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Chair

Mr. Larry Miller

Standing Committee on Agriculture and Agri-Food

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● (1100)

[*English*]

The Chair (Mr. Larry Miller (Bruce—Grey—Owen Sound, CPC)): I'll call the meeting to order.

I believe we have a quorum here, and because we have five witnesses here today, I'd like to get started.

Thank you to our witnesses for being here today. We appreciate it. We're spending the next week on the road, so we wanted to make our time in Ottawa valuable before we go.

We're going to move to our first presenter, Mr. Schmitz, from the University of Florida, for ten minutes or less, please.

Dr. Andrew Schmitz (Professor, Food and Resource Economics Department, University of Florida): Thank you very much.

Do we have to speak into the mikes, or can we speak any way we want to?

The Chair: The mike is controlled, sir, from back here anyway. When it comes to a couple of our French members—Mr. Bellavance and Ms. Bonsant—you may want to get your interpretive stuff ready when it's their turn for questions.

Dr. Andrew Schmitz: Thanks for inviting me to come.

I've been an academic for over 40 years and I've spent my career at the University of California, Berkeley. I am currently at the University of Florida and also at the University of Saskatchewan. I've done extensive work in agricultural technological change, including work on hybrid corn and mechanized agriculture, especially mechanization in California. Also, I've done extensive work in some of the biotech areas.

I'm going to make the comment that I'm not paid to come here to give one side of any story. I find these days that so many consultants also partly give you the answer they want you to hear because they're paid for part of the answer. So I'm not paid by any Monsanto group or any Canadian Wheat Board or anybody in my testimony.

My points will be fairly clear. What I'm going to say is actually in a new book we just published at the University of Toronto. It's called *Agricultural Policy, Agribusiness, and Rent-Seeking Behaviour*. So in addition to agricultural policy, we also bring in sections on technological change, and also on genetically modified organisms in a chapter.

The literature on biotechnology has grown rapidly, and there are many studies now that have examined GMOs and other biotech products. One of the reasons that the results aren't necessarily consistent is that we sometimes do economics from a different perspective. I've always done economics from what we call "welfare economics", which is a fancy way to do benefit-cost analysis. And this is a standard approach that's agreed to by most academic economists. I don't know about other fields, but I know it's accepted in economics, in which I have my degree, a PhD.

With that, I'm just going to make a couple of comments from our book and one of the papers we wrote. Actually, I'll leave with you a paper that's written for non-technical people on an overview of the biotech industry.

The first point we make in here is on this whole question about consumer acceptability, and this is where part of the debate comes in about what the impact of biotech is. My colleagues from the University of Saskatchewan—Peter Phillips testified in this group, and I know Peter very well, and apparently this gentleman is part of that group. His assessment is maybe somewhat different from one of his colleagues in economics, Richard Gray, and how he might actually conduct and do benefit-cost analysis for GMOs.

In addition, for example, Colin Carter was my student at the University of California, Davis. He seemed to be a strong supporter of GMO wheats, for example, and he comes out with a totally different conclusion about the benefits and costs of GMO wheats from what Richard Gray and Hartley Furtan do, from the University of Saskatchewan, in terms of the payoffs. Colin is very positive on GMO wheats. Hartley Furtan and Richard Gray and others are fairly negative on GMO wheats.

The big key issue here is consumer acceptability of GMOs. I'd have to agree with the point that it can't be all based on science, whether we're going to make profitability from GMOs. Science only plays a role, but you have to also bring in consumer acceptability for GMOs.

For example, in the wheat business at the present time, committees have evaluated different varieties of wheat. The eight different varieties of bread wheats are actually based on science. But so are the consumer acceptability attributes of wheat based on science. As a result, they have a formal way of actually determining what is consumer acceptability in addition to the scientific aspects of it. So wheat is a good example also about consumer acceptability.

● (1105)

Now, apparently Monsanto did a study, and I think Colin and other people were involved. They make this conclusion, and I think it's well known, that there are big payoff owes to GMO wheats. And we've done this consumer acceptability part of it, but my only question with that is if somebody else did the same study, I can guarantee you that I could show you a benefit-cost ratio of anywhere from 1.0 to 6.0, depending on what assumptions I'm going to make about consumer acceptability.

We could use one of our international trade models, like we do on wheat and other grains, to actually show that. Then it comes back to this question of who did the study, where did they get the numbers from, and who did they talk to. That's the same question as.... At the present time we're evaluating the oil spill in the gulf and we're doing this work on the costs of the oil spill. But the same argument would apply to this sort of thing when you get into willingness-to-pay measures of consumer acceptability from GMO products.

This is the last point I make here in this first paper on consumer acceptability. I've been involved in several lawsuits related to biotechnology and not related to biotechnology. But this issue comes up also with respect to the impact of a power line crossing somebody's property or the transportation of nuclear equipment, etc., in the country.

What happens is the judges always rule that it isn't science that determines whether the electric power lines are necessarily harmful for you living there, it's consumer perception of what determines the damages from the power line. So the whole first part of this paper is devoted to this debate on consumer acceptability.

Then we actually discuss in here the whole notion of producer profitability. Now, it's always been stated that technological change, whether it's hybrid corn, whether it's due to new canola varieties, etc., always results in these huge benefits to producers. That is not true. I can show you models where I can show a negative impact on producers, not a positive impact to producers. That's not being negative or a supporter or non-supporter of the GMOs. It's also part of the market and the dynamics of economics. So it's difficult to generalize.

Now, I enjoyed Peter Phillips' excellent presentation on canola, but I have the problem of trying to generalize from canola across all commodities. For example, canola is specific to the fact that it generated huge human benefits, and I think even his estimates or your estimates might even be low from the standpoint of the benefits from GMOs. Richard Gray and others did some studies on the health impact of the new canola varieties. So that case is very clear.

But one of the cases you likely ask, then, is why does Europe accept oils of a GMO quality and they won't accept other products necessarily from GMO quality? But as he knows from biotechnology, it's the nature of your consuming in wheat, etc., so you'd be consuming the trait directly; but with oil you don't, because it's a residual protein. So that's a huge issue there in terms of why one commodity might be accepted and why another commodity won't be accepted. So we spend most of the time debating this question about producer acceptability.

Then the other point we raise in here is this StarLink case. I was involved as an expert witness against Aventis on the U.S. StarLink case. In that particular case, I guess the Greenpeace movement or someone else discovered the StarLink gene in Taco Bell. The corn growers sued Aventis for releasing a GMO corn that wasn't really acceptable or licensed. What we found in this case and what you really have to recognize is sometimes the transaction costs, the segregation cost, when you introduce GMO varieties and mix it with non-GMOs can be huge. That's especially true when these countries have zero tolerance for GMO products.

Japan, at the moment, is a large buyer of Canadian wheat. I'll guarantee you that Japan would never buy GMO wheat from Canada. That's well stated by them, and it's also well stated in some studies we reference in our book that have studied consumer acceptability in Japan, India, and other countries. Other countries in the world likely will accept GMO wheats, etc., but Japan certainly won't.

So when the StarLink corn got mingled in with the other commodities, what happened was the Japanese were involved too. So the Japanese then requested that a testing be done not only in the U.S. about StarLink corn, but also they tested loads in Japan and they turned down huge amounts of corn actually going into that market. They have zero tolerance, and when you have zero tolerance on a commodity it's going to be very costly to keep these markets segmented so that you don't end up with GMO corn and non-GMO corn all mixed together—or GMO wheats, or whatever commodity you're talking about.

● (1110)

I can go on with a whole host of comments. My comment is that I think products have to be treated separately when you talk about GMOs. And I think you have to engage in a process where in fact you have to be necessarily almost guaranteed that you have an end product that's going to be consumer-accepted.

To have that, you also have to tell me what exactly you're breeding in a GMO trait to even do a study on consumer acceptability. You just can't go and ask a buyer in Japan and say, “Do you accept GMOs or not?” You have to be much more specific of what this product is and what you're actually trying to do with it.

I'm over ten minutes. Sorry.

The Chair: Thank you very much, Mr. Schmitz; you weren't that far over.

We now move to Mr. Nault and Mr. Darier. Mr. Darier is the Quebec representative from Greenpeace, and Mr. Nault is just a representative—I didn't mean “just” a representative, Mr. Nault.

You have ten minutes between you, please.

Thank you.

[*Translation*]

Mr. André Nault (Representative, Réseau québécois contre les organismes génétiquement modifiés (OGM)): I am a representative of the Réseau québécois contre les OGM. Greenpeace and the AmiEs de la Terre de l'Estrie form a team. We will explain this to you later.

Mr. Éric Darier (Quebec representative, Greenpeace, Réseau québécois contre les organismes génétiquement modifiés (OGM)): First, I would like to thank the committee for inviting us to appear.

Before we start, I would like to introduce our delegation from the Réseau québécois contre les OGM. You've already met Mr. Nault, from the AmiEs de la Terre de l'Estrie. I remind you that you should have a written copy of our brief. My presentation today will be slightly different, so that I don't go over our 10 minutes.

The purpose of our network is to bring all GMO opponent groups together into a strong network that works together to address certain issues and, in particular, facilitate the exchange of information and ideas for a GMO-free future.

We represent some 20 organizations working mainly in the fields of the environment, consumer rights, agriculture and health; a full listing is available on our website. We also work very closely with the Canadian Biology Action Network.

Our network is here today to contribute to your study on agricultural technologies. Our oral presentation will focus on at least one element, that is, the 2001 report by the Royal Society of Canada. We hope that your campus visits next week will be very fruitful. We also hope that, as the public, we will have access to the account of these meetings, so that we can see what you are studying and what people have to say.

The reason I want to focus on the Royal Society of Canada report is because today, or very soon, is a historic date, the 10th anniversary of the 2001 Royal Society of Canada report, which is titled "Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada." You can have a look at the copy I have brought with me. The French version is about 280 pages long. I will provide you with some background. The report was commissioned by the federal government and was drafted by 14 "arms-length" experts who were not members of our network, but rather scientific experts from the whole academic community. The report lists 58 recommendations. As the title suggests, the report really focuses on precaution.

Reading the 58 recommendations is out of the question, but I would like to at least read a few, to add to the comments of my predecessor:

> 7.1 The Panel recommends that approval of new transgenic organisms for environmental release, and for use as food or feed, should be based on rigorous scientific assessment of their potential for causing harm to the environment or to human health. Such testing should replace the current regulatory reliance on "substantial equivalence" as a decision threshold.
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> 7.2 The Panel recommends that the design and execution of the testing regimes of new transgenic organisms should be conducted in open consultation with the expert scientific community.
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> 7.3 The Panel recommends that analysis of the outcomes of all tests on new transgenic organisms should be monitored by an appropriately configured panel of "arms-length" experts from all sectors, who report their decisions and rationale in a public forum.
>
> 8.1 The Panel recommends the precautionary regulatory assumption that, in general, new technologies should not be presumed safe unless there is reliable scientific basis for considering them safe. The Panel rejected the use of "substantial equivalence" as a decision threshold to exempt new GM products from rigorous safety assessments on the basis of superficial similarities because such as regulatory procedure is not a precautionary assignment of the burden of proof.
>
> 8.2 The Panel recommends that the primary burden of proof be upon those who would deploy food biotechnology products to carry out the full range of tests necessary to demonstrate reliably that they do not pose unacceptable risks.
>
> 8.3 The Panel recommends that, where there are scientifically reasonable theoretical or empirical grounds establishing a *prima facie* case for the possibility of serious harms to human health, animal health or the environment, the fact that the best available test data are unable to establish with high confidence the existence or level of the risk should not be taken as a reason for withholding regulatory restraint on the product.
>
> 8.4 As a precautionary measure, the Panel recommends that the prospect of serious risks to human health, of extensive, irremediable disruptions to the natural ecosystems, or of serious diminution of biodiversity, demand that the best scientific methods be employed to reduce the uncertainties with respect to these risks. Approval of products with these potentially serious risks should await the reduction of scientific uncertainty to minimum levels.

● (1115)

There are 58 recommendations, so I will stop here. I am not going to bombard you with the recommendations made by the Royal Society of Canada, which, I remind you, is the highest scientific authority in Canada. It does have a certain credibility in this field.

Unfortunately, the recommendations set out in the Royal Society of Canada report were mostly ignored by the government. The government simply threw the report away.

In 2004, three years after the report was submitted, the Commissioner of the Environment and Sustainable Development published a Canadian Food Inspection Agency audit, which confirmed and gave more details on what the Royal Society of Canada report covered three years earlier.

Almost nothing has changed since 2001. What's worse is that GM plants with multiple gene insertions, such as StarLink corn, have been authorized without a specific assessment. GM animals, especially the GM pig, are on a fast track to becoming authorized. GM salmon could be marketed soon.

Canada has still not ratified the United Nations Biosafety Protocol, while 160 countries have done so. Consumers are still waiting for the mandatory GMO labelling that some 40 countries have already adopted.

The approval of GM alfalfa will lead to a crisis, which I hope you are aware of.

So, what can your committee do? We have formulated five basic recommendations.

First, your committee should encourage all MPs to vote in favour of Bill C-474. The bill will not solve all of our problems, but it will at least enable us to protect farmers from the economic impact of a poor biotechnology management policy.

Second—

● (1120)

[*English*]

The Chair: Monsieur Darier, we're here about biotech. Bill C-474 is—

[*Translation*]

Mr. Éric Darier: Absolutely. Bill C-474 is about an economic study conducted before the authorization of GMOs.

Second, the committee should ask the government to issue a report similar to the one issued in 2001 by the Royal Society of Canada to see where we are 10 years on. This would be an interesting study to conduct, since we are talking about science.

Third, a moratorium should be imposed immediately on GM alfalfa in order to avoid market turmoil and irreversible damage.

Four, we recommend that MPs, regardless of their party, adopt mandatory GMO labelling, which almost 90% of consumers support. That's a fact.

Last, Canada must finally ratify the biosafety protocol in order to catch up to the international community.

I would like to conclude my presentation by distributing two documents. The first is an academic article by Peter Andrée about regulations on GM foods. This article basically confirms that the Royal Society of Canada report has been generally ignored. I will leave one copy for the committee members. I also have a copy of the video "The World According to Monsanto," which gives an overview of the legislative context within which GMOs are authorized here and abroad. Committee members can watch the video if they like.

Thank you.

Mr. André Nault: I would like to take our last minute to point something out. The previous speaker talked about science. When science—

[*English*]

The Chair: Please be brief; your time is up.

[*Translation*]

Mr. André Nault: Okay.

When science becomes an important element in justifying GMOs, it must not be based on a substantial equivalence marketing principle. GMOs have been broadly accepted across America on the strength of the substantial equivalence principle, but this is not a scientific principle.

[*English*]

The Chair: Thank you.

Anything that comes before the committee has to be in both official languages, so providing that's done, you can submit that.

Next we have Mr. Agblor, director of research for the Saskatchewan Pulse Growers.

You have ten minutes or less, please.

Dr. Kofi Agblor (Director of Research, Saskatchewan Pulse Growers): I would like to apologize to you, Chair, if you see me leaving before the time is up. I've never done this, and I booked my return flight to Saskatoon to get me home on time.

The Chair: Okay. We'll understand that.

Dr. Kofi Agblor: In a generation, Canada has gone from zero in the production of pulses other than beans to being the world's leading producer, not only in the production but also in the export of pulses. This year we produced about 4.5 million metric tonnes in Saskatchewan alone. That would be mainly peas and lentils. Last year, $2.2 billion worth of pulses were exported from Canada, of which $1.8 billion came from our province.

Most of this success has been possible because of the tripartite group—made up of the University of Saskatchewan, the Ministry of Agriculture of Saskatchewan, and the Saskatchewan Pulse Growers—funding research at the university. The growers have commercial rights to all the varieties that are developed at the university, so we determine whether we will release a variety to the growers. We have that right. Because the university is a public institution, they were able to negotiate those exclusive rights to us. In return, we put back funding into the program from a levy of 1% that our growers pay. If you consider other crops, I'm sure those growers are paying more than 1% for the development of technology.

We feel that research and development is the greatest asset we have. It has made a return of $20 for every dollar that the growers have put in. In genetics, it is $28 in return for every one.

We do not have GMOs in pulses at this time, because we feel that our markets do not want them. The signal we get from the market is that they are not interested in a GMO pulse. We've always said, and I've always said, that if India releases a GMO chickpea, we will work on a GMO pea.

Biotechnology is a tool, and it should only be used if it's the most appropriate tool to give you what you need. It's not something that you apply.... It's like plumbing; you don't plumb every part of your house, right? Biotechnology is a tool.

For us, with the kinds of threats we face, most of those threats cannot be addressed by GMOs. Disease resistance is not a trait that pays a lot of money. A chemical firm will not develop disease-resistant strains because then they won't sell you the fungicide to spray. That's why we are concerned with declining resources from the public side of funding research and development. Not only that, but we are concerned that when those resources are available, we'll target them to a particular part of science—applied, pre-commercial.

We believe that the way into the future is to define your problem, do your needs assessment, identify the gaps, and provide resources to develop the knowledge and technologies to address those gaps. It does not matter the spectrum of science, whether it's fundamental, whether it's basic, whether it's applied; if that is pertinent to the solution, you should do that.

We've always felt also that plants with novel traits regulations in Canada are not friendly to smaller crops. It could cost you up to $200,000 to demonstrate a trait for feed use only. If you put it as a food use, it escalates. If you look at the span of crops we have in Canada, if you take the world's top ten by size, by tonnage, wheat might be the only crop in Canada that would make that list. It tells you, then, that industry investment in crops is always by the size you sell. Take the number of seeds, multiply that by the acres, and make your money, or sell a chemical, times the number of acres, and make your money.

We in this country have always based our productivity on the quality. We still have an environment in the west of 120 days frost-free, and we have to design our genetics to meet that.

● (1125)

We think that plants with novel traits, the way they are now, are certainly not very conducive to that and should be looked at again. The public helps bring new traits into the market.

We think that into the future, biotic stresses are going to be key. As the climate changes or the variability in the weather becomes unpredictable, the impact on productivity will be quite harsh, and we will need all the genetics.

What we see in the future is genomics. We believe that understanding a plant's genome and knowing the genes that are in there will give our breeders the tools they need to bring new traits into the marketplace. Some of those traits may come by way of transgenics, but by and large most of my breeders have told me that with genomics they think they can get what they want in pulse crops without GMOs. That's what they have said. But we also think that the public has not responded to the funding of genomics to the extent that other countries have. Look at the United States. It has determined crops as strategic and at the federal level has gone ahead and sequenced.

Sequencing is only one part of the equation. It's very cheap now. The right technologies that can sequence a genome are under $50,000. When you get those millions of reads, making sense of that, bringing that down to a level breeders can use, is where it is at. We are investing in the National Research Council Plant Biotechnology Institute to put a position in place in bioinformatics to get that kind of translation for our breeders. We think that should have been done by the public.

In conclusion, we view GMOs as a tool that we will only apply when the market is right. We have our signals from the market on an ongoing basis. It's the market that will determine that. A regulatory approach may be a pre-emptive strike that will serve no purpose. I think that every industry in Canada, be it wheat or canola or pulses, has groups that are looking out at the marketplace. And if the signal is that we will take it, I'm sure they will go ahead and develop a technology for it.

We feel strongly, though, that genomics is the way to go in Canada. We have fairly small crops, outside of wheat and canola. There isn't a lot of industry investment on the private sector side for most of our crops. The public should step up, invest in genomics, and let our breeders have the tools they need to develop the traits on the genetic side that will cope with our future climate.

Thank you.

● (1130)

The Chair: Thank you very much, Mr. Agblor.

Now we'll move to Mr. Richard Gold, a professor at McGill University. You have ten minutes or less, please.

[*Translation*]

Mr. Richard Gold (Professor, Faculty of Law, McGill University, As an Individual): Mr. Chair, committee members, thank you.

[*English*]

I'll be making my comments in English.

[*Translation*]

However, do not hesitate to ask me questions in French.

[*English*]

Thank you for inviting me here today. I'm talking on a slightly different issue from what some of my colleagues have, although it connects up in several ways.

I'm a professor in the faculty of law at McGill University, where I specialize in intellectual property: chiefly patents, innovation, and biotechnology.

Just for the record, all of my funding comes from public sources, mostly grants or governmental institutions. I've provided advice to Health Canada, Industry Canada, Canadian Biotechnology Advisory Committee, World Intellectual Property Organization, World Health Organization, UNITAID, and the OECD.

I was also an expert on the Council of Canadian Academies' report on nanotechnology, which touched on some of the issues of precaution. In fact, the chair of the royal commission study, Conrad Brunk, was one of the committee members.

My goal here is simply to help the committee. I'll make a few remarks, but I'm open to questions, particularly related to patents and innovation. I have circulated a background document that should have been translated. I won't be referring to it directly, but it gives some background ideas.

First, I'm going to concentrate on patent law. The first thing to say is that Canadian patent law in the area of agricultural biotechnology is for all intents and purposes equivalent to that of our neighbours in the south and in Europe. There are technical differences, but the scope of patent law protects plants and animals, even though the patent law doesn't technically apply to them. It still provides the same amount of coverage.

The issue I want to talk about is uncertainty. I want to quote from Justice Binnie in a decision by the Supreme Court of Canada from 2000, in the matter of Free World Trust and Électro Santé. He said, “There is a high economic cost attached to uncertainty and it is the proper policy of patent law to keep it to a minimum”. So it's on those issues that I would like to speak.

I am not going to be advocating for or against particular biotechnologies. I think most of us agree that there are some biotechnologies, including genetically modified organisms, that are very helpful. I would think of plant-derived vaccines, which provide vaccine production at much lower cost and are much more stable and able to be transported in high-heat areas. And there are other technologies that we would mostly agree should not be pursued. Canada has decided with respect to BST and genetically modified wheat that we do not want to go forward with these technologies.

I'm taking it for granted that some biotechnologies are wanted and others are not, and what we need is a regulatory, including patent, regime that provides certainty so that we get the investments that give us the products we want. We also have laws that protect those who may be harmed by undesired uses of these crops. If we don't do these things, we will have under-investment by industry in the crops we want and under-compensation for those suffering harm.

There are a variety of uncertainties in patent law. I want to note that the uncertainties in patent law may pale in comparison to some of the uncertainties in regulations—the high cost of regulation, the absence of regulation with respect to genetically modified animals, and so on. But in respect of patent law, one of the risks and uncertainties I want to talk about is patent quality.

In the United States there were studies conducted showing that almost half of the patents that actually go to court have been ruled invalid, and I don't think we can say that Canadian patents are any better. In fact, they may be of lower quality, especially in areas of high technology such as biotechnology. So one worry is whether a patent is valid or not. That's a risk both for those who hold the patents and for those who might want to do research in the area covered by the patent.

This is a problem inherent in the patent system. One of the ways people have suggested to fix it is to invest more in the patent office, which Canada has done. Another way is to introduce an opposition procedure within the patent office so that those who wish to challenge a patent can do so. Europe has such a scheme, and the United States for the last few years has at least been debating it. Canada is significantly behind.

Another issue is freedom to operate. Until recently, only a few companies had the ability to introduce products on the market. One of the issues in biotech is that each generation of product sits on a platform of all previous innovations, and that means you need access to the patents that other companies have. For a long time this has been an issue, since only a few companies had enough financial ability to either license the technology in or take the risk that they would be sued. This would limit access to the market and innovation.

● (1135)

More recently, we have seen an increase in cross-licensing, so that more people can introduce products. We would like to see that continued in order to ensure that people are not put at unjust risk. We can do so through government policies that encourage cross-licensing, as well as better enforcement of our competition laws in fields such as this.

Another issue relates to the calculation of damages. This has been particularly important in the area of agriculture biotechnology. If a patent holder holds a patent over a crop over which there sits a patent, the calculation of damages in Canada is very uncertain. The courts, both the Supreme Court and the federal courts, have given us contradictory rules about how to calculate those damages. This could either lead to overcompensation—that is, the patent holder gets too much—or to undercompensation: that is, it's worth violating the patent because there will not be enough return. Clarifying the rules helps both farmers know what their risk is and the companies determine how much to invest.

Further, the entire area of agriculture biotechnology as well as areas such as nanotechnology or health biotechnologies raise an issue that the courts are the final determiners of the validity of a patent. Most judges do their best in trying to understand the science underlying biotechnology, but they are not trained. Most of them went into law because they didn't like science. While they do their best, if you read these cases you realize that there are sometimes misunderstandings and misapplication of scientific principles.

This is an issue that is inherent in any patent system. But again, an opposition process—which allows more disputes to take place within a patent office, which has greater expertise—could be beneficial.

I'm happy to answer any questions on patent law, but I will just end on that note.

Thank you.

● (1140)

The Chair: Thank you very much, Mr. Gold.

We now move into questioning.

Just as a reminder to our members, we have a little bit of business we need to do prior to our travel. We need 10 or 15 minutes at the end of the meeting. An issue has come up and we'll have to go in camera.

Anyway, Mr. Valeriote, for seven minutes.

Mr. Francis Valeriote (Guelph, Lib.): First of all, I want to thank all of you for appearing before the committee.

We've had a rather difficult journey in having this discussion. The idea is to unveil the issue, unveil the industry, so that a better understanding of the issue by the public could somehow be achieved. I'm glad you're participating in it.

Before we rose in December, a group came before us on the issue and described it as being two solitudes, one pro and one anti-GMO. I felt good leaving that meeting, because a number of people from each side had actually come to kind of an understanding that maybe there is a forum that could be created in which those for and against could come together and actually help us look at the issues, and maybe come up with some regulations that might protect biodiversity and the interests of each of them. That forum existed, I think, in the late nineties, then kind of diminished in the early 2000s, and now they don't meet at all.

I'd like to hear from you, Éric, on that, and I'd like to hear maybe from you, Andrew, or anyone else who would have a comment on the value of re-establishing that forum. Clearly, we're not able in a committee to sit around and come up with the actual regulations that are needed, and come up with solutions.

Can I hear from you, Éric, and then someone else?

[*Translation*]

Mr. Éric Darier: Thank you for you question, which is very interesting and relevant.

As we said in our presentation, most of the 58 recommendations in the Royal Society of Canada report are very specific with regard to GMO regulations and the authorization of GMOs. It would be very interesting to go over these 58 recommendations in order to really identify the most relevant elements.

In 2001, when the Royal Society of Canada report was published, our group reacted to it very positively. We thought that a dialogue was finally beginning. The Canadian government is always saying that it relies on the science-based approach. I often sit in on discussions held by the United Nations on biodiversity and on the biosafety protocol. The Canadian delegation is always talking about the science-based approach at those meetings. This approach is actually included in the Royal Society of Canada report. We should revert to this approach in order to truly have a solid scientific basis.

[*English*]

Mr. Francis Valeriote: I'm going to ask you to be brief, because I do want others to have an opportunity—

[*Translation*]

Mr. Éric Darier: Absolutely. I am going to stop here.

Mr. André Nault: I would like to add something very quickly. It has been pointed out that science is important, and we also feel that science is important. As soon the government starts using science and not marketing as its basis, we will get involved.

[*English*]

Mr. Francis Valeriote: Okay. Very good.

Andrew.

Dr. Andrew Schmitz: I believe there's a huge payoff from getting back to the organizations we had in the nineties. For example, if I had a committee with my colleagues in there—including the people from the U.S., Florida, etc.—I think we could come up with an interesting report or consensus that might have a big payoff on how to move forward. But as long as we work independently and in different places, the results are always diffuse and we never come into some coalition that can move the process forward. But I think it would have a huge payoff.

Just as an example, years ago we set up an international trade consortium meeting, and now we also set up a society of benefit-cost analysts, and it's had huge payoffs in terms of getting together twice a year to talk about trade issues and how you do this kind of benefit-cost work.

● (1145)

Mr. Francis Valeriote: Anyone else?

Kofi, I'd like to know more about the terminology you raised: genomics. I don't know a lot about it. Do you see that as a substitute for...? Clearly it isn't, but could you tell us more?

Dr. Kofi Agblor: It started—was it in the eighties—and it finally cost about $2 billion to sequence a human genome. It was a global effort. I think we were part of that, led mainly by the U.S. and the EU.

Essentially, genomics takes a very good look into the DNA makeup of an organism, whether it's a bacterium, a plant, or an animal.

The first point is to sequence that DNA. Essentially, it's like breaking it into its constituent parts. But knowing where the genes are and the location of those genes we believe gives you an understanding of whether there is a gene we know that is conferring resistance to a major disease, for example. Maybe it's present in a related species or in the wild. If it is, then you can work to bring it in. The tools are being developed so you don't have to cross it into a cultivar it and do it backwards. It takes you forever to clean it up. You can bring it in, in a much more efficient way.

We think it will increase the rate at which we can adopt traits. Also, the kinds of traits, like GMOs, may not be very good in terms of a single gene trait when you have a multiple gene effect, especially on diseases, which is what breeders say. Most diseases have a multiple gene effect.

It will also help with biodiversity. If we have species out there today in labs, in our gene banks, we cannot use them because we don't know how to make effective use of the trait. Genomics will be the way to go.

Mr. Francis Valeriote: Before that, Éric, I do have another question on.... You mentioned GMO labelling. I'm not a proponent of it, nor an opponent of it. But I'm curious, what would that look like?

Richard or Andrew or anyone.... If any product has any GMO in it at all, do you just say it contains GMO?

Has anyone envisioned a labelling system?

Mr. Éric Darier: Very briefly, I think the European legislation is now enforced and has been enforced for several years. It has set the standards internationally in terms of what could be done. Because Canada is a developed country at the same level as Europe, it could be done as well. It exists in Europe, so it could be done as well.

To answer the question very briefly on genomics—and it's a very difficult question that you asked my colleague on the panel, to explain genomics in three minutes—I want to say that environmental groups are in favour of genomics and want to understand how plants and genomics function. The problem and the confusion that lots of people have is that the Canadian legislation is much broader than international definitions. If you look at the biosafety protocol, it refers only to genes that actually transfer from one organism to another one. The Canadian description is a “catch-everything”, which creates huge confusion, and it's damaging for everybody. We have some growers there who are actually suffering from that confusion. It confuses the public. We put biotechnology and everything in there.

For example, my own organization, Greenpeace, is not necessarily opposed to marker-assisted selection. That has to do with the element that is important because it's different. I'm not saying there's no problem or that we do not need to study it. But I think we should also look at that aspect.

If you ask me what kind of improvement I think we could make, it would be to adjust Canadian regulations to match internationally recognized standards of the definition of a GMO. That would really resolve some of the issues—not all of them, but I think it would be one point.

● (1150)

Dr. Andrew Schmitz: I have one comment.

I'll send you some literature on some other work on genomics. Some of my colleagues in Florida have made huge breakthroughs now on genomics for tomatoes, celery, and other crops. It's unbelievable what they do at the present time. There's an example of other crops, not just what you're talking about. There are huge breakthroughs. I'll send you those papers.

Also, some of my colleagues have studied the labelling issue. It's a mess. It's like the case against Canada on beef trade. The U.S. imports beef, and now we need country-of-origin labelling under the U.S. Farm Bill. You heard about the arrangement in front of the WTO. I'm one who really believes they can do all they want about labelling of American or Canadian beef, but the consumers I've talked with at the present time say they don't read those labels, and if they do read them, they make no sense. If anything, they figure Canadian beef is superior. This labelling is like organics and everything else. It's a hot subject, but nobody really knows where it's at at the moment.

The Chair: Thank you.

I'll now move to Mr. Bellavance for seven minutes.

[*Translation*]

Mr. André Bellavance (Richmond—Arthabaska, BQ): Thank you.

Thank you for your testimony, Messrs. Nault and Darier.

In your brief, you talk about a point that we from the Bloc Québécois also think is important: the Cartagena Protocol on Biosecurity. I am having a hard time understanding why Canada is not among the 160 countries that have signed this protocol.

For the benefit of those who will read the testimonies and for the benefit of my committee colleagues, I would like you to explain why it is important to sign this protocol, what that would imply and why most world countries have signed, but not Canada. Have the United States or some European countries signed this protocol? Why do you think Canada is still refusing, even today, to sign the Cartagena Protocol on Biosecurity?

I would like you to summarize this issue.

Mr. Éric Darier: Thank you for this question, which was very much to the point. I hope that my answer will be as concise.

An interesting fact is that the biosecurity protocol was signed in Montreal in 2000, and that the Secretariat of the Convention on Biological Diversity is based in Montreal. It is somewhat ironic that the host country of the secretariat has not ratified the protocol. In fact, the biosecurity protocol is part of and originated with the Convention on Biological Diversity.

A major environmental concern is cross-border GMO contamination. The main objective of the international protocol is to make transfers between two countries transparent. Transparency means that the country receiving GMO products will be aware of this fact. The protocol also aims for transparency with regard to studies conducted and sets out a compensation mechanism in case of a disaster, which makes it possible to decide who will be paying out compensation.

So far, 160 countries have signed this protocol, but Canada has not. I try to follow the Canadian delegation during negotiations, and I find it somewhat surprising that Canada is always boasting that its biosecurity standard is similar or even superior to that outlined in the Cartagena Protocol on Biosecurity. If that is indeed the case, there is no reason why Canada should not ratify the protocol. My question is: Why has it not done so?

The United States cannot ratify the Cartagena Protocol on Biosecurity because it has not ratified the Convention on Biological Diversity. This is the reality our colleagues to the south are facing. Since the North American Free Trade Agreement was signed, we have been part of a free trade space with Mexico, which has ratified the Cartagena Protocol on Biosecurity.

Mr. André Bellavance: I have to stop you there, Mr. Darier. Does the fact that Canada and the United States, unlike Mexico, have not signed the protocol create disagreements?

Mr. Éric Darier: Yes. For instance, it is absolutely necessary to prevent the contamination of corn in Mexico, where the plant originated. Some contamination occurred in this country as a result of the exportation of American corn, which was largely subsidized by American taxpayers. Corn dumping took place in Mexico in the early 2000s. This was very well documented by the International Joint Commission, regarding the NAFTA and the environment. So, this is an issue.

However, other issues will arise, and we could discuss them later if you like. GM salmon could be produced in Canada and exported to Panama, which is about to ratify the Cartagena Protocol on Biosecurity, and then possibly be exported to the United States. Something like that would have consequences.

Canada should ratify the Cartagena Protocol on Biosecurity, act in a more transparent manner in its dealings with the international community and meet its global responsibilities.

● (1155)

Mr. André Nault: Owing to, among others, the close ties between the biotechnology industry and governmental and regulatory agencies, we suspect that Canada will not sign the protocol.

Mr. André Bellavance: What do you mean?

Mr. André Nault: There is some secrecy surrounding the presentation of issues where there is, to use the term Richard used earlier, misapplication of science principles. We, as environmentalists, are concerned about the interpretation of science principles. I believe that companies have an in with the government that the general population does not.

Mr. André Bellavance: Mr. Schmitz, I have a question you're better positioned to answer because you came from the United States to testify.

You talk about consumer acceptability of, reactions to, attitudes and opinions on GMOs. Out of curiosity, I would like to know whether these concerns are present in the United States. You talked a little bit about labelling. Here, we are advocating mandatory GMO labelling—at least our party is. Consumers need to know what they're buying; they must be given the right to choose. GMO presence must be indicated on products, as is already being done in Europe, even though there is some flexibility, which is completely understandable.

Do you have the same concerns in the United States?

[*English*]

Dr. Andrew Schmitz: That's pretty interesting.

[*Translation*]

Mr. André Bellavance: If we're talking about all Americans, I understand.

[*English*]

Dr. Andrew Schmitz: In our book, we actually have a little section on that question. The answer to that is that I really don't know, because the consumer seems, at the moment, to be very confused on this topic.

You think that consumers really read labels. In the U.S., most consumers never look at labels. That's the issue. If you ask people if they look at the label for where the beef comes from when they buy it, they say that they have no idea. They don't look at the labels.

Organics they know, because that's a huge, growing field in the U. S., just as it is here. There's huge growth in the market for organics. But of course the stores sell organics to those markets separately, so when you buy organics, they're actually on a shelf with everything that is labelled as organic food.

On this whole question of biotech, they've asked people those questions. And the people say that they have no idea even what biotech is or what you're really asking and why you're asking that question.

So at the present time, it's not clear where we're headed, again, in the U.S. with respect to biotech and more biotech with respect to labelling of these products. And I'd say a lot of the companies will block it.

[*Translation*]

Mr. André Bellavance: Thank you.

[*English*]

The Vice-Chair (Hon. Mark Eyking (Sydney—Victoria, Lib.)): You have half a minute, if you want it. No, that was good? Okay.

We'll move on to the NDP and Alex.

Mr. Alex Atamanenko (British Columbia Southern Interior, NDP): Thanks to all of you for being here.

Not too long ago we had testimony before committee by Dr. Ian Mauro from the University of Saskatchewan. In his testimony he said that he had done a project involving 2,500 farmers across the three prairie provinces. He asked them what their concerns were in regard to the technology. I'm just going to bring up some points from his speech and ask you to comment on them. He said:

> Risks are less well understood, and this is where my research really provides new information. For both genetically engineered canola and genetically engineered wheat, the main risks, ranked in order of importance by farmers themselves, included markets, which were the top risk for farmers. They were concerned about loss of income. They were concerned about problems in the segregation system, that biology would leak into a segregation issue, which would lead to market harm.

We have had that same point given to us by the representative of the Canadian Wheat Board when he spoke, that it was very difficult to contain or separate, especially in bulk handling, genetically modified organisms from non-modified.

Then farmers were concerned about corporate control of agriculture, seeds being privatized, lawsuits. And then he talks about agronomic "volunteers"—in other words, migration of crops across the landscape—and then, of course, it tied in with contamination.

We've recently seen that the United States has approved the release of genetically modified alfalfa. We've seen three organic organizations state that they would have supported that if there was confinement, which is hard to understand.

As you comment on this, I'd like to know if it is really possible to contain any genetically modified crops so that there's no cross-contamination. There seems to be a lot of evidence in regard to alfalfa that it is not. My concern in the way we react to it is that many in the industry say we have to be science-based, although it's often their science.

Dr. Schmitz, you talked about consumer acceptability and producer profitability. Mr. Agblor, you talked about the fact that you folks are watching very closely market acceptance. Is there room for guidelines, developed by government in conjunction with the industry, which is specifically what my bill would target?

I'll leave it there and maybe we can have some comments before we're out of time.

Dr. Schmitz.

● (1200)

Dr. Andrew Schmitz: I am actually a farmer, and we farm on a fairly large scale in Saskatchewan. We farm out of the city of Regina. Our daughter farms north of Saskatoon and they've been very successful with canola. If there are any issues with respect to canola, on their farm, etc., they think it was a wonderful idea to grow the canola they can. It's been a cash crop and a saviour for their farm, the canola area.

We're too far south, but fortunately we've diversified into the pulse crops. There was a time when we were large barley and wheat growers, along with our cattle operation, but we've shifted into the peas and lentils. That's been a saviour for us compared to the people who haven't adopted it and in the last two or three years stayed with the conventional wheat and have a rotational threat.

To answer your question about the issues of segregation, etc., the farmers in our area really don't bring up the GMO stuff. In our area, with respect to the wheat and barley that's grown, the issues, they never think about them, I don't think. That wouldn't be true for all farmers, but I think the issue of biotech.... The topic is so complicated, they likely don't even know what the word even means. There are a lot of people still farming out there who have never heard of it and wouldn't know how to define biotechnology or a GMO.

I think the big issue in our area is structural change and the huge growth of farm size. That concerns people: the rapid change in technology in the last ten years, which is also machine equipment, farm-size-related, which may be or may not use GMO products. That's my feeling.

Mr. Alex Atamanenko: Anybody else?

Dr. Kofi Agblor: I would just say that we do that now in lentils. I think there are at least ten different types of lentils grown. There is the red, the green, Spanish brown, and French green. Then, in the red and green we have the large, medium, and small sizes. They are sent out of the country with a specification. If it's a large grain, it's a large grain. And typically.... I know of a farmer last year who grew red lentils and green lentils. He was able to ship them out to a processor.

Dr. Andrew Schmitz: We did that.

Dr. Kofi Agblor: Right.

So if the value is there, you do it; it comes down to value. And because lentils are highly profitable, it's very easy to do it; it is done with lentils. If you go to any of our traders or exporters, they have all the segregated beans. So the infrastructure can be put in place.

The question you want to answer is, when rationality and irrationality are colliding, do they create a path that indeed is the endgame? Will segregation be able to satisfy people, or are you beginning to deal with zero tolerance again? If we find one seed in a thousand, then your segregation is not working.

So be very careful, if you go down the road of segregation solely on the basis of the technology, as opposed to the quality and safety of the product. In our case, we do it with lentils because the value is there, and that's just how you do it. You can't sell a blend.

Dr. Andrew Schmitz: We were involved in a project in India recently on biofuels. I tried to find out about the perception of the people in India about lentils. As you know, they're the big buyer of lentils from Saskatchewan. Every time you go to the restaurant and eat soup, etc., it has a label of contents showing lentils in it. It was at least my reaction, or the reaction there, that they did not want to see any GMO lentils ever being shipped into India. That was interesting.

● (1205)

[*Translation*]

Mr. André Nault: Had the appropriate studies been conducted from the beginning, we would perhaps not be asking ourselves whether labels are needed.

The first independent scientific study was conducted by Arpad Pusztai in 1998. This gentleman was ostracized by the industry and expelled from his institution for discussing GMO-related safety issues in his report. Had science been given its due, we would perhaps not be discussing, as we are today, labelling or seed segregation.

Mr. Éric Darier: I would like to add, very quickly...

[*English*]

The Chair: I'm sorry, Mr. Darier, the time is up.

Mr. Lemieux, you have seven minutes.

Mr. Pierre Lemieux (Glengarry—Prescott—Russell, CPC): Thanks very much, Mr. Chair.

And thank you for taking time out of your day to come in front of the committee today to talk about biotechnology and how it can impact our agricultural sector.

One point I would make, of course, is that although genetically modified products are part of biotechnology, they're not all of biotechnology. One of the things we're going to have to keep in mind as a committee is that—we talk about GM products, of course—we not focus only on GM products, because there's a lot more going on in the biotechnology sector.

There are the two extremes. The one extreme would be that biotech should rule everything, and then the other extreme would be that it shouldn't touch anything. In between is, I think, where the committee is, and the question is, where does biotechnology help agriculture and where does it not help agriculture?

With some of the discussion we had today.... Certainly, Mr. Schmitz, you brought up, for example, the fact that the consumer has an important role to play. This is a discussion that we've had. Science has to dominate the argument, because the fundamental question is whether the end product is safe for human consumption, yes or no. Science plays a very fundamental role in that, and as a result scientific assessments, scientific procedures to determine that question are extremely important.

But the other side of it is of course consumer acceptance.

Mr. Schmitz, you mentioned trying to get consumer opinion on this matter. Did you have particular mechanisms in mind, a coherent and cogent way of doing that?

Dr. Andrew Schmitz: No, but I've also done work with some colleagues with respect to the oil spill in the gulf, so we actually have a methodology by which you can determine the damages from an oil spill, what we call compensating and equivalent variation measures. This was also the application on the *Exxon Valdez* oil spill years ago.

There are ways you can get at consumer acceptability, but the trouble is you have to tell me what you're asking the consumers to respond to. You just can't go to consumers and ask, would you buy GMO products? You have to be very specific on, for example, what would a seed company release and what traits would it have before the consumers even ask that question.

I have some colleagues who did some work on Japan versus Canada and some other countries with respect to GMOs. They found, obviously, that with respect to GMOs, Japan is one of the toughest countries to deal with. That is still likely true. I think they could have done much better work, depending upon their budget, to find out exactly how the response was, rather than do the survey work they did. A lot of those surveys are interesting, but I don't rely on many of the results from survey work on acceptability.

Mr. Pierre Lemieux: One of the risks of trying to seek public opinion is you can have groups that say they represent public opinion and they might have a very strong voice on the matter, but do they? My actual thought is that the consumer plays a fundamental role when he or she purchases the final product.

In Canada we have diversity among consumers. We have consumers who are very organic. They will buy organic product. Perfect. You have the freedom to do that. We have others who will buy canola oil. Great, buy the canola oil. In Europe it is a little more continentally divided, meaning that in Canada we have canola oil and over there they wouldn't necessarily want a GM product or a hormone-enhanced product. So sometimes you can draw boundaries by regions or countries as to what the consumer will actually do, but my thought on the matter is the consumer ultimately decides.

Farm groups, farmers, the agricultural sector has to decide if this is of net benefit to their sector.

Mr. Agblor, I think this is where you were going when you were saying in the pulse crop sector you don't have customers for GM pulse crops so you're not growing them. If you had a customer, or if you felt this was something that would appeal strongly to the consumer, you would certainly have a close look at this.

I wonder if you might want to comment on that balance you're looking at, which is consumer acceptance versus actually embracing that aspect of biotechnology.

● (1210)

Dr. Kofi Agblor: Biotechnology will be key to feeding the world in the future. There is no doubt about that. However, as to whether most of those traits will go into the plant by genetic engineering transfer of genes, I don't know what proportion of those traits will require that.

If you look at nitrogen use efficiencies, when we can use less nitrogen and get the same yield, it will have a happy impact on climate change and drought issues. I've seen the photos of plants that are stressed with drought and produce a normal yield. You look at a plethora of those traits. We will need to use more and more of those. It is explaining to the public. In Australia when the poll was done on if we were to introduce a water-use efficiency—which is what we should be saying, not drought stress—gene in wheat, would you support it, 70% of Australians said yes. Consumers saw value, or the citizens saw value, in a trait in terms of maximizing a resource that they don't have. That is how we have to approach it.

In the first instance, it was industry-led. We have a chemistry to sell. We introduce a trait, and without educating the people on the benefits of that single pass—you don't have to do five sprays and all that to kill the weeds—and the environmental benefits, the train left the station with the goods on it before the public got onboard. But in future you need to be proactive and engage the public on trait-specific and say that we could maximize yield with half the nitrogen we use now. It takes half a billion cars off the road. Do the math. We can tell you that with green peas and lentils you save enough natural gas to heat 132,000 prairie homes for one year, and you know how cold it gets on the prairies. Those are the kinds of things that will resonate with the public.

If we adopt that approach I think that is a way, but we need biotechnology and we have to define it for what it is. It is not all GMO. Probably only 10% or 20% of the traits we have today in crops are actually GMO. The rest are just biotechnology tools.

The Chair: Thank you very much.

[*Translation*]

Mr. Éric Darier: Since your committee will be visiting various campuses next week, I simply wanted to point out that Agriculture Canada has excellent research institutes on wheat, among others. The institutes have been subsidized by Canadian taxpayers. A lot of research is being conducted at these institutes, such as the Université Laval in Quebec City. Unfortunately, over the years, this research has been decreasing in favour of companies like Monsanto, an American company, which have commercial interests in marketing GMOs rather than other products. However, there are already many other very interesting methods that do not require gene transfers into another plant. I strongly encourage you to meet with people from Agriculture Canada's research laboratories who are working on conventional wheat and who are getting very interesting results.

We should also look at genomics, which are indirectly related, but are present. We shouldn't put all our eggs into one basket, the gene transfer basket that, to tell the truth, is controversial from the consumers' point of view and represents only a minute part of genomics' benefits.

● (1215)

[*English*]

The Chair: Thank you.

Mr. Eyking, you have five minutes.

Hon. Mark Eyking: Thank you, Mr. Chair.

I thank the witnesses for coming today. It's quite a broad spectrum.

Recently in *The Economist* there was an article concerning the future food crisis that more or less stated that the world has gone through an economic crisis a bit, but that the food crisis is next and is going to be just as challenging—more challenging, definitely—than the economic crisis.

When we sit around the table, as the western world 20% of us are fortunate enough to have lots of food, and we can make decisions and choices about our food. The other 80% of the world just go day to day getting their food.

If this crisis happens—it is happening now, and we see it—although we should have been ahead of the curve with the economic crisis, if we're going to be ahead of the curve with this food crisis when we have to feed ten billion people, I see biotechnology as probably one of the few tools or the best tool to help avoid some of the problems, especially with world climate changes and distribution.

It has been stated that the more local food we can get produced, the better we're going to be able to adapt. For that to happen, you're going to have to have varieties and things like that.

Often we're looking through our own lens at our own consumers, our own tastes, our own concerns. But shouldn't the powers that be look at how we are going to start growing crops in the sub-Sahara or in parts of Africa or India or wherever? Shouldn't we be coming to grips with that? How do we come to grips with it, and how is biotech going to deal with it? And what leadership role should we be taking in that kind of way?

I will just open it up and I would hope everybody will have a few minutes.

Dr. Andrew Schmitz: Here are a couple of comments. First of all—and it may be the answer to this other gentleman too—you have to remember that there are some GMOs that really you have to accept and that there's no controversy over. BT Cotton, for example, was a huge breakthrough. You don't consume cotton, so there's no controversy on some of these. You can't let the problem with categorizing in general.... There are some real success stories just like this.

But on the food thing, I think there are huge areas yet to be done with respect to breeding rices that aren't GMO rices. This is a huge area, but IRRI, etc. are working on some different type of rices, and they're also trying to develop the iron content in the rice. I think it will have a huge payoff.

The other thing is, I believe more in the Chicago school of economics. I'm not a government interventionist type, necessarily. Markets usually take care of themselves. We've always had poor people, starving people. That's almost a different area from our trying to feed the world in what we do—population growth, etc.—because we have commercial demand, and somebody has to pay for this food yet.

We had a conference two years ago, and everybody asked the same question—where is this food market headed?—when wheat futures got over $12 a bushel and we thought we farmers were going to live in heaven forever. All of a sudden the markets all collapsed, until this spring. Now we're back into this price spiral. But you see, that isn't all necessarily with technology; it's also with respect to government policy, because government policy at one time got involved also in holding food stocks. They avoid all this instability.

Then we dropped that argument under the U.S. Farm Bill, whereby now we're no longer required to hold wheat when the prices get below what they call the loan rate. That's something we should look into too in relation to this food crisis. It isn't all on increasing supply and trying to increase production; it's also to do with management and what we do with this huge weather instability that's out there at the present.

But I have a forecast: don't buy a bunch of farmland in Saskatchewan on the basis of these prices that exist at the present time.

The Chair: Mr. Darier, you had your hand up next. You have one minute.

Mr. Éric Darier: Yes, the food crisis is indeed a very serious issue. I think we should remember that there are currently no GMOs designed specifically, in terms of gene transfer, to increase yield. Most of it is herbicide resistance or produces pesticides. I think that's the reality of this.

Secondly, all the international NGOs who have been in the field in the south working on those issues will tell you that sometimes the very little answers can have the best impact. It's not necessarily putting new technology on the market. Several years ago an international organization of the UN did an extensive report, which looked at solutions adapted continent to continent. In most cases, GMOs were not the key elements to address and solve the food crisis.

● (1220)

The Chair: Thank you.

Mr. Gold, you had a comment.

Mr. Richard Gold: Yes.

My research group works extensively in Africa with some of the large centres and researchers, and there's an awful lot of interest in biotechnology. They see this as a way to deal with both health and their future food needs, and they're putting a lot of resources into it. They want to have more partnerships. This is an opportunity for Canada, for Canadian biotech companies to be involved, because they're looking for access to financing knowledge about regulatory systems. They want to work with our universities. Anything we can do to help will benefit us economically, but also help them solve their own food issues.

The Chair: We're out of time, Mr. Nault, but I'm going to allow you, if you're very brief.

[*Translation*]

Mr. André Nault: I will be very brief.

The green revolution that was supposed to feed the world has not succeeded in doing so, and I don't think that biotechnologies will succeed either.

However, the ability to grow our own food locally is the most important issue. We must stop making food travel all over the world. We must achieve food self-sufficiency at home.

[*English*]

The Chair: Mr. Hoback, five minutes.

Mr. Randy Hoback (Prince Albert, CPC): Thank you, Chair.

First of all, I want to apologize to Dr. Agblor and Dr. Schmitz. I understand they grow pulses, and we have no pulses on the table back there, Chair, which is just horrible. We should have pulses. We're looking for protein.

Anyway, thank you for coming. I really appreciate your taking the time out of your schedules. I think leaving Florida to come here must be a little bit of a step backwards, maybe, but we all love Saskatchewan in the summer, so I can understand why you're there in the summer for sure, Dr. Schmitz. That's where I'm going to go with you first.

You talked about the StarLink corn, and I'm curious. If we had had low-level presence back then when that was ongoing, how would that have been impacted?

Dr. Andrew Schmitz: I'm not sure. The impact.... You asked me what the impact the StarLink corn has...?

Mr. Randy Hoback: Yes. One of the suggestions around here is that we need to get a low-level presence out—1% or 0.5%, I'm not sure what the number is; there are people smarter than I am who can figure that out. But the suggestion is that we need some tolerance in the system to allow for foreign content.

Dr. Andrew Schmitz: That's where this comes up; it was really brought up in this case. In the StarLink corn case, when they found StarLink in the corn supplies when the farmers sued Aventis, the issue there was trading with the Japanese, and the corn market took the big hit as soon as they discovered there was StarLink in the corn system. Colin Carter and Al Lyons and some others did some excellent work on a really rigorous analysis of the impact the StarLink case had.

The reason that was so dramatic is the sense of the cost of segregation also came up. There's zero tolerance, right? It's costly when you have zero tolerance when you start commingling products. They were shortening up these markets with huge—

Mr. Randy Hoback: And it's not realistic to expect that—

Dr. Andrew Schmitz: Right. But at the present time, that's what you've got. So people are promoting or moving toward having products where you don't have zero tolerance, where you may move to a 2% or 3% tolerance of GMOs. But the segregation cost really became an issue there, and they're highlighted again in the StarLink case. The Japanese didn't trust the Americans any more, so they also did their own testing at the border of corn shipments going into the Japanese market. They turned back huge shiploads of corn on the basis of the StarLink corn, yes.

Mr. Randy Hoback: I'm going to go over to you, Mr. Gold, and just talk a little about the patent side of things and new technologies. Biotechnology just isn't GMO, and I want people to really focus on the fact that GMOs are just one of the tools in the chest. Dr. Agblor, you talk about the pulse industry. You've been very successful in bringing forward new traits using genomics, I believe, which is probably the best way you've been addressing that.

So how do we go about allowing industry to have security in their research, and marketing the products they develop in such a way that it still doesn't...? I'm trying to figure out a way to say that they feel secure that they can have proper returns on their investment, yet the farmer doesn't feel he's getting shafted paying over-the-counter, through-the-nose rates for the seed.

Mr. Richard Gold: Thank you for that question.

Actually, I think Mr. Agblor's comments at the beginning partially answered that. It was a consortium between those growing it, researchers, and industry to develop the technology. That really seems to be the way of the future. If you want to have the right biotechnology—and you're quite right, it extends to tools that identify what kinds of plants or animals, country of origin, or GMO—with the whole gamut of technologies that actually are suited to the farmers, and ultimately consumers, you need these consortia.

Anything we can do to help fund them gives security to everyone. Right now when universities develop technology, they often have to give them away at a very early stage. No one can value them. No one knows whether they're appropriate or not. They sometimes have difficulty figuring who to license to, or even.... As I said, sometimes only large companies have the ability to take on that technology.

So anything we can do to help build consortia, with links between universities, the growers, and the industry so that they develop products, will create stability. We'll create better enforcement in the end, because we're developing a community that believes in the technology. The only way to find out if someone is violating your patent is if someone lets you know. If you have a good community and everybody is supportive of the technology, you have a much higher chance of enforcing your patents when they exist.

● (1225)

Mr. Randy Hoback: I know that in the manufacturing sector—I used to work with Flexicoil, and then Case New Holland—we used to have a joke that your patent was only as good as your wallet.

Is that similar in the grain sector and in the seed sector...or not even in the seed sector, but in the biotech sector? Seed is just one part of the biotech sector.

Mr. Richard Gold: I think that's a cynical way to look at that. Most patents are never enforced, and they're not designed to be enforced. They basically are a sign to the world, “I have developed something, come work with me.” That's the best way to use a patent, not to enforce it. If you actually go to court, it costs about $1 million to $2 million a side in a patent dispute.

So people generally accept patents. They don't violate them, or they don't violate them more than any other type of rights. They're useful as commercial tools to set up negotiations, to build relationships. Those companies that adopt those types of strategies do better than those who go out and just try to enforce their rights willy-nilly.

So yes, smaller companies will have more difficulty in enforcing them just because of the cost, but when you have a clear-cut case, you will still win in a Canadian court.

Mr. Randy Hoback: Okay.

I'd like to turn now to segregation and new crops.

The Chair: Very briefly.

Mr. Randy Hoback: I'll be as quick as I can.

One of the concerns that have been brought up by some of the plant breeders or in the public is that if we put in a trait that makes it no longer a for-use crop—for instance, with a crop like canola—but one used only in industrials such as plastics, what kind of process do you guys think should be in place for handling that type of crop? It will never hit the food chain theoretically, yet realistically it possibly could.

Maybe that's more than a one-minute answer, so maybe it's not a fair question. I'll have to leave the question hanging right now, but maybe I'll get you to think about that a bit.

The Chair: Does somebody want to respond to it?

Mr. Darier.

Mr. Éric Darier: I think the issue of what's called PH farming is a big issue. It's a very challenging issue, because if you have a food crop that can also produce industrial products or pharmaceutical products, it will be virtually impossible to actually properly segregate unless you do it in a totally hermetic way, and for economic reasons you cannot do that; you're not going to seal those crops.

So that's a huge issue. At least one thing that has been done so far is that we haven't gone fast on this issue, and rightly so, because if a food chain is contaminated, it's a huge issue.

To go back to my Royal Society report, I think there were some interesting recommendations that this committee should revisit. I think they were there at the time, and unfortunately this issue is still there. I thank you for raising this, because I think indeed it is a big threat, and the U.S. is not as cautious as we are here.

[*Translation*]

Mr. André Nault: Could I make a quick comment?

[*English*]

The Chair: I'm sorry, sir, I have to move on. You can get a chance to comment later on.

Ms. Bonsant.

[*Translation*]

Ms. France Bonsant (Compton—Stanstead, BQ): Mr. Nault, I will give you the opportunity to answer.

Mr. André Nault: Should we be using food to produce plastic or fuel if a food emergency is looming? We must decide what to do as a society. If the prospect of a food emergency is looming on the horizon, we need to keep food for consumption, and not for making fuel or plastic.

Ms. France Bonsant: Thank you, gentlemen. Such a varied and interesting group of witnesses is a welcome change.

There has been a lot of talk about GMOs in the sector of oilseed crops, lentils and wheat. In September 2010, there was much discussion about transgenic salmon. I know that the Americans have commissioned an independent study on the potential effects of transgenic salmon on human beings. Do you feel that the studies that have been conducted are sufficient to put a stop to the production of transgenic salmon? According to a report I watched, transgenic salmon and natural wild salmon are not the same size at one year old. This must have some consequences on humans.

I would like to know what you think about this, Mr. Darier.

● (1230)

Mr. Éric Darier: Thank you for your question. This issue has been around for a good 15 years or so, but I think that it will become more and more relevant, given the fact that a small U.S. biotechnology company based in Prince Edward Island is trying to get GM salmon approved.

I want to go back to the Royal Society of Canada report, which was very clear on this subject: if there is one thing that we must not do, it is run the risk of releasing GM fish, salmon or some other kind, into the environment.

The issue continues to be relevant. The FDA, in the United States, is looking into authorizing GM salmon for human consumption. What's quite interesting is that the American system is somewhat more transparent than our own. Some of these studies show that there could be concerns for human health. That is why additional studies have been requested. The FDA continues to conduct studies on the issue.

I am very afraid that, under all kinds of pressure, GM salmon will be approved for consumption in the United States. If that should happen, it will very quickly lead to a crisis in Canada, given the Canadian government's position.

I want to remind you that, following the publication of the Royal Society of Canada's report, the Government of Canada very clearly stated that it meant to establish regulations specifically for GM fish, owing to the specific risks involved. However, 10 years down the line, we are still waiting for these regulations.

If the United States authorizes GM salmon, a crisis will ensue in Canada. First, it will have to be determined whether Canada should produce GM salmon eggs. Second, if they are produced here, they will have to be exported in the context of the Cartagena Protocol on Biosecurity. Third, the consequences of consuming this product will have to be determined. Will we be able to prevent the accidental spread of eggs in water? This is a potential threat to a very important sector, that of salmon farming and the salmon industry.

Ms. France Bonsant: In my constituency, there is a brook trout producer. Everything about his fish is natural; there are no transgenics involved. If the Americans end up supporting the consumption of transgenic salmon, which are 10 times larger than regular salmon, Canada will experience significant economic effects. All farmers of small natural salmon will go bankrupt.

Mr. Éric Darier: I don't know if your committee has consulted salmon producers or people working in aquaculture, but, to my knowledge, they are all very hostile to the idea of GM salmon or fish, for all kinds of reasons.

I wanted to point out that GM salmon is not larger, but rather grows faster. It matures in 18 months instead of three years. That's the reality of the matter.

The biological risks related to wild salmon contamination, which, among other things, poses a threat to biodiversity, are so great that the Royal Society of Canada was very clear on the issue: it called for a moratorium on aquaculture in oceans to prevent this contamination. This is something you should look into, in addition to the alfalfa and all the other issues. The recommendations made by the Royal Society of Canada must be implemented without fail.

This is also a matter of transparency. There has been a lot of talk about public and market confidence, but the confidence is also based on transparency. We must reassure outside markets that we are making the best scientific decisions based on the best independent expertise.

Ms. France Bonsant: I see.

Do you have anything to add, Mr. Nault?

Mr. André Nault: All the independent studies that we've had so far, such as those conducted by Arpad Pusztai, Gilles-Éric Séralini and the Institute of Science in Society, have shown that transgenics have consequences. I want to point out that there is a huge difference between transgenes and working in genomics. The immune system of rodents was affected in every transgenics experiment. I am pretty sure that, if we were talking about a drug, it would not even get past the first stage of approval for human consumption. Even so, we are eating these products.

[*English*]

The Chair: Just as follow-up on that, Mr. Darier, Ms. Bonsant asked you about the transgenic fish, and just so I have my figures right, I believe you said they reach full size at 18 months versus three to four years?

● (1235)

Mr. Éric Darier: Yes, that's instead of three years.

The Chair: My question to that is, presuming those are all captive fish and presuming that in order to get that their feed is increased, if that were in the wild—and this is only hypothetical—what impact would doing that have on the food supply for those fish?

Do you have any comment on that?

Mr. Éric Darier: There are lots of studies and computer modelling on the impact of releasing some of the GE fish into the environment by accident. We could have an entire committee hearing on this one, and I invite you to do so, maybe later.

But some of the experts predict that even the release of only a few non-sterile GE fish in very limited or specific populations of wild salmon could eventually lead to extinction of the wild salmon. That's why the Royal Society was very specific. Why? First, because they compete for food. Second, they are also sexual predators. They compete for reproduction even if the next generation is less viable. Basically, there is a weakening of the wild salmon compared to the GE salmon.

I invite you and this committee, for time's sake, to look at some of the documentation of the European Free Trade Agreement and some of the experts who looked into that, and to do it quickly, because this issue is going to come up sooner than you think.

The Chair: Thank you.

I'll now move to Mr. Shipley for five minutes.

Mr. Bev Shipley (Lambton—Kent—Middlesex, CPC): Thank you, Mr. Chairman.

Thank you to our witnesses.

I'm from Ontario, and I've had a number of great meetings with commodity organizations. We don't grow many lentils or peas right where I am, but that being said, we do grow a lot of corn, soybeans, wheat, and edible beans.

I'll go to Mr. Schmitz. I'll ask you for help, because I think we all need it in terms of how we communicate. I think there are two issues. It was mentioned earlier today that we sometimes have a fear factor that goes out, and we'll make the worst scenario so that we get a bad push. I don't agree with that scenario. I think we have to be balanced. We have to have science. That's what our basis is. As far as marketing goes, give farmers credit: quite honestly, they're not going to grow something they can't market. They aren't going to grow something if they don't have the research and development. That's actually what our grain farmers are saying about why a partnership developed. With Mr. Gold and Mr. Schmitz and Mr. Agblor, we've talked about developing these partnerships among universities, the growers, and the industry.

We're developing products, and we say we shouldn't be using these for commerce or to generate energy or whatever. The interesting part is that, based on the research one of my growers is showing me—and I'm a farmer also—at the end of the day, we will generate energy. We will generate a product for commercial industry. We may even generate products for pharmaceutical use. At the end of the day, we still have food, because now the research has been able to pull apart—let's use corn for example—in the energy development of ethanol.

Everyone has heard for a number of years—and somebody's always been putting it out—that GMO, genetically modified, is bad stuff. Nobody seems to understand genomics. That sounds a little softer. So how do we communicate, quite honestly, that not everything is right, and not everything is wrong? In the dairy industry, which I was in, in Canada, we did not accept BST. We have a sovereign right to do that, thank you.

How do we communicate those types of things to the people?

We do have a number of our younger families.... I don't read the labels, but my daughter does. Getting them to understand it is the other part.

How do we communicate that clearly? Could I have any ideas, please, from the three of you? Because it is an important aspect.

● (1240)

Dr. Andrew Schmitz: Let me give you an example. Suppose that somebody reads a report, which isn't available from Monsanto, on why genetically modified wheat may be the way to go or on releasing this wheat. If this is really true, and it might be, you have to give people in the public information also. It can't always just be private information in terms of whether this is acceptable, right? So then to communicate, what you need to do, almost, is get an objective body from another side, which is not part of the seed companies, and so on, which push their agenda, to try to show who the gainers and losers are from this whole thing.

In the U.S., ethanol is a mess. That whole ethanol system in the U. S., in my opinion, is when you really get the farm lobbyist groups involved. In my opinion, most academics, at least, really do not support at all the ethanol program in the U.S. They make this argument: Why do you produce corn with energy and use corn again to produce energy? It's all over the map, depending on which expert you talk to, as to whether there are any benefits from ethanol. How you communicate that to the average person I have no idea. An average person might say that if corn goes up 50¢ a bushel or 60¢ a bushel because of ethanol, it has to be a bad thing for me from a food supply point of view. Furthermore, they'd argue that it has no impact on the fuels market. So why are we doing it? Obama's got himself in a real bind or a problem with these energy prices and how to deal with these tax credits now for the oil producers.

I agree with you that you have to communicate, but it's tough. If farm groups think that there's a bottom line in it for money, they don't really need the time to communicate with anybody either. It's a matter of convincing politicians to do it.

The Chair: You just have a couple of seconds left.

Mr. Gold wanted to speak.

Mr. Bev Shipley: Let Mr. Gold answer.

Mr. Richard Gold: Sorry to jump in.

There have been, actually, some good efforts. There's a science media centre that now exists in Ottawa. Preston Manning has his organization in the west. We in the research community have made greater efforts to communicate. I've participated in a science cafe on biotechnology.

It's about encouraging people to actually intervene. Reading a label gives you very little information. If you don't actually understand the technology, they don't mean anything. You might be overly willing to buy the product or not willing to buy the product, without really being educated about it.

Biotechnology is not scary. It's not all that complicated. It just needs to be explained. The research community is probably your best resource.

The Chair: Okay, thank you.

We should actually be breaking now, but I'm going to give Mr. Easter one question and Mr. Hoback one question. But keep it brief.

Hon. Wayne Easter (Malpeque, Lib.): Yes. Well, I really had about three, Mr. Chair.

Anyway, one of the justifications for feeding a hungry world is the need for more production. I guess I'd ask you, Andrew, what role production really plays. There's the whole issue of crop losses, storage losses, transportation to markets, waste in storage, and you name it. There's a huge area there.

On the issue at hand, one of the big confusing areas is the difference between GMOs and biotechnology. On biotechnology and the confusion, I'd ask whoever can answer it. Biotechnology isn't exclusively GMOs. How do we get around that?

Dr. Andrew Schmitz: Well, I think you get around it, for example, with the trade the gentleman who just left is involved in. I think the trade very well knows that the product they're actually buying is biotech and is not a GMO product. When we deal with the Japanese, they know exactly what they're buying when it comes to buying wheat from Canada, and that's why they buy here. When you get this whole thing comingled, and so on, these buyers don't know where it comes from. They likely wouldn't even buy any non-GMOs. You have to buy GMOs and non-GMOs. You have to segment the markets, and so on.

The grain companies all trade with the specs already specified, and these buyers generally know it. That's, to me, very clear.

The Chair: Mr. Hoback, you can ask one quick question.

Mr. Randy Hoback: Mr. Schmitz, you talked about how your farm has adapted from wheat and barley to pulses. We've seen tremendous growth in pulses. In fact, you talked about your daughter's farm and how she's gone to canola, and canola in problem cases.

● (1245)

Dr. Andrew Schmitz: Yes. It's not the right area.

Mr. Randy Hoback: Yes.

We're seeing in the wheat sector, especially, that acreage has dropped. I have my theories, but how do you view wheat?

Dr. Andrew Schmitz: In our area, wheat was once king, and even this year with the wheat prices up.... But then you've got to recognize that canola has hit through the roof and you've got these other crops that have increased maybe even faster. So everybody's looking for this big expansion of wheat acreage, right? It likely isn't going to happen.

Mr. Randy Hoback: It's not there, is it?

Dr. Andrew Schmitz: The second thing is we just found it not profitable compared to the other crops because the yields were never great. We had drought, etc. So it was just the economics of that area with the effect of pulse—

Mr. Randy Hoback: So how do we deal with rotations? Because we need to keep a rotation to keep things healthy.

Dr. Andrew Schmitz: Well, you see, in my opinion a lot of the better farmers who are still farming don't even listen to some of these discussions about mixing crops depending on prices of commodities. I always find that a lot of the good farmers actually have a rotation they deal with now, and of course that's where lentils and peas, etc., fit perfectly in their rotation crop, because of less nitrogen in the crop. So a lot of people in our area have a rotation, and they're not going to change that rotation very much, depending on the relative price of crops.

Mr. Randy Hoback: I guess my concern is guys who are cheating the rotation because of profitability. When it gets tighter on the margins you see that they start doing canola on canola and some things they probably shouldn't do.

Dr. Andrew Schmitz: Yes, that's what happened this year.

The Chair: Thank you very much, gentlemen. We could carry this on all day, I'm sure, and I wish we could.

I wasn't trying to cut anybody off at any time. Sometimes our own members forget that their five or seven minutes include the question and the answer. I'm very liberal with the time, but the more I give, the more everybody expects.

Anyway, thank you very much for coming here today, and I'm sure we will run into you somewhere in our travels. So thank you very much.

I have to ask everybody not connected to committee members or staff to please exit the room. We have to go in camera to deal with some business.

Thank you.

[*Proceedings continue in camera*]

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