

Learning Together Genetic Engineering and the Food System:

GMO Strawberries



There are no genetically engineered (genetically modified or GM) strawberries being sold in Canada yet, but US biotechnology companies are genetically modifying strawberries using the new genetic engineering techniques of gene editing.

Some gene-edited strawberries are being sold in very limited quantities as frozen strawberries through the US agriculture company Simplot's wholesale food division in the US only. In December 2024, Simplot stated its intention to start selling a gene-edited strawberry in Canada as soon as 2025, but its plans are stalled.

Other biotechnology companies have announced plans to prepare for commercial releases of other genetically modified berries, such as **blackberries and blueberries**.

Genetically modified organisms (GMOs) have only been on the market in Canada since the mid 1990's. Most of these products have been processed food ingredients and animal feed from GM corn, GM canola, and GM soy. As of June 2026, there are only eight GM foods on the market in Canada. They are not labelled in grocery stores.

Gene-edited strawberries and other GM berries would mean increasing **corporate control over seed varieties and the beginning of many potential types of GM fruits and vegetables**. Releasing GM fruits and vegetables puts non-GM plants at risk of contamination, threatening the tradition of seed-saving and the preservation of heritage varieties. GM contamination also threatens organic farmers' livelihoods because organics prohibits the use of GM seeds.

GM seeds contain patented gene sequences that are legally considered corporate property. Patents on gene sequences mean that private corporations can claim ownership rights over seeds and restrict their use. The use of patented genetically modified traits has helped facilitate corporate domination in the seed market. Just four companies – Bayer, Syngenta, Corteva and BASF – now control 56% of the global commercial seed market.

More about strawberries

There are three native varieties of wild strawberries in Canada; the Wild Strawberry (*Fragaria virginiana*), the Woodland Strawberry (*Fragaria vesca*), and the Coastal or Beach Strawberry (*Fragaria chiloensis*). The cultivated strawberry varieties (*Fragaria ×ananassa*) grown on farms or sold in grocery stores are a cross between Wild Strawberry and Coastal Strawberry.

Strawberries are self-pollinating but can also cross with other strawberry plants through wind or insect pollination. Strawberries usually multiply by sending out runner vines that create clones, so the impacts of cross-pollination mainly matters when growing from seed.

Strawberries are a beloved fruit across cultures and traditions. In some nations indigenous to Turtle Island (North America), the name for the strawberry translates to "the heartberry" in English. The heartberry's cultural significance is vast and diverse, and the berry is often held as an important symbol and teacher of love and connection to Mother Earth.

Introduction to Genetic Engineering: What are GMOs?

Genetic engineering, (also commonly called genetic modification or GM) is a collection of laboratory techniques used to create **genetically modified organisms, often abbreviated to GMOs**. It is an invasive and inadequately understood technology that directly changes the genetic make-up of plants, animals and other organisms.

Gene editing is a category of new genetic engineering techniques used to alter genetic material. New gene editing techniques, such as CRISPR, aim to delete DNA segments or otherwise change a DNA sequence.

Genetic engineering directly changes the genetic makeup (DNA) of an organism, bypassing traditional plant and animal breeding to produce new characteristics. It includes techniques that make changes to DNA by inserting genetic material from the same, similar, or unrelated organisms, as well as gene-editing techniques that introduce genetic material that acts as an “editor” to modify DNA.

Unlike conventional breeding, genetic engineering is a laboratory technology that enables the transfer of genes between species or kingdoms that would not breed in nature and enables the construction of new genetic sequences not found in nature.

The few GM foods currently on the market were all assessed for safety by regulators at Health Canada, however, many future gene-edited GMOs will not go through any government approval process and Health Canada does not require companies to notify the government when they release these new unregulated GMOs into the food system.

There is no mandatory labelling in Canada to help people identify which GM foods are in grocery stores and there is no government tracking and tracing of these products.

The use of genetic engineering in food and farming, and the lack of transparency for customers and farmers, raises environmental, social, economic, and ethical concerns, as well as food safety concerns.

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GM FOODS ON THE MARKET IN CANADA

Crop	Trait	Where on the shelves
01 CORN	Insect resistant, herbicide tolerant	Corn flakes • Corn chips • Corn oil and other corn ingredients in processed foods • Corn syrup Eggs, milk and meat* • Some sweet corn • There is no GM popcorn
02 CANOLA	Herbicide tolerant	Canola oil • Eggs, milk and meat*
03 SOY	Herbicide tolerant	Soy oil • Soy protein • Soy lecithin • Eggs, milk and meat*
04 SUGAR BEET (WHITE)	Herbicide tolerant	Sugar
05 ALFALFA	Herbicide tolerant, low-lignin	A small amount is grown to feed dairy cows and other farm animals. Not grown for sprouts.
06 PAPAYA	Virus-resistant	Whole papaya from US or China • Fruit juices
07 PINEAPPLE (PINK)	Pink coloured flesh	Whole pineapple, in a few grocery stores
08 TOMATO (PURPLE)	Deep purple colour	Whole purple tomatoes in plastic boxes, brand “Empress” from Red Sun Farms

*Many animals used to produce eggs, milk and meat are fed corn, canola and/or soy

GM FOODS COMING SOON?

Food	Trait	What
SALAD GREENS	Mustard greens with less pungent flavour	Packaged fresh salad greens, lettuce mixes
STRAWBERRIES	Longer harvest season, longer shelf life	Whole strawberries
APPLE	Non-browning	Bagged sliced apples sold in the US
POTATO	Non-browning, less acrylamide	Innate brand “White Russet” sold in the US

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