website (www.haccp.com. au) or through HACCP International's 'linked-in' site. HACCP International will begin certifying to this new standard later in 2014.

While there are a number of guidelines in place issued by national bodies, there is currently no comprehensive

international standard that precisely meets the need of the food industry and with the release of this standard; we are looking forward to that changing.

We receive many applications for certification to the scheme in its current version. However the scheme makes quite a number of important demands upon the applicant which sees a significant number of companies failing to achieve certification. Let's see why that happens.

Firstly, the nature of the scheme requires applicants to have a specific interest in the food industry and a commitment to meeting particular standards both in general operations and the food industry in particular. Organisations that are not prepared to devote resources and energy to the food industry demands are most unlikely to be successful in their application. This is not for the faint of heart!

> Many pest control applicants fail – this is not for those who do not have a real interest in the food industry or for the faint of heart

Those that do not only demonstrate an ability to meet the requirements of the industry in terms of SOPs, documentation, reporting, internal auditing, food safety training, chemical selection and chemical application, but most importantly, have also undergone site audits, at several food industry client locations as well as at their own facilities. These site audits review operations and reporting at sites governed by HACCP programmes to ensure an ability to actually deliver a compliant service. Furthermore, in the case of national or multi branch service providers, multiple audits are conducted to ensure compliance across branches. Certificates of Conformance therefore apply on a branch by branch basis.

The scheme currently has minimum requirements in the following key areas

- Standard Operating Procedures
- Chemical Handling
- Treatment,
- Site Maps and Monitoring
- Site Specifications
- Pest Sighting and Monitoring
- Service Reports, Recommendations and Housekeeping
- Good Hygiene Practices and Good Manufacturing Practices
- Training – both in pest control and food safety
- Licences and Insurances.

The current review will no doubt see the minimum expectations being lifted further in certain key areas in order to meet expectations of the industry globally and 'World's Best Practice'.

To receive further information on the standard and its development, please email :standards@haccp-international.com or visit HACCP International at www.linked-in.com

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The BRC Global Conference and Food Safety Europe 2013

BRC certified sites are now approaching 20,000 worldwide, **a 10% increase on last year.**

HACCP International were delighted to be a sponsor of the BRC (British Retail Consortium) Certification Body (CB) and Approved Training Provider (ATP) Global Conference and then as break-out session sponsor of the Food Safety Europe Conference that immediately followed in Amsterdam during October.

The CB and ATP conference is held yearly as the forum for discussing audit best practice, developments to, and the progress of, The BRC Standards, throughout the world, as one of the benchmarked Global Food Safety Initiative standards. The BRC Standards continue to see strong uptake across all global markets with very nearly 20,000 certificated sites now operating, a growth of 10.3% from the previous year. This means that 20,000 food processors, consumer goods manufacturers, packaging manufacturers and storage and distribution companies are now signed up to the principle of playing their part to ensure food safety throughout the supply chain! And the BRC Standards certificates are accepted as proof of this compliance among a wide range of retailers and specifiers, assuring the safety of their suppliers, including quick service restaurant groups, manufacturers seeking 2nd tier raw material suppliers and major hotel brands globally.

A range of very interesting subjects were covered by the BRC Global Standards Team including CEO Mark Proctor, David Brackston, John Figgins, Tessa Kelly, Azin Parsa, Jo Griffiths, Adam Burden, Karen Betts and Geoff Spriegel. We provide below a summary snapshot of some of the most interesting facts and figures to emerge:-

Tessa provided an outline of growth of take up of the different standards. Growth of the BRC Storage and Distribution Standard, percentage wise, is strongest at 26.5%, up to 525 sites with year-end growth projected as 40%, Growth of the Food Safety Standard remains strong at 5.2%, taking an already well established base up to 15,592 sites! Some of the biggest hot spots for growth are Canada, USA, UK, Spain, Italy, Poland, Turkey and China, with some of the key emerging hotspots being Vietnam, Turkey, South Africa, Eastern Europe and Latin America. An interesting opinion to emerge within the food industry is an agreement that Tier 2 suppliers (food suppliers to other food manufacturers) should be certified.

Azin Parsa showed us that there are now 194 approved training providers across 35 countries, with the UK, USA and Canada dominating, mostly being certification bodies but with a strategy to increase the number of independent ATPs. To ensure that ATPs maintain appropriate skills, Azin informed the conference that an examination process is on the way for ATPs.

Joanna Griffiths, in bringing us up to date with the Packaging Standard, was delighted to tell the conference that the BRC Packaging Standard is the first such standard to be GFSI benchmarked. An interesting bit of news is that the UK retailer, Asda, will require all Storage and Distribution facilities to be BRC certified by December 2014 and parent company Walmart, taking a similar line, requires all S&D facilities to operate to a GFSI benchmarked standard or, in the current absence of a GFSI benchmarked S&D Standard, to a Standard Owner operating another benchmarked standard such as BRC with its Global Food Safety and Packaging, benchmarked standards.

HACCP International's stand was a busy corner at the BRC conference

John Figgins started to bring Day 1 to a close with a look at the top ten Issue 6 non-conformances from audit against the BRC Global Food Safety Standard. Here they are:-

- Section 2: Accuracy, information, review and amendment of the HACCP flow diagram.
- Section 4.4: Building fabric especially door policy, pest proofing and walls.
- Section 4.13: Pest control survey/in depth inspections
- Section 4.11.1: Housekeeping and hygiene – poor cleaning methodology and standards of cleaning.
- Section 1: Management commitment, objectives and scheduled meetings.
- Section 4.7: Maintenance schedules and post maintenance sign-off
- Section 4.8: Staff facilities – the standard and location of hand washing facilities and segregation of outdoor clothing

- Section 3.4: Internal audits schedule and the recording of non-conformances with actions, to a meaningful timescale
- Section 4.9.3: Glass control – the accuracy of the glass register
- Section 3.9: Traceability systems – adequacy and rigorous testing

It is interesting to see how many come up from Section 4 of the Standard – which supports the improved focus of audits to Issue 6 of The Standard on the facility, production controls and GMP.

The new pest control standard to which HACCP International will be certifying later in 2014 could be very significant in lowering the high level of non conformance by pest controllers that is reflected in section 4.13(above).

David Brackston finished with some information concerning the timeline and consultation process leading to Issue 7 of the BRC Global Food Safety Standard. Ideas and feedback are being generated now, while, in the latter half of 2014 the documents, guidance and training will be developed with this new version of The Standard 'going live' in July 2015.

During the last 2 days of the conference - Food Safety Europe 2013 – HACCP International presented a 90 minute workshop about the food safety risks and implications from non-food; that is, articles, equipment, materials and services used by the food industry. Clive Withinshaw and Richard Mallett presented data and information to a workshop of over 80 senior figures from certification bodies, food manufacture and retail culminating in a "have a go" risk assessment team table exercise that proved to be much fun! We were delighted

Richard Mallett and Clive Withinshaw present at the BRC conference, Amsterdam.

with the feedback presented to us, in person, by the delegates immediately after this event and now very much look forward to working with the BRC on a forthcoming webinar to take the subject of food safety risk and controls from equipment and materials used in the food room a step further. This industry education programme will be supported in the near future by in-house presentations and workshops, where requested by those who have a vested interest in mitigating the food safety risk from equipment and materials. Anyone within the retail, quick service restaurant, food-service or hotel/catering industry that would like to discuss this option with us should contact us using **info@haccp-international.com** in the first instance.

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Multi-national food companies accused of undermining health policies and obesity initiatives.

By Danielle Bowling, Food Magazine. www.foodmag.com.au

Governments across the world are being called on to counteract the influence that multi-national food companies are having on stalling healthy food policies.

Last year, a meeting on the progress of obesity prevention efforts in low and middle income countries was held in Bellagio, Italy. The Bellagio Declaration, was released yesterday at the International Congress of Nutrition in Granada, Spain, called for greater efforts from organisations and governments to protect healthy food policies from the lobbying efforts of large food corporations, or 'Big Food and Big Soda.'

Professor Barry Popkin from the University of North Carolina said, "Governments see the rising tsunami of obesity flooding over their countries, but as soon as they put up serious policies to create healthier food environments they get hammered by the food industry."

The policies which provoke this response are regulations to reduce the marketing of unhealthy foods to children, front-of-pack labelling systems to help consumers readily assess the healthiness of the food, and taxes on unhealthy foods like sugar-sweetened beverages, said Professor Carlos Monteiro, University of Sao Paulo, a co-convener and one of Brazil's leading public nutrition researchers.

Different countries' experiences were published in Obesity Reviews, and showed that the obesity epidemic is rising very fast in many developing countries, rapidly catching up or overtaking undernutrition as the dominant nutrition problem.

"This is creating a double burden of co-existent overnutrition and undernutrition within many populations or even within households," reads a statement from the International Association for the Study of Obesity.

The director general of the World Health Organisation (WHO), Dr Margaret Chan, has recently called the lobby forces of 'Big Food and Big Soda' one of the biggest challenge that countries face as they try to reduce obesity and diet-related chronic diseases.

She outlined some of the tactics the food industry has been using such as lobby groups, promises of self-regulation, lawsuits, and industry-funded research. The Bellagio Declaration calls on WHO to develop norms for government engagement with the private sector so that partnerships are not detrimental to nutrition goals.

"The first priority for food policies is to improve nutritional outcomes for the population, not the bottom lines of multi-national corporations," said Professor Boyd Swinburn, co-chair of the International Obesity Task Force.

In 2013, Oxfam updated its 'Behind the Brands' scorecard ranks, and found that leading food brands are being very sluggish in improving their social and environmental policies.

No company performed better overall than the 'fair' category, with companies including Nestle, Unilever, Coca-Cola, Danone and General Mills experiencing slight increases in their scores. Associated British Foods, General Mills and Kellogg's are at the bottom of the scorecard with few signs of progress.

Venture Capitalists are making bigger bets on food start-ups

The following article by Michael Nagle was first printed in the New York Times. What happens in the USA is often repeated elsewhere and it seems that 'start up' food businesses are the on V.C. radar.

What if the next big thing in tech does not arrive on your smartphone or in the cloud? What if it lands on your plate?

That idea is enticing a wide group of venture capitalists in Silicon Valley into making big bets on food.

In some cases, the goal is to connect restaurants with food purveyors, or to create on-demand delivery services from local farms, or ready-to-cook dinner kits. In others, the goal is to invent new foods, like creating cheese, meat and egg substitutes from plants. Since this is Silicon Valley money, though, the ultimate goal is often nothing short of grand: transforming the food industry.

"Part of the reason you're seeing all these V.C.'s get interested in this is the food industry is not only massive but, like the energy industry, it is terribly broken in terms of its impact on the environment, health and animals," said Josh Tetrick, founder and chief executive of Hampton Creek Foods, a start-up making egg alternatives.

Some investors say food-related start-ups fit into their sustainability portfolios, alongside solar energy or electric cars, because they aim to reduce the toll on the environment of producing animal products. For others, they fit alongside health investments like fitness devices and heart rate monitoring apps. Still others are eager to tackle a real-world problem instead of building virtual farming games or figuring out ways to get people to click on ads.

"There are pretty significant environmental consequences and health issues associated with sodium or high-fructose corn syrup or eating too much red meat," said Samir Kaul, a partner at Khosla Ventures, which has invested in a half-dozen food start-ups. "I wouldn't bet my money that Cargill or ConAgra are going to innovate here. I think it's going to take start-ups to do that."

In the last year, venture capital firms in the valley have funneled about $350 million into food projects, and investment deals in the sector were 37 percent higher than the previous year, according to a recent report by CB Insights, a venture capital database. In 2008, that figure was less than $50 million.

That money is just a slice of the $30 billion that venture capitalists invest annually, but it is enough to help finance an array of food start-ups.

The venture capital firms helping to finance these businesses are some of the valley's most prominent names, in addition to Khosla: SV Angel, Kleiner Perkins Caufield & Byers, True Ventures and the Obvious Collection. Celebrities from Hollywood (Matt Damon), pro football (Tom Brady) and the tech world more broadly (Bill Gates) have also joined in.

"Consumers are interested in sophisticated experiences that are beautifully delivered, which we've seen happen on the Web and with products like the iPhone," said Tony Conrad, a partner at True Ventures, which was an early investor in the coffee company Blue Bottle. "Now, we're seeing that happen with food and beverage."

Still, some tech analysts and venture capitalists are skeptical that these companies, with their factories and perishable products, can reach the scale and market valuations of big Internet companies.

"I don't see a multimillion-dollar business coming out of any of these companies," said Susan Etlinger, an analyst with the Altimeter Group, a firm that advises companies on how to use technology. "The majority of Americans will not likely be able

CONTINUED ON PAGE 22

to participate, they're simply too expensive for them."

Venture capitalists have strayed from pure technology to food before. Restaurant chains like Starbucks, P. F. Chang's, Jamba Juice and, more recently, the Melt, were backed by venture capital. Recipe apps and restaurant review sites like Yelp have long been popular.

But this newest wave of start-ups is seeking to use technology to change the way people buy food, and in some cases to invent entirely new foods. Investors are also eager to profit from the movement toward eating fewer animal products and more organic food. They face a contradiction, though, because that movement also shuns processed food and is decidedly low-tech.

"It's not Franken-food," Mr. Kaul of Khosla Ventures said. "We're careful not to make it sound like some science experiment, but there is technology there."

Hampton Creek Foods, based in San Francisco, uses about a dozen plants, including peas, sorghum and a type of bean, with properties similar to eggs, to make an egg substitute.

> Food start-ups have their own challenges that are unfamiliar to tech entrepreneurs and investors, like a broken-down delivery truck or a bad oyster

Mr. Tetrick, its founder, started the company after working on alleviating poverty in sub-Saharan Africa. He hired a protein chemist, a food scientist, a sales executive from Heinz and a contestant from the television show "Top Chef." Two large food companies are using the egg substitutes in cookies and mayonnaise, and he said he planned to sell them to consumers next month.

Unreal, based in Boston, makes candy that the founders say has no artificial colors or flavors, preservatives, hydrogenated fats or genetically modified ingredients, with at least 25 percent less sugar than similar candy on the market and added protein and fiber. The candy is sold in stores including CVS and Target.

Lyrical Foods makes cheese from almond milk and macadamia milk under the name Kite Hill, which is the first nondairy cheese to be sold by Whole Foods. Nu-Tek Salt uses potassium chloride instead of sodium chloride to lower sodium. Beyond Meat and Sand Hill Foods are making veggie burgers that their investors say taste and grill more like beef than others on the market.

Yet some investors say the projects have a better chance of success if they steer clear of selling actual food. "The food category has been a hard nut to crack because it's a perishable item," said Mark Suster, an investor at GRP Partners. "The No. 1 thing V.C.'s are looking for are scalable and repeatable, high-margin businesses. You can create those in food, it's just harder."

His firm, for instance, is tapping into the food industry by investing in Internet services like ChowNow, an online restaurant ordering company.

GoodEggs, another Web service, is a marketplace for local farmers and chefs who make artisanal goods like cheese, honey, jam and olive oil. Another company, Farmigo, is taking a similar strategy.

Kitchensurfing is a site that lets people hire private chefs to give pasta-making lessons or prepare an authentic Thai meal, just as one might book a room on Airbnb.

"Chefs spend all of their time working and at farmer's markets," said Chris Muscarella, the site's co-founder and chief executive, who has worked in restaurants. "They aren't sitting in front of a computer. So the fact that you're finally getting more chefs online through mobile devices is actually a big deal for the culinary world."

Still, food start-ups have their own challenges that are unfamiliar to tech entrepreneurs and investors, like a broken-down delivery truck or a bad oyster. These setbacks can be more difficult to recover from than a software malfunction.

In the early days of Plated, for instance, which sells ready-to-make dinner kits for recipes like Greek lamb burgers with cucumber salad, the founders sank $15,000 into building a customised refrigerated warehouse in Queens. Then they discovered that it would not cool lower than 70°F (21°C) unsuitable for food handling and preparation.

"We just had to walk away from that investment," said Nick Taranto, one of the founders.

Bill Maris, a partner at Google Ventures, the search giant's investment arm, said he was closely watching the trend.

He said, "Start-ups are unpredictable and all these companies are trying to take advantage of new technology and markets that are changing."

"But," he added, "in 2000, the same questions were asked about YouTube and no one knew how it would even work, let alone become a business."

FOOD LAUGHS

A lighter look at the food we produce - from the mouths of the famous.

- We are living in a world today where lemonade is made from artificial flavors and furniture polish is made from real lemons. - *Alfred E. Newman*
- In Mexico, we have a word for sushi: bait - *José Simons*
- I'll have a double cappuccino, half-caf, non-fat milk, with enough foam to be aesthetically pleasing, but not so much that it would leave a moustache. - *Niles Crane, Frasier*
- Fun-sized Snickers? Who's this fun for? Not me. I need six or seven of these babies in a row to start having fun. - *Jeff Carlin*
- I cook with wine. Sometimes I even add it to the food - *W.C. Fields*
- I like rice. Rice is great if you're hungry and want 2000 of something - *Mitch Hedberg*
- Our toaster has two settings: too soon or too late - *Sam Levenson*

HOT LINKS

US food safety
http://www.foodsafety.gov/

As far as sites dedicated to Food Safety go, this is a beauty from the US. A bunch of good information, training material and interesting facts pages. Got a question? Just ask Karen, the food safety expert, or even give her a call during business hours. Just like Siri for Food Safety

Say cheese!
http://www.bacteriainphotos.com/

Microbiologist porn on this site with nothing but cool photos of bacteria. Bacteria on media, bacteria via light, bacteria via scanning electron….and great links to other bactophile sites! Bacteria as art! Wow, you could expect to see these on the wall of some awesome bacteria museum… if only there was such a place (sigh)…But wait, what is this ?

Bacteria museum
http://www.bacteriamuseum.org/

At the time of investigation, there was a problem with the operation of this site which kept me from exploring the hallowed halls of this facility….but I'm told it should be resolved by the time we go to print. Anyway, even from the front, it does look really good!

CERT ID - The World's leading Non-GMO Certification
http://www.cert-id.com/Certification-Programs/Non-GMO-Certification.aspx

The headline says it all! A robust, internationally recognised certification programme now delivered in Australia by HACCP Australia.

Better than a shoe phone
http://phonevault.com/catalog/Novelty/FoodBeverages/default.asp

What could be better than Maxwell Smart's shoe phone? ....Food Phones for food techs! Genuine telephones in the shapes of food from bread sticks to various vegetables. Call your friendly technologist at HACCP Australia in style.

Food challenges
http://bestfoodchallenges.com/

I'm still feeling a little ill after reading these pages….great food challenges from the USA by state. Example; eat 20 mammoth hamburgers and get your photo on the wall (and set yourself up for all sorts of illnesses). My advice; look but don't touch.

FACT

This product is food safe

HACCP INTERNATIONAL FOOD SAFETY PROGRAMME CERTIFICATION

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 or email 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

CATERING AND FOOD SERVICE EQUIPMENT	CHEF INOX (I) HOSHIZAKI (I) MACKIES ASIA PACIFIC (I) S.P.M. DRINK SYSTEMS S.r.l. (I)
CLEANING EQUIPMENT	CARLISLE CLEANING EQUIPMENT (I) CHAMPION MACHINERY HK LTD (I) ESWOOD GLOBAL CHAMPION (Shanghai) LTD (I) OATES CLEAN SABCO
CLEANING CHEMICALS KITCHEN MATERIALS AND SANITATION PRODUCTS	3M (I) BAXX (I) BIOZONE SCIENTIFIC (I) BUNZL CHAMPION CHEMICALS LTD CLOROX (I) CONCEPT LABORATORIES DEB GROUP (I) EDCO (EDGAR EDMONDSON) KIMBERLY-CLARK PROFESSIONAL (I) LALAN SAFETY CARE OATES CLEANING PREMIUM PRODUCT SOLUTIONS (I) TORK
CLEANING & MAINTENANCE SERVICES TO THE FOOD INDUSTRY	ACE FILTERS AERIS HYGIENE SERVICES (I) BORG CLEANING CHALLENGER CLEANING SERVICES INTEGRATED PREMISES SERVICES ISS HYGIENE SERVICES METROPOLITAN FILTERS PINK HYGIENE SOLUTIONS
CLOTHING, DISPOSABLE GLOVES AND PROTECTIVE WEAR	KIMBERLY-CLARK PROFESSIONAL (I) LALAN GLOVES SAFETYCARE LIVINGSTONE INTERNATIONAL PARAMOUNT SAFETY PRODUCTS PRO PAC PACKAGING RCR INTERNATIONAL STEELDRILL WORKWEAR & GLOVES SCA HYGIENE
FACILITY FIXTURES, FLOORING AND FIT OUT	ALBANY DOORS (I) ALTRO SAFETY FLOORING & WALLING (I) BLUE SCOPE STEEL (I) CARONA GROUP DEFLECTA CRETE DYSON AIRBLADE (I) GENERAL MAT COMPANY HALTON (I) HIDRIA GIF (I) MANTOVA PHILIPS LIGHTING ROXSET SILIKAL (I)
FACILITY FIXTURES, FLOORING AND FIT OUT CONTINUED	THORN LIGHTING (I) UCRETE-BASF (I) UNIVERSAL FOOD SERVICE DESIGN
FOOD INDUSTRY SERVICES	SHADOW GROUP SKILLED GROUP
LABELS - FOOD GRADE	LABEL POWER OMEGA LABELS W W WEDDERBURN
MAGNETS	MAGNATTACK GLOBAL (I)
MANUFACTURING EQUIPMENT COMPONENTS & CONSUMABLES	BIOCOTE (I) BSC MOTION TECHNOLOGY ENMIN (I) FCR MOTION ITW POLYMERS & FLUIDS LANOTEC (I) SICK SMC PNEUMATICS (I)
PEST CONTROL EQUIPMENT AND MATERIALS	BAITSAFE(I) BASF (I) BAYER (I) BELL LABORATORIES INC (I) ECOLAB PEST FREE AUSTRALIA (I) STARKEY PRODUCTS (I) SYNGENTA WEEPA PRODUCTS
PEST CONTROL SERVICES	AMALGAMATED PEST CONTROL ARREST-A-PEST CPM PEST & HYGIENE SERVICES ECOLAB FLICK ANTICIMEX ISS ORIGIN EXTERMINATORS RENTOKIL SCIENTIFIC PEST MANAGEMENT STAR PEST CONTROL
REFRIGERATION, GOVERNORS, EQUIPMENT AND DATA SYSTEMS	AERIS HYGIENE SERVICES (I) CAREL (I) DIGINOL (I) E-CUBE SOLUTIONS MISA(I) REJUVENATORS
STORAGE EQUIPMENT & PACKING MATERIAL	NETPAK RCR INTERNATIONAL SCHUETZ DSL
THERMOMETERS, PH METERS AND DATA LOGGERS	3M 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

FACTERIA SALMONELLA

Salmonella is a dangerous food poisoning bacteria and as few as 15 living cells can cause illness. Therefore, it should be absent from all ready to eat foods and those requiring minimal heat treatment. This organism is the most common cause of food-borne deaths.

The onset for the disease is usually 12 to 36 hours and the duration of the illness is 1 to 7 days. If the bacteria cross from the intestinal tract into the bloodstream, extremely serious complications can occur.

Salmonella is a facultative anaerobe that grows between 5°C and 45°C and causes food poisoning by infection. Salmonellae are non-spore forming, so a temperature of 70°C is usually sufficient to kill them.

Foods commonly involved are meat, poultry, raw milk, milk products and eggs.

Contamination may be directly or indirectly from human or animal excreta. Over 2000 types of Salmonella are known, all of which are capable of causing illness in man. Salmonella typhimurium or Salmonella enteritidis are particularly common causes of Salmonella food poisoning.

To avoid the growth of Salmonella, foods need to be thoroughly cooked and the potential for cross contamination from raw to cooked, direct and indirect must be eliminated. Furthermore, food handling, sanitation and hygiene also need to be maintained at high levels to avoid the growth of Salmonella.

Of interest, reptiles are known to be carriers of extremely high numbers of Salmonella.

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