

# WORLD FOOD REGULATION REVIEW

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# WORLD FOOD REGULATION REVIEW

## INCORPORATING INTERNATIONAL FOOD SAFETY NEWS

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Managing Editor: Bob Yorke, U.K. Email [bobyorke@researchinformation.co.uk](mailto:bobyorke@researchinformation.co.uk)

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# AROUND THE WORLD

## CANADA

### Caffeine in Juice: Storm in a Cola Glass?

On March 19, 2010, after what it described as “an extensive review of all available science”, Health Canada authorized the broader use of caffeine as a food additive from cola-type beverages to all carbonated soft drinks.

Health Canada said it had determined that adding synthetic caffeine to non-cola soft drinks in concentrations no higher than 150 parts per million (ppm) poses no health risk to consumers when they follow recommendations for maximum daily caffeine intake. The authorized concentration for non-cola beverages is lower than the maximum of 200 ppm authorized under the Food and Drug Regulations for cola beverages.

Note the first sentence of the announcement, which clearly states that broader authorized use of caffeine as a food additive had been expanded “from cola-type beverages to all carbonated soft drinks.” Note the word “carbonated”.

The release goes on to add that “the current prohibition against adding synthetic caffeine to other foods remains in place”.

Canadians have been encouraged to monitor their daily caffeine intakes to avoid elevated levels of consumption, and Health Canada has urged manufacturers to voluntarily identify on product labels the total caffeine contained in a product, both from natural ingredients such as guarana and from direct addition as a food additive. Beyond that, Health Canada is also asking industry to go further than food additive labelling requirements (i.e. mandatory declaration of caffeine in the list of ingredients) and to identify the presence of caffeine on the front of package labelling of newly caffeinated beverage formulations.

Health Canada’s announcement of course recommended that Canadians should drink water as their beverage of choice and look for other healthy beverage options (milk, fortified soy beverages or 100 per cent juices), with consumption of other beverages, including soft drinks, being limited.

The expanded use of caffeine in soft drinks was to be authorized through an Interim Marketing Authorization (IMA), allowing manufacturers to begin selling products while regulatory changes are being drafted.

Similar levels of caffeine are currently allowed in non-cola soft drinks in many other jurisdictions, including the United States and Europe.

## Newspaper Article

In a response to the Health Canada announcement, the Edmonton Journal published an opinion entitled *Caffeine in Juice Bad Move*, on 24 March, decrying the move.

The article’s author spoke of being “appalled” as an educator at [the decision] “to allow juice box companies to put synthetic caffeine in their juice box products. Alberta Education and schools at all levels are trying to promote healthy alternatives to caffeine and sugar-laden soft drinks. The only logical explanation I can think of for this decision is, that caffeine being an addictive drug and if they can get the kids hooked as it were, they will sell far more units.”

## HC Response

In response to the Edmonton Journal article, Health Canada issued an immediate clarifying announcement, pointing out the — fairly obvious — fact that its decision to expand the allowed use of caffeine to non-cola soft drinks does *not* affect fruit juices in any way, and that the wording of the Interim Marketing Authorization very specifically applies only to carbonated soft drinks. The addition of caffeine to other foods, including juices, is not allowed.

With so many issues of real substance facing the public, it seems a pity that the attention and time of government departments, health officials and the general public are diverted by non-issues such as this.

## EUROPEAN UNION

### Consultation on BPA

The European Food Safety Authority (EFSA) has held consultations with national experts from across Europe, as well as several international risk assessment authorities, on the subject of bisphenol A (BPA). BPA is widely used in the manufacture of polycarbonate plastics, including materials which come into contact with food, and has been linked to a number of possible health problems.

The first meeting took place at EFSA’s headquarters in Parma, Italy, on Friday 26 March. It was attended by 25 experts nominated by 19 European countries, as well as members of EFSA’s scientific Panel on food contact materials (CEF Panel) and representatives of the European Commission.

At the meeting, EFSA outlined the draft opinion on

BPA which is currently being prepared by the CEF Panel, as well as the initial findings of its review of recent scientific literature in this area. Panel members stressed that all relevant scientific information will be critically analysed to determine its importance to the safety assessment of BPA.

Experts from Denmark, France and Germany presented their recent or ongoing assessments of BPA at the meeting, which gave participants the opportunity to contribute any other relevant information. The main issues discussed included the design of scientific studies on BPA, toxicological aspects and the strengths and weaknesses of certain individual studies.

Similar issues – as well as details of new risk assessments and studies being carried out around the world – were also discussed with the US Food and Drug Administration, Health Canada, Food Standards Australia New Zealand, the Food Safety Commission of Japan and the World Health Organisation during a telephone conference on Monday 29 March.

EFSA's two independent scientific outputs on BPA are due to be finalised by the CEF Panel at its next plenary meeting in late May. EFSA is promoting dialogue with its national and international partners on this issue to ensure that European-level advice is based upon the most up-to-date and reliable information possible.

See <http://www.efsa.europa.eu/en/events/event/cef100626.htm>

## EUROPEAN UNION

### Consultation on Animal Welfare Implications of Genetic Selection in Chickens

The European Food Safety Authority (EFSA) Panel on Animal Health and Welfare (AHAW) is launching an online public consultation on its draft scientific report on the welfare aspects of genetic selection in chickens raised specifically for meat production (broilers). The consultation aims to gather the widest range of scientific-related data and comments to finalise the work and provide the most up-to-date and comprehensive scientific advice to EU decision makers.

The consultation will be open on EFSA's website until 12 April 2010. The Panel will consider comments received during the online consultation as well as those received during the technical meeting with stakeholders held in September 2009 as it completes this scientific work.

The European Commission requested that EFSA gather and assess all data available on the subject and produce two scientific opinions: one on the influence of genetic selection on the welfare and resistance to stress of commercial broilers; and a second on the welfare of broiler breeders. Based on these opinions, the Commis-

sion will submit a report concerning the influence of genetic parameters on the welfare of chickens to the European Parliament and to the Council.

EFSA's Panel on Animal Health and Welfare (AHAW) is supported by two ad hoc Working Groups of experts to draft a scientific report on the current knowledge on the welfare aspects of genetic selection in broilers, and broiler breeder management and housing. This work will form the basis for two scientific opinions planned to be adopted in June 2010. The draft scientific report is now subject to a public consultation and comments received will be taken into consideration when finalising the opinions.

See <http://www.efsa.europa.eu/en/consultations/call/ahaw100330.htm>

## EUROPEAN UNION

### Consultation on Guidance for Environmental Risk Assessment of GM Plants

The European Food Safety Authority (EFSA) has launched a public consultation on the revised guidance of its GMO (Genetically Modified Organisms) Panel for the environmental risk assessment of GM plants. EFSA provided updated guidance for assessing the impact of GM plants on the environment and held discussions with stakeholders and Member States as part of this work. Together with new, strengthened requirements in terms of data generation, collection and analysis, this guidance also contains a revised section on the evaluation of possible effects on non-target organisms. The document is the result of two years' work and demonstrates EFSA's commitment to staying at the forefront of recent developments in the field of GM plant environmental risk assessment. The public consultation will last until 30 April.

EFSA reviewed and updated the specific areas that need to be addressed when assessing the environmental impact of a GM plant. These cover in particular the persistence and invasiveness of the GM plant, taking into account plant-to-plant gene transfer; the likelihood and consequences of gene transfer from the plant to micro-organisms; the potential evolution of resistance in target pests; the impact of the GM plant on non-target organisms; and the impact that the cultivation, management and harvesting techniques associated with the GM plant may have. Specific attention was also given to other environmental processes that may be affected by the GM plant, as well as to the impact that these may have on human and animal health.

EFSA also supplemented its guidance document with specific aspects which will need to be taken into consideration for the assessment. Detailed require-

ments are given for the choice of appropriate non-GM comparators (which are the non-GM plants with which the GM plant is compared during the safety evaluation) and types of receiving environments to be considered; the experimental design of laboratory and field studies, and their statistical analysis; and the consideration of possible long-term effects.

Some GM plants can produce an insecticide which wards off attacks from certain insects, and it is important to ensure that they do not adversely affect other insects (the so called non-target organisms or NTOs). In the context of its work on the new guidance, the GMO Panel produced a scientific opinion on how to evaluate the impact of a GM plant on non-target organisms. The opinion defines criteria for the selection of relevant non-target species; for the identification of those aspects of the environment that need to be protected from harm; and for the experimental design of laboratory and field studies and their statistical analysis.

The revision of the guidance document was undertaken in response to a request from the European Commission. To complement this, EFSA undertook work on non-target organisms on its own initiative. Also, a series of technical discussions was organised to bring together GMO Panel experts, stakeholders and technical experts from the EU Member States to exchange views on the scientific issues and various aspects of the documents. At the end of the public consultation launched on 5 March, EFSA will publish a report with an overview of the comments received and will address the relevant comments in the final EFSA GMO Panel guidance document and related opinion on non-target organisms.

See <http://www.efsa.europa.eu/en/consultations/call/gmo100305a.htm>

## EUROPEAN UNION

### EFSA Board Supports Consultation Launch of Communications Strategy

The Management Board of the European Food Safety Authority (EFSA) has endorsed the 2009 Annual Activity Report, which showed that EFSA issued more than 630 scientific outputs last year, and endorsed for public consultation EFSA's communications strategy for 2010-2013 — developed following research carried out amongst the Authority's key target audiences.

The board, meeting in Toledo, Spain, also backed EFSA's preliminary draft Management Plan for 2011 and its preliminary draft budget for 2011 of Euro 79.3 million.

Highlights of EFSA's scientific activities in 2009 included its first annual report on pesticide residues, opinions on dairy cow welfare, the first series of 'general function' health claims, and a joint opinion on

antimicrobial resistance with ECDC (the European Centre for Disease Prevention and Control), EMA (European Medicines Agency) and the European Commission. The work of its Scientific Committee and panels was supported by the outsourcing of preparatory work through contracts and grants worth Euro 6,8 million (compared to Euro 2.3 million in 2008).

### Communications Strategy

Board members viewed a presentation of qualitative research commissioned by EFSA amongst its customers, partners and key stakeholders in the EU and beyond. Findings indicate that the Authority has become a well-respected European body, recognised as an essential part of the European food safety network, producing independent, science-based support for policy makers. The research also highlights future opportunities, including that EFSA should provide more predictable timetables for its scientific work — taking into account increasing demand — as well as communicate its outputs more simply and continue to strengthen its Member State network.

This research has helped inform the communications strategy confirming that EFSA's overall approach of working closely with national food safety agencies and stakeholder networks remains appropriate. But the strategy presented for 2010-2013 includes plans to improve the simplicity of its communications and expand public outreach.

"The target audience research is really informative. It has been a key element informing the draft communications strategy 2010-2013 which the board agreed was a very good and useful paper and endorsed for public consultation," EFSA Management Board chair Diána Bánáti said.

### Preliminary Draft Management Plan 2011

Demand for EFSA's scientific opinions is expected to remain high in 2011, and the need for EFSA's advice on applications for authorisations will grow, especially in areas such as the re-evaluation of feed additives, food enzymes and GMOs. The assessment of health claims, which drew considerable resource in 2009, is currently scheduled to be completed in 2011 but new work in this area is also expected. EFSA says it will continue to work with the European Commission to set deadlines and priorities in this work. The sharing of data is pivotal to EFSA's work programme for 2010 and for 2011 and Member State cooperation in this area is crucial.

### Networks

The board also discussed a document formalising rules of procedure on European networks of scientific organisations, with a view to harnessing scientific cooperation and exchanges of information, expertise and

best practice. The document will be adopted by written procedure following some revisions. The networks have achieved good results so far in such areas as zoonoses, pesticides and contaminants and EFSA aims at establishing similar networks in nanotechnologies, plant and animal health and welfare, and GMOs scheduled for 2010.

## EUROPEAN UNION

### European Dietary Reference Values for Nutrient Intakes

The European Food Safety Authority (EFSA) Panel on Dietetic Products, Nutrition and Allergies has established dietary reference values for the intake of carbohydrates, dietary fibre, fats and water. EFSA's advice on nutrient intakes provides an important evidence base to underpin nutritional policies, the setting of diet-related public health targets and the development of consumer information and educational programmes on healthy diets. The opinions, published in March, were adopted by the Panel after consultation with Member States, the scientific community, and other stakeholders. The consultation ensures EFSA has benefited from the widest range of views to finalise the work and provide the most up-to-date, clear and comprehensive advice to EU decision makers.

Dietary reference values indicate the amount of an individual nutrient that people need for good health depending on their age and gender. The European Commission asked EFSA to update previous European advice in this area, taking into account new scientific evidence and recent recommendations issued at national and international level. EFSA delivers today its first opinions on dietary reference values (DRVs) for carbohydrates, dietary fibre, fats, and water. These will be followed by opinions on DRVs for vitamins and minerals.

In summary, the Panel's conclusions are:

- The intake of total carbohydrates – including carbohydrates from starchy foods such as potatoes and pasta, and from simple carbohydrates such as sugars – should range from 45 to 60% of the total energy intake for both adults and children
- For sugars there is good evidence that frequent consumption of foods high in sugars increases the risk of tooth decay. Data also show links between high intakes of sugars in form of sugar sweetened beverages and weight gain. The Panel however found there was insufficient evidence to set an upper limit for sugars. This is because the possible health effects are mainly related to patterns of food consumption – ie the

types of foods consumed and how often they are consumed – rather than a relation to the total intake of sugars itself. Evidence regarding patterns of consumption of sugar-containing foods should be considered by policy makers when making nutrition recommendations and developing food-based dietary guidelines at national level

- A daily intake of 25 grams of dietary fibre is adequate for normal bowel function in adults. In addition evidence in adults shows there are health benefits associated with higher intakes of dietary fibre (e.g. reduced risk of heart disease, type 2 diabetes and weight maintenance)
- Evidence is still inconclusive on the role of the glycemic index and glycemic load<sup>1</sup> in maintaining weight and preventing diet-related diseases
- Intakes of fats should range between 20 to 35% of the total energy intake, with different values given for infants and young children taking into account their specific developmental needs
- There is good evidence that higher intakes of saturated fats and trans fats lead to increased blood cholesterol levels which may contribute to development of heart disease. Limiting the intake of saturated and trans fats, with replacement by mono- and poly-unsaturated fatty acids, should be considered by policy makers when making nutrient recommendations and developing food-based dietary guidelines at national level
- A daily intake of 250 mg of long-chain omega-3 fatty acids for adults may reduce the risk of heart disease
- For water a daily intake of 2.0 litres is considered adequate for women and 2.5 litres for men.

The NDA Panel also published two further opinions, one laying down the general principles for establishing dietary reference values, and another providing advice to policy makers on how to translate nutritional recommendations into messages about foods, called food-based dietary guidelines (FBDGs). FBDGs can guide consumers on what to eat and help them make healthy dietary choices.

The opinions published were finalised following comments received between 2008 and 2009 during an online consultation process. In September 2009, EFSA also organised a special meeting with nutrition experts from Member States to exchange views on the draft opinions.

1. Tools used to measure and rank the rise in blood sugar levels following consumption of foods containing carbohydrates.

See <http://www.efsa.europa.eu/en/scdocs/scdoc/1458.htm>

## EUROPEAN UNION

### “No Consensus” on Glucosamine Article 14 Claims

Strategic consultants, EAS, believe that the fact that Member States did not reach an agreement in February on EFSA’s unfavourable opinion on article 14 glucosamine claims illustrates that there is still “no consensus on all the details of underlying criteria for studies performed to achieve the EU’s approval of claims”.

Deliberations in the Standing Committee on the Food Chain and Animal Health Section on General Law on Tuesday, 26 January, saw no agreement on the issue of the validity of article 14 claims (disease risk reduction) relating to glucosamine and reduced cartilage degeneration.

The lack of consensus came despite the European Food Safety Authority’s (EFSA’s) opinion that it could not draw any scientific conclusions from the submitted clinical studies, which were conducted on “diseased people”. EFSA has said it could not establish that such studies were representative of the target healthy population. A similar conclusion has been drawn by EFSA on a recent Article 13 claim for glucosamine.

The EFSA NDA (Dietetic products, nutrition and allergies) panel that deals with this issue concluded at the end of 2009 that “patients are not the target group for health claims”. However, EFSA pointed out that studies in patients may be used to substantiate claims for the general population and this should be decided upon a case-by-case basis.

For example, the NDA expressed that studies including a target group for gastrointestinal discomfort in IBS patients would be acceptable, while joint function in osteoarthritis patients (basis of glucosamine claims) would not be accepted.

“We understand that EFSA needs to ensure that the target group of the claim needs to match the target group on which the studies are performed, or that the studies allow extrapolation to this target group” said EAS Regulatory Affairs Manager Stefanie Geiser. “However, it is currently not clear where the line is drawn. It is difficult for companies to understand which type of health condition will be accepted under the claims Regulation and which will not. In addition it is difficult to understand why and on which basis certain studies performed on patients and relating to certain health conditions should be excluded, taking into account that disease risk reduction claims are included in the scope of the EU claims Regulation. We therefore very much welcome that the Commission, Member States and EFSA are now discussing the criteria for acceptance of such studies in more detail.”

The European Commission has now asked the Member States, on basis of the glucosamine case, for their

views on EFSA’s opinion regarding these claims, to be discussed in the next Standing Committee on 26 April 2010.

See [www.eas.eu](http://www.eas.eu)

## NEW ZEALAND

### World Keeping an Eye on Melamine

A New Zealand Food Safety Authority (NZFSA) toxicologist is working with a group of experts from around the world to set an internationally-accepted limit for melamine in foods. This is designed to harmonise global efforts to detect any deliberate adulteration in the future.

This effort follows the 2008 event in China when infant formula laced with melamine killed at least six children and made many thousands sick.

NZFSA principal toxicologist John Reeve will attend the Codex Committee on Contaminants in Foods in Turkey next month, where he expects the committee will consider a limit that will not only protect the health of consumers all over the world, but also ensure that governments can take action against the deliberate and unnecessary adulteration of products.

It will also avoid unnecessary barriers to trade in products that contain trace levels of melamine that are not from adulteration.

A New Zealand action level for the presence of melamine was put in place in September 2008. Many other countries have set their own limits at the same levels, but others who have no set limits take action to prohibit imports of products if any presence of melamine is detected. Melamine mimics protein, artificially bumping up protein measurements when a product is tested.

“Essentially, the committee’s job will be to formalise a standard, removing the variations that exist from country to country,” said Mr Reeve.

“There has been international backing within Codex for taking action and New Zealand has had a significant input into setting this internationally-accepted limit.”

Small amounts of melamine inadvertently get into products, either through migration from the equipment food is processed on, or because it is common in tiny amounts in the environment.

“Our testing methods are getting much more sophisticated, so we can detect melamine at miniscule levels that are harmless. Because these miniscule levels are not the result of deliberate adulteration, it is appropriate that an internationally agreed limit is set,” said Reeve.

“A zero limit for the compound would not be practical and could be used as a technical barrier to trade. Therefore the committee’s work is focussing on striking a balance between acknowledging the ‘natural’ occur-

rence of the compound while protecting the health of consumers and making it difficult for those willing to use unethical practices in food production.”

The Codex Alimentarius Commission (Codex) sets international standards and related documents for use by the 183 member nations to protect consumer health and international trade. These standards are recognised as international benchmarks for many developed and developing countries.

Internationally-accepted standards are vital for countries exporting and importing food. For instance, about 80% of the food New Zealand produces is exported, bringing in more than half of that country's overseas earnings.

## **NEW ZEALAND**

### **MAF and NZFSA to Merge**

The New Zealand Food Safety Authority (NZFSA) will be merged into the Ministry of Agriculture and Forestry (MAF), said Minister of Agriculture and Biosecurity David Carter and Food Safety Minister Kate Wilkinson in March.

Mr Carter said “Reintegrating NZFSA back into MAF allows for a single organisation focused on the integrity and performance of New Zealand's biological economy.”

A single department will be legally created on 1 July, with full integration of the functions of the two departments expected to be completed by December.

“MAF and NZFSA already work closely together and this decision means the new Ministry will span the full primary industries value chain from producer to consumer,” said Mr Carter.

“It will more closely align some of the key functions supporting the Government's economic growth goals, including sector performance, sustainable development and trade facilitation.

“Our future prosperity depends on the growth and productivity of our primary industries and in meeting international trade requirements for these products.”

Ms Wilkinson added that ensuring consumers — both in New Zealand and overseas — have confidence in the integrity of products - and regulatory processes - is critical.

“NZFSA and MAF are both highly regarded internationally and building on that reputation is important,” she said.

“We want to provide consistency in the regulatory approach for domestic and export-based businesses. Having a single competent authority spanning imports and exports of animal and plant products and responding to public, animal and plant health biosecurity events

makes sense.”

The government says that the amalgamation of MAF and NZFSA is part of a series of initiatives across the state sector to “lift agency performance and improve service delivery” to New Zealanders.

See <http://www.beehive.govt.nz>

## **SCOTLAND**

### **Advice on Food and Feed Hygiene Requirements Published**

The Food Standards Agency (FSA) in Scotland has produced advice for the farming industry, highlighting the primary production food and feed hygiene requirements of EC Food Hygiene Regulation (852/2004) and EC Feed Hygiene Regulation (183/2005). The advice is in “question and answer” format.

Farmers are subject to a number of inspections by various different bodies throughout the year, and the FSA says it “aims to clarify where certain responsibilities lie”, the role that assurance scheme membership plays, and draw attention to the primary production enforcement pilot taking place in Scotland.

To help the farming industry, the Agency has produced the “question and answer” advice, which can be found at the link below, to describe the purpose of the inspection, what the inspection involves and who carries out the inspection, as well as the efforts the FSA has made to reduce the regulatory burden on farmers.

See <http://www.food.gov.uk/scotland/safetyhygienescot/foodfeedhygienefarmsscotfaq/>

## **SCOTLAND**

### **Treatment of Bees with Oxytetracycline: Consultation Launched**

The Food Standards Agency in Scotland has launched a consultation on proposed honey testing, following treatment of bees with oxytetracycline (OTC) last autumn to control an outbreak of European Foulbrood (EFB).

The consultation outlines a proposed testing strategy and seeks comment on suitable levels for testing for OTC residues. Similar consultations have been carried out in Northern Ireland & Wales.

The consultation period ends on Thursday 15 April 2010 and, following consideration of responses, the testing strategy will be implemented when 2010 honey production starts.

European Foulbrood is a notifiable and devastating bacterial disease of bees and OTC is the only registered

treatment for its control. In response to an outbreak of EFB in honeybees in eastern Scotland during 2009, the Scottish Government initiated a voluntary programme of OTC treatment of affected hives in September 2009. Approximately 4,660 hives were treated following honey collection and prior to overwintering. However, due to the complex nature of bee colony biology, and perhaps because no honey is produced during overwintering, it is possible that residues of OTC will be present in honey from treated hives once production commences this spring.

At parts per million levels, OTC residues may disturb the balance of intestinal bacteria. At the levels considered here, however, OTC residues do not raise any food safety concerns. However OTC residues in honey should be minimised.

The Agency says it continues to liaise with Scottish Government, the Veterinary Medicines Directorate and other relevant bodies to ensure that honey produced from OTC treated hives in spring 2010 will be tested for OTC residues. Results will be copied to the Agency, Scottish Government and the Veterinary Medicines Directorate and further action taken as necessary.

See <http://www.food.gov.uk/consultations/consultscot/2010/testoxytetracyclineresiduesscot>

## UNITED KINGDOM

### Board Agrees Single Front-of-pack Label Plan

The Food Standards Agency (FSA) Board, at an open meeting held in Cardiff in March, has agreed to the implementation of a single approach to front-of-pack (FOP) nutrition labelling that, it believes, will best help consumers make healthier choices when they buy food.

Food businesses will be encouraged to use all three elements found by independent research to help UK consumers interpret nutritional information: traffic light colours (red, amber and green), text (high, medium or low) and percentage Guideline Daily Amounts (% GDAs).

The Board's recommendation clearly signals that the Agency does not support FOP labels using only % GDAs, but that % GDAs should be combined with either traffic light colours or text, and should ideally have all three elements.

Businesses are also encouraged to ensure that the information is presented on the packaging in a way that is clearly visible and prominent. To avoid consumer confusion, colours other than traffic lights should not be used. Additionally, information on portion size should be realistic and not mislead, and the labels should be used on a wider range of processed packaged foods.

Jeff Rooker, FSA Board Chair, said "The Board was

clear that it wanted a single approach to front of pack labelling that works. Tremendous progress has been made by industry in taking up front-of-pack labelling but different schemes are causing confusion to consumers. The Board is very clear that the framework outlined today is an important step on the way to a single approach."

In March 2006 the Agency recommended a set of principles for FOP labelling intended to help consumers easily understand the levels of fat, saturated fat, salt and sugars in food products. Currently, the majority of UK food manufacturers and retailers are voluntarily using some form of FOP labelling.

The various FOP labels being used meet some or all of the Agency's existing recommendations, but some use colours other than the Agency's recommended "traffic lights" as a design feature, or to highlight the different nutrients: for example, green for fat and yellow for salt.

An independent evaluation of the effectiveness of these schemes was published in May 2009. This study found that the co-existence of different FOP labels confused consumers, particularly the use of different colours. It concluded that the words 'high, medium and low' were understood best, and combining this text with traffic light colours and percentage GDAs would enable more people to make healthier choices easily. Consumers in "citizens' forums" subsequently run by the Agency shared this view, but particularly liked traffic light colours as an "at a glance" cue.

In the light of that evidence, together with feedback from a public consultation, the Board has now agreed the basis for a single approach to FOP labelling in the UK. The Agency will advise Ministers of its recommendations before undertaking a four to six week consultation on the technical guidance that will be needed to implement the Board's recommendations.

See <http://www.food.gov.uk/multimedia/pdfs/board/fsa100307.pdf>

## UNITED KINGDOM

### Date Marking Consultation Launched

The UK Food Standards Agency (FSA) is seeking views on new date-marking guidance it has drawn up to assist industry when deciding appropriate date marks to use on food products.

Under European Union (EU) food law, pre-packed food is required to carry one of two types of date marks: the "best before" and the "use by" date marks. It is up to food businesses to decide what date labels they should put on food products. The Government produced guidance for industry on this over ten years ago, which was re-issued by the Agency in 2003.

In February 2009, the Waste and Resource Action Programme (WRAP) and the FSA hosted a joint event on date marking and food waste, at which it was agreed that the FSA guidance on “use by” dates should be updated.

The updated guidance should help food businesses set date-marks in a way that is more appropriate and more consistent. It should also help improve consumer confidence regarding the use of date marks.

The guidance sets out key principles that should be considered by food businesses when determining date marks, including a flow chart to aid the date-marking decision-making process. A simplified two-page version of the guide to legal compliance is also being issued in order to help small businesses.

The FSA believes that the revision of this guidance is an important step in a wider programme of work being undertaken by Defra, WRAP, and the FSA, who are working with industry to identify and implement appropriate changes to practice, intended to help consumers better understand the date labels.

The consultation closes on Wednesday 16 June 2010. The Agency will then consider the responses when finalising the draft guidance.

See <http://www.food.gov.uk/consultations/consulteng/2010/fsaguidanceappdatemarksfoodeng>

## UNITED KINGDOM

### Salt and Sodium Research Published

The Food Standards Agency (FSA) has published details of qualitative research exploring people’s preferences, and understanding of the way in which salt and sodium information is presented on food labels.

People taking part in the research were keen for labelling of salt or sodium to be as clear and consistent as possible and preferred the use of the term “salt” on food labels. This was because it was most familiar to them and because they did not necessarily understand the relationship between salt and sodium.

While there was understanding of the health consequences of eating too much salt, there was little awareness that sodium is the part of salt that can cause raised blood pressure if eaten in large quantities.

The FSA says this piece of research was carried out to help inform the UK’s discussions in Europe and internationally on the best way to label foods.

Head of Nutrition at the Food Standards Agency, Clair Baynton, said “Too much salt in the diet can raise blood pressure, which increases your risk of developing heart disease and stroke. As a nation we are eating too much salt and here in the UK, a lot of work is going on to reduce salt in food products.

“Our research highlights that although people have generally got the message that too much salt is bad for health, it’s not always easy for them to check how much they are eating as labelling can be confusing.”

The research was carried out by “thepeoplepartnership” and used a combination of in-depth interviews and group discussions. Fieldwork took place in six locations across the UK from 18 to 30 November 2009.

See <http://www.food.gov.uk/science/socsci/surveys/saltsodium>

## UNITED KINGDOM

### Agency Publishes Salt Commitments

The UK Food Standards Agency (FSA) published commitments in March from a range of retailers and manufacturers highlighting the progress being made on salt reduction.

Businesses working towards the FSA’s salt targets have provided details about their salt reduction programmes and progress they are making towards the 2010 and 2012 targets. Commitments include entries from major UK and international manufacturers, the major UK retailers and key trade associations, and demonstrate the breadth of work being undertaken by industry to reduce the population’s salt intake.

Retailers and their suppliers have made reductions across a large range of everyday foods:

- Asda, the Co-operative and Waitrose now meet the 2010 salt targets across their whole range, with Sainsbury’s also on track to meet the targets
- M&S and Morrisons meet 90% of the 2010 targets, with M&S bread and sandwiches now meeting the 2012 targets
- Tesco’s products meet 2010 targets and 70% now meet 2012 targets
- Lidl, Budgens and Londis are looking at how they can meet the 2012 targets.

The FSA says that manufacturers are “tackling technical challenges in reducing salt levels whilst maintaining consumer acceptance and product safety”:

- Arla has reduced sodium content of cheese spreads, reduced by up to 46%
- Bernard Matthews has taken between 30% and 50% of salt from its coated products while Kerry foods has removed up to 44% of salt from its sausages and 9% from its cured meats
- The Association of Cereal Food Manufacturer’s, including members such as Kellogs and Nestlé have reduced the amount of salt used in their products by around a half

- Pepsico crisps now contain up to 55% less sodium.

Burton Foods and United Biscuits are continuing their work to reduce salt levels to the minimum, in a “challenging area” where much of the sodium remaining in products now comes from raising agents.

Some manufacturers have made large salt reductions in soups and sauces: AB Foods cook-in sauces and pastes by 30-60%, and Heinz soups by 39%. General Mills, Kraft, Mars, McCain, Premier and Unilever have also made significant reductions in the levels of salt in their products, with much of their portfolios meeting the 2010 salt reduction targets.

Food Standards Agency Head of Nutrition, Clair Baynton, said “It’s extremely encouraging to see levels of salt in a wide range of food continuing to decrease, with many companies reaching 2010 targets and now working towards 2012 salt targets wherever possible.

“Over the past few years, as a result of work being done by industry and the Agency, there has been a drop in people’s salt intakes – from 9.5g a day to 8.6g.

“We still have a way to go before we reach the 6g target but the commitments to continued salt reduction that we have received from so many businesses are very positive and will help us achieve our goal.

“The document we have published today will be regularly updated, to show how businesses’ salt reduction programmes are progressing. We are aware that there are increasing difficulties for businesses in continued salt reduction and we welcome their efforts to reduce salt to the lowest levels that are achievable in their products.”

The FSA has been working with food businesses since 2004 to encourage voluntary salt reductions. Targets were set in 2006 and updated in 2009 to be even more challenging, and to encourage further reductions.

The Agency says it has also received commitments from 44 catering businesses and their suppliers, which are published separately, on the catering section of the FSA website.

See <http://www.food.gov.uk/healthiereating/salt/saltcommitments>

## UNITED KINGDOM

### FSA Welcomes Consumer Focus Wales *E. coli* Report

The Food Standards Agency (FSA) has welcomed the publication of the Consumer Focus Wales report: *Protecting consumers from E.coli O157*.

The report refers to progress by the Agency and others in implementing the recommendations in the Pennington report on the Public Inquiry into the *E. coli* outbreak in South Wales in 2005. The Agency says that

it agrees that, while much has already been done, there is more still to do.

Although the Pennington report was concerned with outbreak in South Wales, the Agency is addressing its recommendations on a UK-wide basis. The Agency is looking at all major causes of foodborne illness, not just *E. coli*; looking at all foods, not just at meat; and taking actions across the UK, not just in Wales. It has established a Food Hygiene Delivery Programme, the purpose of which is to minimise the level of foodborne disease through:

- Improved awareness and control of food safety hazards by food businesses, food law enforcers and consumers
- Reliable assurance that compliance with legal standards is maintained, using timely, effective and proportionate enforcement where necessary.

The work programme runs until 2016 and the FSA says it has set out when Professor Pennington’s recommendations will be delivered (see appendix 1 at the link below). As part of this work, a substantial review of food hygiene enforcement in Wales will take place in 2014.

Steve Wearne, Director of the Food Standards Agency in Wales, said “The Agency’s core role is to put the consumer first and we want food that is produced or sold in the UK to be safe to eat. We are always looking for new ways to combat foodborne illness. There will always be more challenges and our work will continue through the next five years and inevitably beyond.”

One of the points raised in the Consumer Focus Wales report is the need for the Agency to provide guidance to environmental health officers on the use of separate machinery for raw meat and ready-to-eat foods. This guidance will address managing the risk of cross-contamination by *E. coli* O157 through cleaning and will provide advice on the dual use of equipment. The Agency plans to consult on this guidance in the near future.

See <http://www.food.gov.uk>

## UNITED KINGDOM

### Agency Welcomes Shelf-life Guidance for Chilled Foods

The Food Standards Agency (FSA) has welcomed the publication of new guidance intended to help food businesses determine the shelf life of ready-to-eat foods.

The guidance is from the British Retail Consortium (BRC) and the Chilled Food Association (CFA), working in collaboration with the FSA. It is designed to help

businesses — from small food outlets to major food manufacturers – to calculate a safe shelf life for how long particular foods can be kept before being eaten. It is also designed to help firms meet European Union hygiene rules that set limits on bacteria in food, such as *Listeria monocytogenes*, which is the focus of the guidance.

Complex issues are explained simply for staff at all levels of expertise. Real life examples are also provided to show how the advice should be put into practice.

The BRC chaired a coalition of organisations that developed the guidance, including the CFA, the Chartered Institute of Environmental Health (CIEH), the Local Authorities Coordinators of Regulatory Services (LACORS), and the FSA. The UK National Reference Laboratory Services for Food Microbiology (Health Protection Agency) participated as an observer.

Liz Redmond, Head of the Food Standards Agency Hygiene and Microbiology Division, said “People need confidence in the safety of the food they buy; this guidance adds to the good work already being done by the food industry, CIEH and the FSA to achieve this. I hope businesses and enforcement officers will find this a useful addition to the range of food safety information available to them.”

## Background

*Listeria monocytogenes* is an important cause of food poisoning. The number of reported cases of listeria has increased over recent years, particularly in people aged over 60. *L. monocytogenes* is frequently present in the environment and can be found in raw foods such as fresh meat, raw milk and fish. It is able to survive and grow at refrigeration temperatures and is of particular concern in relation to chilled, ready-to-eat foods that will not be cooked before consumption. Food business operators must therefore take action to control contamination from *L. monocytogenes* and set a safe shelf-life that takes account of the potential for it to grow in the food during storage and use.

See <http://www.food.gov.uk/foodindustry/guidancenotes/foodguid/readytoeat>

## UNITED KINGDOM

### The Future for Meat Hygiene Controls

The Food Standards Agency (FSA) has started a programme of work to review the current system of regulation of meat hygiene inspection activities and enforcement (known as ‘meat official controls’).

The work is aimed at improving public health protection while delivering a more risk-based, effective and proportionate system for meat official controls. As well

as consumer protection, proposals for a new inspection regime will take account of animal health and welfare considerations.

The current system of meat official controls, particularly post-mortem inspection of meat, is based on a traditional inspection approach. This was developed more than 100 years ago to tackle the public health concerns of that era, such as parasites and other defects visible to the naked eye. Currently, the main causes of foodborne disease are microbiological (for example, *Campylobacter*, *Salmonella* and *E. coli*), which cannot be seen by the naked eye.

Official controls are set out in European legislation so any changes must be agreed with other European member states, the European Commission and international partners.

### Advisory Body Meeting

The FSA’s Advisory Body for the Delivery of Official Controls met in February 2010 to update members on the programme and to discuss the future of meat inspection.

Members heard about discussions with European partners on the modernisation of meat inspection. The meeting also learnt about the conclusions adopted by the Council of the European Union on the Commission’s review of the 2006 food hygiene legislation.

The Advisory Body was informed of the FSA’s research call published in November 2009 and the Agency’s plans for further research in this area. Results from the first wave of research are expected towards the end of this year. Further information on research is in the presentation at the URL below.

These activities are part of the programme of work (see the Board paper below) the Agency set up to assess the effectiveness of alternative approaches to current official controls, and to build the supporting evidence through rigorous research.

The meeting also heard from a representative of the European Livestock and Meat Trade Union (UECBV), who presented their ideas for an improved inspection regime for the red meat sector. UECBV’s presentation can be found below.

See <http://www.food.gov.uk/multimedia/pdfs/board/fsa090906.pdf>

## UNITED KINGDOM

### Review of Infant Formula and Follow-on Formula Advertising Controls

The UK Food Standards Agency (FSA) and the Department of Health (DoH) published an independent review 11 March looking at the effectiveness of controls on the advertising of follow-on formula. Such formula

is only intended for babies over the age of six months.

There have been concerns about the way this product is advertised and that it might be confused with infant formula. European regulations were put in place in 2006, which, among other things, aim to reduce confusion for parents. The then Minister of State for Public Health, Dawn Primarolo, asked an independent panel of experts to assess whether the new rules on advertising in the regulations were working.

The panel's report has been submitted to Gillian Merron, the Minister of State for Public Health, for her consideration.

See <http://www.food.gov.uk/healthiereating/nutcomms/infformreview/>

## UNITED STATES

### USDA Seeks Comments on New Rule to Enhance Food Safety

The US Department of Agriculture's Food Safety and Inspection Service (FSIS) announced March 25 that it is seeking comment on proposed measures to enhance food safety. The proposed rule would implement a provision of the 2008 Farm Bill and is a priority for the Food Safety Working Group (FSWG).

"One year ago the President called on government to do more to ensure our food is safe, and we are working aggressively every day to improve the food safety system in the United States," said Agriculture Secretary Tom Vilsack. "The steps we are announcing today will help prevent foodborne illness as well as speed our response when illnesses occur – two goals of the Food Safety Working Group."

The new proposed rule would require that regulated establishments: 1) Promptly notify FSIS if any unsafe, unwholesome or misbranded meat or poultry product has entered commerce; 2) Prepare and maintain current procedures for the recall of meat and poultry products produced and shipped by the establishment; and 3) Document each reassessment of the establishment's process control plans or Hazard Analysis and Critical Control Point (HACCP) plans.

The new proposed rule supports the Food Safety Working Group Key Findings announced on July 7, 2009.

President Obama created the Food Safety Working Group on March 14, 2009 and charged Tom Vilsack and Health and Human Services Secretary Kathleen Sebelius, the co-chairs of the group, with working to upgrade US food safety laws for the 21st century; foster coordination throughout government; and ensure that the laws are enforced. Representatives from all federal food safety related agencies, including FSIS, the Food and Drug Administration (FDA), and the Centers for

Disease Control and Prevention (CDC) meet regularly to discuss how producers, processors, retailers, consumers, and all levels of government can work collaboratively to make US food as safe as possible.

Comments regarding the adopted regulations must be received on or before May 24, 2010.

See [www.foodsafetyworkinggroup.gov](http://www.foodsafetyworkinggroup.gov)

## UNITED STATES

### Agencies Warn of Raw Milk Outbreaks

The United States Food and Drug Administration (FDA), along with several state agencies, has alerted consumers to an outbreak of campylobacteriosis associated with drinking raw milk. At least 12 confirmed illnesses have been recently reported in Michigan. Symptoms of campylobacteriosis include diarrhoea, abdominal pain and fever.

The FDA is collaborating with the Michigan Department of Community Health (MDCH), the Illinois Department of Public Health, the Indiana State Board of Animal Health and the Indiana State Health Department, to investigate the outbreak. MDCH reports that, as of March 24, it had received reports of 12 confirmed cases of illness from *Campylobacter* infections in consumers who drank raw milk, which originated from a dairy in Indiana.

Raw milk (i.e. unpasteurized milk from hooved mammals, such as cows, sheep, or goats) may contain a variety of pathogens – including *Salmonella*, *E. coli* O157:H7, *Listeria*, *Campylobacter* and *Brucella* – that may cause illness and possibly death. Public health authorities have expressed concerns about the hazards of drinking raw milk for decades.

Since 1987, the FDA has required all milk packaged for human consumption to be pasteurized before being delivered for introduction into interstate commerce. FDA's pasteurization requirement also applies to other milk products, with the exception of a few aged cheeses.

From 1998 to 2008, 85 outbreaks of human infections resulting from consumption of raw milk were reported to CDC. These outbreaks included a total of 1,614 reported illnesses, 187 hospitalizations and 2 deaths. Because not all cases of foodborne illness are recognized and reported, the actual number of illnesses associated with raw milk likely is greater.

Proponents of drinking raw milk often claim that it is more nutritious than pasteurized milk, and that it is inherently antimicrobial, thus making pasteurization unnecessary. There is no meaningful nutritional difference between pasteurized and raw milk, and it does not contain compounds that will kill harmful bacteria.

See <http://www.foodsafety.gov/index.html>

# NANOTECHNOLOGY

## UK: Nanotechnology – The New Frontier

By Mike Jobson

Nanotechnology can be defined as the design, characterisation, production and applications of structures, devices and systems by controlling shape and size at the nanometre scale – a nanometre being one billionth of a metre.

Nanotechnology and nanomaterials are a natural part of food processing and conventional foods, because the characteristic properties of many foods rely on nanometre sized components (such as nanoemulsions and foams). However, recent technological developments lead the way for manufactured nanoparticles to be added to food. These could be finely divided forms of existing ingredients, or completely novel chemical structures.

For food it is thought the tiny additives could be used to reduce salt and fat contents, increase flavours and nutritional values, and prolong shelf lives. They could also be used to develop so-called “smart packaging”, which could detect exactly when food has gone off.

### European Food Safety Authority Opinion

In February 2009, the European Food Safety Authority published its opinion on the potential risks arising from nanoscience and nanotechnologies in food and feed. The main conclusions from the opinion are listed below:

- The current risk assessment paradigm is appropriate for nanomaterials
- There are limited data on oral exposure to nanomaterials and any consequent toxicity
- There are limited methods to characterise, detect, and measure nanomaterials in food/feed
- Toxicological and toxicokinetic profiles of nanomaterials cannot be determined by extrapolation from data on their equivalent non-nano forms. A case by case approach is needed
- Appropriate data for risk assessment of nanomaterials may include comprehensive identification and characterisation of the nanomaterial, information on whether or not the material will be ingested in nano form and remain in nanoform at absorption.

### The House of Lords Select Committee on Science and Technology Inquiry

Also in February 2009, the House of Lords Select Committee on Science and Technology launched an inquiry into nanotechnologies and food. It said the new technology could have very real benefits to consumers, improving the flavour, nutritional value and durability of food.

Lord Krebs, the scientist and former head of the Food Standards Agency, said that the report found no evidence of danger from the particles but that their “novel properties may result in novel risks”.

He went on to say that “The food industry was reluctant to say what kind of research was going on to develop nanotechnologies in food. It got its fingers burned with GM. It’s attitude is to keep a very low profile.

“We think this a wrong approach. We think being secretive will make more of a backlash than being open, particularly as there are potentially consumer benefits.”

### Scientists Call for Urgent Testing of Health Implications of Nanoparticles

However, little is known about the effects the tiny particles could have if they were to escape into the human body, and a powerful committee of experts is calling for more research into the health implications.

A two-year study by the Royal Commission on Environmental Pollution warned there is the possibility to damage human health but emphasised that not enough research had been done.

Concerns are mainly around toxic nanoparticles that may be able to permeate protective barriers in the body, such as those surrounding the brain or a baby developing in the womb. The team used the example of asbestos, another innovative material that was later found to be a carcinogenic, to demonstrate the possible implications to health.

Some nanoparticles display similar characteristics to asbestos.

Professor Sir John Lawton, chairman of the Royal Commission, warned that nanotechnology is in danger of becoming like genetically modified crops (GM), with science forging ahead without public understanding or trust.

Professor Vicki Stone, Professor of Toxicology at Napier University in Edinburgh, said nanoparticles have been found to be toxic in the laboratory and that tests now need to be carried out to see if this will affect

humans.

A Department for Environment, Food and Rural Affairs (Defra) spokesman said “The Government remains committed to researching their [nanoparticles] health and environmental impact. In particular ministers are pushing in Europe to ensure that effective regulation is in place. EU and UK reviews of existing legislation have concluded that the existing regulatory framework can be changed to extend to nanomaterials.”

### Natural Nano

Nanoparticles are found naturally in nature. Milk is in fact an example of a nanotechnology in which incredibly small particles of protein are suspended in water.

Ricotta Cheese, which is made by creating the conditions for nanoparticles of protein to stick together to form gels, which give it that special texture, is another example of nanotechnology.

### Consumer Concerns Still Not Addressed

Whilst Governments are beginning to recognize the need for new laws to protect workers, the public and the environment from the risks of nanotoxicity, many commentators feel that nanotechnology is being commercialized largely outside of general public awareness or debate, and without any serious attempt to involve the community in decision making about its introduction.

Issues of ethics, democracy and nanotechnology’s broader socio-economic impacts have yet to register in the debate.

## UK: FSA Response to Nanotechnology Report

The Food Standards Agency (FSA) published its response in March to the House of Lords Science and Technology Committee report into nanotechnologies and food. The FSA said it welcomed the committee’s report and its recommendations, “many of which are already being taken forward”.

Across all manufacturing sectors, nanoscience and nanotechnologies have advanced in recent years and there is a range of innovative products on the market. Developments in the food industry are generally at an early stage but do have the potential to bring about benefits to both consumers and industry.

The Science and Technology Committee’s report, which was published in January 2010, provides a detailed analysis on a range of important issues, including research into health and safety implications, regulation and public engagement.

Some recommendations are in areas such as research coordination and public information about nanotechnologies, and are wider than just food. In these

cases the recommendations will be implemented by other Government Departments with input from the FSA where this is necessary – for example in research strategy and public engagement.

The Government response to the committee’s report is consistent with the UK nanotechnologies strategy (published on 18 March 2010) and it includes cross-references to actions set out in the strategy, where these are relevant to the Select Committee’s recommendations.

The Government response, the Science and Technology Committee’s report, and more information about nanotechnology and the UK nanotechnologies strategy can be found at the links below.

See <http://www.official-documents.gov.uk/document/cm78/7857/7857.asp>

## Detection of Nanoparticles in Food

In the Netherlands, RIKILT – the Institute of Food Safety, part of Wageningen UR – recently kicked off the EU project, NanoLyse. The project was set up in order to develop methods for the detection of engineered nanoparticles in food.

Nanoparticles have chemical and physical properties that differ from larger particles and the individual atoms and molecules that make up those particles. They therefore may behave differently in humans and animals. While these new characteristics make applications in food and other areas an interesting prospect, they could also pose risks.

At present, there are no suitable methods for detecting the presence of nanoparticles in food reliably and simply. As a result, it is not possible to determine the level of exposure of consumers. This shortcoming was picked out by the European Food Safety Authority (EFSA) in 2009 as one of the most important knowledge gaps in the risk assessment of nanoparticles in food.

For this reason, research methods are being developed within NanoLyse for the detection and identification of a number of important types of nanoparticles in food. The information that can be gained through these measurement methods is essential for a reliable risk assessment by authorities, policymakers and the business community.

Within NanoLyse, RIKILT is working alongside universities, research institutes and small and medium-sized enterprises in various European countries and Canada. The project will run for three years.

See <http://www.rikilt.wur.nl>

# SPECIAL REPORT

## New Zealand: Supplemented Food Standard

By David Panasiak\*

After a long wait, amendment to the New Zealand Dietary Supplements Regulations 1985 came into effect on 31 March 2010. These became effective immediately and removed permission for foods to be dietary supplements. Transitional provisions for a period of two years relating to food-type dietary supplements have been built into the new Supplemented Food Standard which came into effect at the same time. ([Http://www.nzfsa.govt.nz/policy-law/legislation/food-standards/index.htm](http://www.nzfsa.govt.nz/policy-law/legislation/food-standards/index.htm))

The new Supplemented Food Standard brings the New Zealand system closer to the dual system in Australia, where there are foods and therapeutics and nothing in between. Dietary supplements will now be restricted to therapeutic-type products similar to complementary medicines in Australia. New Zealand Supplemented Foods would be illegal foods if they were produced in Australia or imported into Australia from anywhere except New Zealand. The mutual recognition treaty between the two countries means that, as food products in New Zealand, they could be exported to Australia and sold with impunity. In his article on the NZFSA website, Chief Executive Andrew McKenzie (<http://www.nzfsa.govt.nz/publications/ce-column/2010/2010-03-ce-web-column-dsr.htm>) states that the new standard will bring labelling of food-type dietary supplements into line with the more stringent requirements of foods under the Australia New Zealand Food Standards Code (ANZFS). Labelling of Supplemented foods will more closely resemble other foods with the exception that they must carry the name "Supplemented Foods" prominently on the pack to distinguish them from other foods. Of course, the effectiveness of this new regime will only be as good as the enforcement efforts undertaken by the NZFSA. Enforcement of the Dietary Supplements Regulations has been sadly missing for a number of years, but this may change.

It has long been requested that the Dietary Supplements Regulation be updated to include more modern sweeteners – acesulphame K and sucralose in particular – even though it has been evident that some products on

the market contained these substances, albeit illegally. Proposed amendments were first circulated in a discussion paper in 2004 and then resurrected in 2007. The 2004 amendments were much simpler, with proposed new permissions for sweeteners among other minor changes. The 2007 amendment went much further and suggested the whole separation of food-type and therapeutic-type dietary supplements, in preparation for the then proposed Joint Australia New Zealand Therapeutics Agency; this proposed agency died during gestation. However, the Supplemented Food Standard covering food-type dietary supplements and the amended Dietary Supplements Regulations 1985 go a long way to making the New Zealand and Australia regulatory systems more compatible.

The labelling and composition requirements for Supplemented Foods will resemble the requirements of the Food Standards Code and, importantly, food hygiene and safety measures under the NZ Food Act will apply to supplemented foods. There is still a huge gap between the formidable requirements for complementary medicines in Australia and minimal requirements for dietary supplements in New Zealand. However, that is a matter for the Australian Therapeutics Administration and MedSafe in New Zealand to resolve. Until that is done, dietary supplements will remain illegal imports into Australia.

Supplemented Foods are defined as products that are represented as food that have been somehow modified – perhaps by the addition of substances not normally permitted in general foods, or added in quantities not permitted in general foods – to perform a physiological role beyond the mere provision of nutrition. Although many aspects of the Australia New Zealand Food Standards Code (ANZFS) have been adopted by reference into the Supplemented Food Standard, certain foods may NOT be Supplemented Foods – formulated meal replacements or formulated supplementary foods (Standard 2.9.3), formulated caffeinated beverages (Standard 2.6.4). Interestingly, sports foods (Standard 2.9.4) are not excluded. Other exclusions are dietary supplements, medicines, controlled substances and alcoholic beverages or intoxicating foods.

In an explanatory note the New Zealand Food Safety Authority (NZFSA) made it clear that the Supplemented Food Standard is seen, by the Authority at least, as a temporary solution until a Supplemented Food Standard is adopted into the ANZFS. Personally I think the wait will be longer than the wait for this 'interim' standard. The Australia New Zealand Food Regulation Ministerial Council is still working on a policy

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\* David Panasiak is a food regulation consultant in Canberra with Food Liaison.

See [www.foodliaison.com.au](http://www.foodliaison.com.au)

guideline on the intent of Part 2.9 (Special Purpose Foods) of the ANZFSF (<http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-pgdev>)

The New Zealand Supplemented Food Standard appears to be at odds with this process and also possibly pre-empts the Council of Australian Governments In-

dependent Review of Food Labelling Law and Policy (<http://www.health.gov.au/internet/main/publishing.nsf/Content/mr-yr10-dept-dept25022010.htm>). However, New Zealand is a sovereign country and has the right to regulate food as it sees fit. New Zealand has been patiently waiting for Australia to regulate Dietary Supplements with no apparent progress.

## Global Food Supplement Associations Meet to Define World Regulation

The global food supplement industry recently gathered in Istanbul for the Annual Meeting of the International Alliance of Dietary/Food Supplement Associations (IADSA) to address the scientific and regulatory issues shaping the future of legislation across the world in the sector.

The meeting brought together members from Asia, Europe, Latin America, Russia and the United States to establish priorities for action. It was agreed that:

- The IADSA Scientific Programme would be extended to cover the substantiation of claims and best practice in the regulation of botanical ingredients in supplements
- That a global framework for good manufacturing practice (GMP) would be developed. This will bring together elements of existing GMPs from across the world
- That cooperation would continue with governments across Asia and Latin America as priorities

- That IADSA should monitor closely developments in the EU, and particularly on the health claims Regulation, in view of the global importance of the EU in regulation.

Peter Zambetti, the newly elected Chairman of IADSA, highlighted the importance of harnessing the combined expertise and networks of the members across the world.

“IADSA is an organisation that continues to move from strength to strength,” said Peter Zambetti. “We have to move forward on engaging in more education and training for decision-makers, whether in government or science.

“It is vital that whatever regulatory and policy solutions are arrived at across the world, the interests of the whole supplement sector are protected”.

The next annual meeting will be held in Anaheim, to coincide with the Natural Products Expo West Trade Show.

See [www.iadsa.org](http://www.iadsa.org)

The editors of *World Food Regulation Review* invite readers to contribute articles about food regulation to be considered for by-lined publication. We are interested in updates on regulatory, legislative, or legal developments from around the world, as well as longer analytical articles on current topics in the regulation of the food and agriculture industries. While the publication maintains an emphasis on food safety, the scope of coverage also includes trade policy and environmental concerns. Prospective authors should contact Bob Yorke, Managing Editor, World Food Regulation Review, Research Information Ltd., Grenville Court, Britwell Road, Burnham, Bucks, SL1 8DF, UK. Tel: +44 (0)1628 600499. Fax: +44 (0)1628 600488. Email: [bobyorke@researchinformation.co.uk](mailto:bobyorke@researchinformation.co.uk). If submitting an article via e-mail, please attach it as a file prepared in plain text, Microsoft Word or Rich Text format.

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# SPECIAL REPORT

## Climate and Environment – Food Watch

Monitoring news and developments in the areas of climate change, bio-diversity issues and other environmental factors relevant to food safety and quality.

### Introduction

It is now apparent that hopes that delegates from 192 nations meeting in Copenhagen last December could reach agreement on binding targets for greenhouse gas emissions were fantasy. Comment has since been made that 'no agreement is better than a bad deal', but there is obviously considerable doubt as to what would be a 'good deal'. The 'accord' reached between key world leaders doesn't solve immediate problems.

National enforceable targets for emissions in both rich and poor countries – and the costs and contributions to be resolved – mean that the 'circus moves on' to further meetings in 2010.

In the UK, the coldest winter for 30 years, hacked emails casting doubt on the science of climate change, and a damaged national economy, have no doubt resulted in many more sceptics on the subject. However, much action is being taken around the world to reduce emissions, and governments are increasingly aware of the dangers – both environmental and political – of doing nothing.

'Climate and Environment – Food Watch' will keep an eye on future developments and report on issues relevant to reader's interests.

**Mike Jacob**

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### The Daily Telegraph

#### French Oysters (01/08/09)

Oyster beds in France have been struck by a mystery disease that has killed millions of oysters and plunged the industry into a crisis for a second year. The first wave of deaths came in May in the Mediterranean – including Corsica and the Etang de Thau, a salt water lake near Montpellier – and also the west coast in the bay of Arcachon. The second wave struck oyster growers as far away as Normandy.

This follows a crisis in 2008 when the oyster industry was similarly hit by the worst outbreak of disease since the native European or "Portuguese" oyster was all but wiped out 30 years previously. Since that time almost all oyster farms in Europe have been restocked with the Pacific "creuse" oyster from Japan and British Columbia.

Scientists at Ifremer, the French Institute for Exploration of the Sea, believe that the combination of a virus and up to 3 types of bacteria may play a role in the disease. Warmer sea temperatures – perhaps related to

global warming, may also be partly responsible, as they weaken the young oysters and increase the amount of plankton the baby shellfish eat so they gorge themselves to death. Toxic algae and chemicals could also be factors.

Oyster farmers have asked the government for emergency funding on a similar scale to 2008, when it provided £32 million.

Producers say the death of baby oysters should not deter the consumption of mature shellfish as they are unaffected and pose no health risk to humans.

#### Industrialise the Countryside (12/09/09)

The comment "ruin the countryside or face black-outs" was based on comment from Professor David Mackay, the Chief Scientific Adviser at the Department of Energy and Climate Change. His view is that new energy sources are not being built fast enough.

Public opposition to wind farms and nuclear power stations is creating a looming crisis, with Britain increasingly having to buy electricity from abroad. The government targets of 40% of the country's energy needs being met by wind, solar and other green sources by 2020 are dismissed as hopelessly over-optimistic.

One alternative to the industrialisation of the UK's countryside is to make such use of land, in places abroad, where there is lots of sunshine and where the job of growing energy crops more productively than the UK can be possible.

A building programme to cater for the alternative to renewables – nuclear and so called 'clean coal,' which is as yet an unproven technology – would have to be enormous.

#### Complacency on Food Production (29/08/09)

Charlie Brooks writes (in response to the recent Department for Environment, Food and Rural Affairs (Defra) analyses on food security), that since April 2002 in the UK, 7,300 dairy farmers have gone out of business, 467 of them in 2009, so that we now have a half million fewer dairy cows in the country than 10 years ago. However, we also have more people now drinking milk and eating cheese.

The Department for Children, Schools and Families imports 100% of its mutton lamb and bacon, 94% pork, 91% beef, 98% apples. He drew attention to the apparent lack of concern that the Royal Society for the Protection of Birds is trying to turn 677 hectares of productive agricultural land on Wallasea Island in Essex into a nature reserve.

Since 1997 the area of fruit and vegetable production in Britain has fallen by 36,000 hectares and in 2005 a

joint Treasury/DEFRA document stated that ‘domestic food production was neither a necessary nor sufficient condition for food security.’

### The Guardian

“By 2050, 25m more children will go hungry” (30/09/09)

Food shortages and soaring prices for staples such as rice, wheat, maize and soya beans will follow if global warming goes unchecked, writes Suzanne Goldenberg. All regions of the world will be affected, but the most vulnerable – south Asia and sub-Saharan Asia – will be hardest hit by falling crop yields, according to a report prepared by the International Food Policy Research Institute (IFPRI) for the World Bank and the Asian Development Bank.

The children of 2050 will have fewer calories to eat than those in 2000 and the effect would be to wipe out decades of progress in reducing child malnutrition.

UN Secretary General Ban Ki-moon is pressing the World Bank and the industrialised world to step up investment in seed research and to offer more affordable crop insurance to the smaller farmers in developing countries. He said that although prices have stabilised, the world’s food system is still in crisis.

#### Oxfam Appeal

On 29th September 09, Oxfam launched a \$152 m appeal on behalf of 23 million people hit by severe drought and spiralling food prices in Kenya, Ethiopia, Somalia and Uganda. The charity called it the worst humanitarian crisis in Africa for a decade

#### IPRI Findings

Southern Asia, which made great advances in agricultural production during the 20th century, was singled out in the IFPRI report for being particularly at risk of food shortages.

Without an ambitious injection of funds and new technology, wheat yields could fall by more than 30% in developing countries, setting off a catastrophic rise in prices.

### International Herald Tribune

“Munching towards a healthier climate” (23/10/09)

Elizabeth Rosenthal writes about the new labels listing the carbon dioxide emissions associated with the production of foods – from whole wheat pasta to fast-food burgers – which are now appearing on grocery items and restaurant menus in Sweden.

The Swedish National Food Administration (SNFA) was tasked in 2008 with creating food guidelines, giving equal weight to climate and health. New dietary guidance has been produced which, for example, advises consumers to favour carrots over cucumbers and tomatoes because the latter two have to be grown in

heated greenhouses and consume energy. Preference for beans or chicken rather than red meat (because of the GHG’s associated with cattle) is another suggestion.

The SNFA acknowledges that it is hard for consumers to co-ordinate ‘environmental’ advice with “how can I eat more healthily”. However, experts state that if the new guidelines are religiously heeded, Sweden could cut its food production emissions by 20 -50%.

Surveys reveal that the majority of Swedes are willing to change their diet. Business groups, farming co-operatives and the government are engaged in co-ordinated ways to identify food choices. ‘MAX’ – Sweden’s largest home-grown chain of burger bars now puts emissions calculations next to each item on its menu boards. Sweden’s largest farming group labels some categories of foods (chicken, oatmeal, barley, pasta) similarly.

However, not everyone in Sweden is happy. Producers argue that the new programmes are overly complex and threaten profits. The meat industry, Norway salmon farmers and Malaysian palm oil growers have raised objections. However, consumption of red meat dropped 1% for the first time in Sweden in 2008 – the government says as a result of ‘climate awareness.’ New organic standards are also on the way, which will reflect low emission farming techniques.

#### “Australia’s Water Industry most innovative in the world because of Climate Change” (27/10/09)

Lisa Pham writes that Australia has experienced an extreme series of drought years in the past decade and, as a consequence, has developed innovative technologies to focus on efficiency in water use.

Modernisation of the existing canal infrastructure has involved the introduction of water control gates, measurement, software and telecommunication systems to increase water efficiency and raise crop yields.

The 3,700 mile canal system in Northern Victoria that distributes water to 10,000 farms has seen an efficiency increase from 60 to 90% in some areas, cutting annual waste by 450 million litres. Rubicon Systems – irrigation technology specialists who are involved in the project – also have two pilot systems in China and India and a presence in the USA.

In South Australia, another Australian company, Water Infra-Structure Group has introduced its Virginia Pipeline system, serving a greenhouse/market garden area north of Adelaide, which is one of the largest and longest running water re-cycling projects in the world. Since 1999 more than 1 billion litres of re-cycled water have been delivered to 320 customers, irrigating more than 200 different crops. Initial capital of \$19 million (Aus) and a recent extension of \$6.6 million has returned a \$1 billion benefit to South Australia.

Butler market gardens near Melbourne employs re-cycled water for washing lettuce and Asian vegetables prior to distribution to super-markets. Rain water har-

vesting is used for irrigation. The former conveyer system using some 80,000 litres of fresh potable water a day is no longer employed. The water recycling plant installed by Tripax Engineering in 2007 has cut water consumption by 95% to 2000-4000 litres/day.

The World Business Council for Sustainable Development reports that the industrialised countries need to up-grade systems investment to replace ageing water supply and sanitation infrastructure, could amount to expenditure of \$200 billion a year. The cost for the United States alone could amount to \$1 trillion over the next 20 years.

There is a massive potential global market for water products, services and technologies and the Australian industry is working hard to develop its export potential.

'Water Australia' is a new marketing organisation set up in 2009 to provide promotional aid for Australian companies in overseas markets.

#### "China's Green Water needs"

The trade service division of the Chinese Ministry of Commerce announced a plan to build 10,000 'green hotels' by 2012. These hotels will need to be outfitted with the latest in water treatment technology.

In 2007, China raised national standards for drinking water and established an inspection network to monitor quality. The Health Ministry added 71 benchmarks to the existing 35, but water sources are still considered unreliable.

Canadian companies are involved in introducing and up-grading purification systems to meet water safety and quality needs. China is engaged in a drive to improve water quality in both businesses and private homes. The overall programme for clean water technology in China is growing by 20% a year.

## Major Developments Imminent on Country-of-Origin Labelling

Proposals for European controls on Country of Origin labelling legislation are likely to reach a key stage in the decision-making process later this year. UK government agencies have been canvassing consumer opinion, as well as surveying what sort of origin statements are currently used on labels. The findings from these surveys are likely to influence the requirements placed on the food and drink industry.

In order to help the industry keep up to date with the latest developments and ensure that their product labels will be compliant with these changes and with new guidance, Campden BRI is holding a seminar on 14th May 2010.

John Hammond, Head of Information and Legislation Services at Campden BRI, said "The seminar will discuss the latest findings from FSA research and surveys, a new code of practice for labelling of pork products, and new guidance issued by FSA Scotland. We will also be looking at the role that analysis has to play in policing uptake of the legislation and, importantly, the potential costs to business. Speakers from Campden BRI, academia, government and industry will ensure that all aspects of this important topic will be covered."

For more information, email [d.davies@campden.co.uk](mailto:d.davies@campden.co.uk) or see <http://www.campden.co.uk/country-origin-seminar.htm>

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<http://www.foodregnews.com>

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# INTERNATIONAL FOOD SAFETY NEWS

To improve awareness of food safety issues throughout the world

## Editorial

As time goes by, we never seem to come any closer to achieving our objective of making safe the food that we eat; it seems that as soon as one organism comes under control another emerges to challenge our resourcefulness. So it was interesting to see a series of publications discussing the notion of a *Food Safety Culture*. While outbreaks of foodborne disease are often investigated, traditional approaches to identifying risk factors may not determine the real or underlying cause(s) of an outbreak. Therefore, the notion is proposed that, in the event of a food poisoning incident, a business' food safety culture should be considered in addition to the traditional risk factors. The evolution of a food safety culture starts with organizational culture though it is likely that, within large organizations or those with multiple sub units, more than one food safety culture exists. The authors discuss whether a business gets the food poisoning it deserves and they assess the role of management in outbreaks, including food safety culture. Factors influencing the likelihood of a business to be responsible for food poisoning are considered and discussed using 4 categories or variables. These are then applied in a case study of an *E. coli* O157 outbreak. The authors conclude that the risk of a business to cause food poisoning depends on the types of foods produced, the people consuming the food and where the business sources its raw materials. These need to be considered in relation to the hygiene behaviour of the food handlers employed. Food safety does not happen by accident and to produce safe food consis-

tently, especially on a large scale, requires management. Management includes the systems that are used and the organizational food safety culture of compliance with those systems. The authors consider that food poisoning will never be totally prevented; however, to a considerable extent, a business does get the food poisoning it deserves. Finally, failure to comply with food safety requirements can be widespread and this is both an individual behavioural and a managerial problem. The concept of food safety organizational culture, whilst largely ignored in the past, is attracting increasing interest and a possible framework for assessing a business' food safety culture is considered. A total of 6 possible groupings have been identified as 'culture' factors that could contribute to food safety performance; these comprise food safety management systems and style, food safety leadership, food safety communication, food safety commitment, food safety environment and risk perception. These groupings can form the basis for assessing food safety culture and the authors discuss how this may be done practically, which is of value to auditors, environmental health practitioners and industry. Thus, this concept could help improve compliance with third party hygiene standards, and reduce the risk of food poisoning.

The concept of a food safety culture is admirable and might have helped prevent 6 food poisoning outbreaks, totalling 23 cases, caused by staphylococci that were reported in France in 2009. Soft cheese made from unpasteurised cows' milk was

found to be the common source. Staphylococcal food poisoning results from the ingestion of staphylococcal enterotoxins (SE) preformed in food by enterotoxigenic strains of coagulase-positive staphylococci and was confirmed through (i) the high count of coagulase-positive staphylococci in cheeses from each of the 6 outbreaks, (ii) the detection of staphylococcal enterotoxin in the incriminated cheese type and (iii) the detection of the *see* gene in coagulase-positive staphylococci isolates from the suspected cheese samples. To date, 21 staphylococcal enterotoxins have been described of which staphylococcal enterotoxin type E (SEE) was identified and quantified in the cheese. The patients suffered from nausea, vomiting, abdominal cramps and diarrhoea, in some cases associated with fever, with an incubation period ranging from 1¼h to 8h. Three cheese batches of cheese (I, II and III), produced during a 2-week period by the same fromagerie from a single milk storage tank, were involved in the 6 outbreaks. Coagulase-positive staphylococci were isolated from cheese samples at numbers of  $>1.5 \times 10^5$  cfu/g although no cheese samples were available for outbreaks 4 and 5 while coagulase-positive staphylococci could not be detected in the cheese sample from outbreak 6 as this cheese had been heated before consumption. SEE was detected in cheese samples, including the cheese sample from outbreak 6, and quantified in amounts ranging from 0.36 to  $>1.14$  ng/g.. A rapid recall of con-

Continued on rear cover

## NEWS

### Pathogens Carried Over During Slaughter from Animals to Carcasses

The results of a nationwide study coordinated in Germany by the Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung; BfR) indicate that *Campylobacter* and *Salmonella* can frequently be detected at the time of slaughter. The pathogens reach the slaughterhouse in intestinal contents or on the feathers of the animals and can then be carried over during slaughter to the carcasses. From there they reach the food chain and then consumers. According to the report published by BfR, *Campylobacter* were detected on 62 percent and *Salmonella* on 17.6 percent of the 432 carcasses examined in Germany. In 48.6 percent of the slaughter groups *Campylobacter* were detected in the intestinal contents of the animals. The study is part of an investigation which was conducted in 2008 in all Member States of the European Union (EU). The results of the EU study were published on the same day by the European Food Safety Authority (EFSA). *Campylobacter* and *Salmonella* are the most frequent pathogens of bacterial gastrointestinal diseases in man.

“Chicken is the main source of foodborne *Campylobacter* infections,” said BfR President Professor Dr. Dr. Andreas Hensel, “and infections with *Salmonella*, too, can often be traced back to chicken”.

Particular attention should therefore be paid to kitchen hygiene when preparing chicken. Poultry meat should only be consumed once it has been heated thoroughly. This inactivates not only *Campylobacter* and *Salmonella* but also other potential pathogens. Furthermore, the meat

should be stored and prepared separately from other foods to prevent the carry-over of pathogens to other foods.

The contamination of carcasses with *Campylobacter* was far lower in the cold winter months than in the summer. Also the amount of *Campylobacter* on the contaminated carcasses varied considerably from only a few germs to more than 100,000 germs per gram chicken. If *Campylobacter* were detected in animals from one slaughter batch, then the probability that the carcasses in this batch were also contaminated was particularly high (93 percent positive findings). In the case of carcasses from the slaughter groups that tested negative for *Campylobacter* in the intestines, the detection rate was 33 percent. Around 80 percent of the *Campylobacter* detected were *Campylobacter jejuni* whereas *Campylobacter coli* accounted for approximately 20 percent. This corresponds to the distribution observed in human infections, too.

Besides *Campylobacter*, *Salmonella* were also frequently detected on the carcasses. In this context 14 different *Salmonella* serovars were detected. The three serovars *Salmonella* 4,12:d:-, *Salmonella typhimurium* and *Salmonella paratyphi* B (dT+) together accounted for more than half (55 percent) of the detections. Already, in an earlier study on the incidence of *Salmonella* in broilers, the frequent detection of the serovars *Salmonella* 4,12:d:- and *Salmonella paratyphi* B (dT+) had been observed in this poultry species.

EU-wide, 71.2 percent *Campylobacter* were detected in the intestines of the slaughter groups of broilers and 77 percent on the carcasses. The detection rates in the Member States were between 2 percent and 100 percent for detection in

the intestines and between 4.9 percent and 100 percent for detection on the carcasses. The values obtained for Germany were, therefore, lower than the EU average.

EU-wide 15.7 percent of the carcasses were contaminated with *Salmonella*. The most frequent serovars were *Salmonella infantis* and *Salmonella enteritidis*; however the frequent detection of *Salmonella infantis* reflects the very high level of contamination of animals in one Member State.

See [http://www.bfr.bund.de/cm/208/grundlagenstudie\\_zum\\_vorkommen\\_von\\_campylobacter\\_spp\\_und\\_salmonella\\_spp\\_in\\_schlachtkoerpern\\_von\\_masthaehnen\\_vorgelegt.pdf](http://www.bfr.bund.de/cm/208/grundlagenstudie_zum_vorkommen_von_campylobacter_spp_und_salmonella_spp_in_schlachtkoerpern_von_masthaehnen_vorgelegt.pdf)

### Canada: *Salmonella* in Red and Black Pepper

The Canadian Food Inspection Agency (CFIA), Health Canada and the Public Health Agency of Canada (PHAC) say they are working with the United States Food and Drug Administration (FDA) on an investigation into a *Salmonella* contamination of black and red pepper in the United States.

The affected pepper was recalled by two spice companies in the United States. The CFIA is now investigating other potentially contaminated products that may have used the affected pepper, such as spices and seasonings. Products that can contain the affected pepper can pose a health risk to consumers. A number of food recalls have already occurred in the US and Canada.

At the time of writing, there had been no confirmed illnesses in Canada to date relating to the consumption of the products recalled in Canada.

Consumers may not be able to tell from ingredient lists if black or red pepper is in the food because it is often a part of a seasoning mix. It is therefore necessary to be aware of

the list of recalled products, and to dispose of them if encountered. If whole black peppercorns cannot be identified by the original brand or code, consumers are advised to check with the place of purchase.

As is usual with *Salmonella* infections, older adults, pregnant women and those with pre-existing medical conditions are more vulnerable to long-term complications.

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## USA: Injunction Sought Against La. Sprout Grower ...

In March, the United States Department of Justice, in an action initiated by the US Food and Drug Administration (FDA), sought a permanent injunction against a sprout grower in Louisiana, its manager, and the company production manager.

The complaint charges the defendants with violating the Federal Food, Drug, and Cosmetic Act by “preparing, packing, and holding sprouts under insanitary conditions, where they may have become contaminated with filth”.

“The agency has repeatedly warned the company over several years that corrective actions need to be taken in this facility,” said Michael Chappell, acting associate commissioner for regulatory affairs at the FDA. “While no illnesses have been reported to date, this action is necessary to ensure that it remains that way.”

The ready-to-eat sprouts are distributed to wholesale suppliers, who in turn distribute them to customers located in Gulf Coast states, including Louisiana, Mississippi, Alabama, Florida, and Texas.

Five FDA inspections over the past nine years, including an inspection conducted between August 2009 and September 2009, revealed that the defendants failed to imple-

ment basic food sanitation principles and practices for their sprout growing operation, according to the complaint.

The complaint alleges violations that include equipment and facilities that were unclean or unable to be sufficiently cleaned, insanitary employee practices, and a poorly maintained facility.

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## ... and NY Dairy Farmer

A New York State dairy farmer cited by the US Food and Drug Administration for selling cows that had illegal residues of antibiotics was ordered by the US District Court for the Western District of New York in March to stop offering the animals for slaughter until he complies with federal law.

A federal judge entered a consent decree of permanent injunction on March 25 against the the sole proprietor of a farm in New York state, which sells its dairy cattle to an auction yard to be slaughtered for human consumption.

The FDA complaint said the farmer has sold cows for slaughter for at least 10 years with residues of the antibiotics penicillin and sulfadimethoxine in the animals’ edible tissue. The agency also said he illegally gave the cows higher-than-allowed dosages.

“The sale of animals for animal-derived human food products that contain illegal levels of animal drugs poses a significant public health risk,” said Bernadette Dunham, D.V.M., Ph.D, director of FDA’s Center for Veterinary Medicine. “FDA will continue to take action against producers who violate federal laws intended to protect the health of the public and of livestock.”

The farm was most recently inspected between Oct. 6 and Oct. 21, 2009, and the farmer was given a written report detailing the viola-

tions. After FDA issued a warning letter in 2006 requiring him to abide by the law, violations continued.

The US Department of Agriculture (USDA), which has the responsibility for detecting drug residues in beef sold for human consumption, cited the farm owner six times in the past 10 years.

The farm also failed to keep adequate records of which cows were medicated, according to the complaint.

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## USA: Update on *Salmonella* Montevideo Outbreak

As part of the *Salmonella* Montevideo investigation, the United States Food and Drug Administration (FDA) has been “actively investigating” the supply chain of black and red pepper supplied to a Rhode Island company. [See also the story above re. Canadian action.]

The Centers for Disease Control and Prevention (CDC) reports that 252 people have been infected with a matching strain of *Salmonella* Montevideo in at least 44 states and the District of Columbia. Analysis of an epidemiologic study comparing foods eaten by individuals who were sickened identified salami/salame as a possible source of illness (see <http://www.cdc.gov/salmonella/montevideo/index.html>)

The Rhode Island company has recalled a variety of ready-to-eat Italian-style meats after *Salmonella* was associated with its products. A complete listing of the recalled products, which are regulated by the US Department of Agriculture’s Food Safety and Inspection Service (FSIS), can be found at: [http://www.fsis.usda.gov/News\\_&\\_Events/Recall\\_006\\_2010\\_Products/index.asp](http://www.fsis.usda.gov/News_&_Events/Recall_006_2010_Products/index.asp)

As a result of the investigation, a number of spice products are now

being recalled by two spice companies, based in New Jersey and New York State.

Both companies sell products directly to commercial customers, who may have incorporated them into their own products.

Restaurateurs, foodservice operators, and consumers should not use the products being recalled by either of these companies.

The FDA says it continues to work with the companies concerned to identify customers who received the recalled product and determine if further recalls are necessary. Consumers are being encouraged to check FDA's website for the latest company recall information.

The FDA has collected 190 composite pepper samples, which represent more than 4,800 subsamples, at various locations in the supply chain.

### "A Closer Look"

The FDA says it is in the process of "taking a closer look" at the handling of spices from farm to table, and in the spring of 2009 began work on a spice risk profile. A risk profile is designed to capture the current state of knowledge related to an issue and identify any knowledge gaps. This particular profile focuses on microbiological contaminants and filth issues related to spices. Some members of the spice industry have already agreed to provide data to FDA, which believes that the risk profile will provide "vital information to risk management decision-makers and will help the Agency determine the best way to mitigate foodborne illness issues associated with spices". Specifically it can help FDA determine how to allocate resources, whether guidance for industry or for FDA inspectors is appropriate, or even the need for new rulemaking.

*Salmonella* can cause serious and sometimes fatal infections in young children, frail or elderly people, and others with weakened immune sys-

tems. Healthy persons infected with *Salmonella* often experience fever, diarrhoea (which may be bloody), nausea, vomiting and abdominal pain. In rare circumstances, infection with *Salmonella* can result in the organism getting into the bloodstream and producing more severe illnesses such as arterial infections (infected aneurysms), endocarditis and arthritis.

See <http://www.foodsafety.gov/poisoning/causes/bacteriaviruses/salmonella.html>

## EU: 2008 Zoonoses Report

The European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC) have published their Annual Report on Zoonoses and Food-borne outbreaks for 2008. The report gives an overview of zoonotic infections shared in nature by humans and animals, and disease outbreaks caused by consuming contaminated food. The report shows that the number of human cases of the three most reported zoonotic infections was lower in 2008 than in 2007.

Campylobacteriosis remained the most frequently reported zoonotic infection in humans across the European Union (EU), with 190,566 cases notified in 2008 (down from 200,507 in 2007). In foodstuffs, *Campylobacter*, which can cause diarrhoea and fever, was mostly found in raw poultry meat. In live animals, *Campylobacter* was found in poultry, pigs and cattle.

*Salmonella*, the second most reported zoonotic infection in humans, decreased significantly for the fifth consecutive year, with 131,468 cases in 2008 compared to 151,998 in 2007, representing a 13.5% decrease. It remained however the most frequent cause of food borne outbreaks. *Salmonella* was found most frequently in raw chicken, tur-

key and pig meat. In animal populations, an important decline of the *Salmonella* type Enteritidis – the type most frequently affecting humans<sup>1</sup> – was observed in laying hen flocks<sup>2</sup>.

2008 was the first year in which EU Member States implemented a new programme put in place by the EU Commission to reduce the prevalence of *Salmonella* in laying hens<sup>3</sup>; 20 Member States have already met their reduction target for that year. This could be the reason for a decrease of *Salmonella* Enteritidis infections in humans, since eggs are known to be the most important source for these infections, the report said.

"It is worth noting that the number of *Salmonella* cases is declining both in animals and humans. The findings in the report support the Commission and Member States in reducing the prevalence of zoonoses in the EU," said Hubert Deluyker, EFSA's Director of Scientific Cooperation and Assistance.

Andrea Ammon, ECDC's Head of Surveillance Unit, added "It is encouraging to note the overall decline for most of the zoonotic diseases covered by the report. However, there is no room for complacency and the report serves to highlight the importance of the joint efforts between ECDC and EFSA in providing valuable data for the reduction of zoonotic diseases."

With 1,381 confirmed cases in 2008, *Listeria* infections showed a decrease of 11% compared to 2007. Although less frequent in humans compared to *Campylobacter* and *Salmonella*, *Listeria* is known to have a high mortality rate, the most affected being vulnerable groups such as the elderly. In foodstuffs, the study found *Listeria* above the legal safety limit in some ready-to-eat foods, mostly in smoked fish and heat-treated meat products and cheeses.

Reported cases of Q fever in hu-

mans increased from 585 in 2007 to 1,599 in 2008<sup>4</sup>. This disease, caused by the bacterium *Coxiella burnetii*, results mainly from the inhalation of contaminated dust around infected cattle, sheep and goats. Q fever causes flu-like and gastrointestinal symptoms such as fever and diarrhoea. In animals, the highest infection rates were reported in goats.

Verotoxigenic *Escherichia coli* (VTEC) accounted for a total of 3,159 human infections in the EU, representing nearly a 9% increase from the previous year. Among animals and foodstuffs, VTEC was most often reported in cattle and bovine meat. The number of cases of *Yersinia* in humans in 2008 was 8,346, a 7% decrease from 2007, with the bacterium found mostly in pigs and pig meat.

The report also gives an overview of food-borne outbreaks in 2008: 5,332 were recorded, affecting over 45,000 people and causing 32 deaths. Most of the outbreaks were caused by *Salmonella* (35%) followed by viruses and bacterial toxins. The most frequent food sources of these outbreaks were eggs and egg products (23%), pig meat and derived products (10%) and buffet meals (9%).

The report, which covers 15 zoonotic infections, also provides data on other zoonoses, such as brucellosis, bovine tuberculosis and rabies, and the two parasitic zoonoses trichinellosis and echinococcosis.

The full version with data per country and annexes is available on EFSA's and ECDC's websites.

1. *Salmonella* Enteritidis and *Salmonella* Typhimurium were the most frequently reported types of *Salmonella* in humans (representing together 79.9% of human cases).
2. In a baseline survey carried out in 2004-2005, 18.3% of laying hen flocks were positive for *Sal-*

monella Enteritidis in the 23 Member States that participated and in 2008 3.1% of the laying hen flocks were found positive in the 25 Member States that reported data.

3. In accordance with Regulation (EC) No 2160/2003, these control programmes aim at reaching the *Salmonella* reduction target set by Regulations (EC) No 1003/2005 and No 1168/2006 and cover the following types: *S. Enteritidis*, *S. Typhimurium*, *S. Infantis*, *S. Virchow* and *S. Hadar* in breeding flocks and *S. Enteritidis*, *S. Typhimurium* in laying hen flocks.
4. EFSA is presently working on an opinion on Q fever in farmed animals in the EU and the risk it may pose to public health. The results of this opinion will be available later in 2010. A new key topic section on Q fever is available on EFSA's website

See <http://www.efsa.europa.eu/en/scdocs/scdoc/1496.htm>

## EU: *Campylobacter* and *Salmonella* in Chicken

The European Food Safety Authority (EFSA) has also published the results of a survey on *Campylobacter* and *Salmonella* in chicken at slaughterhouses in the European Union. In most EU Member States, a high prevalence of *Campylobacter* was found in chickens, whereas *Salmonella* was less frequently detected. These zoonoses are the cause of the two most reported food-borne diseases in humans in the EU: campylobacteriosis and salmonellosis. This was EFSA's sixth baseline survey on food-borne bacteria carried out at EU level and the first to directly investigate the presence of *Campylobacter* and *Salmonella* in chickens at slaughter.

All Member States<sup>1</sup> participating in the survey carried out in 2008 reported *Campylobacter* in the chickens they sampled. The samples were taken at the beginning and at the end of the slaughter line, that is when the chickens arrive at the slaughterhouse and when their carcasses are chilled after slaughtering, respectively. On average, the bacterium was found in the intestines of 71% of chickens, indicating that they were already infected when alive, and on 76% of sampled carcasses, which suggests some further contamination during slaughtering. The survey shows that these figures varied greatly between Member States. The survey follows a recent opinion of EFSA's Biological Hazards (BIOHAZ) Panel which confirmed that poultry meat appears to be a major, if not the largest, source of *Campylobacter* infection in humans<sup>2</sup>.

The survey also says that 22 Member States reported *Salmonella* in the chicken carcasses they sampled. On average, 15.7% of sampled carcasses were found to be contaminated, although figures varied between Member States. Of the various types of *Salmonella*, 17 Member States reported the types Enteritidis and Typhimurium, which are responsible for most *Salmonella* infections in humans.

The aim of the survey was to provide comparable figures for all participating Member States in order to give an overview of the prevalence at slaughter of *Campylobacter* in chickens and of *Campylobacter* and *Salmonella* in chicken carcasses<sup>3</sup>. The survey also sets out recommendations, in particular for further research on factors affecting the spread of *Campylobacter* in chicken meat production and on best methods for surveillance and control of *Campylobacter*<sup>4</sup>.

The data in the survey were collected from slaughtered chickens and their carcasses randomly selected from slaughterhouses within

each participating country. The sampling took place throughout 2008; a total of 10,132 samples were tested from 561 slaughterhouses in 26 EU Member States and Norway and Switzerland.

1. 26 Member States and Norway and Switzerland participated in the survey.
2. In its “Scientific Opinion on Quantification of the risk posed by broiler meat to human campylobacteriosis in the EU” EFSA’s BIOHAZ Panel concluded that the handling, preparation and consumption of broiler meat may directly account for 20 to 30% of human cases of campylobacteriosis in the EU.
3. The present survey only takes into consideration the occurrence of *Salmonella* in chicken carcasses samples. EFSA has already carried out a survey on *Salmonella* in live chicken flocks.
4. Control measures for *Salmonella* are already in place in the EU. Member States follow a compulsory *Salmonella* control programme for chickens and *Salmonella* criteria are also set for chicken meat and other types of meat. More information on the EU reduction programmes for *Salmonella*.

See <http://www.efsa.europa.eu/en/scdocs/scdoc/1503.htm>

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## EU: Overview of Dioxin Levels in Food and Feed

The European Food Safety Authority (EFSA) published an analysis in March of the levels of dioxins and related substances in food and animal feed. The report, which was prepared by EFSA’s Data Collection

and Exposure unit, is based on over 7,000 samples collected by 21 European countries between 1999 and 2008. EFSA was asked by the European Commission to evaluate dioxin contamination levels in relation to maximum levels which have been set for different categories of food and feed in the EU in order to protect consumers.

Dioxins, and similar compounds such as dioxin-like polychlorinated biphenyls (PCBs), include a range of toxic substances which are formed by burning – e.g. through waste incineration or forest fires – and some industrial processes. Their presence in the environment has declined since the 1970s, following concerted efforts at the EU level.

Dioxins are found at low levels in many foods. They do not cause immediate health problems, but long-term exposure to high levels of dioxins has been shown to cause a range of effects, including cancer. Their persistence, and the fact that they accumulate in the food chain – notably in animal fat, therefore continues to cause some safety concerns.

The highest average levels of dioxins and dioxin-like PCBs in relation to fat content were observed for liver and liver products from animals. The highest average levels in relation to total product weight were for fish liver and products derived from fish liver. In animal feed, the highest average levels were found in fish oil.

Overall, 8% of the samples exceeded the different maximum levels set out in EU legislation. However, some of these samples clearly originated from targeted sampling during specific contamination episodes. There were also large variations between different groups of food and feed in terms of the proportion of samples which exceed maximum levels.

The report concludes that no clear trend can be established regarding

changes in background levels of dioxins and related substances in food and feed over time, as there were increases in some categories but decreases in others. Furthermore, occasional contamination episodes and a lack of information on which samples resulted from targeted or random sampling make it difficult to assess such trends.

The current EU method for measuring overall dioxin levels is based on toxicity values for different types of dioxins recommended by the World Health Organisation (WHO) in 1998. EFSA was also asked to assess the impact on total dioxin levels of using toxicity values set out in WHO recommendations from 2005, which downgraded the relative toxicity of certain types of dioxins. The report finds that using the new values would reduce overall dioxin levels by 14%, although the extent of this reduction was very different across food and feed categories.

Finally, the report recommends continuous random testing of a sufficient number of samples in each food and feed group to ensure accurate assessments of the presence of dioxins and dioxin-like PCBs.

See <http://www.efsa.europa.eu/en/scdocs/scdoc/1385.htm>

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## France: New Data Helps Fine-tune Fatty Acid Reference Intakes

In order to prevent the major illnesses potentially linked to eating habits (cardiovascular disease, diabetes, obesity, cancer), the most important rule is to balance caloric intake and energy requirements, according to the French Food Safety Agency (Agence Française de Sécurité Sanitaire des Aliments; AFSSA). In addition to avoiding excess caloric intake, AFSSA also recommends that the proportion of fats eaten should be between 35 to 40%, a

range which most French people generally comply with, although 43% of adults and 34% of children surpass this limit.

French population reference intakes (ANCs) for different types of fatty acids have been established to cover physiological requirements and to prevent certain illnesses.

The French population consumes excessive levels of saturated fatty acids (on average 15% of caloric intake, versus a recommended ANC of under 12%). Saturated fatty acids include lauric, myristic and palmitic acid which are atherogenic<sup>1</sup> when consumed in excess amounts. However, other short and medium-chain saturated fatty acids can have positive effects on health.

Polyunsaturated fatty acids include:

- Alpha-linolenic acid, a precursor of the omega-3 family, and linoleic acid, a precursor of the omega-6 family, which are essential nutrients; however since linoleic acid must not be consumed at the expense of alpha-linolenic acid, AFSSA has recommended increasing the ANC recommendation for this nutrient
- Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are long-chain omega-3 fatty acids. AFSSA has set the ANC for EPA for preventing cardiovascular disease. It has also increased the ANC for DHA, essential to cerebral development and function.

AFSSA therefore recommends a fat intake that is neither too low, nor too high. This stems from the fact that lipids have beneficial effects on health — provided that a variety of both plant- and animal-based fats are included in the diet in order to balance intake of the various fatty acids. Aside from palm oil (very high in palmitic acid and found in many

manufactured food products), consumption of a variety of vegetable oils is recommended (canola/rape-seed oil and walnut oil are the primary sources of alpha-linolenic acid). Fish should be eaten twice a week, including oily fish which is virtually the only source of DHA and EPA.

The above information should make it possible to fine-tune the guidelines and objectives of the French National Programme for Nutrition and Health (PNNS). These data will also enable AFSSA to analyse the composition of the main foods containing fatty acids, and to formulate recommendations for consumption for the general population based on these data and additional scientific research.

1. Atherogenic substances favour the accumulation of cholesterol-rich plaque on the internal walls of the arteries.

## Product Recall System “Raises Bar” for Mitigating Risk

FoodTrack Inc. has announced the development of a new, patent pending product recall system designed to mitigate risk, protect consumer health and improve the effectiveness of the product recall process. Available later this year, Recall Control is intended by FoodTrack to become the most comprehensive product recall system available.

The Recall Control Platform is described as “a real-time, bi-directional, interactive gateway that provides multi-tiered recall notification and lifecycle management for the food and consumer products industries”. It is designed to reach the most remote corners of the supply chain on a global basis and to provide a cost-effective means for industry-wide participation to ensure compliance.

## Product Removal Time Shortened

Presently, product recalls can take weeks to execute due to the complexity of the global supply chain, the sheer number of trading partners involved, and the many disparate systems found within distribution channels. When recall information normally moves downstream, what can be thousands of affected trading partners need to individually contact their respective stores or distributors to remove products from shelves or distribution. Sending confirmations of removal back upstream can be equally challenging as data trickles in at a snail’s pace.

Now, via a single integrated platform and customizable Recall Control Form containing pertinent data relating directly to a specific trading partner, Recall Control places a recalling firm and its trading partners in an environment said to provide “real-time on-screen desktop notification, dynamic progress reports and other proprietary automated response tools to accomplish in days what could otherwise take weeks”.

This otherwise daunting task is achieved via a proprietary client-side software application that can be customized according to a company’s individual needs. The software not only integrates with a company’s own legacy software systems but when a recall is executed by a recalling firm, the platform’s publishing tool enables instant upload to the web-enabled Recall Control Platform.

## At a Glance

When a recalling firm enters or drags data into the Recall Control Form, it can be sent selectively or via a blanket notification that simultaneously uploads to the online Recall Control Platform. These same data move downstream and integrate with real time onscreen dashboards where individual trading partners easily input status information on the

fly. As updated information is entered, the data automatically moves back upstream to their own trading partners or suppliers, as well as to the original recalling firm and supervising regulatory agencies.

This is designed to accomplish a fully integrated, user-friendly automated response process where every trading partner is in the loop. For regulatory agencies, this could mean enormous savings as resources for Federal, State and Local effectiveness checks can be more efficiently utilized.

### Industry-wide Participation

For industry, product recalls equate to billions of dollars in lost revenue between the cost of removing products, internal staff time, and litigation proceedings that generally follow. By shortening the lifespan of tainted or affected products remaining on shelves, both industry and consumers benefit.

To ensure virtually 100 percent participation, via required registration among trading partners, the manufacturers say the Recall Control Platform “will be affordable for companies of all sizes”. It was introduced at the Consumer Goods Forum Global Food Safety Conference in Washington, DC, in February and will be available to industry later this year.

See [www.recallcontrol.com/factsheet.htm](http://www.recallcontrol.com/factsheet.htm)

## UK: Antimicrobial Resistance Report Published

A report on antimicrobial resistance in the UK has been published by the Veterinary Medicines Directorate.

The report summarises data collected in 2007 (or for the most recent previous year where there are no data from 2007) from across the UK for a

range of bacterial organisms of medical and veterinary importance in the UK. This information was collated from a variety of sources, including surveys of healthy people, animals and food, as well as from the results of tests on medical or veterinary clinical diagnostic samples.

The UK Food Standards Agency (FSA) contributed data on the types and amounts of foods of animal origin purchased within the UK and the antimicrobial resistance of isolates of *Campylobacter* and *Salmonella* obtained during three food surveys.

The report has been produced in response to a recommendation in a report on *Microbial Antibiotic Resistance in Relation to Food Safety*, published by the Advisory Committee on Microbiological Safety of Food (ACMSF). A key recommendation of the ACMSF report was that the organisations responsible for monitoring antimicrobial resistance in animals, people and food should work together to produce a report summarising antibiotic resistance in the food chain in the UK.

[http://www.vmd.gov.uk/Publications/Antibiotic/AMR\\_Overview\\_07.pdf](http://www.vmd.gov.uk/Publications/Antibiotic/AMR_Overview_07.pdf)

## UK: *E. coli* Report Welcomed

The Food Standards Agency (FSA) has welcomed the publication of the Consumer Focus Wales report: *Protecting consumers from E.coli O157*.

The report refers to progress by the Agency and others in implementing the recommendations in the Pennington report on the Public Inquiry into the *E. coli* outbreak in South Wales in 2005. The Agency says that it agrees that, while much has already been done, there is more still to do.

Although the Pennington report was concerned with outbreak in South Wales, the Agency is address-

ing its recommendations on a UK-wide basis. The Agency is looking at all major causes of foodborne illness, not just *E. coli*; looking at all foods, not just at meat; and taking actions across the UK, not just in Wales. It has established a Food Hygiene Delivery Programme, the purpose of which is to minimise the level of foodborne disease through:

- Improved awareness and control of food safety hazards by food businesses, food law enforcers and consumers
- Reliable assurance that compliance with legal standards is maintained, using timely, effective and proportionate enforcement where necessary.

The work programme runs until 2016 and the FSA says it has set out when Professor Pennington's recommendations will be delivered (see appendix 1 at the link below). As part of this work, a substantial review of food hygiene enforcement in Wales will take place in 2014.

Steve Wearne, Director of the Food Standards Agency in Wales, said “The Agency's core role is to put the consumer first and we want food that is produced or sold in the UK to be safe to eat. We are always looking for new ways to combat foodborne illness. There will always be more challenges and our work will continue through the next five years and inevitably beyond.”

One of the points raised in the Consumer Focus Wales report is the need for the Agency to provide guidance to environmental health officers on the use of separate machinery for raw meat and ready-to-eat foods. This guidance will address managing the risk of cross-contamination by *E. coli* O157 through cleaning and will provide advice on the dual use of equipment. The Agency plans to consult on this guidance in the near future.

See <http://www.food.gov.uk/news/press-releases/2010/mar/fsaresponsecfwreport>

## **CAMPYLOBACTER**

A continuous common-source outbreak of campylobacteriosis associated with changes to the preparation of chicken liver pate

In Dec. 2006 an outbreak of *Campylobacter* infection occurred in Forth Valley, Scotland, UK, affecting 48 people over a 3-wk period. All cases dined at the same restaurant (restaurant A). A cohort study of a party of 30 who ate lunch at restaurant A on 21 Dec. was performed to identify the vehicle of infection. Of 29 respondents, the attack rate in those who ate chicken liver pate was 86% (6/7) compared to 0% (0/22) for those who did not. Results showed that between 1 Dec. and 1.30 pm on 21 Dec. the restaurant had used a different method of cooking the pate to that normally employed. No cases reported dining at the restaurant after this time. The duration of the outbreak suggested a continuous source of infection. This is the 1st continuous source outbreak of *Campylobacter* documented in Scotland. Chicken liver pate was found to be the most likely vehicle of infection. It is concluded that this outbreak illustrates the hazards associated with undercooking *Campylobacter*-contaminated food.

O'Leary MC et al. *Epidemiology and Infection* 2009, 3, Food poisoning from raw fruit and vegetables, 383-388.

### **Danish strategies to control *Campylobacter* in broilers and broiler meat: facts and effects**

Thermotolerant *Campylobacter* spp. have been the most common bacterial cause of human gastrointestinal disease in Denmark since 1999. In 2003, the Danish voluntary strategy to control *Campylobacter* was intensified. The focus was on biosecurity, allocation of meat from *Campylobacter*-negative chickens

to the production of chilled products, and consumer information campaigns. Results showed that between 2002 to 2007 the percentage of *Campylobacter*-positive broiler flocks at slaughter decreased from 43–27%. After processing, *Campylobacter*-positive samples of chilled chicken meat fell from 18% in 2004 to 8% in 2007. Furthermore, the number of registered human *Campylobacter* cases decreased by 12%; from 4379 cases in 2002 to 3865 cases in 2007. It is concluded that the observed decrease in the occurrence of *Campylobacter* in chickens and chicken meat and the coincidental fall in the number of registered human cases is, in part, a result of the implemented control strategy.

Rosenquist H et al. *Epidemiology and Infection* 2009, 137(12), 1742–1750.

### **Detection probability of *Campylobacter***

A rapid presence/absence test for *Campylobacter* in chicken faeces is being evaluated to support the scheduling of highly contaminated broiler flocks as a measure to reduce public health risks [Nauta, M. J., & Havelaar, A. H. (2008). Risk-based standards for *Campylobacter* in the broiler meat chain. *Food Control*, 19, 372-381]. Although the presence/absence test is still under development, an example data set of test results is analysed to illustrate the benefit of the detection probability concept. The detection probability of *Campylobacter* increases with the logarithm of the *Campylobacter* concentration in faeces according to an S-shaped curve which stretches about 2-3 log units. The detection probability is 50% at a *Campylobacter* concentration of  $7.4 \times 10^6$  cfu/g. The uncertainty in the detection probability is 32% at the most

for a 90% confidence interval. This type of information allows for realistic calculations on the *Campylobacter* status of different food processing paths after splitting. Usable quantitative estimates on detection probability await a data set of test results from a test that is ready for use or has similar properties.

Evers EG et al. *Food Control* 2010, 21(3), 247–252.

### ***Helicobacter pylori* and gastric adenocarcinoma**

Gastric cancer is the second most common cause of cancer death worldwide. A large body of evidence supports a causal role of *Helicobacter pylori* in the majority of gastric malignancies. Great strides have been made in understanding the pathogenesis of this relationship, but much remains to be learned. Moreover, because of the high prevalence of infection, the lack of definitive trials, and the challenges of *H. pylori* treatment, there remains no consensus on the role of routine screening and treatment of this infection to prevent cancer. This article reviews the current knowledge on *H. pylori* and gastric cancer and presents some of the clinical and public health challenges associated with this pathogen.

Herrera V and Parsonnet J. *Clinical Microbiology and Infection* 2009, 15(11), 971–976.

Abstracts: Many of the abstracts in this issue were taken from the FSTA – Food Science and Technology Abstracts® database produced by IFIS Publishing, Lane End House, Shinfield Rd, Shinfield, Reading RG2 9BB UK.

Tel: +44 (0)118 988 3895. Fax: +44 (0) 118 988 5065. Email: ifis@ifis.org. Web: www.foodsciencecentral.com

## FUNGI

### Dominance of Group 2 and fusaproliferin production by *Fusarium subglutinans* from Iowa maize

*Fusarium subglutinans* is an important toxigenic pathogen of corn. Recently, 2 cryptic species (Groups 1 and 2) have been described within *F. subglutinans*, but little is known about the occurrence of the 2 groups in North America or their relative capacities to produce mycotoxins. In this study, 58 *F. subglutinans* strains from kernels of corn grown in Iowa, USA, were evaluated for cryptic speciation and production of the mycotoxins fusaproliferin and beauvericin. Results showed that 56 of the 58 strains (97%) belonged to Group 2, and 2 strains belonged to Group 1, based on RFLP derived from amplification of histone H3 and  $\beta$ -tubulin gene fragments. 54 Group 2 strains and both Group 1 strains produced fusaproliferin at concn. ranging from 12 to 3000  $\mu\text{g/g}$  of solid corn culture. None of the *F. subglutinans* strains from Iowa produced beauvericin at detectable amounts, although most *F. subglutinans* strains from Europe and elsewhere are beauvericin producers. These results indicate that *F. subglutinans* strains infecting corn kernels in Iowa belong almost exclusively to Group 2 and that they have a high potential for fusaproliferin production; furthermore, the results confirm an association between Group 2 genotypes and lack of beauvericin production. This is the 1st report characterizing the phylogenetic groups of *F. subglutinans* occurring in Iowa; the predominance of Group 2 suggests that populations of the fungus in Iowa and Europe remain isolated from each other. Results indicate that fusaproliferin contamination of grain is a risk wherever *F. subglutinans* occurs, but beauvericin contamination from *F.*

*subglutinans* is associated only with Group 1.

Munkvold GP et al. Food Additives and Contaminants: Part A — Chemistry, Analysis, Control, Exposure and Risk Assessment 2009, 26(3), 388–394

### Occurrence of deoxynivalenol and its major conjugate, deoxynivalenol-3-glucoside, in beer and some brewing intermediates

Since deoxynivalenol (DON), the main representative of *Fusarium* toxic secondary metabolites, is a relatively common natural contaminant in barley, its traces can be detected in many commercial beers. In this study, 176 beers representing various brands were collected from various markets and tested for the presence of DON and its major conjugate, DON-3-glucoside (DON-3-Glc). The ubiquitous occurrence of DON-3-Glc in the products was revealed. Its level even exceeded that of free DON in some samples; the highest level was 37  $\mu\text{g/l}$ . In addition to glucosylated DON, its acetylated forms were also common contaminants in most of the beers. Generally, stronger beers (higher alcohol content) tended to contain higher levels of DON and its conjugates. No distinct relationship between the contamination of malt and beer was observed in samples collected from several breweries. Attention was also paid to comparison of data on malts obtained by LC-MS/MS and ELISA DON-dedicated kits. The latter provided apparently higher levels of DON, the most distinct difference being observed for malts processed at higher temp. (caramel and roasted malts). The nature of this phenomenon has not yet been explained; in addition to cross-reacting species, other factors, such as the higher content of dark

pigment, may be the cause.

Kostelanska M et al. Journal of Agricultural and Food Chemistry 2009, 57(8), 3187–3194

### Effect of reduced water activity and reduced matric potential on the germination of xerophilic and non-xerophilic fungi

Reduction in water activity ( $a_w$ ) is used as a microbiological hurdle to prevent food spoilage. To minimize the levels of salt and sugar, which are commonly used to reduce  $a_w$ , the potential of food structure as a microbiological hurdle needs to be assessed. The concept of matric potential ( $\psi_m$ ) is used to measure the effect of food structure on water movement. This study reports the effect of reduced  $a_w$  and reduced  $\psi_m$  on the germination of xerophilic fungi (represented by *Eurotium herbariorum*) and non-xerophilic fungi (represented by *Aspergillus niger*) on model glycerol agar media. Germination curves were plotted with the percentage of germinated spores against time. The germination time ( $t_G$ ), which is defined as the time at which 50% of the total viable spores have germinated, was estimated using the Gompertz model. Total viable spores was defined as those spores that were able to germinate under the optimum  $a_w$  and  $\psi_m$  conditions for each species, i.e. 0.95  $a_w$  and 2.5% agar for *E. herbariorum* and 0.98  $a_w$  and 2.5% agar for *A. niger*. As  $a_w$  decreased from 0.90 to 0.85  $a_w$ ,  $t_G$  increased significantly for both the xerophilic fungi and non-xerophilic species at equivalent matric potential values. When matric potential was reduced from -12 kPa (2.5% agar) to -38 kPa (12.5% agar),  $t_G$  of *A. niger* was significantly extended at 0.90  $a_w$ ; however,  $t_G$  remained the same for *A. niger* at 0.85  $a_w$ , and for *E. herbariorum* at 0.80, 0.85 and 0.90  $a_w$ . This study demonstrated that the germination time for non-xerophilic and xerophilic fungi was extended

by reduced  $a_w$ , however the effect of reduced  $\psi_m$  was limited.

Yang Huang et al, International Journal of Food Microbiology, article in press.

### Study of the phenotypic and genotypic biodiversity of potentially ochratoxigenic black aspergilli isolated from grapes

Ochratoxin A (OTA) is a mycotoxin with nephrotoxic, carcinogenic, teratogenic and immunotoxic effects, naturally found in agricultural products including grapes and wine. Black *Aspergillus* species (Section Nigri) are mainly responsible for OTA accumulation in wine grapes and in particular *Aspergillus carbonarius* and *Aspergillus niger* aggregate. The biodiversity of potentially ochratoxigenic strains of black aspergilli from different French vineyards in the southern Mediterranean region of Languedoc- Roussillon was studied. One hundred and eighty nine black strains were isolated from grapes and studied according to harvest year, production zone, grape variety and pre-harvest treatment of grapevines. The strains were identified and classified in two groups according to macroscopic and microscopic characters; these were called the *A. carbonarius* representative group and the *A. niger* aggregate representative group. Members of each group were classified in sub-groups based on macroscopic morphological colony characters. Strain biodiversity was studied according to phenotypic and genotypic characterization and to the OTA production of selected strains on PDA medium. After identification was confirmed by specific PCR using primer pair ITS1/CAR and ITS1/NIG, 24 potential ochratoxigenic strains belonging to *A. carbonarius* and *A. niger* aggregate were discriminated by RAPD-PCR using 8 different OPC primers. The use of specific primers supported the identification based on

phenotypic and morphological characters. RAPD-PCR patterns demonstrated a considerable diversity among the strains. Clustering among *A. niger* aggregate strains was associated with production zone and harvest year, but not grape variety or pre-harvest treatment. Clustering among *A. carbonarius* strains was not associated with any of the above parameters. OTA production of strains on culture medium seemed to correlate better with morphological characters than with genotypic profiles. No clear relation could be established between phenotypic and genotypic characters of the studied black aspergilli.

Dachoupan C et al. International Journal of Food Microbiology 2009, 132(1), 14–23

### Chemical composition, in vitro anti-microbial, antifungal and antioxidant activities of the essential oil and methanolic extract of *Hymenocrater longiflorus* Benth., of Iran

In this study we identified the chemical composition, anti-microbial and antioxidant effects of essential oil and methanolic extract of *Hymenocrater longiflorus* Benth. Totally 87 volatile compounds from the essential oil in *H. longiflorus*, were identified by gas chromatography–mass spectrometry (GC–MS). These compounds are mainly monoterpene hydrocarbons, sesquiterpene hydrocarbons, oxygenated monoterpenes and oxygenated sesquiterpenoids compounds. The anti-microbial and antifungal activity of plants extracts against several pathogenic microorganisms was studied by disc diffusion and minimum inhibitory concentration procedures. The results revealed that the essential oil and polar sub-fraction are effective mostly against *Staphylococcus aureus*, *Aspergillus niger* and *Candida albicans*. The antioxidant activity was also determined by

## US: Oysters and Norovirus

The US Food and Drug Administration (FDA) is working with state health officials from Mississippi and Louisiana to notify consumers, food service operators and retailers about an outbreak of norovirus associated with oysters recently harvested from an area in Louisiana in the Gulf of Mexico, near the mouth of the Mississippi. The oysters were sold or distributed nationwide.

The FDA was notified by state authorities that nearly a dozen consumers in Mississippi fell ill with norovirus after eating raw oysters from the affected area on March 10.

The Louisiana Department of Health and Hospitals has recalled oysters harvested from the affected area on March 6 through March 24, 2010. State health officials closed the area to harvesting on March 24 to protect the public health.

Public health officials are currently working to investigate potential sources of pollution that may have caused the area to become contaminated.

Eleven people reported becoming sick after eating raw oysters at a conference center in Jackson County, Miss. Test results by the Mississippi State Department of Health confirmed that the patients were infected with norovirus.

See [www.cfsan.fda.gov/seafood1.html](http://www.cfsan.fda.gov/seafood1.html)

1,1'-diphenyl-2-picryl-hydrazyl (DPPH) free radical scavenging,  $\beta$ -carotene linoleic acid assay and reducing power. In addition the total phenol of essential oil ( $54.6 \pm 1.2$ ), polar sub-fraction ( $50.0 \pm 1.4$ ) and non-polar sub-fraction ( $64.7 \pm 2.0$ ) were determined.

Ahmadi F et al. Food and Chemical Toxicology 2010, 48(5), 1137-1144.

# DIARY

## April 2010

■ *April 20, SOFHT Breakfast Club: Nanotechnology in the Food Industry*, Middleton, Staffs, UK; [Web: <http://www.sofht.co.uk/events/viewevent.asp?eID=77>]

■ *April 29, Food Allergen Thresholds – Implications for the Food Industry*, Chipping Campden, UK; [Web: <http://www.campden.co.uk/food-allergen-seminar.htm>]

## May 2010

■ *May 26, Antimicrobial Usage in the Food Industry*, Chipping Campden, UK; [Web: <http://www.campden.co.uk/antimicrobials-seminar.htm>]

## November 2010

■ *November 24, Nanotechnology in the Food Chain: Opportunities and Risks*, Brussels, Belgium; [Web: See <http://www.favv-afscs.fgov.be/nanotechnology/>]

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## IFSN Editorial

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taminated cheese batches by the French authorities prevented further cases. Due to the distribution across Europe of the incriminated type of cheese, the EU Member States were informed by the Rapid Alert System for Food and Feed.

Another organism currently in the news is *Coxiella burnetii*, the cause of Query fever (Q fever). Q fever is a mandatorily notifiable disease in the European Union and, until recently, a few hundred cases were reported annually, though it is known to be under-diagnosed and therefore under-reported; in 2009, however, a total of 2,357 new Q fever patients were registered in the Netherlands, with 6 deaths. The organism is associated primarily with goats and intensive animal husbandry is now associated with the emergence of a large Q fever epidemic, affecting human health significantly and raising questions about the intensive animal husbandry in the proximity of densely populated areas, as is the case in the Netherlands. It seems unlikely that the disease will spread geographically to areas with less intensive animal husbandry and at the pace noted in the Netherlands. Ongoing research confirms that abortion waves on dairy goat farms are the primary source of infection

for humans, primarily affecting people living close (under 5 km) to such a dairy goat farm. To reverse the trend of the last three years, drastic measures have been implemented, including the large-scale culling of pregnant goats on infected farms. There is consensus among public health and veterinary professionals that most of the human Q fever cases are linked to abortion waves on large dairy goat farms, and to a much lesser extent on dairy sheep farms although direct contact with non-dairy sheep has also caused a limited number of human cases. International literature suggests that a Q fever infection during pregnancy may lead to adverse pregnancy outcome in a large percentage of cases; however, this does not appear to have been demonstrated in the high incidence area of the Netherlands. There is a theoretical risk for transmission of *C. burnetii* through blood transfusion though the risk of infection is probably negligible. Q fever is now considered a major public health problem in the Netherlands and has recently led to drastic measures, including the large-scale culling of pregnant goats and sheep. Despite the strictest veterinary measures possible, Q fever is expected to remain a significant problem over the coming years. The control measures are aimed at stabilising the number of human cases in 2010, while the sustained compulsory vaccination campaign in small ruminants which is implemented in 2010 nationwide for target farms, is expected to eventually cause a drop in human cases in 2011 and subsequent years. Although it cannot be excluded that spores may spread through wind, so far, there are no signs that the Q fever problem is spreading to neighbouring countries.

And finally, on an optimistic note, the Food Safety Authority of Ireland (FSAI) has published a comprehensive guide to food law to assist artisan and small food producers who have started or are planning to start a new food business. The *Guide to Food Law for Artisan/Small Food Producers Starting a New Business* [That name trips off the tongue, don't you think? – Ed.] includes simplified summaries on food legislation including: General food law; Food hygiene; Microbiological criteria; Labelling and marketing standards; and Additives, packaging, contaminants and pesticides. It provides proactive advice, details of the law and a checklist on criteria required. The guide is free to download on the FSAI website. Alternatively, any additional queries in relation to setting up a new food business can be directed to the FSAI Advice Line on +353 1890 33 66 77 or [info@fsai.ie](mailto:info@fsai.ie). Well Done FSAI – Ed.

*Paul Neaves*