



IT'S YOUR HEALTH



The Safety of Genetically Modified Foods

The Issue

Canadian consumers have questions and concerns about the safety of eating genetically modified foods.

Background

The concept of genetically modified (GM) foods has been around for many years. An early example is the cross-breeding of plants, such as different types of corn. The goal was to transfer a desirable trait (e.g., drought-resistance) from one plant variety to another. This method of genetic modification can take a long time to achieve a specific result, because all of the genes are mixed together, and it may take many attempts to produce offspring with the desired trait.

Advances in science have brought new methods of changing (modifying) the genetic makeup of animals, plants and microorganisms. This includes, but is not limited to, recombinant nucleic acid techniques, which involve the introduction of a gene or genes from one species to another species (this is commonly called genetic engineering). For example, scientists are able to take a gene that carries a desirable trait from one plant, and insert it into the genetic material of a second plant. With this process, only the desirable trait is transferred, and this makes it possible to achieve a specific result more quickly.

Genetic modification techniques have been used to produce crops that are better at fighting off pests, resisting disease, and tolerating the herbicides that are used to kill weeds. These techniques have also been used to delay the ripening process of plant foods that are to be transported long distances (i.e., tomatoes). So far, the agricultural sector has seen most of the benefits provided by these crops. However, scientists are working on the next generation of GM foods, and these may have direct benefits for consumers, such as enhanced nutrition or better taste.

The majority of GM foods approved for sale on the market are from plants, along with a few produced using GM microorganisms. There are currently no food products on the market in Canada that have been made from genetically modified animals.

Assessing the Safety of GM Foods

Every new GM food product must undergo a rigorous pre-market safety assessment before it is allowed to be sold in Canada. Here is a summary of the steps involved in the safety assessment:

- When a manufacturer or importer wants to advertise or sell a new GM food in Canada, it submits detailed information to Health Canada outlining exactly how the product was developed.

- Health Canada's scientific evaluators assess the information. The evaluators have expertise in such areas as molecular biology, toxicology, chemistry, nutritional sciences, and microbiology. In evaluating the safety of a GM food, they look at such aspects as:
- how the modified product was developed, including genetic changes that were made to any plant, animal or microorganism used in the product;
- how the GM food compares to a non-modified counterpart food in terms of composition (e.g., fats, proteins and carbohydrates) and nutrition quality;
- the potential for production of new toxins in the food;
- the potential for causing allergic reactions; and
- the microbiological and chemical safety of the food.

No GM food is allowed on the market in Canada unless Health Canada's scientists are satisfied that the food is safe and nutritious.

Labelling of GM Foods

When it comes to labelling, GM foods are treated like any other food because they are only allowed on the market after they have been through a thorough safety assessment. There are no specific laws regarding the labelling of GM food products. However, all food products (including organic products) must comply with the labelling rules of the Food and Drugs Act and the Consumer Packaging and Labelling Act. These Acts require that labels be truthful, not misleading or deceptive and not give an erroneous impression about the quality, merit, and safety of the food.

Original: January 2009

©Her Majesty the Queen in Right of Canada, represented by the Minister of Health, 2009

Catalogue #

ISBN #

Recognizing that consumers wanted more information about the application of genetic engineering to foods, a group of stakeholders came together to develop a National Standard for Voluntary Labelling and Advertising of Foods That Are and Are Not Products of Genetic Engineering. Stakeholders who helped develop the standard included federal departments and agencies, consumer groups, food manufacturers, grocery distributors, provincial representatives, and farm organizations.

Although the standard is voluntary, it provides guidance to manufacturers on making claims about the use or non-use of genetic engineering in their products. It also assists consumers in making informed choices. See the Need More Info? section below for links to additional information about the labelling of GM foods.

Health Canada's Role

Health Canada is responsible for establishing policies, setting standards, and providing advice and information on the safety and nutritional value of food, including GM foods. Health Canada also promotes the nutritional health and well-being of Canadians by working with partners to define, promote, and implement evidence-based nutrition policies and standards. In addition, Health Canada administers the provisions of the Food and Drugs Act that relate to public health, safety, and nutrition.

Need More Info?

See Health Canada's Web section on Genetically Modified (GM) Foods and other Novel Foods, at: www.hc-sc.gc.ca/fn-an/gmf-agm/index_e.html

This site has links to various topics, including Approved Products, Factsheets & Frequently Asked Questions, Guidelines & Policies, and Regulations. For information on labelling of GM foods, see Part Three under Factsheets and Frequently Asked Questions.

For information on the National Standard for Voluntary Labelling and Advertising of Foods That Are and Are Not Products of Genetic Engineering, go to the Canadian General Standards Board Web site at: www.tpsgc-pwgsc.gc.ca/cgsb/on_the_net/032_0315/standard-e.html

Also, see the World Health Organization's Web site on Biotechnology (GM foods) at: www.who.int/foodsafety/biotech/en/

For general information on food and food safety, go to: Health Canada's Food and Nutrition Web section at: www.hc-sc.gc.ca/fn-an/gmf-agm/index-eng.php

Canadian Partnership for Consumer Food Safety Education at: www.canfightbac.org

For additional articles on health and safety issues, go to the It's Your Health Web section at: www.healthcanada.gc.ca/iyh
You can also call toll free at 1-866-225-0709
or TTY at 1-800-267-1245*

Original: January 2009

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