Canada Spawns Madness

By Heidi Osterman, CN

The seemingly straightforward question, "What are we having for dinner?" is about to get a lot trickier to answer, due to a revolution in science. Many people call it Frankenfish when the answer to the dinner question may be the newly approved and genetically engineered “Salmon with a dash of eel genes.”

Technology is moving so far ahead of common understanding that the language of “transgenics” is not yet in our common vocabulary. If you ask most Canadians what genetic engineering (GE) or genetic modification (GM) mean, most people won’t even understand the question, let alone have an answer ready.

November 25, 2013. Ottawa, Canada’s approval of commercial production of GM Atlantic salmon eggs is an alarming decision that sets Canada up to be the source of global environmental risk, says the Canadian Biotechnology Action Network. “We are extremely disappointed and alarmed that our government has approved the production of GM fish eggs. GM salmon egg production in Canada endangers the future of wild Atlantic salmon around the World,” said Lucy Sharratt of the Canadian Biotechnology Action Network. “It’s simply crazy that the World’s first GM fish eggs are now going to be coming from Canada.”

The Environment Canada approval, published on November 23, 2013, in the *Canada Gazette*, is the first government approval for the company AquaBounty. The company has asked for approval of the GM Atlantic salmon for human consumption in the US, based upon a plan to produce the GM fish eggs in Prince Edward Island, Canada and ship them to Panama for grow-out and processing. “We’re devastated that Prince Edward Island is now officially the home of the Frankenfish,” said Leo Broderick of the Prince Edward Island group called Islanders Say No to Frankenfish. “We don’t want our Island to be the source of this dangerous living pollution.”

“It’s unacceptable that this incredibly important decision was made in total secrecy and without any public consultation,” said Sharratt. The process involves no public participation, nor public hearings. In fact, the public did not know that AquaBounty had received this permission until Environment Canada published its final decision.

As a primer for everyone who is bewildered by the idea of designer plants and animals, genetic engineering is a technology that scientists use to “mate" genetic information from different species together in unnatural combinations.

Despite the general lack of knowledge about GMOs (genetically modified organisms) in Canada, the government has been promoting transgenic technologies using taxpayers’ money. In January 2010, AquaBounty, an American biotechnology company, was given $2.9 million for research purposes.

What is the difference between genetically engineered salmon and natural salmon? Gene-altered salmon have been “spiked” with genes from an eel-like creature called ocean pout and from Chinook salmon. These unnatural salmon have been genetically restructured to produce growth hormones throughout the year and therefore grow unnaturally quickly. In the natural World, salmon produce growth hormones for only three months of the year. The gene-altered salmon are also nutritionally inferior to wild Atlantic salmon. According to data supplied by AquaBounty, gene-modified salmon contain less beneficial omega-3 fatty acids than even farmed salmon.

Of major concern about the gene-altered salmon is escape and harm to wild salmon populations. What would happen if GE fish were to escape into the wild? Research published in the Proceedings of the National Academy of Sciences notes that a release of just sixty gene-altered salmon into a wild population of 60,000 would lead to the extinction of the wild population in less than 40 generations. The biotech company created the fish to be sterile, but admits that 5% could be fertile.

Another major issue concerns the health risk to humans who would eat this product. The health data supplied by the company has been summarized as "sloppy science with woefully inadequate data, small sample sizes, and questionable practices," according to Senior Scientist Dr. Michael Hansen of the Consumers Union.

AquaBounty's research includes testing that is seemingly designed to obscure potential problems rather than reveal problems. Take for instance the sample sizes. Common sense would tell you that when studying something as revolutionary as a designer-fish that steadily pumps out growth hormones, studies must be very broad and rigorous. In reality, the actual sample size of the study to test for changes in morphology of the GE/GM salmon involved only ***twelve*** fish.

When looking for problems that could be associated with higher-than-normal hormone levels, the company used fish weighing only two ounces rather than market-size fish. Data published in the British newspaper *The Guardian* revealed that the GM/GE salmon had elevated levels of insulin-like growth factor-1 (IGF-1), which is a hormone linked to a number of cancers.

Typically, the Food and Drug Administration (FDA) also dismissed the fact that there was a high rate of physical deformity among the gene-altered salmon. Another disturbing fact is that government officials in the U.S. and Canada have not yet even asked the company for data from long-term feeding trials. Without this testing, the public has no way of knowing if the transgenic salmon is safe to eat. Does that leave humans as the actual test animals? If approved, will the fish be ***labeled*** as genetically modified?

Frankenfish is a term coined by opponents of GMOs. In the U.S., over 300 environmental, consumer, health, and animal-welfare organizations, including salmon and fishing groups, salmon and fishing associations, chefs, and restaurants have signed joint letters to the FDA requesting that the approval be denied.

In Canada, people are protesting online, holding public demonstrations, writing letters to the editor, talking to their government agents, and by telling their fish suppliers that "***they will stop eating salmon entirely if transgenic salmon goes to market and is unlabeled***." Even the farmed fish industry is in opposition. The executive director of the Canadian Aquaculture Industry Alliance told CBC, "The Canadian aquaculture industry does not support the commercial production of transgenic fish for human consumption."

Consumers are not demanding designer fish, nor did they ask for the taxpayers' money to be used to re-create plants and animals into patented name brands. Citizens content with the natural plants and animals are disturbed that public involvement has been entirely bypassed on a subject as important as the future of the food supply.

Scientists are playing for keeps here, as the changes made to our seeds, plants, and animals are irreversible. Most global citizens do not want to eat genetically modified plants that are altered to produce their own pesticides from within, or crops modified to tolerate being sprayed with poison that would be lethal to any natural plant. Gene-altered seeds and pollen contaminate the fields of organic and conventional farmers and is a form of gene pollution. Genetically modified salmon will be the first approved "drug-animal" registered in the World.

Help stop the advancement of these untested gene-altered plants and animals – your health depends upon the quality of your food supply. If you care about the future of food as well as your and your family's health, contact your Member of Parliament or Congressional Representative now and demand that they put a stop to this madness.

Heidi Osterman is a certified nutritionist working for the Chelation Medical Center for 14 years in Kelowna, British Columbia. Heidi is the founder of the True Food Foundation, which creates awareness nationally and internationally about the impact of GMOs on our health and the environment, and has recently joined with NHF.