

Undeclared Tree Nut Allergens in Food



2004 – 2005



UNDECLARED TREE NUT ALLERGENS IN FOODS 2004 – 2005

Results of a 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.



Department of Health
Government of Western Australia



TABLE OF CONTENTS

| | |
|----------------------------------|----|
| ACKNOWLEDGEMENTS | i |
| EXECUTIVE SUMMARY | ii |
| 1.0 INTRODUCTION | 1 |
| 2.0 CURRENT LEGISLATIVE POSITION | 3 |
| 3.0 METHODOLOGY | 4 |
| 4.0 RESULTS | 5 |
| 5.0 DISCUSSION | 8 |
| 6.0 CONCLUSION | 10 |
| 7.0 RECOMMENDATIONS | 11 |
| 8.0 REFERENCES | 13 |

ACKNOWLEDGEMENTS

The Department of Health (WA) would like to acknowledge the assistance of the following local governments in collecting samples for analysis:

Armadale
Bayswater
Belmont
Fremantle
Kwinana
Melville
Mundaring
Nedlands
Perth
South Perth
Stirling
Subiaco
Victoria Park
Vincent
Wanneroo



EXECUTIVE SUMMARY

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 (AFGC 2002). 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 (AFGC 2002).

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, crustacea, eggs and wheat (Food Allergy 2003a). 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 (Loblay 2002).

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 (Food Allergy 2003b).

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 (ELISA 2003).

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.

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 micrograms (ppm) of tree nut protein may cause a reaction in a sensitised individual (EFSA 2004). 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.

This 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.



1.0 INTRODUCTION

Allergic reactions to foods or ingredients in foods often take place on the second and subsequent exposures to the specific protein. The individual is usually sensitised on the first exposure by developing antibodies which then react on further exposures. Allergic reactions occur when the antibodies produce cellular chemicals such as histamine. Symptoms may occur almost instantly, or up to an hour after ingestion. Common reactions caused by food allergens are diarrhoea, vomiting, abdominal pain, hives, rashes and asthma (FDA 2001).

A more severe systemic reaction can also occur which may include a rapid loss of blood pressure, severe obstruction of the airways, generalised shock reaction and multiple organ failure. This is known as anaphylactic shock and can be fatal if not treated within minutes (AFGC 2002). Doctors have estimated that between 10 to 20 Australians die each year from anaphylaxis (Williams 2003).

Food allergies are on the increase which makes comprehensive labelling on processed foods a matter of public health significance (Ahlberg 2001). Food Standards Australia New Zealand (FSANZ) has recognised this issue and included more comprehensive labelling requirements for foods bearing common allergenic proteins in the Australia New Zealand Food Standards Code.

The population prevalence of tree nut allergy in Australia is unknown. Two surveys conducted during 2002 of tree nut allergy in pre-school children in child care centres in NSW reported estimated prevalence figures of 0.24% and 0.73% respectively, although it is highly likely that the number of children reported with nut allergies other than an allergy to peanuts was substantially underestimated (Loblay 2002).

In Western Australia, no survey had yet been undertaken on undeclared tree nut allergens in foods. Appropriate analytical test kits (ELISA Systems Pty Ltd) have only recently been available commercially. The Western Australian Food Monitoring Program (WAFMP) designed this survey to determine the level of labelling and compositional compliance with the Food Standards Code.

During the design period of the survey, only two ELISA kits were available for the analysis of tree nut allergens; those for almond and hazelnut. This limited the scope of the survey to examine only products sampled for allergenic proteins from these species of tree nut.

Although they belong to the family of Rosaceae fruits (e.g. apple, peach, and apricot), almonds are most often classified as tree nuts. As such, almonds are included in the international food standards Codex Alimentarius list of allergens which should always be declared on the label of pre-packaged foods. Almonds are used in various forms (whole, chopped, sliced or paste) predominantly in bakery products such as cookies, cakes, pies and confectionery products.



Almonds are a source of gourmet edible oils that are generally cold pressed and potentially contain residual allergens (Besler, Rodriguez & Taylor 2001). Almond major protein (AMP) or Amandin, the primary storage protein in almonds, is the major allergen recognised by almond-allergic patients (Roux et al 2001).

Hazelnut allergens closely related to birch pollen allergens Bet v 1 and Bet v 2 and allergens not related to pollen have been identified in people with pollinosis and without pollinosis. Up to now four isoforms of the major allergen Cor a 1 have been identified in hazel pollen (Cor a 1.01 to Cor a 1.03) and hazelnuts (Cor a 1.04), which are cross-reactive to the pathogenesis-related protein Bet v 1. A hazelnut allergen (14-kDa) showed cross-reactivity to birch profilin (Bet v 2). These birch-related allergens are labile to heat and enzymatic digestion (Besler, Koppelman & Pumphrey 2001).

One of the allergens not related to pollens belongs to the group of lipid-transfer proteins which were recently identified as plant-pan allergens. These allergenic proteins were demonstrated to be stable against heat treatment (Besler, Koppelman & Pumphrey 2001).

Two fundamentally different types of allergy to hazelnuts have been identified. The more frequent type is associated with pollens from trees of the order Fagales (birch, alder, hazel, hornbeam and oak). The other less common type is not associated with pollen allergy. Symptoms of hazelnut allergy in subjects with pollinosis are usually milder immediate-type reactions at the mucosa of lips, tongue and throat (oral allergy syndrome). In contrast, in hazelnut-allergic subjects without associated pollinosis more severe systemic reactions can occur and even deaths have been confirmed to be due to hazelnut allergy (Besler, Koppelman & Pumphrey 2001).



2.0 CURRENT LEGISLATIVE POSITION

The Australia New Zealand Food Standards Code, Standard 1.2.3, stipulates that mandatory declarations must be made should a food contain (as an ingredient, food additive or processing aid) any of the foods below:

- Cereals containing gluten and their products, namely, wheat, rye, barley, oats and spelt and their hybridised strains other than where these substances are present in beer and spirits standardised in Standards 2.7.2 and 2.7.5 respectively
- Crustacea and their products
- Egg and egg products
- Fish and fish products
- Milk and milk products
- Peanuts and soybeans, and their products
- Added Sulphites in concentrations of 10 mg/kg or more
- Tree nuts and sesame seeds and their products

(FSANZ 2005a)

In addition, manufacturers are required under Western Australian and other Australian state and territory food legislation, to exercise due diligence in the preparation of safe food for consumers. Due diligence can, in the main, be satisfied by manufacturers managing allergens in their factories using an effectively implemented allergen control program.

However, the Department of Health remains concerned that some manufacturers concerned with public health and safety and/or mindful of litigation, may be inclined to place warning statements on their products, regardless of whether the products actually contain nuts and/or the factories where the products are processed have nuts onsite. Examples of these types of warning statements are:

- 'Main contain traces of nuts'
- 'Processed on equipment that also handles nuts'

These types of warning statements are of particular concern to allergen sufferers, with some allergen sufferers reporting that statements of this nature could limit the range of products available that they can consume.

Should a manufacturer choose to use such warning statements they need to be mindful that they are required by state and territory food laws not to engage in conduct that is likely to mislead or deceive in relation to advertising, packaging or labelling of food. Some industry associations such as the Australian Food and Grocery Council (AFGC) actively discourage the practice of applying broad allergen warning statements. The AFGC have developed an allergen management guideline to assist its member manufacturers (AFGC 2002).



3.0 METHODOLOGY

Seventy six samples of packaged food were collected by Environmental Health Officers from local governments in the Perth metropolitan area and by officers from the Department of Health. The samples were selected from the following food commodity groups:

- biscuits
- cake
- chocolates
- convenience foods/meals and
- ice-cream

and submitted to the Chemistry Centre of WA for analysis.

Hazelnut Residue

Method: Double antibody (sandwich) ELISA of ELISA SYSTEMS Pty Ltd.

The ELISA SYSTEMS hazelnut residue assay is a double antibody (sandwich) ELISA using specific antibodies coated onto microwells. The antibody is raised against a heat-stable hazelnut protein to avoid false negatives from food samples that have been heat treated. The limit of detection (LOD) is 0.5 ppm and the limit of quantification (LOQ) is 1.0 ppm. To account for the limitation in interpreting extremely low levels and to avoid false positives, values which are below the LOQ are reported as trace levels. The antibody does not cross react with an extensive range of food matrices which include other tree and ground nuts, cornmeal, oats, rice, soy bean and wheat. However, some reaction was detected with seed kernels (not fruit flesh) from apricot, cherries, peaches and nectarines, materials which are not known to be used in foods.

The sample was finely ground with a blender from which 5g of material was placed into 10 volumes of pre-warmed extraction solution. The blending process was repeated until a homogenous solution was obtained. The homogenate was incubated in a 60°C water bath for 15 minutes with intermittent shaking. The heat-treated homogenate was allowed to settle at room temperature and then filtered through filter paper. The clear filtrate was used for analysis. 100µL of filtrate was placed in the well containing antibody specific for hazelnut protein, and incubated for 10 minutes. The well was washed and an equal volume of the enzyme conjugate was added. After another 10 minutes, the washing step was repeated and 100µL of substrate solution was added. After another 10 minutes, the reaction was stopped by adding 100µL of stop solution and the absorbance was measured in a spectrophotometer at 450nm. Absorbencies of the samples were used to determine the 'observed' allergen concentrations by reference to a calibration curve comprising incremental concentrations of allergen. 'Actual' concentrations were calculated by correcting for dilutions performed during sample preparation. Concentrations were expressed as ppm (parts per million).

Almond Residue

Method: same as hazelnut

4.0 RESULTS

The test results were grouped into categories based on allergen concentration.

The following categories have been applied to the data:

No level = No observable reaction

Yes = Observable reaction, low strength (less than 1ppm)

Yes* = Observable reaction, moderate strength (1 to less than 2.5ppm)

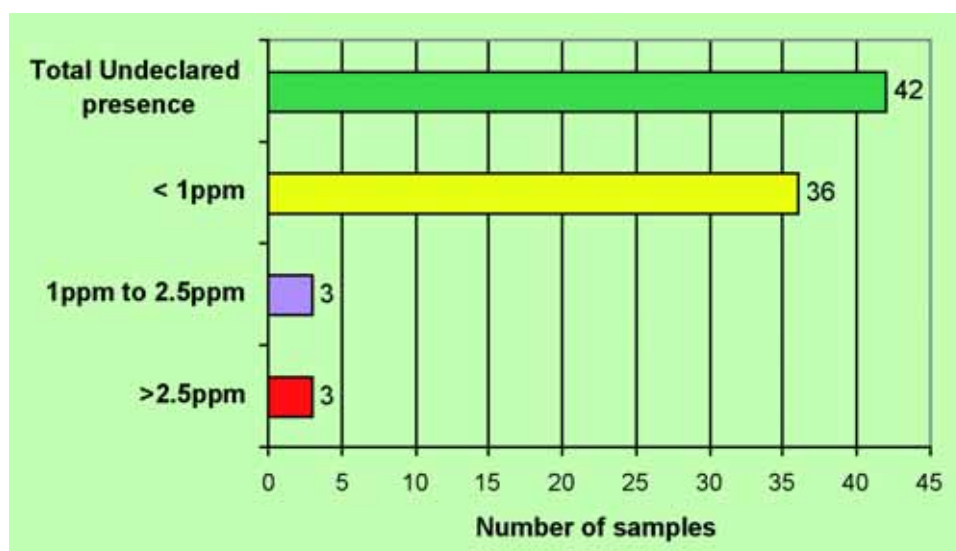
Yes** = Observable reaction, high strength (Greater than & equal too 2.5ppm)

Note: Observable low strength reactions, less than 1ppm, are below the limit of quantification (LOQ) and reported as trace level concentrations.

A total of 55% of samples (42/76) had observable levels of almond and/or hazelnut with no label declaration made regarding their presence in the product (shown in figure 1).

Of the 42 products observed to contain undeclared almond and/or hazelnut, three (7%) were found to contain the allergens at concentrations greater than 2.5ppm, three (7%) contained the allergens at greater than 1ppm with the remaining 36 (86%) observed to contain the allergen at trace level concentrations less than 1ppm.

Figure 1: Undeclared presence of allergen.



For the other 45% (34/76) of products, either the presence of the allergens was detected and declared on the product label (10/34) or the presence of allergens was not detected with no declaration on the product label (24/34). See Tables 1 & 2.



Table 1 shows that allergens were detected in eight of the ten products that labelled the presence of nuts as ingredients, or as possible residues and warning declarations were labelled on two of the products not observed to contain almond or hazelnut allergens.

Of the 10 products declaring the presence of allergens, eight contained the declared presence of almonds and one contained the declared presence of hazelnuts.

Table 1: Products with allergen presence declared.

| DECLARED PRESENCE OF ALMOND AND HAZELNUT ALLERGEN | | |
|---|----------|----------|
| OBSERVED REACTION | DECLARED | |
| | ALMOND | HAZELNUT |
| No observed reaction | 2 | 9 |
| Less than 1ppm | 6 | 1 |
| 1 to less than 2.5ppm | 1 | 0 |
| Greater than equal to 2.5ppm | 1 | 0 |
| TOTAL (Declared presence) | 10 | 10 |

Table 2 provides further insight into those products with allergen presence undeclared and the levels of observable reaction for hazelnut and almond in the product.

Of the 42 products not making a declaration, 40 contained the undeclared presence of almonds and 15 contained the undeclared presence of hazelnuts. Of the products containing undeclared almond, 37 were observed to contain a concentration of less than 1ppm, one greater than 2.5ppm and two in the mid range category. Of the 15 products found to contain undeclared hazelnut, 11 were at an observed concentration of less than 1ppm, three greater than 2.5ppm and one in the mid range category.



Table 2: Products with allergen presence undeclared.

| UNDECLARED PRESENCE OF ALMOND AND HAZELNUT ALLERGEN | | |
|---|------------|-----------|
| OBSERVED REACTION | UNDECLARED | |
| | ALMOND | HAZELNUT |
| Less than 1ppm | 37 (92.5%) | 11 (73%) |
| 1 to less than 2.5ppm | 2 (5%) | 1 (7%) |
| Greater than equal to 2.5ppm | 1 (2.5%) | 3 (20%) |
| TOTAL (Undeclared presence) | 40 (100%) | 15 (100%) |

The results show that where allergenic proteins from almonds and hazelnuts nuts were present and products were not labelled, 7.5% (3/40) and 27% (4/15) of respective allergens were at an observed concentration greater than 1ppm and consequently posed an increased potential public health risk to allergen sufferers.

Of additional concern is one confectionary product showing unlabelled levels greater than 2.5ppm for both almond and hazelnut. This product is traditionally made containing both ingredients and, while culturally some consumers may be aware of the nuts' presence in the product, many other consumers may not.



5.0 DISCUSSION

Different people have different sensitivities to tree nut allergens. Threshold doses have not been established but a few micrograms of nut protein may cause an allergic reaction in very sensitive individuals. Therefore any food with nut protein has the potential to cause an allergic reaction in those individuals (EFSA 2004).

The United States Food and Drug Administration (US FDA) attempted in 2005 to set risk levels based on lowest observed adverse effect levels (LOAEL) for tree nut allergen consumption by mildly sensitive individuals. The US FDA used a range of clinical studies but the report clearly states that there are a number of limitations with the LOAEL (0.02 to 7.5ppm) and that results are likely to be skewed towards mildly sensitive individuals because severe allergy sufferers may be reluctant to participate in the studies (FDA 2005).

It is also important to note that while the estimated tolerable level of intake incorporates a safety factor for human variability, this does not provide an indication of the likely reaction for sensitive allergen sufferers. Variability in allergic response between individuals may be significant and represent much more than the uncertainty factor of 10 that has been applied.

Based on the US FDA conclusion that 5gm of food containing 2ppm of allergen represents a 'low-risk' level for mildly sensitive individuals, a similar 'low-risk' level of intake for food containing 0.5ppm (ELISA LOD) corresponds to the consumption of 20grams. Therefore, understanding the limitations of the LOAEL (0.02 to 7.5 ppm) and accompanying risk levels established by the US FDA, it is apparent that appropriate caution should be applied by manufacturers in the management of nut allergens.

Of 76 product samples tested in this survey, 42 (55%) had observable levels of almond or hazelnut allergens present with no label declaration that they were ingredients, or that there was the possibility of residues.

Due to the variability in the levels of sensitivity of nut allergen sufferers, the number of sufferers in the population likely to have an allergenic response from exposure to a contaminated foodstuff increases with the quantity of nut protein present (EFSA 2004).

Of the 42 products with a presence of undeclared allergen, 86% were in the 'less than 1ppm' statistical category being 92.5% and 73% respectively for almond and hazelnut.

Of the products in this survey in which unlabelled almond or hazelnut allergens were detected, those products with observed concentrations greater than 1ppm present an increased risk to the health of allergen sufferers. The proportion of these products greater than 1ppm was 7.5% for almond and 27% for hazelnut allergen. Of concern is that 50% (21/42) of products containing undeclared allergens were made in Australia. The remaining 50% of implicated products were manufactured overseas.



Almond was the allergen identified as most commonly having a positive reaction and lacking any form of label declaration. Almond allergen was attributed to 95% (40/42) of the unlabelled products showing positive observable reaction to allergenic protein.

Undeclared hazelnut allergens were observed in 36% (15/42) of the unlabelled products that showed a positive reaction to allergenic protein. In instances of undeclared hazelnut allergens, 31% (13/42) also had undeclared almond allergens.

The survey results appear to be backed up by FSANZ food recall statistics. Although not related to tree nuts specifically, FSANZ reported that in 2004 almost half (49%) of all food recalls resulted from companies failing to include a warning statement of potential allergens on the product label (FSANZ 2005b).

Whilst the test kits' LOD is 0.5ppm, the fact that a number of samples demonstrated no reaction means that there is some confidence in the reporting of a positive reaction.

In addition, almond major protein (AMP) is particularly heat stable and is likely to react with the ELISA test even when it is present in products that have been manufactured at high temperatures. AMP will survive blanching, roasting or autoclaving. None of these processes markedly decreases the detectability of AMP in subsequent aqueous extracts of almonds in foods (Roux et al 2001).

The trace level presences (less than 1ppm) of undeclared almond and hazelnut allergens may be due to incidental cross-contamination of products during their manufacture or during blending of supplied premixes, seasonings and flavours.

Contamination with tree nut allergens can occur due to cross contamination of ingredients, food preparation errors and failure to correctly clean manufacturing equipment. Where multiple production lines operate in a single facility it is possible that aerosols and flour dust may lead to inadvertent contamination.

One method used to prevent cross contamination of non-allergen and allergen products is scheduling. Production is segregated so that allergen-containing products are produced on a separate day of the week. Products containing nuts can be manufactured at the end of the week or the end of the last production shift. Equipment should be completely broken down and cleaned. Cleaning documentation must be reviewed and verified prior to the start of production of non-allergen products (FDA/CFSAN 2000).

In addition, employee awareness and training is one of the best defences against allergen residues being unintentionally added to products (FDA/CFSAN 2000).

At the time of the survey only the almond and hazelnut ELISA test kits were available. Since this time more ELISA tests have become available for other tree nut species. The additional tests have enhanced the ability of manufacturers and enforcement agencies to verify the effectiveness of allergen control programs and the accuracy of labelling.



6.0 CONCLUSION

The population prevalence of tree nut allergy in Australia is unknown. However, two preliminary studies in NSW have documented conservative estimates of 0.24% and 0.73% for pre-school aged children.

Product changeover in a manufacturing process presents an unintentional opportunity for product that contains an allergen to contaminate a product that does not contain that particular allergen. This may result in an undeclared allergen being present in a product (FDA/CFSAN 2000). These products may lack a label warning statement and present a potential health risk to people with tree nut allergies.

The results of this survey demonstrate that, at the time of sampling, a significant number of foods available for retail sale in Western Australia contained almond and/or hazelnut allergens but had insufficient information on their labels for allergen sufferers. Fifty five percent (55%) of all food products tested revealed undeclared almond and/or hazelnut allergens with 14% of these containing the allergens at levels greater than 1ppm. This represents a potential risk to the health of Australian consumers with allergies to tree nut proteins.

Of particular significance to enforcement agencies is the fact that 50% of all products with observed positive reactions to either almond or hazelnut proteins which were not declared on the product label were made in Australia. This indicates that Australian manufacturers need to either improve labelling practices or better manage tree nut allergens within their production processes and premises. This includes the purchasing of ingredients. Equally significant is the 50% of imported products containing these allergens but with no label declaration. The results of this survey will provide important information for food importers and the Australian Quarantine and Inspection Service (AQIS) Imported Foods Surveillance Program.

The principle of an informed choice is one of the underpinnings of the modern Food Standards Code. Consumers rely on accurate labelling to make informed choices about the food they purchase.

Manufacturers and importers must assume responsibility for the correct labelling of their products. Manufacturers must also ensure that they have food safety systems and policies in place that identify and effectively control the risk of allergen cross contamination. For allergen sufferers, this is of greater importance than applying broad labelling statements such as 'may contain traces of nuts' which can be seen as a means by which manufacturers could cover any deficiencies in the manufacturing process. In addition the use of these broad labelling statements limits the consumer's choice of foods and may ultimately impact on an allergen sufferers ability to have a varied and healthy dietary intake.



7.0 RECOMMENDATIONS

- 7.1 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.
- 7.2 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.
- 7.3 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.
- 7.4 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'.
- 7.5 Local governments with food manufacturers within their area of responsibility implement comprehensive allergen surveillance as part of their food monitoring regimes.
- 7.6 The WAFMP conduct a follow-up survey to evaluate future industry compliance with respect to allergen labelling.
- 7.7 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 (WA) has acted on the report recommendations with implicated manufacturers and the relevant state, territory and commonwealth government enforcement agencies. All Australian manufacturers with products found to contain undeclared almond and hazelnuts, as well as the relevant enforcement agencies, were advised of the survey findings and asked to investigate the matter.

Manufacturers were reminded of the mandatory labelling requirements in Clause 4 of Standard 1.2.3 of the Australia New Zealand Food Standards Code to declare the presence of tree nut proteins in foods.

In an effort to maintain a varied food supply for allergen sufferers, the manufacturers were also encouraged to control food allergens through their food safety programs and good manufacturing practices rather than using broad labelling statements such as 'may contain traces of nuts'.



All manufacturers contacted as a result of the survey carried out investigations and where necessary made appropriate changes, such as:

- correctly labelling their products
- ceased making the products and/or
- made changes to their allergen control programs.

The survey follow-up action demonstrates willingness between regulators and the food industry to adopt a cooperative approach in making the food supply safer.



8.0 REFERENCES

- Ahlberg P 2001 Food Allergens: is the US Policy Response Adequate?
<http://www.just-food.com>
- AFGC 2002 Food Industry Guide to Allergen Management and Labelling, Australian Food and Grocery Council, October 2002.
- All Allergy 1998 Substance information – Hazelnut allergens.
<http://www.allallergy.net/fapaidfind.cfm?cdeoc=740>
- Besler, Rodriguez & Taylor 2001 Internet Symposium on Food Allergens 3(2): 71-85.
<http://www.food-allergens.de/symposium-3-2/almond/almondabstract.html>
- Besler, Koppelman & Pumphrey 2001 Internet Symposium on Food Allergens 3 (Suppl.1): 1-22.
<http://www.food-allergens.de/symposium-3-1/hazelnut/hazelnutallergens.htm>
- ELISA 2003 Rapid Tests for Safe Food, ELISA SYSTEMS Pty Ltd, Queensland, Australia.
- EFSA 2004 Opinion of the Scientific Panel on Dietetic Products, Nutrition and Allergies on a request from the Commission relating to the evaluation of allergenic foods for labelling purposes, European Food Safety Authority, Request No EFSA-Q-2003-016, February 2004.
http://www.efsa.eu.int/science/nda/nda_opinions/catindex_en.html
- FDA/CFSAN 2000 A survey of food allergens. Food Allergen Partnership – FDA, Minnesota Department of Agriculture (MDA), Wisconsin Department of Agriculture, Trade and Consumer Protection (WDATCP).
<http://www.cfsan.fda.gov/~dms/alrgpart.html>
- FDA 2001 Food Allergen Monitoring, US Food and Drug Administration.
- FDA 2002 Carbolite Foods Recalls Milk Chocolate Bars due to Undeclared Almonds News Release. US Food and Drug Administration.
- FDA 2005 Approaches to Establish Thresholds for Major Food Allergens and for Gluten in Food DRAFT REPORT Prepared by The Threshold Working Group, US Food and Drug Administration, June 2005.
<http://www.cfsan.fda.gov/~dms/alrgn.html#iv>
- Food Allergy 2003a School readiness for children with food allergies. *Annals of Allergy, Asthma & Immunology*. Vol 86, pg 172-176.
- Food Allergy 2003b Clinical features of cashews allergy. *Journal of Allergy & Clinical Immunology*. Vol 105, No. 1, S141.
<http://www.inspection.gc.ca>
- FSANZ 2005a Australia New Zealand Food Standards Code, Standard 1.2.3 – Mandatory Warning and Advisory Statements and Declarations, Food Standards Australia New Zealand, Canberra ACT.
http://www.foodstandards.gov.au/_srcfiles/fsc_1_2_3_Warning_Statements_v78.doc
- FSANZ 2005b Food Standards Australia New Zealand, Food Recalls and Surveillance, Food Recall Statistics.
<http://www.foodstandards.gov.au/recallssurveillance/foodrecalls/foodrecallstatsinclu2957.cfm>
- Loblay, R H 2002, *Food Allergy in Schools and Child Care Centres*, Department of Clinical Immunology, Royal Prince Alfred Hospital, Sydney, NSW.
- Roux KH, Teuber SS, Robotham JM, Sathe SK 2001 "Detection and stability of the major almond allergen in foods" *Journal of Agric Food Chem*. May,49(5):2131-6.
- Williams D 2003 "Shock Tactics", *Time*, 15 Sept, pg 58-59.





Department of Health
Government of Western Australia

Produced by
Food Safety Branch
Environmental Health Directorate
© Department of Health 2006