

Codex Alimentarius and Australia

The Codex Alimentarius, usually referred to simply as Codex, is a joint initiative of the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO).

Codex was established in 1962 to protect consumer health and ensure fair practices in world food trade. Australia has been an important contributor to Codex since its inception because food is one of our most important exports and we export more than half of all the food we produce. Codex Food Standards, Guidelines and Codes of Practice are a reference point for international food trade. The standards are now linked to World Trade Organization (WTO) agreements and may be used as benchmarks in WTO dispute settlement procedures.

The contact point in Australia, Codex Australia, is situated within the Commonwealth Department of Agriculture, Fisheries and Forestry. Codex Australia has distributed as widely as possible a brief publication titled *Lifting the lid on world food standards, What the Australian food industry needs to know about Codex*. This leaflet summarises the Codex process and its relevance to the Australian food industry. It also explains how to subscribe to receive specific Codex papers under consideration and a quarterly e-bulletin – *Setting the Standard* – which summarises up-to-date happenings in Codex. The leaflet and subscription information are available on the Codex Australia web site at www.codexaustralia.gov.au

Committee system

There are nine Codex committees and one task force that develop general standards which may be applied across the food industry. These include such important areas as food hygiene, additives and contaminants, pesticide residues and food labelling. Eleven separate committees and one task force develop specific standards related to food commodities, e.g. fish and fishery products, milk and milk products.

The Codex Alimentarius Commission, the governing body which oversees the committee system, chooses proposals for new international standards using a set of established criteria. All new proposals then go through an eight-step development process (see figure) before a new standard can be adopted by a full meeting of the Commission. This process can take many years to finalise.

Codex Australia coordinates Australia's position on draft Codex standards and seeks input from any interested parties in developing this position. It does this by a number of consultative mechanisms including the National Codex Committee and Codex Advisory Panels.

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Reproduced with permission from *Lifting the lid on world food standards*, Commonwealth of Australia, 2003

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Australian Food Safety Centre of Excellence - NEWS

2004 Food Safety Centre Industry Forum

The Australian Food Safety Centre of Excellence will be holding its second Annual Industry Forum at Food Science Australia (North Ryde) on Wednesday, 1 December 2004. This is the major public event on the Centre's calendar, and provides an ideal opportunity for interaction between the Centre and its stakeholders.

Food safety related issues are always on the radar of Australian food processors, and the Centre needs to know which industry issues are rising to the top of the priority list, so we and our stakeholders can plan to meet these challenges. Your input can help Centre management as we continually strive to increase the Centre's value to industry.

This year the Industry Forum will provide updates on activities within the Centre's four key programs (Strategic Science, Food Safety Education, Knowledge Transfer, Business Development), during which the Centre's Advisory Board and Management Team will seek input from delegates into priorities that should inform the Centre's strategic direction in the coming years.

The shape of the Centre in years to come will be a major focus for discussion at this year's Forum. Our core funding is currently provided through the National Food Industry Strategy Ltd – with the support of the Australian Government Department of Agriculture, Fisheries and Forestry. This valuable support is due to wind up in mid-2007. It is important that we start planning for this transition now.

Now is the time to mark this important event in your diary. To receive more details regarding speakers and other activities at the 2004 Food Safety Centre Forum, please register your interest via the web site www.foodsafetycentre.com.au/whatson.htm or phone **Cathy Moir**, Tel: +61 2 9490 8579.

Issue Update

For the latest on *acrylamide in foods* and other issues of interest to the food industry see the *Issues update* section on our web site www.foodsafetycentre.com.au

Research and Training Scholarships

As part of the Food Safety Centre's commitment to training and developing highly skilled food safety professionals, the Centre has announced a range of scholarships for full-time, part-time or external students.

Postgraduate scholarships:

- Up to \$24,000
- Research areas – adaptation and resistance to stress of foodborne microbial pathogens; ecology, physiology and functional genomics of foodborne microbial pathogens; food allergens; chemical contaminants; predictive modelling and risk assessment
- Projects can be undertaken at any of the four locations of the Food Safety Centre as appropriate to the research topic.

Honours scholarships:

- Up to \$10,000 to support students seeking to obtain BSc Hons in food safety science
- 12 scholarships are available
- Research areas – microbial physiology, molecular biology processing and preservation technologies, toxicology and mathematical modelling
- Projects can be undertaken at any of the four locations of the Food Safety Centre as appropriate to the research topic, but students will be enrolled at the University of Tasmania.

Other Training:

The Food Safety Centre also offers funds to support internships, and conducts course, workshops and training programs in food safety science.

Further information:

www.foodsafetycentre.com.au

Codex Australia stakeholder forum

Because of the limitations of these mechanisms and the growing need for Codex Australia to focus on those Codex activities of greatest importance to Australia, the National Codex Committee resolved in 2003 that the main forum for national consultation on broad Codex policy issues should be an annual stakeholder forum.

The first of these annual forums was held in Sydney in September of this year, attended by approximately 100 representatives of Commonwealth and State governments and industry.

Stakeholder forum outcomes

The forum was addressed by speakers from government and industry. Government speakers gave an outline of the consultative processes historically in place and clarified the relationship between domestic and international standards. They also discussed initiatives being undertaken to improve understanding of and participation by the processed food industry in Codex. This is now particularly important because of the increasing reference to Codex standards in WTO deliberations.

Speakers representing industry organisations which are currently actively involved in the development of Australian positions on key Codex standards, highlighted the reasons for their participation in the Codex process. This included the need for industry sectors to speak with one voice, the benefits of international harmonisation in such important areas as maximum residue limits, approaches to and requirements for food safety management, and to ensure that the Australian government is provided with accurate advice on what is achievable by industry in a commercial environment.

All speakers stressed the need for Codex to maintain a science based decision-making process and this had to be supported by relevant data being fed into the system.

Future

Following the discussion period, there was general agreement amongst participants that the forum had been useful and similar future meetings could aid the consultation process. The outcome of the forum is on the agenda of the October meeting of the Australian Government Codex Policy Committee with a possible forum in 2005 to focus more on the work of particular Codex committees.

Codex and food hygiene

Of particular interest to food safety and hygiene is the work underway in the Codex Committee on Food Hygiene. This committee aims to provide countries with agreed international benchmarks on both the best approach to food safety (i.e. conceptual guidance) as well as on hygiene standard setting for specific foods. Establishing international benchmarks will mean that food safety will be improved globally with more consistency in the approaches countries use to ensure food safety.

Codex standards are developed using a risk analysis framework and thus standards for food safety are based on sound science. This committee, in consultation with experts from the WHO and FAO have

developed guidance on concepts such as microbiological risk assessment, food safety objectives and the role of risk assessors and risk managers.

Two of the key conceptual issues being discussed now are the principles underpinning microbiological risk management and validation. These issues are at a very early stage in the Codex process and therefore it is a prime time to comment on your approaches to these activities.

This committee has also developed basic hygiene provisions for food (General Principles), and specific provisions for specified food groups (e.g. the milk and milk products code). It will continue to work on developing or revising hygiene requirements on priority issues. It is currently revising the Code of Hygienic Practice for eggs and egg products.

The next Codex Committee on Food Hygiene meeting will be in March 2005. For more information on key agenda items, visit the Codex web site at www.codexalimentarius.net or contact Codex Australia.

Food bioterrorism preparedness

Australia's preparedness to deal with bioterrorism including bioterrorism and the food supply is discussed in two recent papers.

The earlier of these papers (*Medical Journal of Australia* 176 2002 251) highlights the fact that Australia's federal system of government requires close collaboration between the Commonwealth, and States and Territories. Emergency service responses are coordinated by Emergency Management Australia. Public health agencies work with emergency services in the States and collaborate through Communicable Diseases Network Australia and the Public Health Laboratory Network to coordinate national reporting, surveillance, laboratory diagnosis of and public health responses to communicable disease outbreaks.

The second paper is a special report from the Commonwealth Chief Medical Officer titled *Protecting Australia from Communicable Diseases: Everybody's Business*. This is a wide ranging review primarily concerned with unintentional outbreaks of communicable disease but contains a section headed *Terrorism – Is Fear More Dangerous Than Disease?* The point is made that biological agents have limitations as weapons and the strategies to detect and control deliberate biological threats are similar to those used by authorities to deal with natural biological agents.

A review of Australia's policies and capacity in this important area has encompassed advice from various services including the Centres for Disease Control and Prevention (CDC) in the United States, the World Health Organization and the UK Public Health Laboratory Service.

The CDC has ranked biological agents that could be used as weapons into three categories taking into account the severity of the disease caused, the potential for the organism to spread and the disruption and panic that could be caused. Category A, the highest, includes the agents responsible for smallpox, anthrax, plague, botulinum toxin and a number of rare viruses.

Category B agents include those that are moderately easy to disseminate, cause moderate morbidity and low mortality and may require enhanced diagnostic capacity and surveillance. A subset of category B agents includes pathogens that are food or waterborne. These include:

- *Salmonella* species,
- *Shigella dysenteriae*,
- *Escherichia coli* 0157,
- *Vibrio cholerae*, and
- *Cryptosporidium parvum*.

The CDC also has compiled categories of chemical agents which might be used in a terrorist attack (*Morbidity and Mortality Weekly Report* 49 2000 1). The priority order for these chemicals is based on the following criteria:

- chemical agents known to be used as weaponry,
- availability of chemical agents to potential terrorists,
- chemical agents likely to cause major morbidity or mortality,
- potential of agents for causing public panic and social disruption, and
- agents that require special action for public health preparedness.

The CDC has also outlined its intention to develop a multilevel laboratory response network with four functional levels depending on the degree of specialisation of the laboratory and the level of biosecurity and bio-safety available.

The Commonwealth Government has two separate initiatives in place to strengthen this country's capacity to deal effectively with the threat of bioterrorism. One of these involves developing a register of laboratories handling pathogenic microorganisms and accompanying security aspects while the other focuses on a register of laboratory capability to work with a range of potential bioterrorism agents. While the emphasis is on biological agents, laboratory capability with chemical agents could also be included.

In a separate initiative an industry/government group, the Food Chain Assurance Advisory Group (FCAAG) is developing a draft national strategy to address key gaps identified in its own strategic analysis of the existing food safety and security system. As with other similar countries, Australia has a comprehensive system of government and industry procedures to ensure the safety of the food supply. These arrangements focus on natural or accidental contamination of the food supply. It is now necessary to ensure these systems are sufficiently robust to deal with the potential for acts of deliberate contamination.

Further information on FCAAG can be obtained from:

Alan Edwards, Department of Agriculture, Fisheries and Forestry, Tel: +61 2 6272 4513.

Prevalence of *Escherichia coli* 0157 in cattle

Escherichia coli 0157 is an important foodborne pathogen. Fortunately foodborne incidents associated with this organism in Australia are rare but its effects are frequently severe. In addition, it is a major public health concern in some countries which import Australian beef, especially the USA which has its own testing regimes.

The prevalence and concentration of *E. coli* 0157 in cattle faeces have been identified as important factors which influence the risk associated with the consumption of contaminated beef products in the USA. As information on the presence of *E. coli* 0157 at the various stages of production is being accumulated, the factors that can influence the faecal shedding of the organism by cattle are being identified. These include an animal's age, diet and husbandry.

In Australia, beef cattle are produced on pasture or are finished on grain – supplemented diets in feed lots (lot fed). Food Science Australia workers have recently published the results of a study to determine if the diet and husbandry practices in these two production systems correlate with the prevalence and numbers of total *E. coli* and *E. coli* 0157 shed by cattle raised in each system (*Journal of Applied Microbiology* 97 2004 362).

For the purposes of this study, lot fed animals were defined as those fed a grain enriched diet for at least 60 days prior to slaughter. The number of lot fed cattle sampled in each State was determined by the number of cattle on feed in Australia. The number of grass fed cattle sampled from each State was determined from that State's production as a percentage of total national production. The survey was conducted during the period of widespread drought in Australia and this may have changed husbandry practices in some areas, influencing the results of the survey.

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The workers found that there was no significant difference in the prevalence of toxigenic *E. coli* 0157 between grass fed and lot fed cattle at slaughter. *E. coli* 0157 were isolated from 15 percent of faecal samples from lot fed cattle and 10 percent from grass fed cattle. A total of 310 samples were analysed.

This incidence is somewhat lower than reported in US lot fed cattle, 23–28 percent, and Italian cattle, 17 percent. Sample size and the method of analysis can affect estimations of prevalence.

There was also no significant difference between the number of generic *E. coli* shed by lot fed cattle and grass fed cattle.

The research workers conclude that while feeding history did not significantly affect the prevalence or numbers of generic *E. coli* or *E. coli* 0157 in cattle at slaughter, further studies are necessary. These could yield information that would help identify risks associated with carcass contamination from infected animals. Further data in this area is required to aid in the development of a whole-of-chain approach for managing the risks of exposure to *E. coli* 0157.

This research was co-funded by CSIRO and Meat & Livestock Australia.

For further information contact:

Dr Trish Desmarchelier or Dr Narelle Fegan at Food Science Australia,
Tel: +61 7 3214 2000.

OzFoodNet – foodborne illnesses in Australia 2003

Foodborne disease is a significant health issue both in Australia and overseas. OzFoodNet (established in 2000 – *Food Safety & Hygiene*, July 2004) estimates that each year approximately 5.4 million people become ill as a result of contaminated food. In addition, foodborne illness results in an estimated 17,770 hospitalisations and 125 deaths each year. The majority of people do not seek medical attention and do not appear in official notification statistics.

OzFoodNet has recently published *Foodborne disease investigation across Australia: Annual report of the OzFoodNet network, 2003* in *Communicable Diseases Intelligence* 28 2004 359. The report is also available at:

<http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/cda-pubs-cdipubs.htm>

The Annual Report states that in Australia, doctors and laboratories are required to notify cases of certain diseases to State and Territory health departments. In 2003, there were 23,250 reported cases of potentially foodborne diseases reported. The majority of these were bacteria that cause gastroenteritis. The two most commonly reported causes of gastroenteritis were *Campylobacter* and *Salmonella* bacteria that were responsible for 67 percent and 30 percent of these reports respectively.

Listeriosis is another important foodborne disease caused by infection with *Listeria monocytogenes* that can result in meningitis, septicaemia or abortion. While *Listeria* infections are uncommon, they pose particular risks to pregnant women, aged people, and those with weakened immune systems. In 2003, there were 72 listeriosis cases notified, with twelve infections in pregnant women or their fetuses. This was slightly higher than the historical reports average of 60 cases per year.

The rates of notified foodborne infections in Australia are similar to those reported in New Zealand, but considerably higher than rates reported for the United States. Reasons for this could include differences in laboratory testing between both countries or higher level of exposure to these infections in Australia.

In 2003, contaminated food in Australia was responsible for 99 outbreaks of gastroenteritis affecting 1,686 people, including 105 who were hospitalised and 6 who died. The types of contaminated food causing these outbreaks included fish, prawns, salad, chicken, tofu, fried rice, pizza, raw eggs and tahini. Significantly, frozen oysters from Japan were responsible for three outbreaks of Norovirus infection (*Food Safety & Hygiene*, July 2004). The most common place where outbreaks occurred was restaurants (34 percent), in private homes (20 percent) and events catered by professional companies (14 percent). These settings, along with aged care facilities, are high risk for serious outbreaks of foodborne disease.

In view of the overall burden of illness and the serious risks concerning some foodborne infections, OzFoodNet's work will continue to be important for monitoring, investigating and responding to foodborne illness.

This article was contributed by OzFoodNet. For more information contact:

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Correction

The article *Integration of the NSW food safety system in Food Safety & Hygiene* (*Food Safety & Hygiene*, July 2004) inaccurately describes the management of food safety in Victoria.

The Victorian Act does not divide food businesses on the basis of risk. Rather, the Act gives powers to the Secretary to declare classes of food premises of which there are currently two – Class 1 (the sale of high risk ready-to-eat food to vulnerable people) and Class 2 (all other food premises except those that retail low risk prepackaged food).

The Victorian Act does not state that food businesses be audited on the basis of risk. Class 1 food premises are required to have an annual third party audit. Class 2 food premises can choose between having their food safety program third party audited, or develop a standard food safety program from a state registered template and having compliance with it checked by local government.

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