

Standing Committee on Agriculture and Agri-Food

Biotechnology – Evidence

Arnold Taylor. P 1
Jodi Koberinski, p.4

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Mr. Arnold Taylor, Organic Grower

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I'm Arnold Taylor. I'm past president of the Canadian Organic Growers. I got out of that job a couple of months ago. I'm an organic farmer from Saskatchewan, and I work with my son and daughter-in-law. We have 3,500 acres, certified organic, and 100 certified organic beef cows.

As president of the Saskatchewan Organic Directorate in 2001 and 2002, I oversaw the organization's effort to launch a class action lawsuit on behalf of all Saskatchewan-based organic farmers against Monsanto and Bayer CropScience for economic and agronomic damages caused by their GE canola. Our organization was seeking compensation for the loss of organic canola, which was at a premium and is a high-value crop that was important in our crop rotations, which is a main method for weed control in organic systems, which prohibit synthetic herbicides.

In the mid-1990s, the Canadian Food Inspection Agency approved GE canola for confined release. I emphasize that. It was confined release and it was initially segregating GE and non-GE varieties in an effort to ensure safe marketability. Shortly thereafter, CFIA carelessly allowed unconfined environmental release, and GE canola cross-pollinated across the landscape and contaminated the germplasm of other non-GE and organic canola cultivars.

Studies indicate that virtually all canola in Canada has been contaminated with GE traits, and at that time, only six years into the production, the certified seed stocks were contaminated as high as 7%. This has adversely affected organic farmers and their markets. Globally organic standards, including Canadian ones, prohibit the use of GE as a method, and this has put our industry on a collision course with the introduction of GE technologies.

Ultimately, our proposed class action suit was rejected, largely because it was difficult to establish who was responsible for the damage caused by cross-pollination of GE crops and organic cultivars.

That is why Parliament must enact some appropriate measures to ensure that new GE crops do not adversely affect farmers and their markets. Had appropriate measures been in place prior to the release of GE canola, farmers and their markets, and Canadian agriculture as a whole, would have been spared much hardship and financial loss.

Enacting appropriate legislation to protect the rights of non-adopters of GE technology is long overdue in Canada. Currently our national regulatory system is deeply flawed and is arguably designed to benefit corporations that develop GE crops at the expense of organic farmers, non-adopters, and consumers as a whole. Market impact must be included in the overall assessment of this technology.

Indeed, history has shown us the dangers associated with a regulatory system that is solely science-based, and we now know that the current system is too narrow to properly evaluate the multitude of potentially adverse socio-economic impacts associated with this technology.

One of the flaws within the current regulatory system is that a number of federal departments oversee the regulation of GE crops in Canada. Although the CFIA plays the lead role, CFIA does a paper review of GE crops based on data submitted by the technology developer, peer-reviewed literature, and expert advice, but with no independent testing on the GE crops themselves because they're deemed substantially equivalent to non-GE varieties.

Regulatory approaches like the CFIA's, which are based on substantial equivalence, have been widely criticized as being pseudo-scientific because they presume GE crops' safety without any scientific basis and are largely based on industry data alone.

I'd like to read you just a short quote from Dr. Millstone from Sussex University in England, talking about substantive equivalence. He calls it an anti-scientific test. He says:

Substantial equivalence is a pseudo-scientific concept because it is a commercial and political judgement masquerading as if it were scientific. It is, moreover, inherently anti-scientific because it was created primarily to provide an excuse for not requiring biochemical or toxicological tests. It therefore serves to discourage and inhibit potentially informative scientific research.

After the commercial release of GE canola, Canadian experts now agree that this pre-release risk assessment failed to anticipate hazards associated with contamination, weed problems, and market harm. Indeed, a review of the Canadian experience with GE crops concludes that very little research has been carried out on the socio-economic impacts associated with this technology and that the Canadian regulatory system disregards the idea that GE crops will have well-known local and international market impacts as irresponsible and embarrassing.

We need to introduce a mechanism to assess and safeguard against adverse market harm caused by GE crops. I'm going to touch a little bit on GE wheat and flax. The proposed introduction of GE wheat is a perfect example of how the so-called science-based regulatory approach, which excludes such socio-economic factors as market harm, can put Canadian farmers and the agriculture industry as a whole at risk.

Between 2002 and 2004, Monsanto was pushing to introduce the world's first herbicide-tolerant variety of GE wheat. However, there was widespread opposition from consumers and Canadian export markets. Over 80% of the Canadian Wheat Board's buyers said they would not purchase GE wheat because of consumer concern over the crop, as Canada's so-called science-based regulations had no way to include this potential threat to export sales, valued between \$4 billion and \$6 billion annually.

Ultimately, due to the strong consumer and environmental backlash, Monsanto deferred the release of GE wheat, but it now appears that there is renewed interest to bring this crop to market, despite ongoing consumer and farmer resistance. GE wheat exposed the crisis in Canada's biotechnology regulations and almost cost Canadian agriculture billions of dollars in lost revenue.

With GE flax, our organic markets were also adversely affected by the variety GE Triffid flax, which was never commercially released in Canada but ended up contaminating seed supply and shutting down our markets in 35 countries worldwide. Flax is one of our highest-value crops, and as a result of confirmation of the contamination, our prices have fallen by 32%. Now, we have to test our crops, both at harvest and at seeding time, to maintain organic certification. This example demonstrates how GE crops can contaminate seed, conventional, and organic crops, causing risk and financial losses for farmers while adversely affecting the marketability of these crops.

Dr. Ian Mauro testified before this committee earlier. I encourage you to inform yourselves about Dr. Mauro's work, because he can tell you about a science-based way to assess market harm.

I have some final thoughts. I have spent most of the past ten years of my life fighting in the courts to protect organic farmers and my farm from GE crops. I should not have had to do this, as my government should have introduced adequate regulations to ensure that organic farmers are not adversely affected by the introduction of GE crops. We have lost the ability to grow canola. We could have lost flax because of the introduction of GE varieties. We could also lose our ability to grow wheat because of the introduction of GE varieties.

Now the industry is trying to introduce GE alfalfa. Arguably, the threat to organic alfalfa is the most significant yet, because it is a soil builder that fixes nitrogen and other essential nutrients. Were it to be contaminated with GE traits, this might destroy our way of farming entirely. GE alfalfa is not needed in agriculture, as it really offers no benefits for conventional or organic farmers and really is only designed to sell herbicides. As these new varieties are introduced, they basically remove that same crop from organic systems, which is detrimental, because we rely on this biodiversity in our crop rotations to ensure healthy and productive soil and crops.

Furthermore, as GE crops out-cross into organic systems, they destroy our ability to market our crops. Ironically, consumers the world over are demanding organic foods, and it's a fast-growing sector in the agriculture industry. Yet our opportunities for growth and farm-level prosperity have been adversely affected by the irresponsible manner in which GE technology has been introduced without proper regulation into the marketplace.

I encourage you to inform yourselves on the severe risks associated with leaving the current regulatory system regarding GE crops as it is. It is inadequate, it is causing harm to farmers in the food system, and Canada's reputation for offering exceptional food safety has been tarnished by experimenting with GE crops.

I encourage you to correct this. Appropriate legislation or appropriate measures need to be enacted to correct the mistakes of the past. It will also help to ensure that organic agriculture will continue to thrive, offering present and future generations the opportunity to access safe and healthy food that requires less in the way of inputs.

Increasingly, the importance of organic agriculture in creating a sustainable future for global society is being recognized, and it must be protected.

Thank you.

February 15th, 2011

Ms. Jodi Koberinski, Executive Director, Organic Council of Ontario

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Ladies and gentlemen, on behalf of the membership of Organic Council of Ontario, I am thankful for the opportunity to speak with you about biotechnology today.

Organic Council of Ontario represents the full value chain of organics in the province of Ontario, and our mandate is to grow the sector. Currently, under the McGuinty government, there is a plan to double the acreage over the next five years.

I have been involved personally in the organic sector for over 15 years, as an advocate, a processor, and a retailer, and I have been involved with certification and the development of the Canada organic standard.

Organics is a response to consumer demand. Eaters want to purchase foods grown in accordance with their sustainability values. These include the absence of genetically modified organisms, chemical fertilizers, synthetic pesticides, and synthetic herbicides. It also includes using crop rotation, implementing soil-building strategies, and increasing biodiversity.

The process of third-party certification, upon which our newly adopted national standard is based, was developed by the industry over a 30-year period. It is the backbone of what we consider to be Canada's original food traceability system.

In Ontario, close to 120,000 acres are certified organic, and this accounts for about 1.5% of agricultural land. It is estimated that current sales figures in Canada are approximately \$2.8 billion, and about 80% of that product is imported from outside the country.

Overall, we're approaching 3% of the mass market. This is the time when the folks who control markets begin to pay attention. The sector was able to achieve this kind of growth without any financial support, regulatory support, or research dollars of any significance from the public.

It was only last year that the sector received its first bulk investment in organic research, in the form of \$6.5 million in science cluster funding, which is a three-year project. Contrast this reality with 15 years of \$7 million a year in public funding for biotechnology, and our sector wonders what we would know if we'd invested only 10% of that in organic production over the same time.

Last week, in Guelph, we heard University of Guelph's Michael Emes say, in relation to the conventional model, that what we've done to date is spray and pray, using masses of herbicides, fungicides, and pesticides, about which people understandably have reservations. Mr. Emes went on to point out how biotechnology is a more precise methodology for production.

The organic sector suggests there are other places we could put our money to achieve the same ends. If we look at the 27-year, side-by-side corn and soybean production trials by the Rodale Institute, we've seen 3,500 kilograms per hectare per year of carbon

dioxide sequestration in the organic system. We have seen a 15% increase in soil nitrogen under this system, and a 30% increase in organic matter in the soil. We also see a reduction of approximately 33% to 50% in energy use when cover crops are used in the system.

The University of Maryland took a look at this study and did an economic analysis of the side-by-side comparison. It showed that the organic system, over time, netted the same income per hectare, and that's without the organic price premium. When these organic systems have been in place over time, we have a dramatic improvement in our productivity.

Last week Mr. Emes also said that almost all of the global biotech crop derives from four plants, as we know, which in 2008 approximated 115 million global hectares. He went on to say that the European position of zero tolerance seems out of step and it presents trade barriers that could affect Canadian farmers.

But let's take a deeper look at the numbers. In 2008, more than 85% of U.S. corn was GE. That's 30 million hectares of corn in the U.S., which accounts for about a quarter of that overall GE planting that Mr. Emes referred to. When we talk about a worldwide acceptance, we're seeing that half of that is coming from six countries, and half of that half is coming just from the U.S.

You'll see the numbers in your notes.

One of the key principles of organic agriculture is the unanimous prohibition internationally of the use of GMOs in the system, from production through processing. Because labelling laws don't require companies to identify GMOs, global consumers reach to organic products as their way of knowing they're not consuming GMO foods.

As much as I am here to represent the organic sector in Ontario, I'm also here to speak on behalf of the millions of eaters who consume our products here in Canada and globally.

The standing committee is asking what the biotech sector needs to flourish. We would like to see the question stated more broadly: what does our agricultural sector need to flourish, and most importantly, what does our consumer base at home and abroad need in relation to biotechnology?

We must not lose sight of the fact that our conventional agriculture is a 50-year-old to 60-year-old production system. It has its own issues with regard to soil fertility, nutrient availability, and toxicity, which are beyond the scope of this presentation to illuminate.

At the core of the organic production paradigm is building healthy soil ecology. Organic agriculture is a green technology with answers for climate change, carbon sequestration, water and soil conservation, and reduced energy use.

GM proponents over the past 15 years have claimed that biotechnology has answers to our agricultural woes. An oft-cited benefit is that biotechnology will reduce chemical use, when in fact the opposite has proven true.

In 2009, Dr. Charles Benbrook looked at USDA data to find that GM crops have been responsible for an increase of 383 million pounds of herbicides over the 13 years of commercialization between 1996 and 2008. It's noted that half of that increase came in the last three years, so our curve goes this way--up.

This dramatic increase in the volume of herbicides applied swamps the decrease in insecticide use attributable to certain GM corn and cotton varieties, making the overall chemical footprint of today's GM crops decidedly negative. The report identifies and discusses in detail the primary cause of this increase, which is herbicide-resistant weeds.

In addition to toxic pollution from pesticides, agriculture faces the twin challenges of climate change and burgeoning world populations. The biotech industry's current advertising campaigns promise to solve these problems, just as they once promised to reduce chemical use.

Before we embrace GM crops as a solution to these new challenges, we need a dispassionate data-driven assessment of the biotech sector's track record on earlier pledges.

To date, we have four species engineered for two traits with one purpose. GE technology results in heavier reliance on off-farm inputs, licensed technologies, and intensification of monocultures. Increasingly, seed companies are making their highest-yielding varieties unavailable without the GE traits, so there is actually less choice, and not more choice, for farmers.

Regardless of the current or future intentions of genetic modification, the technology continues to be opposed by Canada's non-GMO and organic markets in North America, Europe, and Japan, and it will continue to pose a problem for organic and non-GM producers.

Metro Inc., a central Canadian grocery retailer with a sizable market share, has posted the following on their website:

The current state of knowledge does not permit us to positively assert that the consumption of genetically modified organisms...is linked to the development of certain cancers. However, the existence of a risk for the environment and human health has not been excluded.

Clearly, our retailers are hearing pressure from consumers within Canada on this issue, so it's a fallacy to assume that the only concern for GM markets is our export markets.

Organic advocates are perplexed by the simplistic thinking that seems to dominate discussion and debate on biotechnology. This science is not even 20 years old. GE foods have never been labelled, so population-based impacts cannot be traced, and the science that proponents so eagerly point to is conducted by the companies that are applying for commercialization and registration. It is not being conducted in the public forum.

Data is beginning to come in that shows health implications for GE foods on mammals and the true impacts of glyphosate overuse. I won't get into the details on that. In the print materials that you'll receive, I have noted some published and peer-reviewed studies to this effect.

We understand that we could debate the science endlessly back and forth, but at the end of the day, parents are concerned about pesticides and GE in their food supply for their children. Children eat three to four times as much food per weight as adults, drink twice as much water, and breathe twice as much air, and then also are exposed in the womb and via breast milk to pesticides and GE foods. Understandably, consumers are worried.

In addition to the direct issue of GE exposure, organic consumers recognize that more GE fields mean more glyphosate use. This market wants to see the precautionary principle applied when potentially offending genetic materials cannot be recalled in the future. Our sector's opposition to GM production and the expansion of GM technologies remains firm. We are convinced that our position is shared by a majority of Canadians, and that as the detrimental effects of the genetic modification of plants become more apparent, the opposition to their continued use will become insurmountable.

Clearly, the current Canadian policy, as expressed through Mr. Gerry Ritz's recent pro-biotech tour, is dramatically out of step with our nation's sustainability goals and the increasingly savvy Canadian consumers who want to eat clean, healthy food. Therefore, I would like to outline what we consider to be the principles and parameters for establishing an agricultural policy that can be embraced by Canadians.

The principles we are putting forward inform a policy that respects the existence of non-GM agriculture. The existence of both GM and non-GM agriculture means that each system must maintain integrity and take responsibility. The current situation, where those whose crops are polluted by GMOs bear the economic burden of pollution, must not continue.

There are six principles upon which we propose this policy be built. I'll just outline them generally. There's a bit more information in your written materials to help you understand our arguments.

Principle one: organic agriculture is an important facet of the Canadian economy and cultural mosaic and must be protected.

Principle two: products of organic agriculture lose their value if they are mixed with GMOs beyond the level acceptable by target markets. GMO contamination is an unacceptable harm that must be mitigated and avoided.

Principle three: costs and measures for ensuring successful and respectful existence of both farming systems should also be borne by biotech users and biotech developers. This includes biotech farmers employing buffer strips and identity preservation. Best management practices should be verified and enforced through inspection for biotech users.

Principle four: biotech companies and farmers growing GMO crops should compensate organic farmers for financial losses due to adventitious presence in GMO plants and seeds.

Principle five: commercialization of GE crops should not be allowed without a full assessment of potential impact to the environment, health, and farmers' socioeconomic well-being, which includes market acceptance and the freedom to save seed.

Principle six: consumers have the right to know if a food contains products of GE, so labelling of food derived from GE crops should be mandatory.

Thank you so much for your attention this morning. I look forward to answering your questions.