



## **COORDINATED SAMPLING PROJECT 23 -**

### **Declaration of Allergen Content**

*Conducted April to June 2018 with Local Government's across Western Australia*



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## Executive Summary

This Coordinated Sampling Project (CSP) involved the analysis of food sold throughout Western Australia (WA) for the presence of undeclared allergens. This CSP focused on the ten food types which require a declaration of their presence in food, as specified by Standard 1.2.3 of the Australia New Zealand Food Standards Code (FSC) (Food Standards Australia New Zealand [FSANZ], 2018b). These food types are common allergens: cereals containing gluten, crustacea, egg, fish, milk, peanuts, soybeans, sesame seeds, tree nuts and lupin. Their presence must be declared on the label of packaged food or if the food is unpackaged, the information must be provided in the display in connection with the food or provided to the consumer upon request. It is important that consumers in WA can rely on the accuracy of the allergen declarations associated with food in order to make safe and informed purchasing decisions. There was an identified need for this CSP to be conducted since there are health consequences associated with undeclared food ingredients causing reactions in consumers with food allergens, food intolerances and coeliac disease.

The Local Health Authorities Analytical Committee (LHAAC) worked with Western Australian Local Government Authorities (LGA) to execute this project. Western Australian Environmental Health Officers submitted samples for assessment to Agrifood Technology (Agrifood) or Analytical Reference Laboratory (ARL), the two appointed analysts to LHAAC, from April through to June 2018. At the end of the sampling period, 202 samples were submitted to the laboratory for analysis and a total of 419 allergen tests were conducted with numerous samples tested for multiple allergens. Test results indicated that approximately 98% (n = 198) of the analysed products were accurate to allergen claims. Approximately 2.5% (n = 5) of the food products analysed had test results indicating the presence of soy (n = 2), gluten (n = 2) and hazelnut (n = 1) which were found to be inaccurate when compared against allergen claims. In addition, analysts conducted label assessments on 181 samples of which approximately 3.3% (n = 6) were determined to have inaccuracies when compared against the requirements for the mandatory declaration of certain foods or substances in food as prescribed in Standard 1.2.3, clause 4 of the FSC (FSANZ, 2018b). The reports from the analyst detailing the results were assessed by the LGA's involved and further action was taken in response, as deemed appropriate by each LGA.

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## List of Abbreviations

ARL	Analytical Research Laboratory
CSP	Coordinated Sampling Project
FSANZ	Food Standards Australia and New Zealand
FSC	Australia New Zealand Food Standards Code
LGA	Local Government Authorities
LHAAC	Local Health Authorities Analytical Committee
NSW	New South Wales
WA	Western Australia

## 1.0 Introduction

### 1.1 Food allergy and food intolerance

A food allergy occurs when a person's immune system reacts to allergens that are harmless to other people (FSANZ, 2019). Allergic reactions can range in severity between different people (Koeberl et al., 2018). Symptoms of a mild immune reaction can include hives, vomiting or abdominal pain (Health Direct, 2018). Severe allergic reaction can cause swelling of the throat or tongue, wheezing, dizziness or breathing complications. In extreme cases, allergic reaction can cause anaphylaxis which can possibly result in death. It is estimated that ten people die per year from anaphylactic reactions in Australia (Allergy & Anaphylaxis Australia, 2017). The prevalence of food allergy appears to be increasing in numerous countries around the world, including in Australia (Koeberl et al., 2018). In Australia, approximately 2% of adults, 5% of children (up to five years) and 10% of infants have food allergies (Better Health Channel, 2018).

The consumer has the right to access accurate information regarding the contents of their purchased food. A person may wish to avoid certain food due to religious, cultural or ethical beliefs. Furthermore, consumers may need to avoid food types due to the risk of poor health effects in those affected by food allergies, food intolerances or coeliac disease.

Food intolerance is an adverse reaction to foods which occurs in a small proportion of the population (FSANZ, 2019). It may include rashes and swelling of the skin, asthma, bloating, irritable bowel syndrome and migraines. In contrast with food allergy, this type of bodily response does not involve the immune system (Better Health Channel, 2018).

Coeliac disease is a serious condition that is not categorised as an allergy or intolerance. In people with coeliac disease the immune system reacts abnormally to gluten causing small bowel damage (Coeliac Australia, 2019). It is estimated that 1 in 70 Australians are affected by coeliac disease, however, around 80% of this number remain undiagnosed (Coeliac Australia, 2019).

### 1.2 Mandatory declarations and precautionary statements

In Australia, labelling requirements for the presence of allergens in food are prescribed by the Australian New Zealand Food Standards Code. As outlined in Standard 1.2.3, clause 4 of the FSC there are ten foods that require a mandatory declaration that the food or substance is present in the food (Table 1) (FSANZ, 2018b). These ten food types are common allergens that are responsible for 90% of allergic reactions caused by food products (NSW Food Authority, 2015). Food that is required to bear a label must provide advisory statements, warning statements and declarations, as outlined in Standard 1.2.1, clause 8 of the FSC (FSANZ, 2018b). Mandatory declarations must be written in English, be legible and be prominent to contrast with the background, as per Standard 1.2.1, clause 24 of the FSC (FSANZ, 2018b).

In accordance with Standard 1.2.1, clause 9 of the FSC, food that is either sold without a package or without the requirement to bear a label is required to either display advisory statements and declarations

in connection with the display of the food or provide information to the purchaser on request (FSANZ, 2018b). This information is required for the 10 food types (Table 1) which require mandatory declarations as per Section 1.2.3, clause 4 of the FSC (FSANZ, 2018b).

The FSC does not prescribe requirements for precautionary statements regarding the potential presence of allergens in food, such as 'may contain allergens', 'allergens may be present' or 'made in the same facility that processes other allergens' (FSANZ, 2018d). Voluntary precautionary statements are often applied in circumstances where the manufacturer suspects there could potentially be a risk of accidental cross-contamination (Koeberl et al., 2018).

*Table 1.* Food types that must be declared as per the FSC (FSANZ, 2018b) and examples of common food which contain each allergen (FSANZ, 2018c).

<b>Food type or substance</b>	<b>Examples</b>
<b>Cereals containing gluten, namely, wheat, rye, barley, oats and spelt and their hybridised strains</b> (except when present in beer, spirits, alcohol distilled from wheat or in certain glucose syrups that are made from wheat starch)	Breadcrumbs, flour and spelt
<b>Crustacea</b>	Prawns and lobster
<b>Egg</b>	Whole eggs, omelettes and quiche
<b>Fish</b> (except for isinglass used in beer or wine as a clarifying agent)	Catfish, salmon and tuna
<b>Milk</b>	Cow's milk, cheese, custard and sour cream
<b>Peanuts</b>	Whole peanuts and peanut butter
<b>Soybeans</b> (except for soybean oil that has been degummed, neutralised, bleached and deodorised or soybean derivatives that are a tocopherol or a phytosterol)	Soy milk, soy sauce and tofu
<b>Sesame seeds</b>	Sesame seed and tahini
<b>Tree nuts</b> (other than coconut from the fruit of the palm <i>Cocos nucifera</i> )	Almonds, brazil nuts, cashews, pistachios, hazelnuts and walnuts
<b>Lupin</b>	Lupin and lupin flour

## 2.0 Project aim

It is imperative that the consumer is provided accurate information regarding the content of food, in order to make safe and informed food purchases. This CSP aimed to monitor and survey the prevalence of undeclared allergens in packaged and unpackaged food sold in WA by analysing for the presence of the ten most common food allergens which require a declaration of their presence, as specified by Standard 1.2.3 of the FSC (FSANZ, 2018b).

### 3.0 Methodology

Sampling instructions were supplied to all the WA LGA's. Both metropolitan and non-metropolitan LGA's were encouraged to participate in this CSP. To promote their involvement, it was recommended that smaller LGA's sample food carrying an 'allergen-free' claim prepared in any food premises, including cafes, pubs and restaurants. The number of samples suggested to be collected by each LGA was between one and ten samples, as determined by the LGA population (Table 2).

Table 2. The number of samples to be collected by each participating LGA.

LGA Population	Suggested Number of Samples
1 - 2000	1
2001 – 10,000	3
10,001 – 50,000	5
> 50,0000	10 (maximum)

The instructions sent to all LGA's included a schedule to ensure that a variety of food types were included for analysis. Nine specific food product groups were included in the instructions: fruit and vegetable products, meat and seafood products, dried and tinned products, cereal produce (including noodles, pasta and rice), dairy and cheese products, sauces and marinades and drinks, confectionary (biscuits, crisps, snack bars etc.), miscellaneous (oils, soups etc.) and over the counter meals. Each of these nine product groups were allocated to one lead LGA (a major user of the LHAAC sampling scheme) and multiple smaller LGA's.

The products and premises to be sampled were selected at the discretion of each participating LGA. To minimize duplication, it was suggested that it may be prudent for LGA's to sample some of the lesser-known goods in each of the product groups as well as to obtain samples from smaller specialist outlets and mainstream supermarket chains. It was proposed that LGA's sampling prepared meals should include local cafes, pubs and restaurants for assessment.

From April 2018, samples were submitted to Agrifood or ARL. Agrifood and ARL conducted analysis utilising National Association of Testing Authorities (NATA) accredited methods. The testing protocol by the analyst was dependent on the food type:

Unpackaged ready-to eat food products (from cafes, pubs, restaurants etc.). The analyst conducted tests for the presence of allergens to assess the accuracy of allergen free claims provided on the menu or advertised in conjunction with the sale of the food.

Packaged food products with food labels. The analyst assessed the information on the food label with the labelling requirements stipulated in the FSC including the nutritional information panel requirements (Standard 1.2.8, Division 2 of the FSC) and mandatory declaration requirements (Standard 1.2.3, clause 4 of the FSC) (FSANZ, 2018b). Packaged food products labelled with an allergen free claim were tested

for the presence of the specific allergen to confirm the accuracy of the claim provided. Tests were also conducted on packaged food which did not have allergens listed on the label but were suspected of containing them, for example chocolate Easter eggs which do not declare the presence of milk content on the label.

## 4.0 Results

A total of 202 samples were submitted by 37 WA LGA's to Agrifood and ARL for assessment at the end of the sampling period. A range of different product groups were submitted for analysis (Figure 1). The most common type of product submitted were cakes and other types of desserts such as brownies, slices and muffins (15%). The next most common types of food analysed were ready-to-eat meals (10%), biscuits (8%), meat (7%), sauce (7%) and spreads (7%). The 'other' food category consisted of a variety of foods including spices, coconut products, muesli and snack products.

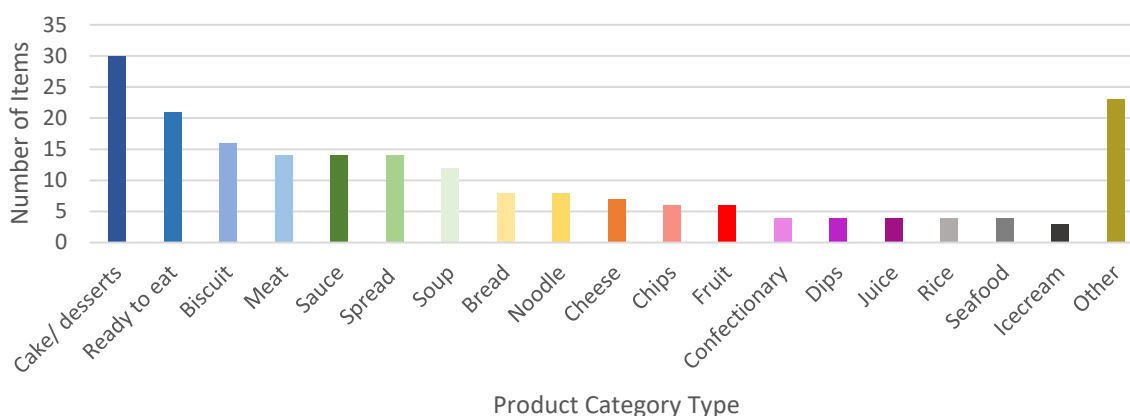


Figure 1. The type of food products (n = 202) submitted for analysis grouped in categories.

The 202 submitted food products were analysed by the approved analysts for the 10 allergens (Table 1) in accordance with the CSP instructions. It is important to note that approximately 42% of the food products were tested for more than one allergen type. A total of 419 different allergen tests were conducted. The most common type of test conducted was for the presence of cereals containing gluten (36.5%); followed by milk (23.6%), tree nuts (14.3%), peanuts (6.4%), soybeans (5.7%), egg (5.7%), sesame seeds (4.1%), lupin (1.4%), crustacea (1.4%) and fish (0.7%) (Table 3). All the tests for the detection of egg, milk, peanut, lupin, sesame, shellfish and fish results indicated accuracy of allergen claims. Of the 419 tests, inaccuracies with allergen claims were identified for cereals containing gluten (n = 2), soybeans (n = 2) and tree nuts (n = 1) (Table 3).



Table 3. The number of allergen tests conducted per type and the number of results demonstrating inaccurate allergen claims.

Allergen type	Number of allergen tests conducted	Number of inaccurate results
Cereals containing gluten	153	2
Soybeans	24	2
Tree nuts	60	1
Milk	99	0
Egg	24	0
Peanuts	27	0
Crustacea	6	0
Fish	3	0
Lupin	6	0
Sesame seeds	17	0
<b>TOTAL</b>	<b>419</b>	<b>5</b>

Test results of the majority (98%) of the analysed food (n = 202) indicated accuracy with the relevant allergen claims. Test results of approximately 2.5% (n = 5) of the 202 food products produced results that were reflective of inaccurate allergen declaration claims (Table 4).

Table 4. Details of the results indicating inaccurate allergen claims.

Sample type	Detected ingredient	Allergen	Packaged	Inaccuracy
Bread	Soy	Soybean	Yes	Label stated 'free of Soy'
Aleppo Kibbeh	Gluten and soy	Cereals containing gluten and soybean	Yes	Label did not declare the presence of allergens
Malteser Cake	Hazelnut	Tree nuts	No	No declaration. The product contained tree nuts
Caramel Slice	Gluten	Cereals containing gluten	No	Claimed to be a gluten free product

The analysts conducted label assessments on a total of 181 products to check for accuracy against the labelling requirements prescribed in the FSC. Approximately 3.3% (n = 6) of the assessed products were considered to be inaccurate against the mandatory declaration of certain foods or substances in food as prescribed in Standard 1.2.3, clause 4 of the FSC (FSANZ, 2018b).

## 5.0 Discussion

The Australian consumer has the right to have access to food that is accurately labelled. Inaccurate labelling poses a risk to the health of consumers who suffer from food allergies, food intolerance or coeliac disease. A recent survey identified that a number of Australians suffered from an anaphylactic reaction after consuming packaged food which did not list the suspected allergen as an ingredient (University of Melbourne, 2018). Consumers can also rely on accurate information on the content of their food in order to avoid certain foods due to cultural, ethical or religious reasons, for example devout Hindus do not eat eggs (Department of Health, 2013).

Thirty-seven percent of all Australian food recalls in 2008 – 2017 were due to undeclared allergens with milk being the most common type, followed by peanuts (FSANZ, 2018a). There was a total of 230 recalls of Australian food in this period due to the undeclared presence of allergens (FSANZ, 2018a). The three types of allergens detected in this CSP with inaccurate allergen labelling results are in the top five most common allergen related recalls (FSANZ, 2018a). The NSW Food Authority (2018) suggest that one reason food recalls are likely increasing in Australia is a result of an increase in allergy awareness.

This study found two samples (1.3%) out of 153 contained the presence of detectable levels of gluten, indicating inaccuracies with allergen claims. Gluten was detected in a packaged kibbeh product which did not contain a label declaring its presence and an unpackaged caramel slice with 'gluten free' claims. This occurrence is a similar finding to a recent study that found 2.7% of food products (n = 256) purchased in Australia and labelled 'gluten free' contained detectable traces of gluten (Halmos, Clarke, Pizzey, & Tye-Din, 2018a). Another Australian study analysed ready-to-eat meals purchased in Melbourne which were advertised as 'gluten free' and found 9% contained gluten (Halmos, Di Bella, Webster, Deng, & Tye-Din, 2018b).

Two samples out of 24 indicated inaccurate results with allergen declaration claims for soy. Soy was detected in one bread product labelled 'free of soy' and in a kibbeh product which did not contain a label declaring the presence of soy.

Of 181 food product labels assessed in this CSP, approximately 3.3% were not accurate when compared against the mandatory declaration requirement of certain foods or substances in food as prescribed in Standard 1.2.3, clause 4 of the FSC. Previous surveys have found that a small portion of food products were not labelled in accordance with the provisions outlined in Standard 1.2.3 of the FSC. LHAAC's CSP 20 indicated that the labelling on 14% (n = 43) of 301 seafood products was inaccurate against mandatory declaration requirements as per Standard 1.2.3, clause 4 of the FSC (LHAAC, 2017). LHAAC's CSP19 indicated inaccurate results in six food products labelled 'gluten free' and one product labelled 'nut free' (LHAAC, 2016).

A study in Melbourne found increased levels of accuracy with gluten free claims from sampling conducted prior to other audits and education initiatives (Halmos et al., 2018b). This highlights the importance of continued surveillance and monitoring of food products to ensure increased compliance across the industry. Survey results from an Australian study determined decreased accuracy with

'gluten free' claims in food sold from premises which did not provide training to staff (Halmos et al., 2018b). Education and training to reduce undeclared allergen inaccuracies can cover measures to reduce cross contamination during storage, display and transport of food (NSW Food Authority, 2018).

## **5.1 Limitations**

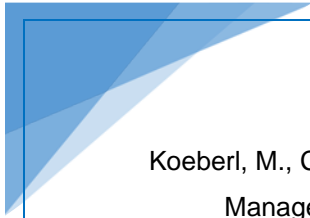
Comparison of product commodities and allergen type were not evenly distributed. Minimal tests were conducted to analyse products for shellfish (n = 6), fish (n = 3) and lupin (n = 6), in comparison to the increased number of tests conducted for gluten (n = 153) and milk (n = 99).

## **6.0 Conclusion**

Inaccuracies with allergen declaration claims were indicated in approximately 2.5% of the assessed products. In addition, inaccuracies with food product labelling were indicated in approximately 3.3% of the assessed products. The inaccuracies identified in this study were followed up by the assessing officer in each LGA. It is imperative that continued surveillance and monitoring of food is maintained to ensure that labelling inaccuracies regarding allergens are addressed.

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## Appendix A

### Raw Data

For further questions or inquiries about raw data contact LHAAC Co-ordinator Trevor Chapman:

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