



FOOD ALLERGEN TARGETED SURVEYS

Undeclared Milk and Gluten in Ready to Use Sauces

2015/16



Summary

Targeted surveys provide information on potential food hazards that enhance the Canadian Food Inspection Agency's (CFIA's) regular monitoring programs. These surveys provide data used to confirm 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 used by the CFIA to focus surveillance on potential areas of highest risk. They can also help to identify any trends that are occurring 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, 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 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.

Pre-packaged sauces, marinades and gravies are convenience products used to infuse or enhance the taste of a finished food product. Foods sampled in this survey included any prepackaged sauces, marinades, and gravies without a milk or gluten claim on the label. The products were tested for beta-lactoglobulin and casein (the two proteins that indicate the presence of milk) and gluten. In total, 299 foods samples were collected from retail stores between May 2015 and April 2016. Only three samples were confirmed positive for casein protein.

All positive allergen results are forwarded to the CFIA's Office of Food Safety and Recall (OFSR). Within CFIA, the OFSR evaluates and determines if the level of undeclared allergen poses a health concern to allergic individuals. Two positive results obtained in this survey were determined to represent a health risk and a food recall was issued.

What are targeted surveys?

The CFIA monitors the food sold to Canadians to make sure Canadian standards are met and to identify any possible new health risks before they become an issue. Active monitoring of food safety is achieved a number of different ways. One way is through targeted surveys.

These surveys provide data that is used to confirm food safety, identify potential emerging hazards, and contribute new information and data on 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 industry complies with Canadian regulations.

Targeted surveys can be best broken down into their classes of food hazards. These may include microbiological hazards, chemical contaminants and residues, and the subject of this report, food allergens.

Due to the large number of possible allergen and food combinations, it is not possible to use targeted surveys to identify and quantify all allergens in these foods. To identify and study the food-allergen 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 components associated with severe allergic reactions, 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 also 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 and other problems for people with certain health conditions such as celiac disease and gluten sensitivity.

This report presents the results of an allergen survey conducted to look at the levels of undeclared milk and gluten in ready to use sauces marinades, and gravies.

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, or contribute to chronic health issues for those with celiac disease. 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 due to cross contamination. Regardless of the source of the allergens, industry must ensure that the food they produce 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 and gluten in foods.

Why did we conduct 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 increasing, particularly among children. Food allergies are estimated to affect up to 5% of adults, but up to 8 % of children in developed countries². Additionally, approximately 1% of the total population are affected with celiac disease³. Celiac disease is a chronic hypersensitivity reaction where the body reacts to the non-infectious antigen gliadin, a component of gluten.

In 2010, the CFIA conducted a survey for undeclared allergens in sauces. This survey targeted milk (casein and beta-lactoglobulin), egg, peanut, soy, tree nuts (almonds and hazelnuts), sesame and gluten. Out of those samples tested, 4.4% tested positive for one or more undeclared allergens or gluten (primarily milk and gluten). Four of these samples were identified as being of higher concern. These four samples were sent to the Office of Food Safety and Recall (OFSR) for follow up, resulting in two food recalls. A recommendation from that study was the need to focus additional attention on undeclared milk and gluten in sauce/marinade/dressing products with appropriate emphasis on imported products. This recommendation was the impetus for this survey.

The main objective of this survey was to obtain additional information regarding the presence and levels of undeclared milk (beta-lactoglobulin and casein), and gluten in prepackaged sauce products. The sampled products were categorized into the following food types: emulsified sauces and dips (mayonnaise, salad dressing, onion dip, etc.), non-emulsified sauces (ketchup, cheese sauce, cream sauce, brown gravy etc.), mixes for sauces and gravies, pasta sauces, and marinades and spices. All products were tested "as sold", meaning that they were not prepared as per the manufacturer's instructions (i.e. as they would typically be consumed).

How did we do the survey?

Food samples were collected between May, 2015 and March, 2016 from national retail chains and local/regional grocery stores located in 6 major cities across Canada. These cities encompassed the four geographical areas including Atlantic (Halifax), Quebec (Montreal), Ontario (Toronto, Ottawa), and the West (Vancouver, Calgary). In total, 299 products were sampled. These included 46 products grown or produced in Canada, 141 imported products (from 19 different countries), and 112 products where the country of origin could not be determined with absolute confidence from the product label or package information, unknowns.

Table 1 – Types and numbers of samples and their origin

Sample Type	Domestic	Import	Unknown
Emulsified sauces and dips	2	7	10
Non-emulsified sauces	6	39	19
Mixes for sauces and gravies	12	47	57
Pasta sauces	23	31	12
Marinades and gravies	3	17	14

What did we sample?

The foods sampled for this survey included any prepackaged product without the following allergen sources in the list of ingredients; milk, wheat, barley, oats, rye, triticale, kamut, and spelt. Foods with a precautionary statement such as 'may contain', 'made in a facility that processes' or any similar precautionary statement for any of these ingredients were excluded from the survey.

What did we find?

Of the 299 samples tested for beta-lactoglobulin (BLG) casein and gluten, none of the samples contained any BLG or gluten, and only three samples were found to contain casein.

Table 2 - Summary of survey results of undeclared allergens detected in parts per million (ppm) by product type.

Sample Type	Samples tested	BLG (ppm)	Casein (ppm)	Gluten (ppm)
Emulsified sauces and dips	13			
Non-emulsified sauces	64			
Mixes for sauces and gravies	116			
Coconut curry sauce *			300	
Coconut curry sauce **			360	
Pasta sauces	66			
Sweet basil pasta sauce			1.2	
Marinades and spices	34			
Total positive results		0	3	0

* sampled in Halifax

** sampled in Ottawa

What do these results mean?

This survey generated new information on the background levels of milk and gluten in samples of pre-packaged sauces without milk or gluten declared in the list of ingredients. Beta-lactoglobulin and gluten were not detected in any of the samples tested. The milk protein, casein, was the only allergen confirmed in any of the samples and was only found in three of the 299 samples in this survey.

Casein is the major protein component in milk. Casein products are used in foods to enhance their physical properties, such as foaming, thickening, emulsification, and to improve their texture or nutritional value. The levels of casein detected in two food products in this survey were present at a higher level. Previous food safety investigations have determined that higher levels of allergens may be from an added ingredient during manufacturing and not necessarily a result of cross contamination. The occurrence of undeclared milk has remained similar to the previous surveys.

In comparison, it appears the occurrence of undeclared gluten has decreased in the time between these two surveys. However, given the limited sample size and quantity of products available on the market, this observation may not be a statistically significant decrease. More surveys are planned for the future to expand the data set.

All positive results are followed up appropriately. Follow-up activities can include further scoping and analysis, formal communication with manufacturer, or recall. In this case, all three positive allergen results were forwarded to the CFIA's Office of Food Safety and Recall (OFSR). The OFSR, in conjunction with the Chemical Health Hazard Assessment Division at Health Canada, determined the levels of undeclared allergens in these products posed a health concern to allergic individuals. The OFSR has the designated authority within CFIA to advise the manufacturer or importer to recall the product from the marketplace and a subsequent recall was issued for one product.

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.

References

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