Canadian Food Inspection Agency
Agence canadienne d'inspection des aliments

Undeclared Sulphites in Dried Tea - April 1, 2014 to March 31, 2015

Food allergen - Targeted surveys

Canada

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. We often use them 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. 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 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.

The main objective of this survey was to obtain baseline information regarding the presence and levels of undeclared sulphites in dried tea products including specialty, flavoured and regular teas. Of the 473 samples tested, 0.6% (3) were found to contain sulphites. All positive results were detected in herbal tea products.

All 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 concern to allergic individuals. The extent of the follow-up actions taken by the Agency is based on the seriousness of the contamination and the resulting health concern as determined by a health risk assessment. None of the products sampled were found to present a health risk.

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 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 confirmed food allergies is expected to be slightly lower[1]. It is believed that the rate of food allergies is increasing, particularly among children. Food allergies are currently estimated to affect up to 5% of adults and up to 8% of children in developed countries[2].

The priority food allergens are the 10 most common food components 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[3]. Sulphites do not cause true anaphylactic allergic reactions but are generally grouped with the priority allergens because sulphite-sensitive individuals may experience allergy-like symptoms. Individuals with asthma are most at risk to sulphite sensitivity and other forms of sulphite reactions[4]. This makes proper identification and labeling of sulphite in food by the manufacturer essential.

Sulphites can occur naturally in food products such as dried herbs[4], and can also be used as food additives to maintain food colour, preserve foods and extend shelf life[5]. Moreover, sulphites are used in food packaging materials such as cellophane, and are also used to bleach food starches such as potato[4]. Undeclared sulphites can be found in foods 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 sulphites, 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 the levels as low as reasonably possible.

This was the first survey conducted by the Agency for undeclared sulphites in dried tea products. The main objective of this survey was to obtain baseline information regarding the presence and levels of sulphites in dried tea product.

All products were tested "as sold," meaning that they were not prepared as per manufacturer's instructions or as they would typically be consumed.

What did we sample

A variety of tea products were sampled between May 2014 and March 2015. Samples were collected from local and 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 sulphites in the list of ingredients
- products with a precautionary statement for sulphites
- products with no list of ingredients if required
- products very close to or past the best before date

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

Product type	Domestic	Imported	Unspecified origin[a]	Total
Black tea	9	85	25	119
Green tea	6	92	9	107
White tea	0	20	0	20
Herbal tea	29	152	24	205
Oolong tea	0	17	2	19
Other tea	0	3	0	3
Total	**44**	**369**	**60**	**473**

[a] 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/IEC 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 the *Food and Drug Regulations* Section B.01.010.1. A prepackaged product will be deemed non-compliant if 10 parts per million (ppm) or more of undeclared sulphites are detected.

What were the survey results

Over 99% of all tea products sampled in this survey did not contain any detectable levels of undeclared sulphites. Only 3 samples tested positive for undeclared sulphites. All of the positive results were found in herbal tea products.

What do the survey results mean

Of the 473 samples tested in this survey, over 99% did not contain any detectable levels of sulphites, while only 3 samples were positive for sulphites. 2 ginseng tea products contained 142 ppm and 111 ppm of sulphites respectively, and 1 oldenlandia diffusa herbal tea was found to contain 11 ppm of sulphites. Besides the natural presence of sulphites in dried herbs[4], they can also be used as an additive, as they are useful in whitening and prevention of discolouration[5].

The extent of the follow-up actions taken by the Agency is based on the level of contamination and the resulting health concern as determined by a health risk assessment. Appropriate follow-up actions 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 in food will cause a reaction in an allergic individual.

All positive results were forwarded to the OFSR for follow-up, and none of them were deemed to pose a risk to consumers. No published literature could be found on the similar topic for results comparison.

This survey generated new information on the background level of undeclared sulphites in dried tea 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 the Agency's surveillance activities are also used to inform the Canadian public and stakeholders by raising consumer awareness and help build public confidence in their food supply by removing non-compliant products.

References

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