



Canadian Food
Inspection Agency

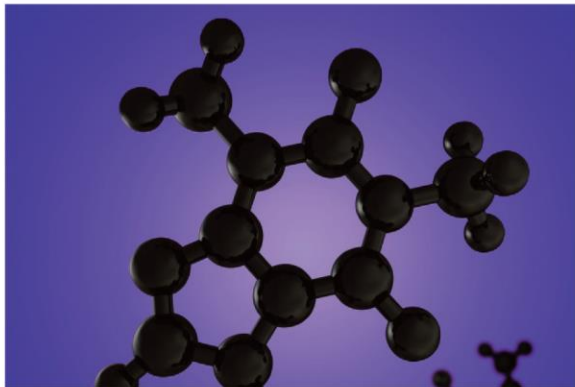
Agence canadienne
d'inspection des aliments

Food Safety Action Plan

REPORT

2011-2012 Targeted Surveys

Allergens



Undeclared Milk in Milk Alternative Products

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EXECUTIVE SUMMARY 2

1 INTRODUCTION..... 3

1.1 THE FOOD SAFETY ACTION PLAN 3

1.2 TARGETED SURVEYS 3

1.3 ACTS AND REGULATIONS 4

2 ALLERGENS SURVEY 4

2.1 RATIONALE 4

2.2 HAZARD: UNDECLARED MILK 5

2.3 SAMPLE DISTRIBUTION 5

2.4 LIMITATIONS 6

2.5 METHODOLOGY 6

3 RESULTS AND DISCUSSION 6

3.1 MILK RESULTS 6

4 CONCLUSION 7

5 REFERENCES..... 8

Executive Summary

The Food Safety Action Plan (FSAP) aims to modernize and enhance Canada's food safety system. As part of the FSAP enhanced surveillance initiative, targeted surveys are used to evaluate various foods for specific hazards.

The use of milk alternative products such as soy and nut beverages, as well as, dairy free cheeses in Canada has increased because of the milk sensitive population, including but not limited to, milk allergic individuals.

The main objective of the milk in milk alternative products survey was:

- To obtain baseline information regarding the presence and levels of undeclared milk in the milk alternative products available to milk sensitive consumers.
- To identify potential food safety concerns relating to undeclared milk in milk alternative products.

Milk alternative products are pre-packaged products used by consumers as replacements for dairy products. A total of 278 milk alternative products were analyzed for the presence of milk protein (casein and beta-lactoglobulin). Samples were collected based on retail availability. Examples of milk alternative products sampled for this survey included soy, rice, nut and hemp beverages, pudding, cheese, yogurt and desserts.

As a result of an ongoing food safety investigation and product recall action, a request was made to determine if samples of a specific brand of product had been picked up for analysis as part of this survey. Two domestic samples were found matching the requested criteria. These samples were immediately analyzed to determine if they contained milk protein. Results for these samples were positive for milk protein. As the lot codes for these 2 samples had already been recalled, no further action was necessary. No other samples were positive for milk protein of the 278 samples analyzed.

1 Introduction

1.1 The Food Safety Action Plan

In 2007 the Canadian Government launched a five year initiative in response to a growing number of product recalls and concerns about food safety. This initiative, called the Food and Consumer Safety Action Plan (FSCAP), aims to modernize and strengthen the food safety regulatory system. The FSCAP initiative unites multiple partners in ensuring safe food for Canadians.

The CFIA's Food Safety Action Plan (FSAP) is one element of the Government's broader FSCAP initiative. The goal of FSAP is to identify risks in the food supply, limit the possibility that these risks occur, improve import and domestic food controls and identify food importers and manufacturers. FSAP also looks to verify that the food industry is actively applying preventative measures.

Within FSAP, there are twelve main areas of activity, one of which is risk mapping and baseline surveillance. The main objective of this area is to better identify, assess and prioritize potential food safety hazards through risk mapping, information gathering and testing foods from the Canadian marketplace. Targeted surveys are one tool that is used to test for the presence and level of a particular hazard in specific foods. Targeted surveys are largely directed towards the 70% of domestic and imported foods that are covered exclusively by the *Food and Drugs Act*, and are generally referred to as non-federally registered commodities.

1.2 Targeted Surveys

Targeted surveys are used to test various foods for specific hazards and are meant to compliment the CFIA's regular programs and inspection activities. The surveys are designed to answer specific questions about hazards in food. Generally, they test for the occurrence and magnitude of defined hazards in targeted foods, often with the testing focusing on a specific segment of the population (i.e., consumers with an allergy or intolerance).

This targeted survey focused on the presence of undeclared milk protein in milk alternative products.

The information gathered will assess the compliance of these products with Canadian regulations and will provide an indication if follow up with industry is required.

1.3 Acts and Regulations

The *Food and Drug Act* (FDA) is the legal authority that governs the sale of food in Canada. The *Canadian Food Inspection Agency Act* stipulates that the CFIA is responsible for enforcing restrictions on the production, sale, composition and content of foods and food products as outlined in the *Food and Drugs Act* (FDA) and the *Food and Drugs Regulations* (FDR).

If a pre-packaged food product displays a list of ingredients without disclosing potential allergens this may result in a health risk to allergic consumers. Failure to declare allergenic components may be contrary to Subsection 5(1) of the FDA. These products may therefore be subject to regulatory measures taken by the CFIA.

Health Canada has recently made amendments to the *Food and Drugs Regulations* to enhance the labelling of priority allergens, gluten sources and sulphites in pre-packaged food sold in Canada. On February 16, 2011 Health Canada published these amendments in the *Canada Gazette*, Part II. The amendments require that food allergen and gluten sources be declared on the labels of pre-packaged foods, having a list of ingredients, whenever the protein, modified protein or protein fractions of the food allergen or gluten source are added to the product. The amendments also require the labelling of added sulphites.

Due to the complexity of the labelling changes required, and the extended shelf-life of some processed foods, Health Canada provided manufacturers with 18 months from the date of registration of the regulatory amendments to implement any changes required in their labels. CFIA and Health Canada continue to encourage industry to declare priority allergens, gluten sources and added sulphites on pre-packaged food labels to provide Canadians with the information necessary to make informed food choices. Canada's new food allergen labelling regulations are currently in force as of August 4, 2012. Information on these regulations can be found on the Health Canada website.ⁱ

The products tested in this survey did not have to meet the new regulations as they were sampled prior to the regulations coming into force, however, proactive actions by the manufacturing sector may have occurred to ensure that these products do meet new regulations.

2 Allergens Survey

2.1 Rationale

The presence of undeclared milk in a food is not a health concern for the majority of Canadians. However, undeclared allergens may represent a serious or life threatening health risk for allergic or sensitive individuals.

The main objective of this survey is to obtain baseline information regarding the presence and levels of undeclared milk protein in milk alternative products. The information gathered will provide an indication of potential food safety concerns relating to undeclared milk protein in milk alternative products.

2.2 Hazard: Undeclared Milk

Cow's milk allergy is the most common food allergy in children less than three years of age.ⁱⁱ The prevalence of self-declared milk allergy in the Canadian population has been estimated to be 2.09%.ⁱⁱⁱ Currently in Canada specific food allergens, including milk, have been identified by Health Canada as being responsible for causing the majority of severe allergic reactions, and are sometimes referred to as the priority allergens.^{iv} There is no cure for a food allergy, and the most important strategy for a person with a food allergy, or a person choosing food for an individual with a food allergy, is avoidance of the allergen or allergens that can trigger an adverse reaction. Allergens and gluten sources should be appropriately labelled to ensure consumers have complete, accurate information when choosing food products.

Milk alternative products are marketed towards a specific population that wishes to refrain from consuming milk protein. The presence of milk protein in these products could be a hazard to an allergic individual.

2.3 Sample Distribution

This survey targeted milk alternative products such as dairy free cheeses, beverages, desserts and yogurts. Samples were collected based on availability in 2011 and 2012 from major retail stores as well as smaller ethnic retailers. No specific brands were targeted. The distribution of the remaining 278 samples by product type is listed in Table.1.

Sample type	Domestic or Imported		
	Domestic	Imported	Total
Beverage-Hemp	44	0	44
Beverage-Other	8	35	43
Beverage-Rice	33	12	45
Beverage-Soy	31	24	55
Cheese	7	17	24
Desserts	12	21	33
Dessert – Frozen*	13	10	23*
Yogurt	5	5	10
Total	153	124	277

*Dessert-Frozen: 1 sample of unknown origin, not included in above table (Total 278)

2.4 Limitations

Samples were all purchased in various retail chains nationally. This represents a small sample size in comparison to what is available to Canadian consumers throughout the country. The samples collected in this survey do not guarantee representation of all national availability. The data collected from this survey is meant to provide a snapshot of the targeted commodity and has the potential to highlight problem areas that warrant further investigation.

2.5 Methodology

Samples were analyzed by an accredited third party laboratory. Third party laboratories are accredited to ISO/IEC 17025, General Requirements for the Competence of Testing and Calibration Laboratories (or its replacement by the Standards Council of Canada (SCC)).

The samples were tested for the presence of milk proteins beta-lactoglobulin (BLG) and casein. Food allergen proteins were detected and measured in the laboratory using ELISA-based accredited methodology.

Method	Analyte	Reporting Limit (ppm)
ELISA Systems Beta-Lactoglobulin	Beta-Lactoglobulin	0.1
ELISA Systems Casein Residue	Casein	0.26

3 Results and Discussion

3.1 Milk Results

There are two major allergen proteins in cow's milk: casein and beta-lactoglobulin.^v Cow's milk contains approximately 30-35 g of protein per liter^{vi}, of which casein and whey account for 80% and 20%, respectively.^{vii} Beta-lactoglobulin makes up approximately 50 % of the protein found in whey, or approximately 10% of the protein found in cow's milk.

Dried milk components are widely used in processed food products. Dried whey can be used as an emulsifier, a gelling agent and as a taste enhancer in foods. It is one of the least expensive ingredients that can be used in manufactured food and is commonly used in dried mixes, fillings and in sauces.^{viii}

Two hundred and seventy eight milk alternative samples (153 domestic products, 124 products of imported origins and 1 product that was from an unknown origin) were

analyzed for presence of milk (casein and beta-lactoglobulin, separately). A total of 556 individual allergen tests were completed on these 278 samples.

Table 3: Positive Sample distribution for Casein and Beta-lactoglobulin		
Analyte	No. samples tested	No. of positive samples
Milk: casein	278	1
Milk: beta-lactoglobulin	278	2

As a result of an ongoing food safety investigation and product recall action, a request was made to determine if samples of a specific brand of product had been picked up for analysis as part of this survey. Two domestic samples were found matching the requested criteria. These samples were immediately analyzed to determine if they contained milk protein. Results for these samples determined that one sample was positive for both casein (6600 ppm) and beta-lactoglobulin (68 ppm) and the other was positive for only beta-lactoglobulin (0.52 ppm). As the lot codes for these 2 samples had already been recalled, no further action was necessary. No other samples were positive for milk protein of the 278 samples analyzed.

Table 4 Results of Milk Analysis			
Sample description	Casein	BLG ¹	Total Milk Protein
	ppm		ppm
Wild Blueberry Cheesecake	6600	68	6668
Chocolate Cheesecake	-	0.52	0.52

¹ BLG= Beta-lactoglobulin

4 Conclusion

Two hundred seventy eight samples of a variety of dairy free cheeses, beverages, desserts and yogurts were analysed for undeclared allergens. Two samples (<1%) were found to contain undeclared milk protein. This survey gathered baseline information on the occurrence of undeclared priority allergens and gluten in a variety of dairy free cheeses, beverages, desserts and yogurts.

5 References

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