



FOOD ALLERGEN TARGETED SURVEYS

Undeclared Tree Nuts in Nut Free Products



What are targeted surveys?

The Canadian Food Inspection Agency (CFIA) monitors the food sold to Canadians to make sure it meets Canadian standards and to identify any possible new health risks before they become an issue. Active monitoring of food safety is completed in a number of different ways. One way is through targeted surveys.

Targeted surveys provide information on food hazards that are not usually a part of the CFIA's regular monitoring programs. These surveys provide data that is used to confirm food safety, identify potential emerging hazards, and contribute new information and data to food categories where it may be limited or non-existent. They are used by the CFIA to focus surveillance on areas of highest risk. They can also help to identify any trends that are occurring and provide information about how manufactures comply with Canadian regulations.

Targeted surveys can be best broken down into their classes of food hazards. These include food allergens, chemical contaminants and residues, and microbiological hazards. Due to the large number of possible allergen and food combinations, it is not possible to use targeted surveys to identify and quantify all hazards in foods. To identify the food-hazard combinations with the greatest potential health risk, the CFIA reviews scientific literature, media reports, risk intelligence data, and receives input from a number of federal, provincial and territorial subject matter experts in the area of food safety.

What are Canada's priority food allergens?

Food allergens are food proteins that can cause a reaction of the body's immune system in some people. Priority food allergens are the most common food proteins associated with severe allergic reactions, or allergy like reactions in Canada. These allergens consist of peanuts, tree nuts, sesame, seafood, eggs, milk, soy, mustard, sulphites, wheat and cereal grains containing gluten.

This report presents the results of an allergen survey that was conducted to look at the levels of tree nuts in foods labelled as being free of nuts.

Why Are We Concerned About Allergens?

Food allergies can affect people of all ages but are particularly common in children. Food allergens can represent a serious or life threatening health risk for allergic individuals. Reactions to food allergens depend on the individual's sensitivity and can range from mild, to severe, to life threatening. Interestingly, the degree of reaction can vary from day to day. This makes proper identification and labeling of allergens in food by the manufacturer essential.

Allergens can be found in food due to their presence in the raw ingredients, or they can be accidentally introduced along the food production chain because of cross contamination. Regardless of the source of the allergens, industry must ensure that the food produced is safe for human consumption, either by complying with specific Canadian regulations where applicable, or by keeping the levels as low as reasonably possible.

Targeted surveys, like this one, generate information on the presence and levels of the priority allergens in foods.

Why we did this survey

Approximately 7 percent of Canadians have self-reported as having at least one food allergy, but the actual number of medically diagnosed food allergies is expected to be slightly lower¹. It is believed that the rate of food allergies is on the increase, particularly among children. Food allergies are estimated to affect up to 5% of adults but up to 8 % of children in developed countries².

The main objective of this survey was to obtain baseline information regarding the presence and levels of undeclared almond and hazelnuts in products with a tree nut/nut free claim. These included, but are not limited to, snack foods (muffins, crackers), desserts (ice cream, cookies, chocolate), and meals (soup, stew, pasta). All products were tested "as sold", meaning that they were not prepared as per manufacturers instructions (i.e. as they would typically be consumed).

What we tested

Food product samples were collected from retail stores between May 2014 and April 2015. In total, 1010 foods were sampled, including:

582 products grown or produced in Canada

371 imported products (from 18 countries)

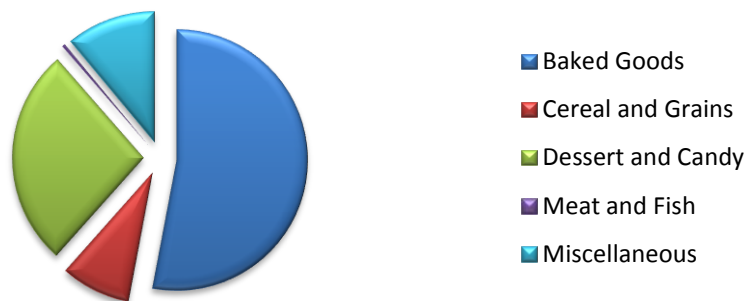
57 products where the country of origin could not be determined from the product label or sample information

Figure 1: Relative distribution of domestic and imported samples collected for this survey.



Note: Figure 1 does not include samples of unknown origin, or samples that the origin could not be determined with absolute confidence.

Figure 2: Relative distribution of sample types collected for this survey



How we did the survey

The samples were collected at stores in six Canadian cities and were tested in the condition they were bought.

Foods sampled in this survey included any prepackaged product with a tree nut free claim on the label. Products were excluded from the survey if any of the following tree nuts were listed in the list of ingredients: almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, pecans, pine nuts, pistachio nuts or walnuts. Foods with 'May Contain' or similar precautionary statements were also excluded in the survey.

While not all detectable levels of undeclared allergens pose a risk to consumers, all positive results are followed up by CFIA. The extent of the follow-up actions are based on the seriousness of the contamination and the resulting health concern as determined by a risk assessment. These actions could range from testing more samples, to an inspection of the facility where the product was processed or sold. Follow-up actions could potentially result in recalling the product from the Canadian market place.

What We Found

Approximately 1000 samples were tested in this survey and only one confirmed positive almond sample was identified.

Table 1: Summary of survey results by product type – Samples with undeclared allergens

Category	Total Samples Tested	No. + ve Hazelnut	Amount (ppm)	No. +ve Almond	Amount (ppm)
Baked Goods	535	0		0	
Cereal and Grains	87	0		0	
Dessert and Candy	273	0		1	0.7
Meat and Fish	4	0		0	
Miscellaneous	111	0		0	
Total	1010	0		1	

Note: For detailed information based on the types of products in each category see Appendix 1

What do these results mean?

This survey generated new information on the background level of almond and hazelnuts in samples of pre-packaged foods containing a nut free claim. Based on this survey, the occurrence of two undeclared tree nut allergens (almond and hazelnut) in a variety of prepared foods was almost absent. Only one confirmed positive almond sample was identified in this survey at 0.7 ppm. The information was forwarded to the Office of Food safety and Recall within the CFIA and a food safety investigation was conducted which resulted in a recall of the product from the market.

WHAT DOES PARTS PER MILLION (PPM) MEAN?

Allergens are measured and reported as parts per million (ppm). When thinking about contamination, 1 ppm is like 1 drop of ink in a large laundry sink.

Information gathered in this survey, in conjunction with other data including the Canadian Total Diet Study, and Statistics Canada's Canadian Health Measures Survey food consumption data, are critical information in assessing the health risk that our food supply poses to Canadian consumers.

The CFIA continues its surveillance activities and informs the Canadian public and stakeholders of its findings.

Appendix 1

Detailed information of the types of products in each category

Product Type	Origin			Total
	Domestic	Import	Unknown	
Baked Goods				
Baked Goods	84	8	5	97
Baking Mixes	33	24	2	59
Bread products/ croutons	14	10	1	25
Cookies/crackers	250	90	14	354
Total	381	132	22	535

Product Type	Origin			Total
	Domestic	Import	Unknown	
Cereal and Grains				
Cereal products	6	20	3	29
Corn Products	0	1	0	1
Grain products/flours	29	22	0	51
Rice Products	4	1	1	6
Total	39	44	4	87

Product Type	Origin			Total
	Domestic	Import	Unknown	
Desserts and Candy				
Candy products	49	42	2	93
Chips various	11	25	2	38
Chocolate products	13	25	1	39
Popcorn	3	5	1	9
Fruit snacks	22	46	2	70
Dessert Frozen (Dairy)	9	0	1	10
Dessert (non-dairy)	5	0	0	5
Desserts/puddings	7	2	0	9
Total	119	145	9	273

Product Type	Origin			Total
	Domestic	Import	Unknown	
Meat and Fish				
Breaded Chicken	0	2	0	2
Breaded Fish	0	2	0	2
Total	0	4	0	4

Product Type	Origin			Total	
	Miscellaneous	Domestic	Import		Unknown
Beverage -Other		0	1	0	1
Butters Other Nut		14	19	0	33
Dried Fruit		5	15	0	20
Dried mixes		1	0	0	1
Ginger Organic		0	1	0	1
Pulses and Seed					
Products		8	12	0	20
Pizza and Pasta					
Products		4	9	1	14
Potato Products		2	1	0	3
Preserve-Other		0	1	0	1
Protein Products		0	2	0	2
Pumpkin Products		1	1	0	2
Other		8	5	0	13
Total		43	67	1	111

References

1, Soller, L., Ben-Shoshan, M., Harrington, D. W., Fragapane, J., Joseph, L., Pierre, Y. S., Clarke, A. E. (2012). Overall prevalence of self-reported food allergy in Canada. *Journal of Allergy and Clinical Immunology*, 130(4), 986-988.

2, Sicherer, S. H., & Sampson, H. A. (2014). Food allergy: Epidemiology, pathogenesis, diagnosis, and treatment. *Journal of Allergy and Clinical Immunology*, 133(2), 291-307.