



Undeclared Peanut and Gluten in Cumin and Paprika - September 1, 2015 to November 31, 2015

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 peanut and gluten in cumin and paprika products. 299 samples were tested in this survey, and approximately 19% (57) of the samples were found to contain undeclared gluten and/or peanut. Most positive results were found in the ground/powdered cumin products.

37 positive results 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. Only 1 ground/powdered cumin product containing undeclared gluten was deemed to represent a health risk and was 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. Originally started as a project under the Food Safety Action Plan (FSAP), targeted surveys have been embedded in the CFIA's regular surveillance activities since 2013. 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 CFIA 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.

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 peanut and gluten in cumin and paprika product.

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: cumin seeds, ground/powdered cumin and ground/powdered paprika. All products were tested “as sold,” meaning that they were not prepared as per manufacturer’s instructions or as they would typically be consumed.

The main objective of this survey was to provide data to assist in determining the prevalence of allergens and gluten in cumin and paprika products available at Canadian retail locations. Instance of cross-contamination and/or adulteration had been identified in spices by CFIA’s Policy and Programs Branch. This information was initially requested to aid in determining the source and root cause of peanut and almond in cumin-containing products. Almond was eventually excluded from this survey because the lab methodology for almond cross reacts with mahaleb, a spice obtained from the seeds inside mahaleb cherry stones. Mahelab spice is in common use in the Mediterranean region, Iran northern Europe and parts of central Asia and has been found to be present in a number of imported spices, likely as a cross contaminant. Results of this retail level survey helped to contribute to assessing the scope of undeclared allergens in spices and in investigating the potential health risk to Canadians. The survey provided baseline information regarding the presence and levels of undeclared peanut and gluten in cumin and paprika products.

What did we sample

Cumin and paprika products were sampled from September 2015 to November 2015. 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 any of the following allergens in the list of ingredients – peanut, wheat, rye, barley, triticale, kamut, spelt or gluten
- products with oat in the list of ingredients, but without a “gluten free” claim
- products from bulk bins
- products with a precautionary statement for peanut, wheat, rye, barley, triticale, kamut, spelt or gluten

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

Sample type	Domestic	Import	Unspecified origin*	Total
Cumin - ground/powdered	1	155	23	179
Cumin - seed	0	19	1	20
Paprika - ground/powdered	0	67	33	100
Total	1	241	57	299

* 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 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. All positive peanut samples are assessed against [Section B.01.010](#) of the *Food and Drug Regulations*.

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

What were the survey results

Approximately 81% of all cumin and paprika products sampled in this survey did not contain any detectable levels of undeclared gluten and/or peanut, while 57 of the samples tested in this survey were found positive for 1 or both undeclared allergens. The majority of peanut and/or gluten positive samples were present in ground/powdered cumin products. 22 of these positive samples contained levels of gluten not exceeding 20 ppm and met this criterion for a gluten free food.

What do the survey results mean

Of the 299 samples tested, approximately 81% did not contain any detectable levels of undeclared peanut and/or gluten. Of the 57 positive cumin and paprika samples, undeclared allergens were most frequently present in ground/powdered cumin products. 4 of the samples tested were found to be positive for both allergens.

Gluten

52 products sampled in this survey tested positive for undeclared gluten. The level of gluten detected in these 52 samples ranged from 6 to 25000 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. Additionally, the presence of high levels of gluten from wheat in ground spice has been known to be due to economically motivated adulteration however, determining the source is difficult with imported products.

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, only positive results higher than 20 ppm (per serving) were forwarded to the CFIA's OFSR for a health risk assessment and possible follow up action. Only 1 ground/powdered cumin product was determined to pose health risk to consumers, and was recalled.

Peanut

7 products sampled in this survey were detected to contain undeclared peanut at low levels ranging from 1.6 to 12ppm. The low level of peanut could possibly be introduced into the product due to cross-contamination. All positive results were forwarded to OFSR for health risk assessment, and none of these products were deemed to represent health risk to consumers.

The extent of the follow-up actions taken by CFIA is based on the level of the 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 actually 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 and therefore may not result in a product recall.

This survey generated new information on the background level of undeclared peanuts and/or gluten in cumin and paprika products collected from 6 cities across Canada. 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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