

FOOD SURVEILLANCE

AUSTRALIA NEW ZEALAND

FOOD STANDARDS AUSTRALIA NEW ZEALAND
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UNDECLARED TREE NUT ALLERGENS IN FOOD: REPORT OF WA SCREENING SURVEY

BACKGROUND

Food allergies affect only a small proportion of the population; however the effects on a susceptible person consuming allergenic proteins can be detrimental to their health and potentially fatal. Only 1-2% of the total Australian population is affected by food allergies but the rate rises to 5-8% in children.

Food allergies, unlike food intolerances, are caused by an immune response to the ingestion of a particular substance or ingredient. Almost 90% of all food allergies are attributable to specific proteins derived from eight food groups: milk, eggs, fish, crustaceans, peanuts, soybeans, tree nuts and wheat.

In a survey of school children from 109 schools, the most common food allergies were found to be from milk and peanuts, followed by tree nuts, crustacean, eggs and wheat. The population prevalence of tree nut allergy in Australia is unknown. However, two preliminary studies conducted in NSW during 2002 have documented conservative tree nut allergy prevalence estimates of 0.24% and 0.73% respectively for pre-school aged children.

Tree nuts are a group consisting of almonds, brazil nuts, cashews, chestnuts, hazelnuts, hickory nuts, macadamia nuts, pecans, pine nuts, pistachios and walnuts. Although tree nuts cause fewer reported allergic reactions than peanuts, the reactions are equal in onset and severity to those for peanuts. → 6

EDITORIAL

Ian McKay Acting Assistant Secretary, Surveillance Branch, Office of Health Protection, Australian Government Department of Health and Ageing

The Office of Health Protection was established late in 2005 to bring together the following key functions required to sustain a health response to a national health emergency:

- enhanced surveillance for communicable diseases, including foodborne illness;
- health emergency planning and response coordination; and
- health protection policy.

More specifically, the Office of Health Protection will be responsible for:

- leading the health response to a national health emergency;
- managing the national medicines stockpile;
- developing health emergency response legislation;
- planning for supporting essential services in the event of a national health emergency;
- operating the National Incident Room;
- strengthening border controls to prevent disease entry;
- strengthening communicable disease surveillance;
- strengthening laboratory diagnostic capacity;
- investigating and helping to minimise foodborne illness; and

→ developing and managing communication strategies.

The structure of the Office of Health Protection is built around 3 Branches:

1. Emergency Planning and Response;
2. Health Protection Policy; and
3. Surveillance (which includes OzFoodNet and other aspects of food safety).

The inclusion of food safety in the Office of Health Protection is a reflection of the Australian Government's recognition that the OzFoodNet foodborne illness surveillance and investigation system is a key part of the national disease surveillance network, and the potential importance of the food supply in the context of terrorism. In addressing potential threats to the food supply, both accidental and deliberate, the Office of Health Protection is working to strengthen its collaboration with other agencies, particularly the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and FSANZ.

The OzFoodNet network consists of about 15 epidemiologists working in the state/territory health departments; 2-3 in the larger states and 1 each in the smaller states. The coordinating epidemiologist is based in Canberra, and is assisted by another epidemiologist and a surveillance coordinator. OzFoodNet is part of Communicable Diseases Network Australia, which is the communicable disease expert sub-group of the new Australian Health Protection Committee (AHPC). The AHPC was recently established to take over the role of the Australian Health Disaster Management Policy Committee.

OzFoodNet's work falls into three main areas:

- assessing the burden of foodborne illness through surveys of the community, diagnostic laboratories & physicians, surveillance activities and data from other external sources;
- studies to assess the causes of foodborne illness in Australia (this information is vital to inform the development of measures to tackle these illnesses); and
- research to improve the detection and investigation of outbreaks.

OzFoodNet has substantially enhanced our capacity to detect and investigate foodborne illness. This can, of course, be illness due to either accidental or deliberate causes. During each outbreak investigation early consideration is given to whether there are signs, such as an unusual clinical illness or disease agent, that the outbreak may be due to deliberate causes. If deliberate contamination is suspected then the matter would be referred to the appropriate security and police agencies. For outbreaks that are considered due to accidental contamination, standard investigative procedures are undertaken in collaboration with the states and territories and other Australian Government agencies.

The Office of Health Protection will continue to be closely involved with the surveillance activities coordinated by the Implementation Sub Committee (of the Food Regulation Standing Committee) and FSANZ, including the development of the national food safety incident protocol. More information on the Office of Health Protection is available from: [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/Office+of+Health+Protection+\(OHP\)-1](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/Office+of+Health+Protection+(OHP)-1)

CODE IMPLEMENTATION SURVEY: REVIEWING THE IMPACT OF OUR REGULATORY ARRANGEMENTS

WHY CONDUCT A CODE IMPLEMENTATION SURVEY?

In early 2005, FSANZ commissioned a survey of stakeholders to assess how well the regulatory arrangements of the new *Australia New Zealand Food Standards Code* were working. The new Code came into full effect in December 2002 after a two year transition period, replacing the former Australian *Foods Standards Code* and the New Zealand *Food Regulations 1984*.

Food Standards Australia New Zealand (FSANZ) plays a key role in developing and maintaining the *Australia New Zealand Food Standards Code*. FSANZ seeks advice on the Code from other government agencies and input from stakeholders, and works to ensure that the Code is consistent with food regulatory policies endorsed by the Australia and New Zealand Food Regulation Ministerial Council.

WHAT WAS THE AIM OF THE CODE IMPLEMENTATION SURVEY?

The survey aimed to collect baseline data on the extent to which the labelling and compositional standards in the Code met the following five objectives that guided the review of food standards:

- to reduce the regulatory burden on industry by reducing the level of prescription of food standards;
- to be easier to understand and make amendments more straightforward;
- to replace standards that regulated individual foods with standards that applied consistently across all foods or a range of foods;
- to consider the possibility of industry codes of practice as an alternative to regulation; and
- to facilitate harmonisation of food standards between Australia and New Zealand and between Australasia and international standards.

Previous FSANZ research projects have collected information on the impact of other key changes to the Code, such as those in the Food Additives standard and Food Safety standards.

National Food Handling Benchmark Survey Report: <http://www.foodstandards.gov.au/newsroom/publications/nationalfoodhandling1315.cfm>

Consumption of Intense Sweeteners in Australia and New Zealand Report: http://www.foodstandards.gov.au/_srcfiles/Intense_sweetener_Report_feb04.pdf

WHICH STAKEHOLDER GROUPS TOOK PART IN THE SURVEY?

The research was conducted with three key stakeholder groups:

- the food industry (small, medium and large manufacturing and retail food businesses);
- health professionals (nutritionists and dietitians); and
- government enforcement officers.

Consumers were not included in this survey as their views have been collected in previous research on a range of labelling issues including general labelling, nutrition content, allergen, food type dietary supplement, infant food and nutrition, health and related claim labelling.

WHAT VIEWS WERE SOUGHT IN RELATION TO THE NEW CODE FROM THESE STAKEHOLDER GROUPS?

Each of the three stakeholder groups were asked to provide their opinions on changes to the Code in relation to: awareness of the changes from the old Code to the new Code; the main advantages and disadvantages of these changes; the ease of understanding the new Code; the ease of understanding compared to the old Code; the sources of information on food standards issues used and their usefulness; and their involvement with developing food standards.

WHAT WERE THE MAIN FINDINGS OF THE SURVEY?

In summary, the survey found that all three stakeholder groups—food industry, enforcement officers and health professionals—had a high level of awareness of the labelling and food compositional standards areas that changed in the new Code. This was especially true for changes regarding the nutrition information panel requirements. Awareness of changes to date marking requirements followed, with the vast majority of the food industry and enforcement officers being more aware of changes to date marking than health professionals. Awareness of changes to requirements for warning and advisory statements and allergen labelling was also high, particularly among the food industry. The most frequently mentioned sources of information on the Code used by respondents included the FSANZ website and advice line (within Australia) NZFSA (within New Zealand) as well as peer groups/colleagues.

The new Code has had minimal impact on domestic, international and Australia/New Zealand trade within the food industry, though 25% food businesses reported that trade between Australia and New Zealand was easier. The harmonisation of the labelling and compositional standards between Australia and New Zealand has also had minimal impact on trade within the food industry.

More respondents from each stakeholder group mentioned advantages as a result of changes to the Code than disadvantages. Each stakeholder group mentioned a different main advantage most frequently. Similarly, the disadvantages mentioned by each stakeholder group varied. This was not surprising, given their different perspectives. Food industry organisations mentioned more information for consumers as the main advantage. The food industry mentioned the increase in demand for consumer information as the main disadvantage of the new Code, as it increased their workloads. Other FSANZ research with consumers (2003 quantitative labelling study) indicated a high interest in food labels, with 77% of consumers finding food label information useful when selecting food, reporting that generally this information was fairly clear and easy to understand.

ISC COORDINATED FOOD SURVEY WORKSHOP – ADELAIDE

The Implementation Steering Committee (ISC) held its first bi-annual Coordinated Food Survey Workshop for 2006 on 6 April in Adelaide. The aim of the workshop was to further progress bi-national surveillance and monitoring activities by finalising the draft ISC Coordinated Food Survey Plan for 2006-09. The workshop was attended by representatives of food regulatory agencies in Australia and New Zealand, including representatives from the recently established Office of Health Protection and Food Safety of the Australian Government Department of Health and Ageing.

The workshop was very productive, with multiple jurisdictions agreeing to participate in the surveys proposed for inclusion on the ISC Coordinated Food Survey Plan for the 2006-07 financial year. Two important outcomes of the workshop were: identification of possible surveys for the 2007-09 financial years, and agreement on the draft ISC Coordinated Food Survey Plan for 2006-09 financial years, which was endorsed by ISC at the meeting of 15 June 2006.

Approximately one third of food businesses also reported difficulties with applying labelling and/or compositional standards, particularly small to medium businesses.

Link to 2003 labelling report: <http://www.foodstandards.gov.au/newsroom/publications/foodlabellingissuesquantitativeresearchconsumersjune2003/index.cfm>

For enforcement officers, the main advantage was that the new Code was easier to use and clearer with regards to date marking. On the other hand, some officers found the labelling and compositional standards more difficult to understand.

Among health professionals, the most frequently mentioned advantage was better allergen labelling, followed by more information for consumers. At the same time, they said that the new Code makes labelling and compositional information more difficult for consumers to understand.

Most survey respondents from each stakeholder group had not been involved in standards development, either in making an application for an amendment to the Code or lodging a submission to a proposed standard. Those who had participated in the standards development process reported that it was now easier to identify where a change was needed to amend the new Code. However, a proportion did report difficulties in preparing applications or in reading and understanding our technical reports prior to making submissions.

WHERE TO FROM HERE?

FSANZ will consider the issues raised in this report in more detail and use the information to assist in the current internal review of our processes following the FRSC Review and to inform future planning.

BENZENE IN FLAVOURED BEVERAGES SURVEY

Overseas agencies have recently reported the presence of benzene in some beverages. In the past, testing by the United States Food and Drug Administration also confirmed the presence of benzene in some soft drinks. Reformulation of some soft drinks was said to have resolved the issue in some cases, but not all manufacturers have reformulated. In early 2006 independent testing in the United States found levels of benzene 2-5 times the World Health Organization (WHO) water quality guideline levels of 10 parts per billion (ppb) (or 0.01 milligrams per litre). The news created international interest, with the United Kingdom, Germany and South Korea all conducting tests. Following this international interest and findings of low levels of benzene in soft drinks and other beverages, FSANZ investigated a range of Australian beverages.

Benzene is widely distributed in the environment. Although benzene is a known carcinogen, the health risks to humans based on consumption are not clear. Most people are exposed to a small amount of benzene on a daily basis, both in the outdoor environment and in the workplace. Exposure of the general population to benzene is mainly through breathing air that contains benzene. This includes traffic pollution (benzene is present at 1-2% in most petrol blends), air around petrol stations and from both active and passive smoking.

Benzene can be formed at very low levels in beverages that contain both ascorbic acid (vitamin C) and sodium benzoate. Sodium benzoate [211] is a permitted food preservative that may be added to many food products to ensure the microbiological safety of the food. Ascorbic acid [300] is also an approved food additive (antioxidant) which may be added to drinks. It also occurs naturally in fruit and fruit juices. Ascorbic acid reacts with metals (copper, iron) found in water to form hydroxyl radicals, which react with benzoic acid to form low levels of benzene.

Worldwide there is no specific benzene limit for soft drinks and drinking water limits vary from country to country. The WHO drinking water guideline is 10 ppb which is used in the UK and New Zealand, other water guidelines are 5 ppb in the US and 1 ppb in Europe and Australia. The National Health and Medical Research Centre (NHMRC) Water Quality Guidelines are not mandatory standards, however they provide a guide for determining the safety and quality of drinking water. Benzene levels are likely to be higher in beverages where benzoic acid and ascorbic acid are deliberately added to ensure microbial safety.

FSANZ sampled and tested 68 flavoured beverages purchased in the ACT and NSW. The survey results are not representative of all flavoured beverages as the sampling was targeted mainly at beverages that were more likely to contain benzene and included; cola and non cola soft drinks, flavoured mineral waters, cordial, fruit juice, fruit drinks, energy drinks, and flavoured/sports water. Of the 68 samples FSANZ has tested, 29 detected levels of benzene above 1 ppb were found, only four of which were above 5 ppb and 5 above 10 ppb. The range of detections was <1 to 40 ppb.

The UK FSA reported that their initial testing of 230 products found 38 products above the UK water limit of 1 ppb and below the WHO's water limit of 10 ppb. Four products contained benzene levels between 10 and 28 ppb. The UK FSA has recalled a number of products with benzene levels found above the 10 ppb. South Korea has also recalled several products found to be over the 10 ppb figure. Within the USA the majority of the beverages tested showed either no detection or levels below 5 ppb. Health Canada found 30% of their 67 samples contained benzene at levels above the analytical detection limit of 1 ppb, six products contained elevated levels of benzene above the 10 ppb. Health Canada is working with their food industry to reduce benzene levels in the affected products but is not recalling any products at this stage.

The European Commission Institute for Health and Consumer Protection have produced a report that examines the quantification of human exposure characterisation of chemicals including benzene. Table 1 shows a general daily exposure to benzene, indicating total food and beverage consumption are minor contributors to overall exposure.

SOURCE OF EXPOSURE	ESTIMATED EXPOSURE	SOURCE OF INFORMATION
Air		
Inhalation exposure	220 µg/day	EU
Refilling car petrol tank	32 µg during refilling (3 mins)	EU
Automobile-related activities		
Driving for one hour	40 µg/day	ATSDR
Cigarette smoking		
	7900 µg/day	EU
	1820 µg/day	Canada
	1800 µg/day	IPCS
Passive smoking		
	63 µg/day	Canada
	50 µg/day	IPCS
Diet		
Food and drink products	0.2-3.1 µg/day	EU
Food	1.4 µg/day	Canada
Water and food	1.4 µg/day	IPCS

TABLE 1: General world population exposure to benzene categorised by activity and media Adapted from ATSDR, 2005; IPCS, 1993 and Health Canada, 1993.

Food Safety Authorities in the UK and USA have stated that the soft drink industry should maintain the lowest possible levels of benzene in their products although the health risks from the levels found in beverages are likely to be very low. The UK FSA have stated that people would need to drink more than 20 litres of a drink containing benzene at 10 ppb to equal the amount of benzene you would breathe from city air in a day. Their overall message has been that while manufacturers should avoid the presence of benzene in soft drinks, the current levels make a negligible impact on overall benzene exposure, thus additional health risks are low.

The survey results do not raise any public health concerns in relation to benzene levels in flavoured beverages available in Australia, as the trace amounts found make a negligible impact on overall benzene exposure. Nonetheless, FSANZ has liaised with other government departments and the



food industry to ensure that levels of benzene in beverages are kept as low as can be achieved, while still ensuring the microbiological safety of these products.

The International Council of Beverages Associations (IBCA) has approved a *Guidance Document to Mitigate the Potential for Benzene Formation in Beverages* which has been adopted by the Australian Beverages Council and made available to all Australian beverage manufacturers.

Manufacturers with products where benzene was detected have been advised of the results and have been referred to the ICBA's Guidance Document to assist them in minimizing the possible unintended formation of benzene. The Australian Beverages Council has advised that they will continue to work with their member companies to reduce benzene levels in products while still ensuring their microbiological safety, and will monitor their progress.

The guidance document can be found at the following internet location: <http://www.australianbeverages.org/lib/pdf/ICBAbenzeneGuide.pdf>

Further information can be found on the Food Standards Australia New Zealand website in the fact sheet on benzene: <http://www.foodstandards.gov.au/newsroom/factsheets/factsheets2006/benzeneinflavouredbe3247.cfm>

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UPDATE ON THE REVIEW OF AUSTRALIA'S NATIONAL ANALYTICAL CAPABILITY + CAPACITY FOR CHEMICAL RESIDUE ANALYSIS

BACKGROUND

A project is being carried out to consider and explore the issues surrounding the ability of Australia's laboratories, both government and private, to meet current and future testing requirements for agricultural and veterinary chemical residues and environmental and other contaminants, including impurities in chemical formulations, which impact on food safety, public health, trade, environmental health and national security.

The project will establish present and future chemical testing requirements for various commodities. Emphasis is placed on objectively estimating the needs across government authorities (Commonwealth Departments and State authorities), industries and other interested parties.

In collaboration with the National Association of Testing Authorities (NATA), the project will ascertain present and potential capability and capacity of analytical laboratories. This will include an extensive survey of over 100 analytical laboratories to ascertain what analytical resources are available to meet present and future requirements. It will include information on:

- Current analytical capability and potential ability to extend present capacity.
- Interest in developing capability and resources required in terms of equipment, human resources, training and method development.
- Other analytical equipment/instrumentation available and biohazard facilities.
- Collate into a database, and identify and quantify gaps to facilitate the formulation of recommendations and policy/commercial decisions by stakeholders.

ISSUES

A questionnaire on present and future needs covering over 200 chemical compounds has been developed and distributed to:

- Food Standards Australia New Zealand, Australian Pesticides and Veterinary Medicines Authority (APVMA), National Measurement Institute (NMI), the Australian Government Department of Environment and Heritage, the Australian Government Department of Health and Ageing, the Australian Government Department of Agriculture, Fisheries and Forestry, as well as relevant state and territory authorities responsible for primary industries, health and environment.
- Specialist groups (CSIRO, Australian Veterinary Association, universities and specialist committees).
- Relevant industry representative bodies.

Individual consultations with each of the stakeholders are presently being carried out to ensure broad participation and robustness of data.

A database has been developed to provide an electronic system for consultation, input, data entry, analysis of data and reports. Feedback is in the process to be consolidated in the database.

A tracking and feedback system was implemented for ensuring maximum return of questionnaires and other necessary information. To date, feedback has been received from:

- the Australian Government Departments of Environment and Heritage, Health and Ageing, and their state and territory counterparts;
- the Australian Government Department of Agriculture, Fisheries and Forestry;
- state and territory departments of primary industries;
- specialist groups; and
- the Australian Pesticides and Veterinary Medicines Authority.

Development of questionnaire on laboratory capacity and capability in collaboration with NATA is underway, with input from interested agencies. It will be distributed to Australian laboratories in the second stage of the review.

There will be staged reporting related to key milestones for the questionnaire, consultations and database development. Reporting for the first stage was completed on 19 May. A final report is due at the end of the year to align with the other reviews underway.

DAFF seeks further input from the Food Surveillance Network to present and future analytical requirements.

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TIMELY CAMPAIGN DRIVES FOOD SAFETY MESSAGE

Media campaigns can be a cost effective way of reaching a wide target market. One of the challenges facing the NSW Food Authority is to identify media opportunities that will be widely reported but also enable it to reinforce/promote food safety messages to key target markets.

While media campaigns are very good at building awareness, they don't by themselves deliver the "gold standard" of behavioural change: getting someone to modify what they do, or start doing something new. Media campaigns and the creative use of web sites and other materials as part of a comprehensive campaign take us further down the road towards behavioural change. Key to generating media is identifying a "hook" or "angle" to a story. Another key is to use uncomplicated but credible science to back the story.

In December 2005, the Food Authority launched a simple time and temperature campaign around barbecues. Authority staff took the temperature of patties and sausages at dozens of barbecues around Sydney and found a significant number were undercooked. They also found significant cross-contamination. Here was the "hook".

Following from the success of BBQs, the Authority decided to examine the temperature of kids' lunch boxes as part of its focus on time and temperature control at its Royal Easter Show stand. The survey had two components: Authority staff made a range of sandwiches and then placed them in identical lunch boxes. Some had frozen ice blocks or drinks (poppers), while others did not.

The lunch boxes were placed outside in a shady area (many school children leave their bags and lunches outside classrooms). The temperature of each sandwich taken at hourly intervals over five hours, about the same time from when sandwiches are made in the morning to when they're eaten at lunch. This survey showed that lunch boxes with frozen blocks and poppers were up to 12C cooler than those without temperature control. All sandwiches were then sent off to the lab for bacterial analysis. Those without any means of temperature control (i.e. frozen block or popper) had up to five times the bacterial count as those with temperature control.

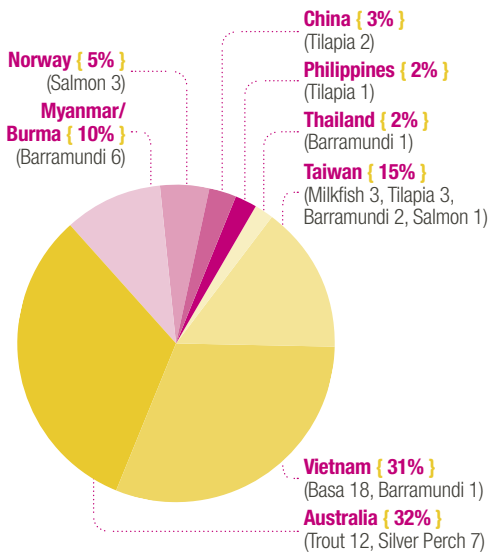
The second phase of the campaign was to determine how many kids likely went to school with no way of keeping their lunches cool. Three schools agreed to cooperate and circulated a simple Food Authority questionnaire among teaching staff. Nearly 600 primary students were asked what they had for lunch, and whether they had a frozen block or popper in their lunch box. Analysis of questionnaire responses showed that nearly 40% of primary students had no way of keeping their lunch cool. These children were at greater potential risk of food poisoning because the warmer it is, the more bacteria food will contain. The surveys, graphs, photos and key messages were presented in a simple and easy to follow format on the Food Authority's web site.

The story generated robust media, with a potential audience of 2.2 million. Once again, community participation (in this case from schools) enabled the Food Authority to build a simple campaign backed by accessible science to drive a key message about time and temperature control.

HEAVY METALS IN AQUACULTURED FISH

In the last issue of the Food Surveillance Newsletter we reported on the results of a national survey of *Chemical Residues in Aquacultured Fish*. In a second element of this survey FSANZ commissioned analysis for heavy metals in the same fish samples.

All Australian States and Territories participated in this national survey and a total of 61 samples of local and imported aquacultured fish were sampled from across Australia. Samples were collected from late April until early June 2005. The 61 fish samples were tested for levels of heavy metals including: chromium, cobalt, nickel, copper, zinc, arsenic, selenium, molybdenum, cadmium, antimony, mercury and lead. Three to five fillets or whole fish were combined as a single sample and prepared by firstly chopping the sample into smaller pieces and then being processed using a mincer. All samples were prepared according to the Australia New Zealand Food Standards Code (Schedule 4) for commodities to which a maximum level (ML) applies. In the case of whole fish, the "whole commodity including bones and head after removing the digestive tract" was prepared. For fish fillets, the entire fillet was prepared. The samples were then microwave digested with nitric acid and analysed by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS).



GRAPH 1: Total Number of Aquacultured Fish Samples Collected & Analysed by Country of Origin

As with the antimicrobial analysis the fish samples originated from a number of countries including Australia, China, Myanmar/Burma, Norway, Philippines, Taiwan, Thailand and Vietnam. Fish were sampled based on research of the market so that they were representative of the fish available to consumers in Australia. The variety of fish samples that were collected for analyses included Barramundi, Salmon, Basa, Rainbow Trout, Tilapia, Milk Fish and Silver Perch.



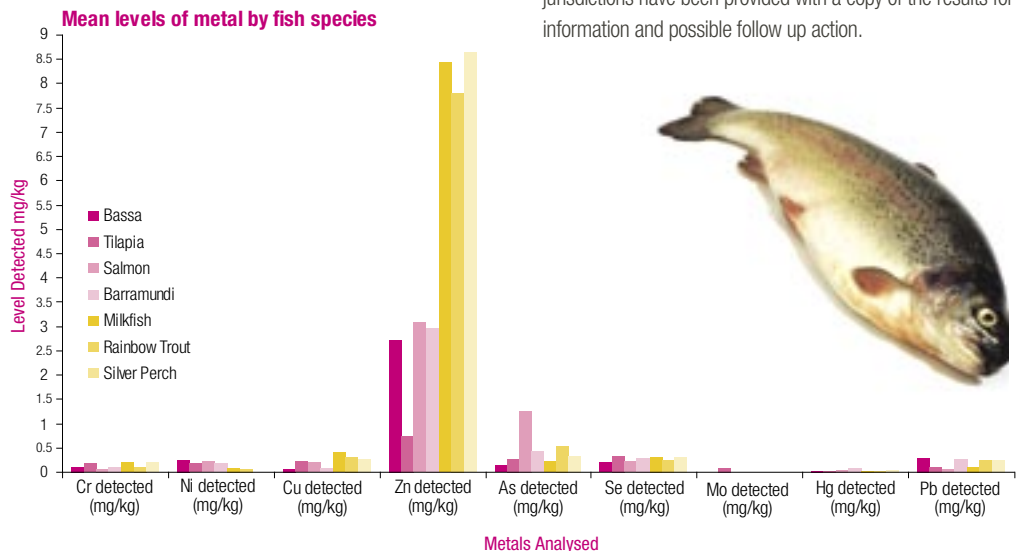
The National Residue Survey (NRS) had previously conducted residue analysis of samples of wildcaught and aquacultured fish, looking at trace elements (cadmium, copper, lead and mercury), as well as persistent organic pollutants (including Dioxins and PCBs) in 2004. These results indicated low levels of contaminants in both aquacultured and wildcaught fish.

Overall, the results of our survey were similar to those found by the NRS. As shown in Graph 2, the levels of metals in the fish samples were generally found to be low and most samples contained no measurable levels of cobalt, nickel molybdenum, cadmium and antimony. While the zinc levels appear high in comparison to the other analytes the levels found are similar to the zinc levels commonly found in fish and are lower than those found in meat. There are no MLs for zinc in the Australia New Zealand Food Standards Code (the Code).

The Code has MLs for only a few of the chemicals analysed in fish. *Standard 1.4.1 – Contaminants and Natural Toxicants*, prescribes levels in fish for Mercury (mean 0.5 mg/kg), Arsenic (2.0 mg/kg), and Lead (0.5 mg/kg). Two separate maximum levels are imposed for fish – a level of 1.0 mg mercury/kg for the fish that are known to contain high levels of mercury (such as swordfish, southern bluefin tuna, barramundi, ling, orange roughy, rays and shark) and a level of 0.5 mg/kg for all other species of fish. The levels of mercury recorded were well within the levels prescribed by the Code for fish. Graph 3 shows Arsenic was found in a couple of samples within the maximum levels prescribed for fish. One salmon sample originating from Norway contained the highest levels at 1.9 mg/kg.

Two samples had detected levels of lead just above the 0.5 mg/kg level permitted by the Code, at 0.53 mg/kg and 0.52 mg/kg. These samples were both imported fish and will be retested and followed up if they are found to be non compliant. Although outside of the scope of the survey as it was not an aquacultured fish, a single sample of Nile Perch from Kenya was analysed for heavy metals. The analysis showed the sample exceeded the maximum permitted level for lead at 2.7 mg/kg. The levels of selenium, mercury and zinc in this sample were also relatively high in comparison to other samples. This sample will also be retested and followed up appropriately.

GRAPH 2: Metal levels of metal by fish species



Upper levels of metals detected in relation to permitted ML



GRAPH 3: Levels of metals detected in samples in relation to permitted ML

Overall, the results found no significant difference in the metal contaminant content of Australian versus imported fish. However the small sample size of the survey means that the significance of the results of the study can not be overstated and that appropriate qualifications about the statistical significance of the survey be made. At this time there may also need to be discussion about the possibility of repeating the activity in the future to enhance the validity of the findings. Samples with relatively high levels of any heavy metals are being reanalysed as part of routine quality assurance and all jurisdictions have been provided with a copy of the results for information and possible follow up action.



The diversity of tree nut species combined with relatively new and limited analytical testing methods are a contributing factor to the lack of monitoring for tree nut allergens in food products. It is only recently that test kits for the detection of almond and hazelnut ingredients have become commercially available.

Manufacturers are currently required by legislation to declare the presence of allergens if they are in the food as an ingredient, additive or as the result of using a processing aid which may contain the allergen.

SCREENING SURVEY

This report describes a screening survey designed by the Western Australian Food Monitoring Program (WAFMP) to examine both imported and locally produced food products for undeclared allergens from almond and hazelnut. At the time of the survey ELISA testing kits were only available for almond and hazelnut species.

A total of 76 samples of packaged food were collected by local government Environmental Health Officers at locations across the Perth metropolitan area. The samples were selected from several different food commodity groups including biscuits, cakes, chocolates, convenience foods/meals and ice-cream. The samples were submitted to the Chemistry Centre for analysis and the results compared to label declarations for the presence of almond and hazelnut proteins.

Of the 42 products found to contain undeclared almond and/or hazelnut, three were found to contain the allergens at concentrations greater than 2.5ppm, three contained the allergens at greater than 1ppm with the remaining 36 containing the allergen at trace levels less than 1ppm. In addition, it is important to note that 50% (21/42) of products lacking any label declaration for the presence of almonds or hazelnuts were Australian manufactured products with the other 50% being imported.

The main concern is that only a few parts per million (ppm) of tree nut protein may cause a reaction in a sensitised individual. Consequently the six (14%) products found to contain undeclared almond and/or hazelnut proteins at concentrations greater than 1ppm represent an increased health risk to allergen sufferers. From the survey results alone, it is difficult to determine whether or not the manufacturers have failed to meet their mandatory allergen labelling obligations. This is because it's possible that the almond or hazelnut allergens may be present in the food without the manufacturer's knowledge. This can occur if contaminated raw ingredients are supplied to manufacturers and/or inadvertent cross-contamination happens at the place of manufacture. This may be the case for the 86% (36/42) of products containing undeclared almond or hazelnut proteins at trace level concentrations less than 1ppm. However, manufacturers are required to exercise due diligence in the preparation of safe food for consumers and therefore should take all reasonable measures to protect the health of sensitive allergen sufferers.

From a health perspective, the effective use of food safety systems including good manufacturing practice (GMP) is the responsible and preferred way for food businesses to

control allergen presence in food. The use of broad labelling statements such as 'may contain traces of nuts' serves only to limit the choice of foods available to allergen sufferers and should only be used as a last resort. Widespread use of these statements may ultimately impact on the ability of allergen sufferers to have a varied and healthy dietary intake.

RECOMMENDATIONS

The report recommends:

1. The Department of Health WA notify, for follow up action, the manufacturers of products observed to contain undeclared almonds and/or hazelnuts and the relevant enforcement agencies.
2. The Department of Health WA provide the details of those imported food products observed to contain undeclared almonds and/or hazelnuts to AQIS for their attention.
3. Manufacturers be encouraged to have systems and policies in place to control allergens within their processes rather than using broad labelling statements such as 'may contain traces of nuts'. Systems such as quality assurance programs and food safety programs are possible options.
4. Where residues of tree nuts may exist and manufacturers' food safety systems, policies and GMP cannot control or eliminate the risk of possible cross contamination, products should be labelled 'may contain traces of nuts'.
5. Local governments with food manufacturers within their area of responsibility implement comprehensive allergen surveillance as part of their food monitoring regimes.
6. The WAFMP conduct a follow-up survey to evaluate future industry compliance with respect to allergen labelling.
7. Disseminate the results of the survey to the food industry and community to raise the awareness of undeclared tree nut allergen matters.

ACTION ON REPORT RECOMMENDATIONS

The Department of Health has acted on the first four report recommendations with implicated manufacturers and the relevant state, territory and commonwealth government enforcement agencies.

All Australian manufacturers have carried out investigations and implemented appropriate corrective actions where necessary. This has included correctly labelling their products, ceasing manufacture of the products and/or making changes to their allergen control programs.

A full report can be obtained from Department of Health (WA) website: http://www.population.health.wa.gov.au/Environmental/resources/2374%20TreeNutTotal_18%20April%202006.pdf

Further enquiries please contact: Neil McSkimming, Food Safety Branch, Department of Health (WA) on (08) 9388 4999.

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