

GM Foods on the Market in Canada

GM Food in Canada	Where	What
1. CORN	In processed food and animal feed, and a very small amount of GM sweet corn	Herbicide-tolerant & insect-resistant
2. CANOLA	As oil in processed food and animal feed	Herbicide-tolerant
3. SOY	In processed food	Herbicide-tolerant
4. SUGARBEET (white)	Processed into sugar	Herbicide-tolerant
5. ALFALFA	Animal feed	Herbicide-tolerant & low-lignin
6. SALMON (Atlantic)	Farmed salmon	Faster growing
7. PAPAYA	Imported from the US or China	Virus-resistant
8. SQUASH	Imported from the US only	Virus-resistant
9. PINEAPPLE	Imported from Costa Rica	Pink flesh
GM Foods that could come to the market soon		
10. APPLE	Sliced apples in foodservice or sold in plastic bags	Non-browning

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Genetic Engineering

Genetic engineering (also called genetic modification or GM) is a technology that has enabled greater corporate control over seeds and pesticides.

GM seeds are owned and controlled by a few large multinational seed and pesticide companies. All the GM seeds sold in Canada are engineered to be herbicide-tolerant, meaning they are designed to withstand spraying by particular chemicals that kill weeds. Some are also insect-resistant, meaning that the plants themselves are engineered to kill certain insect pests. Herbicide sales in Canada have increased by 234% since the introduction of GM crops (1994-2020).

GM crop plants can contaminate neighbouring farms and are a threat to the future of organic farmers, who reject the use of genetically modified organisms (GMOs).

Most GM crops are used as ingredients in processed foods, for biofuels, or to feed animals.

WHAT IS GENETIC ENGINEERING?

Genetic engineering alters the genetic makeup of plants, animals and other organisms by making changes at the molecular level. Scientists change the traits of organisms by inserting DNA from foreign species or the same species; deleting DNA sequences or triggering new mutations; or introducing genetic material to silence genes.

Unlike traditional breeding, genetic engineering enables the direct transfer of genes between organisms in different species or kingdoms that would never breed in nature, and the introduction of new genetic sequences that do not exist in nature. New gene editing techniques such as CRISPR can produce changes in areas of the genome that are otherwise protected from mutations.

All genetic engineering processes can result in unintended effects. For example, gene editing is often described as precise but it can cut DNA in the wrong spots and create “off-target” mutations. Organisms are so complex that even intended changes can cause unexpected effects.

You have a choice on GM

Our government does not require labelling of genetically engineered (genetically modified or GM) foods, but you can still make a choice:

- 1 Choose organic products. Genetic engineering is prohibited in organic farming.
- 2 Avoid processed food with corn, canola and soy ingredients.
- 3 Choose organic sugar or cane sugar to avoid sugar from GM sugar beets.
- 4 Choose products with the “Non-GMO Project Verified” seal.
- 5 Avoid farmed salmon to avoid GM Atlantic salmon.
- 6 Support farmers who reject GM crops: buy food directly from farmers who do not plant GM crops or use GM feed to produce meat, dairy or eggs.



WHY IS GENETIC ENGINEERING PROHIBITED IN ORGANIC FARMING?

Genetic engineering and organics are two different visions for farming. Organic farmers reject GM seeds and GM animals as unnecessary and risky. Instead they work with the diversity and bounty that nature already offers, often replacing corporate products with natural systems and human labour.

What You Can Do

When you buy food, you play an important role in determining the future of our food system and its impact on people and the planet.

Even just a few choices can make a difference. Here are some options:

- » Choose Organic Food. Regularly choosing one or more certified organic products supports farmers who are committed to a high standard of care for our environment.
- » Eat with the season. Find out which fruits and vegetables are in season in your area and prioritize eating those foods at their freshest.
- » Shop at your local farmers’ market. Choose to be a regular customer to help local farms thrive.
- » Join a Community Shared Agriculture program (CSA). Look for local farmers who run CSAs. In exchange for money upfront, you will receive weekly produce all season long. You help a farmer put seeds in the ground and share some of the risks of farming.
- » Find your local food products in stores. Many provincial governments have created local food brands to help you find locally grown and locally made products.
- » Shop at your independent food store. Independent stores are often vital to the support of family farms, local products, and small food businesses in your community.



Why Your FOOD CHOICES MATTER

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What's the Problem?

Much of the food we eat is produced through a long chain of steps in a global system that contributes to the climate crisis, puts harmful toxins into our environment, and removes decision-making from farmers and consumers. This global food system is dominated by a few large companies that control the markets for seeds, pesticides and other technologies, as well as much of the distribution and sale of food in our communities.

CLIMATE CRISIS

Our global food system contributes 21%-37% of all global greenhouse gas emissions caused by human activities. This includes emissions from food production, as well as from related practices, such as land-use changes like clearing forests to make way for farming, manufacturing pesticides and fertilizers, and energy-intensive activities such as heating greenhouses, and processing, packaging and transporting food.

Agriculture itself – producing crops and animals – contributes approximately 12% of human greenhouse gas emissions. This includes emissions of nitrous oxide from fertilizers, and methane from livestock production.

However, ecological and regenerative approaches to growing food can reduce emissions from farming and protect the environment.

Agriculture is part of the problem, but it can also be a significant part of the solution.

BAYER is the **largest** seed company, **second largest** pesticide company, and **largest** seller of genetically engineered seed in the world. Since its merger with Monsanto in 2018, Bayer owns 23% of the global seed market and 16% of the global pesticides market.

TOXIC CHEMICALS

Pesticides (herbicides, insecticides and fungicides) are chemicals or mixtures of chemicals designed to kill weeds, insects, and other pests and diseases that can harm or destroy food crops. **Many Canadian farms rely on the extensive use of synthetic pesticides**, which contaminate the soil, air and water, and can have detrimental impacts on human health and on biodiversity, including birds, aquatic life, and beneficial insects such as pollinators.

Agriculture uses large amounts of nitrogen fertilizers that release nitrous oxide, a greenhouse gas about 300 times more powerful at causing climate warming than CO₂. Runoff from excessive use of fertilizers and manure also commonly pollutes aquatic ecosystems, leading to dead zones in the water where fish and other organisms cannot survive.

Synthetic pesticides and chemical fertilizers are both petrochemical products, made from fossil fuels.

CORPORATE CONTROL

Just six companies control over half of the global seed and pesticide markets. This high level of corporate concentration means higher prices for farmers, limited choices, and decreased seed diversity. These top companies are also the global leaders in selling genetically engineered seeds.

Our global food system pushes farmers to grow large areas of just a few crops or “monocultures” that rely on corporate products such as synthetic pesticides and chemical fertilizers. In North and South America, most corn, canola, soy and cotton crops are grown from genetically engineered seeds with their related herbicides.

In 2021, Canadian farmers spent 84% of their gross farm income to purchase these corporate products and other farm inputs.

What's the Solution?

Ecological farming practices work to improve soil health, protect water resources, reduce the use of synthetic pesticides and chemical fertilizers, minimize emissions that contribute to the climate crisis, and promote seed diversity and biodiversity on and off the farm. These practices rely on farmers' knowledge, natural systems and human labour, rather than on corporate products. This means that ecological farming relies on building communities and is a way of life.

ORGANIC

Worldwide, organic farmers follow animal welfare and environmental practices, based on the four principles of health, ecology, fairness and care.

Organic farming is a set of ecological practices that are codified in a government-regulated standard. Certified organic farms are inspected every year by professional inspectors from independent certifying bodies to ensure they are following the Canadian Organic Standards. Certification lets you know that every step from farm to table protects and maintains the organic integrity of the farm.

Certified organic farmers do not use:

- » synthetic pesticides or chemical fertilizers;
- » genetically engineered seeds and animal feed (genetically modified organisms or GMOs);
- » antibiotics routinely, or hormones to stimulate growth;
- » sewage sludge or waste from factory farms on their fields.

Remember: Organic farming is a non-GMO choice.

LOCAL

When you choose to buy local food, you reduce the miles your food travels to get to you. This means fewer greenhouse gas emissions and fresher food. Buying fresh food directly from local farmers can also help reduce food waste and food packaging.

Buying directly from farmers helps you build a connection with the people who grow your food. It also **puts more money into farmers' pockets** and helps keep more farmers in business, working on the land. This is important because we are losing farmland and farms in Canada (particularly small and medium size farms), as farm debt increases and the cost of land and inputs increase. Farmers are less than 2% of Canada's population, with an average age of 56. In addition, almost half of all farmers in Canada have off-farm jobs to supplement their income.

Remember: Local food is not necessarily organic, and organic food is not always local. So look for local food that is also grown using organic or other ecological practices.

INDEPENDENT

Your independent local food store and local food businesses can be part of the solution.

Small businesses often have more flexibility to purchase local and seasonal food, build relationships with local farmers, and invest back into your community.

Independent stores face ever-mounting pressures in a marketplace that is dominated by big grocery chains. Five grocery companies – Loblaws, Sobeys/Safeway, Costco, Metro, and Walmart – control 80% of the food retail market in Canada. What and where you buy, both make a difference.

Your food choices can help protect our environment, support your health, and build a better future for food and farming.

Produced by the Canadian Biotechnology Action Network (CBAN), a project on the shared platform of MakeWay Charitable Society. www.cban.ca

Order copies or send questions to info@cban.ca

For more information and references see www.cban.ca/whyyourfoodchoicesmatter

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