



Undeclared Allergens and Gluten in Frozen Desserts - April 1, 2015 to March 31, 2016

Food allergen - Targeted surveys



Summary

Targeted surveys provide information on potential food hazards and enhance the Canadian Food Inspection Agency's (CFIA's) routine monitoring programs. These surveys provide evidence regarding the safety of the food supply, identify potential emerging hazards, and contribute new information and data to food categories where it may be limited or non-existent. They are often used by the CFIA to focus surveillance on potential areas of higher risk. Surveys can also help to identify trends and provide information about how industry complies with Canadian regulations.

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. Additionally, although it is not considered an allergen, undeclared gluten may contribute to chronic health issues for those individuals with celiac disease or gluten sensitivity. Allergens and gluten can be found in food due to their presence in the raw ingredients or they can be accidentally introduced along the food production chain due to cross contamination. Regardless of their source, industry must ensure that the food produced is safe for human consumption, either by complying with specific Canadian regulations where applicable or by keeping allergen levels as low as reasonably possible.

The main objective of this survey was to obtain baseline information regarding the presence and levels of undeclared allergens and gluten in frozen desserts. 598 samples were tested in this survey, and 10 of the samples were found to contain undeclared allergens including the milk protein beta-lactoglobulin (BLG) and casein, as well as gluten, soy and almond. Most positive results indicated the presence of milk allergens in non-dairy frozen desserts.

9 of these 10 samples were forwarded to the CFIA's Office of Food Safety and Recall (OFSR) to determine if the levels found would pose a health risk to allergic individuals. The extent of the follow-up actions taken by CFIA is based on the seriousness of the contamination and the health concern as determined by a health risk assessment. 1 non-dairy frozen dessert containing undeclared milk and 1 dairy frozen dessert containing undeclared almond were deemed to represent a health risk and were recalled.

What are targeted surveys

Targeted surveys are used by the CFIA to focus its surveillance activities on areas of higher health risk. The information gained from these surveys provides support for the allocation and prioritization of the Agency's activities to areas of greater concern. Targeted surveys are a valuable tool for generating information on certain hazards in foods, identifying and characterizing new and emerging hazards, informing trend analysis, prompting and refining health risk assessments, highlighting potential contamination issues, as well as assessing and promoting compliance with Canadian regulations.

Food safety is a shared responsibility. The Canadian Food Inspection Agency works with federal, provincial, territorial and municipal governments and provides regulatory oversight of the food industry to promote safe handling of foods throughout the food production chain. The food industry and retail sectors in Canada are responsible for the food they produce and sell, while individual consumers are responsible for the safe handling of the food they have in their possession.

Why did we conduct this survey

Approximately 7% of Canadians have self-reported as having at least 1 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 increasing, particularly among children. Food allergies are estimated to affect up to 5% of adults and up to 8% of children in developed countries². Food allergens are food proteins that can cause a reaction of the body's immune system, and can represent a serious or life threatening health risk for allergic individuals or contribute to chronic health issues for those with pre-existing health conditions like celiac disease. Approximately 1% of the total population are affected with celiac disease³. Celiac disease is a chronic reaction where the body reacts to a component of gluten which can damage or destroy certain intestinal cells.

The priority food allergens are the 10 most common food components that are associated with severe allergic or allergy-like reactions in Canada. These allergens consist of peanuts, tree nuts, sesame, seafood (fish, shellfish and crustaceans), eggs, milk, soy, mustard, sulphites, and wheat. Gluten, while not a true allergen, is included in this list. Gluten is a family of proteins found in certain grains like wheat, rye, barley, kamut, and spelt. Gluten can cause digestive problems and other issues for people with certain health conditions such as celiac disease and gluten sensitivity. This report presents the results of a survey conducted to look at the levels of undeclared allergens and gluten in frozen desserts.

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

Food allergens can represent a serious or life threatening health risk for allergic individuals or contribute to chronic health issues for those with pre-existing health conditions like celiac disease. Reactions to food allergens depend on the individual's sensitivity and can range from mild to severe or life threatening. This makes proper identification and labeling of allergens in

food by the manufacturer essential. The following types of products were sampled for this survey: Non-dairy frozen desserts and dairy frozen desserts. All products were tested “as sold,” meaning that they were not prepared as per manufacturer’s instructions or as they would typically be consumed.

This was the first survey conducted by the CFIA for undeclared allergens and gluten in frozen desserts. The main objective of this survey was to obtain baseline information regarding the presence and levels of undeclared allergens and gluten in these types of products.

What did we sample

Frozen desserts were sampled from April 2015 to March 2016. Samples were collected from local/regional grocery stores located in 6 major cities across Canada. These cities encompassed 4 geographical areas: Atlantic (Halifax), Quebec (Montreal), Ontario (Toronto, Ottawa) and the West (Vancouver, Calgary). The number of samples collected from these cities was in proportion to the relative population of the respective areas.

The following products were not included in the survey:

- products with all of the following allergens in the list of ingredients (1 of or more in the list of ingredients was fine for testing) - mustard, soy, wheat, rye, barley, triticale, kamut, spelt, gluten milk, and sesame
- products with no list of ingredients
- products with a precautionary statement for all priority allergens
- products from bulk bins

Table 1. Distribution of samples based on product type and origin

Sample type	Domestic	Import	Unspecified origin*	Total
Dessert - frozen (dairy)	248	39	58	345
Dessert - frozen (non-dairy)	41	127	85	253
Total	289	166	143	598

* unspecified refers to those samples for which a country of origin could not be determined from the product label or available sample information.



How were samples analyzed and assessed

Samples were analyzed by an International Standards Organization (ISO) 17025 accredited food testing laboratory under contract with the Government of Canada. The samples were tested as sold, meaning that the product was tested as-is and not as prepared according to package instructions.

In Canada, food allergens and gluten must be declared in the list of ingredient if they are present in the prepackaged product in order to comply with the requirements of *Food and Drug Regulations* Section [B.01.010.1](#). A prepackaged product will be deemed non-compliant if any level of undeclared allergens and gluten is detected.

Health Canada considers that gluten-free foods, prepared under good manufacturing practices, which contain levels of gluten not exceeding 20 parts per million (ppm) (due to cross contamination) meet the intent of the *Food and Drug Regulations* [Section B.24.018](#) for a gluten-free claim.

What were the survey results

Approximately 98% of all frozen desserts sampled in this survey did not contain any detectable levels of undeclared allergens, while 10 of the samples tested in this survey tested positive for undeclared allergens. These positive results primarily resulted from detection of low levels of milk. The majority of undeclared allergens detected were in non-dairy frozen desserts.

Table 2. Levels of allergens and gluten in frozen desserts in mg/kg or ppm

Sample type	Gluten	Soy	Almond	BLG	Casein
Toasted hazelnut sensual fruit ices and ice creams			12.9		
Snow flake cake (mung bean – durian)	15				
Frozen fruit bars (real fruit strawberry & kiwi) - 1				0.5	
Frozen fruit bars (real fruit strawberry & kiwi) - 2				0.6	
Frozen fruit bars (raspberry)				0.2	
Durian ice bar				0.2	0.7
Apple pie		0.7			
Purple yam cookie		0.6			
Frozen mango fruit sorbet bar				7	20
Strawberry rhubarb pie		1.5		0.8	

What do the survey results mean

Of the 598 samples tested, approximately 98% did not contain any detectable levels of undeclared allergens. Of the 10 allergen positive frozen dessert samples, undeclared allergens were most frequently present in non-dairy frozen desserts.

The extent of the follow-up actions taken by CFIA is based on the level of contamination and the resulting health concern as determined by a health risk assessment. Appropriate follow-up actions can include additional sample testing, facility inspection and product recall. The health risk assessment is based on exposure to the allergens and gluten through consumption. The exposure is calculated by using the typical serving sizes for each food. Assessment based on serving size means not all detectable levels of undeclared allergens and gluten in food will cause a reaction in an allergic individual.

Gluten

Only 1 product tested contained a low level of gluten (15 ppm). Gluten can be present in a food due to cross contamination because of manufacturing or distribution practices, as grains containing gluten are widely used in the production of many pre-packaged foods⁴.

The best currently available scientific evidence indicates that levels of gluten below 20 ppm in gluten-free foods would be protective of the health of the vast majority of people with celiac disease⁵. Therefore, this positive sample met the criterion for gluten free food and is safe for consumption.

Almond

Undeclared almond was detected in only 1 product and this product was toasted hazelnut ice cream. The presence of undeclared almond was likely the result of cross contamination. After health risk assessment, this product was considered to pose health risk to consumers and was recalled.

Soy

3 products sampled in this survey contained undeclared soy at levels of 0.64 ppm, 0.76 ppm and 1.54 ppm. Based on previously assessed products, the low level could possibly be a result of cross contamination or cross contact in the manufacturing process or was present in 1 of the ingredients. This could result in the presence of a small amount of allergen in the final product. The true source of the allergenic protein was not determined. None of these products were deemed to present health risks to consumers.

Milk

Undeclared BLG was detected in 6 non-dairy products sampled in this survey and 2 of them also contained casein. Both BLG and casein are milk proteins. Low levels of BLG and casein could be introduced into the product due to cross contamination in an ingredient or the final product. These 2 products had BLG/casein ratios that may be indicative of the presence of low levels of whole milk. All positive results were forwarded to OFSR for health risk assessment and only 1 product containing both undeclared BLG and casein was recalled.

This survey generated new information on the background level of undeclared allergens and gluten in frozen desserts collected from 6 cities across Canada. Based on the results obtained,

a follow-up survey on frozen desserts will be scheduled at a later date. 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 in assessing the health risk that our food supply poses to Canadian consumers. The results of CFIA's surveillance activities are also used to inform the Canadian public and stakeholders by raising consumer awareness and to help build public confidence in their food supply by removing non-compliant products.



References

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