Canadian Food Inspection Agency
Agence canadienne d'inspection des aliments

Salmonella in Imported Tahini - April 1, 2018, to March 31, 2025

Food microbiology - Targeted surveys - Final report



Canada

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Salmonella dans le tahini importé - Du 1er avril 2018 au 31 mars 2025

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Summary

A targeted survey[1] analyzed 908 samples of imported tahini (sesame paste) over a 7-year period from April 1, 2018, to March 31, 2025. Samples of tahini were tested for the presence of the bacterial pathogen S*almonella* species (spp.).

A majority (99.4%) of the samples tested were found to be satisfactory. *Salmonella* spp. were detected in 0.6% (5/908) of the samples. The Canadian Food Inspection Agency (CFIA) conducted appropriate follow-up activities and food recalls were issued by industry. There were no reported illnesses related to these products.

Overall, our survey results indicate that imported tahini sold in Canada is generally safe for consumption, however, contamination with pathogens such as *Salmonella* spp. can occur. As with all foods, and especially those that are ready-to-eat (RTE), good hygienic practices are recommended for producers, importers, retailers, and consumers.

Why the survey was conducted

The survey was conducted to provide enhanced oversight of the safety of imported tahini sold at retail in Canada. Tahini[2] is made from toasted or raw sesame seeds that have been dehulled and ground. Tahini is popular among Canadians[3] as it is a versatile food that can be used as a spread, dip, or dressing. It can also be used as an ingredient in RTE foods such as hummus, baba ghanoush, and halva.

Tahini is a shelf stable, high fat, and low moisture food. Unfortunately, tahini has been associated with numerous foodborne illness outbreaks of salmonellosis worldwide including sporadic illness cases in Canada[4,5,6]. The CFIA conducted a baseline survey on domestic and imported tahini from 2010 to 2014[7,8,9] which resulted in numerous non-outbreak associated recalls of imported tahini contaminated with *Salmonella.* The present survey was implemented to provide enhanced oversight of *Salmonella* spp. in imported tahini on the Canadian retail market. In 2021, tahini was identified as a high-risk food in a Canadian consumer consumption study[10].

When the survey was conducted

The survey was conducted over a 7-year period from April 1, 2018, to March 31, 2025.

Where the samples were collected from

Samples were collected from national retail chains and local/regional grocery stores located in the following 11 major cities across Canada:

- Halifax
- Moncton
- Quebec City
- Montreal
- Toronto
- Ottawa
- Winnipeg
- Saskatoon
- Calgary
- Vancouver
- Victoria

The planned number of samples to be collected from each city was based on the population of the province in which the city was located relative to the total population of Canada.

Total number and description of samples collected

A total of 908 imported tahini samples were collected over the 7-year survey period. A sample consisted of a single or multiple consumer sized containers of the same lot weighing at least 250 g.

What the samples were tested for

The imported tahini samples were tested for the presence of the bacterial pathogen *Salmonella* spp.

Methods used to test the samples

Samples were analyzed using analytical methods published in Health Canada's *Compendium of Analytical Methods for the Microbiological Analysis of Foods*[11] that were suitable for the testing of tahini.

How the samples were assessed

At the time of writing this report, no microbiological standards, guidelines, or policies have been established in Canada for the presence of *Salmonella* spp. in tahini. As *Salmonella* spp. is considered pathogenic to humans, its presence might be considered a violation of the *Food and Drugs Act* Section 4(1)a[12] and therefore assessed as unsatisfactory (table 1).

Table 1 - Assessment criteria

Bacteria	Satisfactory	Unsatisfactory
Salmonella spp.	Not detected/25 g	Detected/25 g

Survey results

A majority (99.4%) of the tahini samples tested were found to be satisfactory. *Salmonella* spp. were detected in 0.6% (5/908) of the samples (table 2).

Table 2 – Assessment results

Bacterial analysis	Number of samples tested (%)	Satisfactory (%)	Unsatisfactory (%)
Salmonella spp.	908 (100)	903 (99.4)	5 (0.6)

A majority (92.5%) of the tahini samples, including all those contaminated with *Salmonella* spp. were conventionally produced (table 3).

Table 3 – Assessment results by production practice

Production practice	Number of samples tested (%)	Satisfactory	Unsatisfactory
Conventional	840 (92.5)	835	5
Organic	68 (7.5)	68	0
Total (%)	**908 (100)**	**903 (99.4)**	**5 (0.6)**

The tahini samples were imported from 15 countries across the world, largely Middle Eastern (70.8%, 643/908) and Asian (16.9%, 153/908) countries (table 4). All the *Salmonella* spp. contaminated tahini samples were imported from Middle Eastern countries (0.8%, 5/643) (table 4).

Table 4 – Country of origin of imported tahini samples

Country of Origin	Number of samples (%)	Satisfactory	Unsatisfactory
China[a]	145 (16.0)	145	0
Egypt[b]	5 (0.6)	5	0
Ethiopia	5 (0.6)	5	0
France	2 (0.2)	2	0
Greece	70 (7.7)	70	0
Iran[b]	4 (0.4)	4	0
Israel[b]	67 (7.4)	67	0
Japan[a]	8 (0.9)	8	0
Jordan[b]	63 (6.9)	63	0
Lebanon[b]	425 (46.8)	422	3
Sudan[b]	5 (0.6)	4	1
Syria[b]	4 (0.4)	4	0
Turkey[b]	58 (6.4)	57	1
United Arab Emirates[b]	12 (1.3)	12	0
United States	27 (3.0)	27	0
Unknown[c]	7 (0.8)	7	0
Unknown[c] (processed in Canada)	1 (0.1)	1	0
Total (%)	**908 (100)**	**903 (99.4)**	**5 (0.6)**

What the survey results mean

Previous Canadian studies[7,8,9] on the microbial quality and safety of tahini have shown results approximating those in this study. The CFIA baseline survey on domestic and imported tahini conducted between 2010 and 2014[7,8,9], resulted in the detection of *Salmonella* spp. in 0.4% (9/2315) of the domestic and imported samples, 0.6% (9/1419) of the imported samples, and 0.8% (9/1100) of the samples imported from Middle Eastern countries (Israel, Lebanon, Syria). Similarly, the current (2018 to 2025) CFIA enhanced oversight survey on imported tahini samples, resulted in the detection of *Salmonella* spp. in 0.6% (5/908) of the imported samples, and 0.8% (5/643) of the samples imported from Middle Eastern countries (Lebanon, Sudan, Turkey). Statistically significant differences were not observed between the two surveys (2010 to 2014 and 2018 to 2025) with respect to the prevalence of *Salmonella* spp. in imported samples, and the prevalence of *Salmonella* spp. in samples imported from Middle Eastern countries. These results suggest that the prevalence and trends related to *Salmonella* contaminated tahini available at Canadian retail stores have remained unchanged over the past

[a] Asian country
[b] Middle Eastern country
[c] Country of origin could not be assigned from the product label or available sample information.

15 years. Other studies have also reported that S*almonella* spp. were found in 17% to 20% of locally produced tahini samples in Lebanon and Saudi Arabia[13].

Overall, our survey results indicate that imported tahini products sold in Canada are generally safe for consumption, however contamination with pathogens such as *Salmonella* spp. can occur. As with all foods, and especially those that are RTE, good hygienic practices are recommended for producers, importers, retailers and consumers.

What is done with the survey results

All results are used to:

- inform risk management decisions
- support program design and re-design

No illnesses have been reported related to the unsatisfactory samples. Appropriate follow-up activities were conducted including:

- food safety investigations
- follow-up with the importers for on-site inspections, additional sampling, and testing
- review of manufacturer production practices, such as heat treatment, sanitation, and training
- review of import records, including product receiving procedures and laboratory test results
- food recalls

Where to access the survey data

The data will be accessible on the Open Government Portal.

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