

ALERT

Genetically Engineered Salmon Produced and Sold in Canada

Summary

The world's first genetically engineered (genetically modified or GM) food animal is a fast-growing GM Atlantic salmon being produced at two new on-land facilities, one in Prince Edward Island, and one in the US (Indiana).

Small amounts of GM Atlantic salmon have been sold, unlabelled, in Canada since 2017, produced at a small pilot plant in Panama that closed in 2019. The GM fish is currently being grown by the US company AquaBounty, which developed the technology.

The GM Salmon

The Atlantic salmon is genetically engineered to grow faster using a growth hormone gene from Chinook salmon and genetic material from ocean pout. The company says it can grow up to twice as fast as other salmon, to reach market-size in almost 18 months instead of 28-36 months.

Producing the GM salmon in Canada

The GM salmon, and GM salmon eggs, are now being produced on land in Canada, at a new site run by the company AquaBounty, in the community of Rollo Bay, P.E.I. AquaBounty says the facility will produce 250 metric tonnes of GM salmon, as well as all the GM salmon eggs the company needs to grow GM salmon around the world.

- The company AquaBounty says the first GM salmon produced in Canada will be “harvested” in January 2021.
- Some genetically engineered (genetically modified or GM) salmon has already been sold unlabelled in Canada, from various small shipments since 2017.
- The GM salmon company AquaBounty wants to build new GM fish production facilities, and may chose a location in Ontario.

The GM Atlantic salmon was approved for on-land production in Canada in 2013 by the Minister of Environment and Climate Change Canada, but a court case brought forward by two environmental groups (Ecology Action Centre and Living Oceans Society) resulted in a new risk assessment, completed in 2019, that allows the current production at Rollo Bay.

To minimize the risk of escape into the wild, government approvals in both Canada and the US restrict production of GM salmon to on-land facilities only, and only at specific sites: In Canada, only AquaBounty can produce the GM salmon, and only at its facility at Rollo Bay, P.E.I.

Selling the GM Salmon in Canada

“Our plan is to follow the guidelines in Canada which is we don’t have to label.” — Sylvia Wulf, CEO, AquaBounty¹

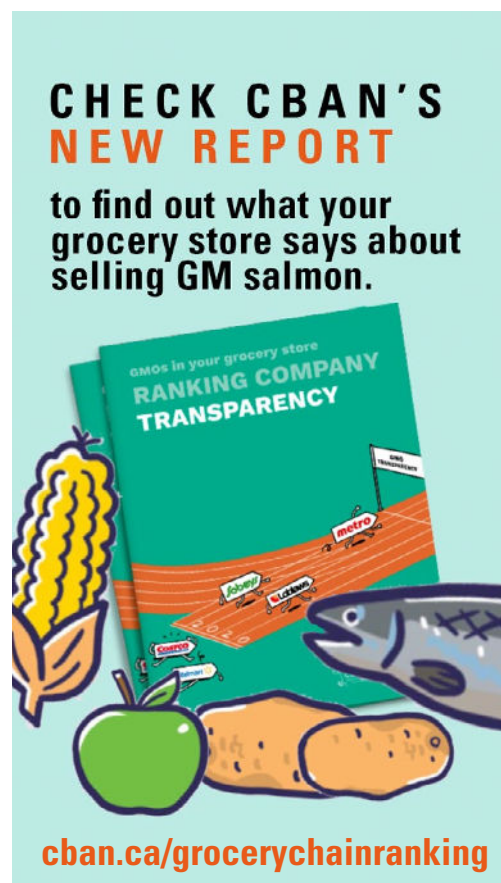
Health Canada approved the GM Atlantic salmon as safe to eat in 2016 and it was first sold in Canada in 2017, without labels or consumers.

AquaBounty’s GM salmon filets could be sold on the market anywhere in Canada. Earlier records, tracked down through Access to Information requests, show that most of the GM salmon was sold into the foodservice sector, such as restaurants or catering, with some going into grocery stores.

All GM salmon sold in Canada will now be coming from AquaBounty’s plant in P.E.I., and possibly also their plant in Indiana.

“Our salmon farmers encourage consumers to ask retailers where their salmon originates when they purchase. We are reviewing our position on mandatory labeling, and recognize the United States and Europe who now require mandatory labeling for GE products.”

— The Canadian Aquaculture Industry Association²



GM Salmon Around the World

Canada and the US are the only countries where GM salmon is currently being produced and sold. However, AquaBounty says it plans to build a new fish production facility each year and expand production around the world (using GM salmon eggs from their plant in Canada). In 2020, the company announced it will build a second US facility, in Kentucky, to produce 10,000 metric tonnes per year.

AquaBounty has named Ontario as site of interest for its second facility in Canada.³ The company says it wants approval to grow the GM salmon in Argentina, Brazil, China, and Israel.

AquaBounty has also developed a genetically engineered tilapia fish that is not yet on the market.

Environmental Risks

If genetically modified salmon or salmon eggs escape from fish farms, they could put endangered wild salmon at further risk. Fisheries and Oceans Canada (DFO) concluded that the hazard to wild Atlantic salmon populations is high if the GM salmon escape.⁴ Research shows that GM salmon could out-compete wild salmon for food, or breed with wild salmon or other species such as brown trout.

To minimize the threat of escape into the wild, AquaBounty is, so far, **only permitted to grow GM salmon on land**. However, land-based containment is not risk-free: DFO says the risk of escape from AquaBounty's facility is low to moderate. If escape happens, the company says that all of the GM salmon will be female and that most or all (98.5%+) will be sterile (via triploidy).

However, an additional risk is that AquaBounty plans to produce and sell both non-GM salmon eggs and GM salmon eggs in P.E.I., for shipping to other plants around the world. DFO has made a number of recommendations to prevent accidental mixing of the GM and non-GM eggs, which could lead to the unintentional production of GM salmon in ocean net-pens, but these measures are not requirements. Research shows that human error is a predictable cause of contamination, and has already led to unapproved, experimental GM animals entering the food chain in Canada.⁵

For more information and updates: **cban.ca/fish**

To take action: **cban.ca/actionfish**



2013: The Minister of the Environment and Climate Change Canada approved commercial production of GM salmon and salmon eggs, in land-based facilities.

2014: The Government of Panama fined AquaBounty for violating environmental regulations.⁶

2016: Health Canada approved the GM salmon for human consumption.

2016: The Federal Court of Canada ruled that the Minister's 2013 decision only applies to AquaBounty's Bay Fortune P.E.I. facility, triggering a new risk assessment for AquaBounty's Rollo Bay facility.

2017 (June): The world's first shipment of GM salmon (4.5 tonnes from Panama) arrived in Québec.

2017: The Government of Prince Edward Island approved construction of AquaBounty's Rollo Bay facility.

2018: The world's second world shipment (4.5 tonnes from Panama) arrived in Québec.

2019 (April): The Minister of Environment and Climate Change Canada approved production of GM salmon at AquaBounty's facility at Rollo Bay, P.E.I.

2020: AquaBounty says its first "harvest" of GM salmon produced in the US (Indiana) will be ready by the end of the year, but no announcement of harvest is made in 2020.

2021: AquaBounty says its first "harvest" of GM salmon produced in Canada (P.E.I.) will be ready in January.

1 Syliva Wulf, President and CEO, AquaBounty. Presentation for the Canadian Centre for Food Integrity. May 27, 2020 <https://www.foodintegrity.ca/wp-content/uploads/2020/05/Insights-into-AquaBounty-Recording.mp4-NEW.mp4>

2 Canadian Aquaculture Industry Association, Industry Position Statements, Genetically Engineered Salmon Product, Accessed August 27, 2020: <https://www.aquaculture.ca/caia-position-genetically-modified-salmon/>

3 Syliva Wulf, as above.

4 DFO. 2013. Summary of the Environmental and Indirect Human Health Risk Assessment of AquaAdvantage® Salmon. Canadian Science Advisory Secretariat, Science Response 2013/023. 2013.

5 Canadian Biotechnology Action Network, GM Contamination in Canada: The failure to contain living modified organisms, 2019. www.cban.ca/ContaminationReport2019

6 See www.cban.ca/fish

The Canadian Biotechnology Action Network (CBAN) brings together 16 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 on MakeWay's shared platform.



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