Brief to the House of Commons Standing Committee on Agriculture and Agri-Food
RE: Issues relating to the horticultural sector
From the Canadian Biotechnology Action Network

May 10, 2024

The Need for Transparency and Government Oversight on Gene Editing for the Horticultural Sector

The Canadian Biotechnology Action Network (CBAN) brings together 15 groups to research, monitor and raise awareness about issues relating to genetic engineering in food and farming. CBAN members include farmer associations, environmental and social justice organizations, and regional coalitions of grassroots groups. CBAN is a project of MakeWay's shared platform. www.cban.ca

Introduction

Securing the future for a vibrant, economically robust, and environmentally sustainable horticultural sector is in the interest of all Canadians. A thriving horticultural sector is one that supports farmer livelihoods and healthy eating choices.

Biotechnology research and development has largely focussed on bringing genetically engineered (genetically modified or GM) grains and oilseeds to market but a shift in focus could soon see the commercial pursuit of more GM fruits and vegetables. The economic risks to the horticultural sector need to be addressed. In particular, there is an urgent need to address the lack of transparency surrounding genetically engineered produce in Canada and the associated negative impact on public trust and consumer confidence.

Summary

Challenge: More genetically engineered fruits and vegetables are expected to come to market in Canada, however, there is no regulatory infrastructure to ensure identification and tracking in the supply chain, and regulatory exemptions mean that many gene-edited fruits and vegetables may be released without any government oversight. Resulting consumer confusion may have economic consequences for the horticulture sector.

Recommendation: All genetically engineered products, including those produced through the new genetic engineering techniques of gene editing, should be subject to pre-market regulation, mandatory notification to government and the public, mechanisms for government tracking and post-market surveillance, and mandatory point-of-purchase labelling for consumers.

The Market Status of Genetically Engineered Fruits and Vegetables in Canada

Five genetically engineered (genetically modified or GM) crops are grown in Canada: GM corn**,** canola, soy, white sugar beet, and a small amount of GM alfalfa (for animal feed).

GM fruits and vegetables grown in Canada:

1. The only genetically engineered vegetable seed currently sold in Canada is a GM **sweet corn**, though the amount grown is unknown. www.cban.ca/corn

GM fruits and vegetables exported to Canada:

1. A few varieties of GM **squash** are grown in the U.S. in limited quantities and can be exported to Canada. www.cban.ca/squash
2. A GM **pineapple**, grown in Costa Rica, is sold in Canada. www.cban.ca/pineapple
3. A GM **papaya** from Hawaii is exported to Canada. www.cban.ca/papaya

Approved GM fruits and vegetables not yet sold in Canada:

1. The GM "Arctic" **apple** varieties developed by the Canadian company Okanagan Specialty Fruits are only grown in the U.S. and are not currently on the market in Canada.[1] www.cban.ca/apple
2. **Potatoes** with multiple GM traits, from the U.S. company Simplot, have been approved for growing and human consumption in Canada but are currently only grown commercially in the U.S., with no apparent release yet in Canada. www.cban.ca/potato

Canadian government tracking of genetically engineered products is limited and of little assistance to the horticultural sector. Statistics Canada tracks the amount of corn for grain planted in Canada that is GM (88%) as well as how much soy is GM (81%).[2] However, the federal government does not know how much GM sweet corn is grown and consumed in Canada, for example (GM sweet corn seeds are listed in seed catalogues).

Canadian regulatory departments list genetically modified organisms (GMOs) that have been approved, but do not track which of these GMOs are on the market. Many approved GMOs, such as the GM apple and some earlier GM tomatoes and potatoes, are not for sale. Further, new Health Canada and CFIA regulatory guidance on novel foods and plants with novel traits means that many new gene-edited GMOs coming to the market will not be assessed and approved by regulators, and will only be listed publicly as being genetically engineered if companies volunteer to disclose this information.

The question of which genetically engineered/gene-edited fruits and vegetables are on the market is emerging as an important challenge to the horticultural sector. Currently, the market status of GM produce in Canada is discernable through research using various sources but, due to the regulatory exemptions, the ability to answer consumer questions about GM produce may rapidly diminish, resulting in greater consumer uncertainty and public mistrust that may have economic consequences.

Lack of Transparency and Government Oversight is a Threat to Public Confidence

There is an urgent need to address the lack of transparency surrounding genetically engineered produce on the market in order to protect the horticultural sector from related economic risk.

The lack of mandatory labelling for genetically modified foods has already been raised as an issue of concern in the horticultural sector, most recently in relation to the release of genetically engineered "Arctic" apples. Many apple growers and their associations were concerned that the market entry of unlabelled GM apples would threaten the market position for all apples. A 2012 survey commissioned by the Federation of Quebec Apple Growers showed that 69% of Canadians did not want a GM apple approved.[3] At the time, the BC Fruit Growers' Association asked for a moratorium on the approval of this product in order to protect the market from consumer backlash and confusion.[4]

The first variety of the GM non-browning "Arctic" apple was approved in 2015 and a few "Arctic" varieties have been approved since. The Canadian Biotechnology Action Network fields several calls a year from customers who are concerned that they have unknowingly bought unwanted GM apples. We continue to receive questions and concerns from members of the general public about the GM apple and GM sweet corn in particular. Our experience warns that, without mandatory labelling of GM foods to provide reliable, accessible information at point-of-purchase, confidence in Canadian produce has already been shaken for some consumers.

Now, the horticultural sector has been placed at further risk of consumer confusion and mistrust by recent federal government decisions that remove pre-market regulation from many gene-edited fruits and vegetables. These decisions mean that some new genetically engineered seeds and foods could soon be sold in Canada without having been assessed for safety by government regulators, and without any disclosure to farmers and food businesses.

The federal government has completed a trio of regulatory updates that remove government safety assessments and mandatory transparency from most seeds, foods, and livestock feed produced through the new techniques of genetic engineering that are collectively referred to as gene editing. The latest decision to remove CFIA safety assessments for most gene-edited livestock feed was announced on May 3, 2024. This follows a similar CFIA decision on gene-edited plants in May 2023 and a Health Canada decision on gene-edited foods in May 2022. Specifically, the exemptions from pre-market regulation apply to seeds that have no foreign DNA and to food and livestock feed from those gene-edited plants.

These decisions allow developers to assess the safety of their own GM products without any government oversight. These genetically modified organisms (GMOs) will not go through any government approval process at Health Canada or the CFIA, and can be released onto the market without companies having to submit any safety data to the government. This lack of independent oversight of company safety assessments is a food safety issue and risks enhancing public mistrust in government regulation and the safety of the Canadian food supply.

The decisions also mean that companies can release these GMOs onto the market without notifying the government or public. This lack of mandatory notification means that some new

genetically modified foods and seeds could be commercially introduced without the knowledge of farmers and food manufacturers. This issue is not resolved by voluntary disclosure systems (see our 2022 report, *New Proposals Would Eliminate Transparency on GMOs in Canada*).[5]

Tracking GM foods is important for public information but also to enable post-market surveillance such that any potential adverse health effects can be efficiently identified and addressed. Unintended changes in GMOs can be missed[6] and could remain undetected for years. A high level of unintended traits has been observed, even in highly-selected commercialized genetically engineered plants, which suggests product developers and government regulators are not fully controlling for unintended effects.[7]

Public opinion surveys consistently show that a vast majority – well over 70% – of Canadians want mandatory labelling for GM foods.[8]

In November 2021, 105 organizations wrote to the health and agriculture ministers opposing regulatory exemptions for gene-edited products, and demanding government oversight and transparency for all GMOs.

Contact: Lucy Sharratt, Coordinator, Canadian Biotechnology Action Network
coordinator@cban.ca 902 209 4906 www.cban.ca/gmfoods

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[1] Neal Carter, President, Okanagan Specialty Fruits (2024) correspondence to the Canadian Biotechnology Action Network, April 25.

[2] Statistics Canada (2023) Table 32-10-0042-01 Estimated areas, yield, production of corn for grain and soybeans, using genetically modified seed, in metric and imperial units. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3210004201

[3] Leger Marketing (2012) Canadian Public Opinion Poll: Arctic Apple Issue. http://www.bcfga.com/files/file/Report%20on%20GE%20survey%20-%20July%203%202012.pdf

[4] Steve Kidd (2013) Fruit growers ask federal government to halt Arctic Apple approval process, Penticton Western News, November 19. https://www.pentictonwesternnews.com/news/fruit-growers-ask-federal-government-to-halt-arctic-apple-approval-process-3534404

[5] Canadian Biotechnology Action Network (2022) New Proposals Would Eliminate Transparency on GMOs in Canada. https://cban.ca/wp-content/uploads/New-proposals-would-eliminate-transparency-on-GMOs-in-Canada-3.pdf

[6] See for example, Box 3: Case Study - Unintended Foreign DNA in Genome-Edited Hornless Cows in Canadian Biotechnology Action Network (2019) Genome Editing in Food and Farming — Risks and unexpected consequences, Page 12. https://www.cban.ca/GenomeEditingReport

[7] Wilson, A.K. (2021) Will gene-edited and other GM crops fail sustainable food systems? In A. Kassam and L. Kassam (Eds.) *Rethinking Food and Agriculture: New Ways Forward* (pp. 247-284). Woodhead Publishing.

[8] See www.cban.ca/labellingpolls.