



Health  
Canada

Santé  
Canada

Your health and  
safety... our priority.

Votre santé et votre  
sécurité... notre priorité.

Risks Associated with Sprouts

Updated:

August 2011

# IT'S YOUR HEALTH



## Risks Associated with Sprouts

### THE ISSUE



Sprouts, including mung beans and alfalfa sprouts, have become a common food item in grocery stores, salad bars and restaurant dishes across Canada. As the popularity of sprouts increases, so does the potential for sprout-related illnesses. Because most cases of [foodborne illness](#) go unreported, the actual numbers of illnesses resulting from eating sprouts in the Canadian population is unknown. Health Canada is taking action on several fronts to help reduce the risk of illnesses related to sprouts.

### SPROUTS AND FOODBORNE ILLNESSES

Worldwide, at least 40 outbreaks of foodborne illnesses have been linked to sprouts since 1973. In most cases, the illnesses were caused by either harmful bacteria such as *Escherichia coli* (*E. coli*) or *Salmonella*.

In 1996, raw alfalfa sprouts and mung bean sprouts contaminated with *Salmonella* have been linked to a number of outbreaks in British Columbia, Quebec,

Ontario, Saskatchewan and Alberta, as well as in the United States. The largest outbreak in Canada was in the fall of 2005, when more than 648 cases of salmonellosis were reported in Ontario.

The largest outbreak linked to sprouts took place in Japan in 1996, when 6,000 people got sick and 17 died after eating radish sprouts contaminated with *E. coli*. This type of bacteria was also the cause of outbreaks involving sprouted seeds in several U.S. states between 1997 and 2004. In June 2011 an *E. coli* outbreak linked to sprouts, centered in Germany, resulted in more than 47 deaths and several thousand infections.

### HOW SPROUTS CAN BECOME CONTAMINATED



Scientists believe that the most likely source of contamination is the seeds that are used to grow the sprouts. Seeds may become contaminated by animal manure in the field or during storage, and the conditions required to grow sprouts (like warmth and humidity) are ideal for the rapid growth of bacteria. Poor hygienic practices in the production of

sprouts have also caused some sprout-related outbreaks of foodborne illness in the past.

Most sprouts, including alfalfa sprouts, can only be eaten raw. This means they are not exposed to temperatures high enough to kill bacteria that may be present. Some sprouts, like mung bean sprouts, can also be eaten cooked. To ensure that bacteria are destroyed, these sprouts should be cooked **thoroughly**. An outbreak of salmonellosis in Ontario in 2005 was linked to the consumption of raw and lightly-cooked mung bean sprouts, like those found in some stir-fry dishes.

## THE RISKS OF EATING RAW SPROUTS

Anyone who eats raw sprouts or lightly cooked mung bean sprouts is at risk for exposure to harmful bacteria such as *E. coli* or *Salmonella*. However, the risk of serious health effects is greatest for young children, seniors and people with weak immune systems.

The symptoms of *E. coli* infection can include stomach cramps, vomiting, fever and bloody diarrhea. Symptoms can start within one to 10 days of eating contaminated food. A small percentage of people can develop a serious condition called haemolytic uremic syndrome, and may need blood transfusions and kidney dialysis. Severe cases could cause permanent kidney damage or even death.

People infected with *Salmonella* bacteria may experience fever, headache, stomach cramps, diarrhea, nausea and vomiting. These symptoms usually start six to 72 hours after eating contaminated food, and usually last for four to seven days. Severe cases may require hospitalization.

If you experience any of the symptoms of *E. coli* or *Salmonella* infection, you should contact your doctor immediately.

## REDUCE YOUR RISK

Groups that are at high risk for serious health effects from [foodborne illness](#) include:

- young children
- seniors
- people with weak immune systems

High risk groups should avoid eating sprouts, especially alfalfa sprouts and mung bean sprouts. Be sure to check for the presence of sprouts in salads, sandwiches and soups you buy in restaurants and delicatessens. In addition, you should also avoid eating cooked bean sprouts found in stir-fries or soups, unless you know that the sprouts have been thoroughly cooked.



If you are a healthy adult and want to eat sprouts, you can reduce your risk by taking the following precautions:

- Buy sprouts that have been stored at refrigerated temperatures. Temperatures should be at or below 4°C (40°F).
- Select crisp-looking sprouts. Avoid sprouts that look dark or smell musty.
- If buying bean sprouts in bulk display, use tongs, a glove or place a bag over your hand to place the sprouts into a plastic bag.
- Refrigerate the sprouts immediately when you get home. Your refrigerator

temperature should be at or below 4°C (40°F). Use an appliance thermometer to check.

- Respect the best-before date on prepackaged sprouts. Throw away any unused sprouts after a few days, or as soon as they lose their crispness.



- If you choose to eat mung bean sprouts, make sure they have been **thoroughly** cooked to kill any bacteria that may be present. Reduce your risk of foodborne illness by avoiding raw or lightly-cooked mung bean sprouts.

## GOVERNMENT OF CANADA'S ROLE

[Health Canada](#) is working with industry representatives, public health officials, the [Canadian Food Inspection Agency \(CFIA\)](#) and other stakeholders to implement safer growing methods for sprouts. Some of the steps taken to date include:

- The finalization of a [Policy on Managing Health Risk Associated with the Consumption of Sprouted Seeds and Beans](#)
- The development of [Guidance for Industry on Sampling and Testing Sprouts and Spent Irrigation Water](#)
- The development of a [Code of Practice](#) for the safe growing and distribution of sprouted seeds and beans. This Code emphasizes the use of Good Manufacturing Practices for sprouts.
- The regular inspection by the Canadian Food Inspection Agency (CFIA) of sprout-growing establishments to ensure good hygienic practices.



Health  
Canada

Santé  
Canada

Your health and  
safety... our priority.

Votre santé et votre  
sécurité... notre priorité.

Risks Associated with Sprouts

Updated:

August 2011

# IT'S YOUR HEALTH



- Health Canada and CFIA are currently developing additional educational material for consumers and the sprout-growing industry.

Health Canada also warns consumers about the risks of eating sprouts and advises the public on steps that can be taken to reduce the risk of contracting sprout-related illnesses.

## FOR MORE INFORMATION

- Government of Canada's **Food Safety** portal at: [www.foodsafety.gc.ca](http://www.foodsafety.gc.ca)
- Health Canada's Web site on **Sprouts** at: [www.hc-sc.gc.ca/fn-an/securit/ill-intox/info/sprouts-pousses\\_e.html](http://www.hc-sc.gc.ca/fn-an/securit/ill-intox/info/sprouts-pousses_e.html)
- Health Canada **Food-Related Illnesses** web section at: [www.hc-sc.gc.ca/fn-an/securit/ill-intox/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/securit/ill-intox/index_e.html)
- Public Health Agency of Canada **Food Safety** web section at: [www.phac-aspc.gc.ca/fs-sa/index-eng.php](http://www.phac-aspc.gc.ca/fs-sa/index-eng.php)
- Health Canada's **Food Program**, at: [www.health.gc.ca/food](http://www.health.gc.ca/food)
- *It's Your Health* – **Food** section at: [www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/index-eng.php](http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/index-eng.php)

## FOR INDUSTRY AND PROFESSIONALS

- Health Canada **Policy on Managing Health Risks Associated with the Consumption of Sprouted Seeds and Beans**: [www.hc-sc.gc.ca/fn-an/legislation/pol/sprouts\\_pol\\_pousses\\_e.html](http://www.hc-sc.gc.ca/fn-an/legislation/pol/sprouts_pol_pousses_e.html)

- **Guidance for Industry: Sample Collection and Testing for Sprouts and Spent Irrigation Water**: [www.hc-sc.gc.ca/fn-an/legislation/guide-ld/sprout\\_water\\_testing\\_analyse\\_pousses\\_eau\\_e.html](http://www.hc-sc.gc.ca/fn-an/legislation/guide-ld/sprout_water_testing_analyse_pousses_eau_e.html)
- The Canadian Food Inspection Agency **Code of Practice** for sprouted seeds and beans: [www.inspection.gc.ca/english/fssa/frefra/safsal/sprointe.shtml](http://www.inspection.gc.ca/english/fssa/frefra/safsal/sprointe.shtml)

## RELATED RESOURCES

- **FightBAC®** at: [www.fightbac.org/](http://www.fightbac.org/)
- The Canadian Food Inspection Agency (CFIA) at: [www.inspection.gc.ca](http://www.inspection.gc.ca)
- The Food Safety Network at: [www.uoguelph.ca/foodsafetynetwork](http://www.uoguelph.ca/foodsafetynetwork)
- The World Health Organization – **Food Safety** section at: [www.who.int/foodsafety/en/](http://www.who.int/foodsafety/en/)
- For safety information about food, health and consumer products, visit the **Healthy Canadians** Web site at: [www.healthycanadians.gc.ca](http://www.healthycanadians.gc.ca)
- For more articles on health and safety issues go to the *It's Your Health* web section at: [www.health.gc.ca/iyh](http://www.health.gc.ca/iyh)

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245.

Updated: August 2011  
Original: July 2002

© Her Majesty the Queen in Right of Canada, represented by the Minister of Health, 2011

ISBN: H13-7/30-2011E-PDF  
Catalogue: 978-1-100-19171-3

Canada