

**MEETING STATUS: PUBLIC**

**LEGISLATIVE ASSEMBLY**

**SESSION: 2/62**

**PRINCE EDWARD ISLAND**

**Motion No: 30**

**Year: 2005**

**VERBATIM TRANSCRIPT OF  
HOUSE COMMITTEE PROCEEDINGS**

-----

**COMMITTEE: STANDING COMMITTEE ON AGRICULTURE, FORESTRY &  
ENVIRONMENT**

**Wednesday, February 16, 2005**

**SUBJECT(S) BEFORE THE COMMITTEE:**

Further consideration of Motion No. 30 concerning GMOs (genetically modified organisms)

**NOTE:**

This Transcription has **NOT** been edited nor subsequently compared with the original tape. It is intended to provide an indication of Committee discussion only and is **NOT** certified by the Legislative Assembly to be a true copy of the discussion.

---

**COMMITTEE**

**MEMBERS PRESENT:**

Wilbur MacDonald, Chair  
Wayne Collins replacing Hon. Mitch Murphy  
Cletus Dunn replacing Fred McCardle  
Andy Mooney  
Eva Rodgerson  
Richard Brown

**ABSENT:**

Ron MacKinley  
Wilfred Arsenault

**GUESTS:**

Part I - Association of Registered Acupuncturists  
Part II - Canadian Environmental Law Association  
Part III - Cooper Institute  
Part IV - PEI Council of Development and Peace Group

**STAFF:**

Marian Johnston, Clerk of Committees  
Louise Polland  
Bob MacGregor



**Committee on Agriculture, Forestry & Environment**  
**Wednesday, February 16, 2005**  
**1:30 p.m.**

**Part I - Association of Registered Acupuncturists: Daniel Shulman**

**Wilbur MacDonald (PC) (Chair):** I'll call our meeting to order and we'd ask for a motion on the agenda. All those in favour signify by saying, Aye.

**Committee Members:** Aye

**Wilbur MacDonald (PC) (Chair):** Contrary Nay. Motion carried. After we have the presenters we'll discuss dates for our next meetings. We should have two or three or four dates ahead so we know where we're going. The next meeting scheduled for the 23<sup>rd</sup> of February which is a week from today, right.

**Marian Johnston (Clerk Assistant):** Yes.

**Wilbur MacDonald (PC) (Chair):** Okay we'll start with Daniel Shulman.

**Daniel Shulman:** Excellent.

**Wilbur MacDonald (PC) (Chair):** Okay so you go right ahead, sir.

**Daniel Shulman:** Okay thank you, Chairman. I apologize up front. I have - coming off a bit of a flu here so.

**Wilbur MacDonald (PC) (Chair):** Your doing okay.

**Daniel Shulman:** I'll try my best.

**Unidentified:** (Indistinct) .

**Wilbur MacDonald (PC) (Chair):** You can lean right back like I am.

**Daniel Shulman:** Great. Okay. Most of you should have a written copy of it. I'm basically going to read from this, but I might improvise a little bit.

Now I'm submitting this brief on behalf of the Association of Registered Acupuncturists of Prince Edward Island. We represent everyone on PEI who practices Acupuncture as part of Chinese Medicine and those of us who are certified to a

level or a standard that commensurate with industry standards everywhere else in North America. While Chinese Medicine and acupuncture is very young here on Prince Edward Island, its development as a profession is much more advanced elsewhere in North America and before I start talking about the topic at hand today, I just wanted to introduce you to the full context of Chinese Medicine in the rest of this continent.

First of all, for those of you who don't know much about it, Chinese Medicine is the oldest continually practiced professional medicine in the world. It's got a rich and complex history that spans thousands of years. It is not something that was developed by one or two people. Rather it's the product of an entire civilization. It's very hard for us to appreciate that. As a medical system, Chinese Medicine has unrivaled durability, reliability, and temporal and geographic distribution of use. It is used in just about every country in the world today by millions of people.

In Canada, Classical Acupuncture is a licensed profession in three provinces, British Columbia, Alberta and Quebec. There's around 800 practitioners in B.C. and somewhere between 200 and 400 in Alberta and Quebec. In Canada in total, there are perhaps six to ten schools of acupuncture and Chinese Medicine. In the United States, things are much more advanced. Acupuncture is licensed in almost every state. There are about 40 established and accredited schools and just to give you some numbers, in California there's about 5,000 practitioners, in Massachusetts there's about 700. So that helps set the stage for sort of the size of the profession that I'm trying to represent here today.

As a system of medicine, Chinese Medicine is very distinct from what we might call modern biomedicine. It includes the practices of Acupuncture and Moxibustion, Chinese Herbal Medicine and Traditional Chinese Body Manipulation. And in one sense, we really should listen to the wisdom that's offered by Chinese Medicine. After all, for all the sophistication the

advice of modern biomedical science, modern medicine can also be remarkably unstable. How many times in the last ten years alone have we had to revise and often completely reverse advice on everything from cholesterol to oat bran, fats to coffee and wine, pharmaceutical hormone replacement therapies, anti-inflammatory medications and anti-depressants? This highly volatile situation certainly sends people trying to make policy, careening from position to position and it incurs considerable personnel and financial cost to governments. In contrast, the lifestyle, herbal and dietary principles of Traditional Chinese Medicine have been reliably followed by millions of people for many centuries, if not more.

So at the very least, the insights that the Chinese Medicine has to offer on genetic modification of food, deserves our consideration. And the principles of Chinese Medicine do have some very profound insights to offer the GMO debate. In that regard, please note that while we, as an association, certainly believe the GMO debate raises many critical environmental, economic and social concerns, we're just going to restrict ourselves here to human health concerns. You're going to hear plenty about other matters from other presenters.

When I say that Chinese Medicine is quite distinct from modern biomedicine, I really do mean that and I'm going to have to share with you some basic Chinese Medical principles. They're going to seem a little foreign, a little odd, you may wonder where on earth I'm coming from. In some cases, they will link up quite nicely with modern medical thinking and in other cases, they're going to differ considerably. If you want to understand and appreciate Chinese Medicine on its own terms, you have to accept something very important. You have to accept that the human body is tremendously complicated and complicated systems can only be understood by using models. Models are not reality, their just maps. They are approximations of reality. And modern medicine is based on a model, it is not reality, it is a model of the human body.

Chinese Medicine is based on another model of the human body. Neither model is wrong or right. They are just different. It's like having two maps of the Prince Edward Island, one is a topographic map and the other is a road map. You look at the two maps, they're of the same place, but the maps

look completely different and the information is completely different.

Now with regard to the GMO debate, there are two basic notions that I want to educate you a bit about today from Chinese Medicine. The first is something that we in Chinese Medicine call and is a very different language, we call Kidney Essence. The second thing I want to present to you today is how Chinese Medicine evaluates foods and herbs. So we'll talk about Kidney Essence first.

Now I'm sure most of you have heard of terms like Yin and Yang and Qi and these are just a few of the many concepts that Chinese Medicine uses to understand the human body, mind and spirit in both health and illness. I certainly don't have time to explain all of Chinese Medicine to you. That would take at least eight weeks of two hour sessions. But that doesn't matter. I really only need to explain a few things, insights from Chinese Medicine as they pertain to the GMO debate. Now obviously, genetic modification was not an issue in the early years of Chinese Medicine, but if you understand the essential nature of what we call Kidney Essence, you will certainly appreciate that fiddling around with genes, moving them from one species to another and offering that modified product for human consumption is most likely to affect us at the level of what we call in Chinese Medicine, Kidney Essence.

So what do I mean when I say Kidney Essence?

Well we're going to have a little primer here on that concept. In a very crude sense, Kidney Essence is the closest thing that Chinese Medicine has to the modern biomedical concept of genetic influences. But it's not a one-to-one correlation. Kidney Essence extends beyond genes to influences you received during gestation and even beyond that to influences you received throughout your life. But like genetic influences, the Chinese Medical notion of Kidney Essence is very deep, very core, very constitutional. In fact the English word "Essence" gets the point across quite well. It's essential. And there are four main characteristics of Kidney Essence that you learn about if you go to Chinese Medical school. And I'll just outline them.

The first is that what we call Kidney Essence controls everything in our bodies to do with growth, reproduction and development.

The second is that Kidney Essence is the basis of what we call Kidney Qi, which is something else I don't have time to explain here, but it has also a lot to do with reproduction, sexual function and of course, urogenital function .

The third is that Kidney Essence produces what we call in Chinese Medicine, marrow and the idea of marrow in Chinese Medicine is quite different from the modern biomedical understanding of marrow. It doesn't just include marrow inside your bones, but also includes your spinal cord and your brain.

Finally, the fourth thing we learn about Kidney Essence is that it's the basis of our constitutional strength. It's the basis of our ability to resist pathogenic factors. Even the Chinese medical idea of Pathogenic Factors is a very complicated one that I can't elaborate on here today, but it includes, well it does include what we consider pathogens in a western modern biomedical context. It also includes much more. But it is fair to say that Kidney Essence has much to do with what we understand today as immune function.

Now as people age, as we get older, it's inevitable that the status of our Kidney Essence declines. In fact, aging in Chinese Medicine is pretty much defined as the decline of Kidney Essence. And the more immoderate a person's lifestyle has been, the faster that decline is. Kidney Essence is influenced both by inheritance and food quality. Poor food quality, poor dietary habits and poor inheritance will all bring about an accelerated decline in what we call Kidney Essence.

So when you put all this together, what do you get?

Someone whose Kidney Essence is in decline, whether prematurely or age - appropriately, could be expected to manifest with some or all of the following signs and symptoms: Bone deterioration, tooth loss, hair loss, reduction in mental acuity, poor concentration, failing memory, problems with balance, dizziness, compromised hearing, central nervous system and neurological problems, sexual dysfunction, problems with reproductive health, predisposition to colds, influenzas and allergies.

This can include such modern biomedical diagnoses as broad or as specific as, osteoporosis and other bone disorders, dementia, vertigo, tinnitus, infertility, menstrual irregularity, urinary

malfunction, premature menopause, difficult menopause, miscarriage, gestational problems, premature birth, impotence, congenital diseases, disorders of the nervous system, impaired childhood development, learning disabilities, and compromised immunity.

Finally, I should point out that in Chinese Medicine, Essence is viewed as something very precious. It's considered a high personal duty to guard and treasure one's Essence and not to fritter it away through ill-conceived lifestyle choices. So that's my primer on what we call Kidney Essence and Chinese Medicine.

The second thing that I need to talk about is how foods and herbs are assessed in traditional Chinese Medicine. The modern biomedical assessment of a food's nutritional value is achieved by laboratory measurements of biochemical constituents of food thought to be important, nutritionally. So for example, we look at a food's vitamin content, its carbohydrate content, its protein content, fat content and so on and so forth, than we think we understand the nutritional status of that food.

The Traditional Chinese assessment of a food's nutritional value is achieved by a much simpler process - observing the effects of food on people. It's very logical, it's very practical. For example, if eating cinnamon makes people consistently warm, than cinnamon is a warming food. If eating cucumbers makes people consistently cool, cucumbers are a cooling food. These two examples are rather ridiculous and simple, I just raised them for their illustrative value. Most examples of Chinese herbs and food are much more complex and require far more astute levels of observational and analytical skill, which the Chinese physicians of yesteryear had in abundance. They were supreme observers.

So for example over decades and even centuries, if it was consistently noticed that many people with declining Kidney Essence experienced an improvement in Kidney Essence related body functions when they ate walnuts, than it would eventually come to pass that in the vast canon of Chinese Medical literature, walnuts would be classified as a substance of benefit to Kidney Essence. It's really that simple.

In other words, while knowing the vitamin C

content or the protein content or the omega-3 content may be of interest, we must always keep in mind that this information may not actually tell us very much about what the food is going to do to us. Food is much more than simply a collection of biochemicals. The view of food as a package of chemicals is naive and I would even say primitive.

What is of practical supremacy in the Chinese Medical assessment of foods and herbs is very simple and profoundly logical. It's based on nothing less than observing what happens to people who consume that food or that herb. What is the overall physiological effect? Do they cool down? Do they heat up? Does their urinary function change? Does their vision improve? Do they get sick more or less often? Do they have more miscarriages? And so on and so forth.

Now let's talk a little about science, turning to the modern biomedical science, nutritional science, assessment of genetically modified foods and what the insights of Chinese Medical Science have to offer. My hope is that this little primer I've given you on the Chinese Medical notion of Kidney Essence has given you a good sense of essence. If it has, then it should be clear to you what predictions Chinese Medical Science would make about the long term health impacts of consuming genetically modified foods. By genetically modifying food, we are manipulating food at the Essence level. It would be very logical to expect that feeding people and animals essence modified food could well have health implication at the Essence level. We should therefore be looking for signs of premature Kidney Essence decline in organisms fed a steady diet of GMO foods. That in short is really truly the only way to know whether GMO foods are as we like to say these days, safe to eat.

Now we come down to the heart of the matter. Genetic modification is a very complicated issue with tremendous levels of scientific and technical complexity. Where is the layperson, the politician and the provincial bureaucrat going to obtain the intellectual wherewithal to navigate all the issues? It is no surprise that we routinely hear anyone but the expert say "I'm just going to have to leave the science up to the experts." and I'm sure you all feel that way. And so we tend to just trust the folks at Health Canada or the CFIA or the USDA or Monsanto that they are all taking that technical stuff under consideration.

The problem is that the experts often don't look at the big picture. It can be just too inconvenient for them to do that. It is very important to recognize that not all science is equal. I like to say there are three classes of science; commercial science, regulatory science and pure science. Commercial science is science in the service of the investment return fast track. It tends to be very narrowly and aggressively focused. Regulatory science is science that tries to fit the complicated world of science into tidy little boxes required of the regulatory bureaucracy. It is often simplistic.

Pure science is science uncompromised by the needs of the first two. It has only one goal, the pursuit of the truth. But in its complexity it often appears vague and ambiguous. If you do choose to consult with science or be briefed by scientists, be absolutely sure that you recognize these differences. Be sure to consult with genetic human health, environmental health and nutritional scientists who are pure scientists and who somehow have managed to remain uninfluenced by the allure of the biotech stage light glare. There are in fact very, very few such individuals around today. Finding them is not at all easy. It used to be the case that university-based scientists were "pure scientists". That is no longer true. Most of them have a strong commercial or regulatory influence to their work and their perceptions.

Commercial and regulatory scientists and even most academic scientists today are often only willing to consider the most convenient and simple parts of the big picture. For one thing, when they evaluate genetically modified foods, as far as I've been able to understand and I believe your earlier presentation from Dr. Christie supports this, they primarily base their assessments on a nutritional understanding of food as nothing more than a package of biochemical constituents. After all that is simple and convenient. If a GMO potato can be shown to have the same vitamin, protein, and carbohydrate content as a non-GMO potato, then it is deemed to be no different. I believe they call that principle, "the principle of substantial equivalence".

Well that is bad science. In fact, I call that sort of thing, garbage in, garbage out science. It is naive, it's crude and it's primitive and it's just not good enough. I contend that a lot of scientists are actually irresponsible when they represent food that way. And science done this way often means

that the resulting regulatory frameworks are nothing more than elaborate houses of cards. And that is often what I think of federal regulatory science.

So here is the very central point of my presentation to you today. If you get it, I've succeeded, if you don't I've failed. The only way to truly know if GMO foods are any different from non-GMO food is to test them out as foods. Starting with mice and rats and then perhaps moving up to fish and dogs and who knows what else, we would need to feed not one, but several successive generations of populations of these animals GMO foods and evaluate all those signs and symptoms that Chinese Medicine would predict may well be impacted by GMO food consumption. In Chinese Medical terms, we would need to monitor GMO fed animals for signs of premature Kidney Essence decline.

In modern biomedical terms, this would mean that we would need to monitor reproductive health, neurological health, congenital illnesses and immune robustness in several successive generations of test animals fed on GMO foods. That sort of test would be the gold standard of GMO assessment. That is a completely different assessment then sending a potato to the lab and determining its vitamin and protein content. And as far as I know, testing the health of animals fed GMO foods is not seriously being considered as the gold standard.

I am sure you can appreciate how much less convenient such an assessment regime would be than just sending a potato off to the biochemistry lab. But if we want to meddle with the very core or as we say in Chinese Medicine the very essence of life, don't you think we should be every sure we aren't just assessing our newfound biotechnology with garbage in and garbage out science? And you know you really don't need to know anything about Chinese Medicine to get the point I'm making. It is just so very sensible and rational, I actually feel kind of ridiculous presenting you with these ideas.

I think the behaviour of many present day technical supporters of GMO foods is much like that of children with their first allowance set loose in a candy shop. I noticed in the briefing notes prepared for you by your staff that something called technophobia was listed as a social factor to be concerned about. And sure there is such a

thing as technophobia, but that is only half the story and the fact that you were not briefed on the other half exposes just how skewed the formal GMO discussion has become. The flip side of technophobia is what I call technophilia. What do I mean by that?

Technophilia is a love of technology, a love so strong and powerful it clouds clear thinking and generates levels of hysterical irrationality easily equal to what gets generated by technophobia. The technophiles are so excited about the promise of yet another new technology to solve all our problems and generate new markets, they lose themselves. I think the even handed approach is to look at both technophobia and technophilia as social factors. When you contrast how widespread GMO foods already become with how very, very little we've begun to understand about the effects of GMO foods, it's entirely accurate to say that the technophiles are a much more potent social factor to be concerned with at the moment. In other words, a balanced view would have people like yourselves who are standing between those of us here in the public and the science far more concerned about the hazards of technophilia than the hazards of technophobia.

This review of the whole GMO food issue shows remarkably open minded courage on the part of Prince Edward Island. In fact I have this image, remember that children's book of the little red caboose trying to push the train up the hill going - I think I can, I think I can, I think I can, I feel like we're standing in that position.

We would like to commend Premier Binns and his government for having the vision to execute such an undertaking. We think the PEI government needs to send out a clear message. We need to say to the rest of the world and to the technophiles, cool your jets. The science of assessing human health and environmental impacts of GMO foods needs to moved from the level of crude and primitive science up to something sensible and rational. Do that for us and when you have come back and tell us your results and then we will be able to decide if we want to let GMO foods into the Garden of the Gulf.

For now we just do not have anywhere near enough information to make a decision. And as a side note in the mean time I can assure members

of this committee that you have nothing to worry about in terms of markets. Just 12 hours down the road in Boston which is a lot closer than Toronto, I can tell you, from personal experience, that the appetite for certifiable organic, non GMO foods is completely and entirely insatiable.

So here's my main point again. The technical science of genetic manipulation of food is way ahead of the science of impact assessment. This imbalance serves the technophiles amongst us, but it does not serve the rest of us. In terms of human health effects of GMO food consumption, Chinese Medicine offers us clear insight into both what effects to look for and how to look for them.

Simply put, we need to monitor reproductive health, neurological health, congenital illness and immune robustness in several successive generations of test animals fed on GMO foods. Only when we do this will we be able to make informed decisions about growing GMO foods. Until such time as this kind of information is available, we are operating in a complete information vacuum. Until such time as this information is available, we need to establish a clear moratorium on growing GMO foods in PEI. Thank you.

**Wilbur MacDonald (PC) (Chair):** Thank you very much, sir.

APPLAUSE.

**Wilbur MacDonald (PC) (Chair):** You will be prepared to answer some questions, if we have some.

**Daniel Schulman:** Yes.

**Wilbur MacDonald (PC) (Chair):** Okay. Anyone like to begin.

**Wayne Collins (PC):** Mr. Schulman I have a question for you. We understand that approximately three quarters of the processed food stuffs on our grocery store shelves contain some form of GMO modified food.

**Daniel Schulman:** Yes.

**Wayne Collins (PC):** Corn starch, syrup, soy protein, oil from canola, corn, cottonseed and soy that are contained out there already, in three quarters of the food stuff on our grocery store

shelves.

I don't know how long they've been there - five ten years whatever. More on the market every day. Are we noticing - have you noticed a decline in the kidney essence of modern North Americans?

**Daniel Schulman:** I'm too young to be able address that, but so much of science is based on - if you look, you see it, if you don't look, you don't see it and once the cat's out of the bag, it's very hard to make assessments like that because there are so many variables. I mean an average person is not just exposed to the foods you're talking about but they are exposed to so many other factors - it would be impossible to isolate those effects. The really, the only way to know is to do laboratory testing of the kind I'm talking about. But I'm too young I mean, you'd need a 100-year old person to be able to say, jeeze in the last 30 years or 20 years, I don't know how long it's been since our shelves have been stocked with this stuff, but you would need a lot of astute observation to make those kinds of conclusions.

**Wayne Collins (PC):** Do you think the cat is out of the bag? I mean, when I say that three-quarters of a product out there has got some form of GM in it, is it . . .

**Daniel Schulman:** Well, it's disgraceful that the cat is as far out of the bag as it is. Like I say, the science of genetic modification is very advanced, but the science of evaluating the food is primitive. It's crude, and it's disgraceful that things have gotten to the state they are, but it's never too late to stop and say, whoa, let's figure this out.

**Wilbur MacDonald (PC) (Chair):** Any more questions? Are you from the province, are you, sir?

**Daniel Schulman:** Sorry?

**Wilbur MacDonald (PC) (Chair):** Where do you operate from?

**Daniel Schulman:** Where do I work and live? In Charlottetown.

**Wilbur MacDonald (PC) (Chair):** Yes, so if we have any questions, we could get back to you.

**Daniel Schulman:** Oh, yeah. No problem.



**Wilbur MacDonald (PC) (Chair):** Okay, if you don't mind leaving your information.

**Daniel Schulman:** I'll leave my contacts, yeah.

**Wilbur MacDonald (PC) (Chair):** Okay, that's great. If we have no more questions, that's fine. Thank you very much, sir.

**Daniel Schulman:** Thank you.

## **APPLAUSE**

**Wilbur MacDonald (PC) (Chair):** We appreciate the fact that you've come in.

**Daniel Schulman:** Thank you.

## **Part II - Canadian Environmental Law Association: Michelle Swenarchuk**

**Wilbur MacDonald (PC) (Chair):** Michelle (Indistinct). All right, Michelle.

**Michelle Swenarchuk:** Good afternoon.

**Wilbur MacDonald (PC) (Chair):** Would you give us your last name, dear, so -

**Michelle Swenarchuk:** Yes, Swenarchuk.

**Wilbur MacDonald (PC) (Chair):** Oh, I was close, but not that close. So you have a presentation to make to us?

**Michelle Swenarchuk:** Yes.

**Wilbur MacDonald (PC) (Chair):** Do you have anything to pass out or just -

**Michelle Swenarchuk:** I gave a partial document to your clerk. I brought four copies with me, but you'll get it afterwards, I guess.

**Wilbur MacDonald (PC) (Chair):** Yes.

**Michelle Swenarchuk:** So if I may?

**Wilbur MacDonald (PC) (Chair):** You proceed, dear.

**Michelle Swenarchuk:** Thank you. My name is Michelle Swenarchuk. I'm a lawyer in Toronto -

dare I admit it - at the Canadian Environmental Law Association. I do environmental law, trade law, and I've also done patent law and I've worked on issues related to GM foods for about the past 10 years because I was part of an advisory committee to the federal government, and part of the Canadian delegation negotiating the bio-safety protocol, which is the international regulatory scheme for trade in genetically modified organisms, and I want to thank you very sincerely for this opportunity to speak to you today. This is a very important subject you're considering and as a fellow Canadian, I'm very happy that you're doing this.

I want to talk about five questions related to GMOs, and I hope that as I speak, if questions occur to you, that you'll just pose them to me and we can discuss this. The five subjects I'm going to talk about first are, very briefly, why do we have GMOs? Then secondly, I noticed that earlier on, there's been some discussion here about whether they reduce pesticide use. I'll make a few comments about that. Then I'm going to talk about some of the science of environmental and health risks and then fourthly, the Canadian regulatory system and why I think it is unreliable, why we are not able to rely on the safety of these products even if Ottawa approves them. And then fifthly, just briefly, the question of a liability regime. If these are grown in PEI, and I know you have some already, who's liable when they get out?

So first of all, just having looked at what's on the website about discussions you've had, I know that the question was raised: Well, why do we have GMOs and do they reduce pesticide use and do they give better yields? So the first question - why do we have them - I think can't be separated from the question of patenting of seeds. The major producers - and Monsanto is the major producer - don't only sell genetically modified crops, of course. They sell the seeds with patents on them, meaning that the farmers who use these seeds have to buy the seeds from Monsanto, cannot save seed from year to year, and of course, Monsanto also restricts in its technology agreements with farmers, has very clear and extensive restrictions on the use of the seeds, so the profitability of the products comes from the patented seeds and then, of course, from the fact that the seeds are modified largely to be resistant to herbicides. I think you all know this. So the producer then - Monsanto - sells the seed, makes

money from that, and sells the herbicide and makes money from that.

So that's really the origin and the purpose of over 90 per cent of the GMOs that are sold worldwide. It's the profitability of patented seeds, plus herbicide use. In other words, we don't have 90 per cent of GMOs there because they give us better nutrition. That's not why they were developed.

So do they actually reduce pesticide use? And I know you've discussed here already that there's a lot of science on this subject - on both sides - I agree that some of it is better than other parts of it.

I'm going to talk about what I think is the most reliable science later. But on the question of herbicide use related to these products, I just wanted to refer you to an American PhD in agriculture who writes on this subject. His name is Charles Benbrook, and a paper he published in 2003 is called *The Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First Eight Years*. And he used the US Department of Agriculture figures for herbicide sales to look at whether, in fact, herbicide use declined with the expansion of GMOs, and actually, he found the opposite.

Using US Department of Agriculture statistics, the studies show that the use of GE herbicide-tolerant crops - corn, soy and cotton - have increased herbicide use in the US by over 30 million kilograms over the past eight years. USDA data show an incredible 22 per cent increase in the amount of liposite - and that's Roundup Ready; that's the herbicide of choice - applied per acre to GE soya between 2001 and 2002. The large increase in the amount of liposite applied per acre of GE soya, combined with the large acreage, make Monsanto's GE Roundup Ready soya the main reason for escalating use of herbicides in the United States. That's just a brief excerpt from the study, but I've given you the reference, and you might want to look at the entire study.

So from what I see of the science on yield and herbicide use related to GMOs, what I see most generally is - and Benbrook would say this, too - in some cases with some of these crops, yields are higher and herbicide use is reduced. In other cases, yields are about the same as conventional crops and in other cases, yields are lower than

conventional crops.

**Andy Mooney (PC):** Just a question. Has the whole use of herbicides increased or that specific product, whether it is just Roundup? The reason I ask is being one that farms, there's different types of chemicals used to combat weeds. Some are used . . . basically on potatoes we can spray them for weeds prior to the potato coming up, and it'll kill any weeds there, but when the potato comes up, that spray is long gone.

There's other types of plants such as this Roundup Ready soya that you're saying that can withstand, if the plant can be up and growing and you can kill the weeds, but the soya is healthy. So I'm just wondering is Roundup just displacing another type of herbicide that was used before or is the total herbicide level increasing? Do you know what I mean?

**Michelle Swenarchuk:** Yes, I do know, and I think the summary sentence from the Benbrook study is that increased herbicide use, generally, by over 30 million kilograms in eight years. So it's not just the (Indistinct).

On the question of how do we evaluate the science here, that's a very hard question for all of us, and I found that the most useful study I know was done at the insistence of the government of Canada by the Royal Society of Canada, and has anyone here referred to this yet, the Royal Society expert panel on food safety? Yes. Okay. Called *Elements of Precaution - Recommendations for the Regulation of Food Bio-technology in Canada, an Expert Panel on the Future of Food Bio-technology* prepared by the Royal Society of Canada in 2001.

Now it's a very substantial review and the panel of experts really looked at all the science applying to GM products and, I think, did a very careful and conservative assessment of the risks and gave advice to the government of Canada about how we should be dealing with these products.

So I want to talk first of all about the risks that they identified. I'm going to do it in a very brief form, but all the science is there if you want to go to that report and get all the details, and then I want to talk about what the Royal Society said about Canada's regulatory system. Has anyone talked to you about that yet?

**Richard Brown (L):** (Indistinct)

**Michelle Swenarchuk:** But you haven't heard, actually, what the Royal Society said. Okay. So let's think, first of all, about what they said about risks to human health and risks to the environment from these products.

And very briefly on the question of human health risks, they looked at two sources of concern regarding potential harm to human health from foods that have been genetically modified. They looked at questions of toxic effects and questions of allergenicity - that is, allergic reactions in people. They concluded that there is the potential for increased exposure to toxic active components of GM food in our diets, but these dangers are unclear since they discovered they were unaware of any validated study protocols currently available to assess the safety of GM foods in their entirety as opposed to as food constituents in a biologically and statistically meaningful manner. In other words, we haven't even designed the protocols to look at the question of whether there is toxicity related to these products.

Then secondly, genetically modified food may increase the potential risk for causing allergic reactions, especially as advances are made in the scope and range of genetic modifications, as consumption of such foods increases and as more innovative trans-genetic combinations are introduced. Risks may arise from the types of genes inserted into foods. There's one study, for example, of a Brazil nut inserted into soybeans. People who were allergic to Brazil nuts, a third of them were also allergic to that soybean.

Increases in consumer's total dietary exposure to the allergen: A person who is allergic to a genetically modified food will have difficulties in identifying allergenic triggers if the genetically modified protein that promotes the allergy is present in several types of food. So essentially they said there are two potential kinds of risks from these foods and one is toxicity, the other is allergic reactions, and we're not studying them, so they couldn't go any further and say that dangers have been established, because they haven't been studied.

On the environmental side, there's more evidence, I would say. The Royal Society said it's difficult to predict the environmental risks associated with GM

crops because of - and I'm quoting - "diverse ecological interactions that can potentially occur in agriculture and natural plant communities" - end of quote - and rare events that could result in serious ecological impact which are extremely difficult to predict given the limits of conventional ecological experiments. However, scientists have identified numerous potential environmental risks pertaining to plants and crops, including whether genetically modified plants can become invasive and whether genes can be transferred between GM crops and wild plants. The essential concern is that because many GM crops have been modified to be resistant to pesticides, the invasion or gene transfer would lead to the development of super-weeds, resulting in reduced crop yields, disruption to the ecosystems and losses in bio-diversity.

And here I'm quoting from the report "Unfortunately, herbicide resistant volunteered canola plants are beginning to develop into a major weed problem in some parts of the Prairie provinces of Canada. Indeed, some weed scientists predict that volunteered canola could become one of Canada's most serious weed problems because of the large areas of the Prairie provinces that are devoted to this crop. Of particular concern is the occurrence of gene exchange via pollen amongst canola cultivars resistant to different herbicides. Such gene stacking represents a serious development because to control multiple herbicide resistant volunteer canola plants, farmers are forced to use older herbicides, some of which are less environmentally benign than new products." And that's the end of the quote.

Now further there's evidence that where genetically modified crops and wild plants co-exist, there will be a likelihood for a gene transfer to take place over time, so that's from farm crops to wild plants, and that certainly now has been demonstrated with maize contamination in Mexico. There is GM contamination from GM corn occurring quite far from the source of it amongst indigenous species of maize in Mexico. That has been established.

So one of the most significant concerns regarding GMOs relates to potential loss of bio-diversity, and concerns over the loss of bio-diversity include about three issues. First, the question of super-weeds. Secondly, the contamination of wild gene pools of major crop plants. And third, herbicide-

resistant plants may have impacts on wildlife. The use of GM herbicide-tolerant crops could result in severe reductions in weed populations with subsequent negative effects on seed-eating birds.

Then another issue that scientists have identified related to GM environmental effects has to do with the use of *bacillus thuringiensis* - BT. Have you talked about that here before? BT is a biological pesticide and I think it's definitely one of the pesticides that organic farmers are able to use on their crops because it's not chemical and it doesn't persist. Well, some species of GM plants have been modified to include genes such as BT to increase their resistance to major insect pests. The proliferation in transgenic plants of BT and its accumulation and persistence in soil is causing a hazard to non-target insects and potentially enhancing the selection of toxin-resistant target insects, and there is already some evidence of BT-resistant insects developing.

There are two problems that I can see immediately from that. First of all, as BT-resistant insects evolve, BT becomes less useful as a herbicide, meaning that farmers will have to go back to using chemicals, which have less beneficial effects. Secondly, of course, just the proliferation of BT because of its existence in GM crops means it's more likely to be toxic to a wide range of insects that are useful insects.

And the last thing I want to talk about with you from the Royal Society report on environmental effects has to do with GM fish and essentially, they pointed out that fish farming is rapidly expanding in Canada and has been accompanied by large numbers of escapes of cultured fish and natural spawning by escaped cultured fish, at least in BC rivers. Potential risks arise from the interaction of cultured and wild fish when farmed fish escape. These risks include predation, competition for food, space and mates, and the transmission of disease and parasites between cultured and wild fish. These risks, in part, led to a recommendation from the Royal Society to place a moratorium on the rearing of GM fish in aquatic net pens. So if you're looking at the possibility of GM fish in PEI, you might want to take a close look at what the Royal Society identified as potential problems with them.

**Richard Brown (L):** What about tanks. Like (Indistinct) on PEI, and they're doing GM stuff, I

think.

**Michelle Swenarchuk:** The Royal Society recommendation was basically make sure they can't escape, so that was specific to fish. Then they have the overall recommendation I'm about to come to about the regulatory system. In other words, if you could prove that they were safe, then you should still raise them - not in net pens, yes.

**Richard Brown (L):** Okay.

**Michelle Swenarchuk:** Okay, so those are, very briefly, some of the environmental and health issues that the Royal Society identified with GMOs in Canada.

**Wilbur MacDonald (PC) (Chair):** Pardon me. Before you move on, what is the relationship of the Royal Society with the Canadian Health Agency, or is there any relationship there at all? And what is the Royal Society?

**Michelle Swenarchuk:** It's an independent body of scientists - very senior scientists - independent of government, but it set up this panel and conducted this review at the request of Agriculture Canada and Health Canada, so this report was done for the government, but by independent scientists, and they had quite a lot to say in the report about the need for independence in assessing these things.

**Wilbur MacDonald (PC) (Chair):** And what year was that?

**Michelle Swenarchuk:** 2001.

**Wilbur MacDonald (PC) (Chair):** And since that time - has it been since that time the Canadian Health Agency and CFIA have agreed to have - I get all mixed up - in these genetically modified organisms?

**Michelle Swenarchuk:** Approval?

**Wilbur MacDonald (PC) (Chair):** Yes.

**Michelle Swenarchuk:** Ottawa started issuing approvals in about 1995.

**Wilbur MacDonald (PC) (Chair):** About 1995. So this Royal Society then, that's come out in about

2001?

**Michelle Swenarchuk:** Right.

**Wilbur MacDonald (PC) (Chair):** What influenced them? Why has it not influenced the Canadian Health Agency? I'm just trying to get the connection so I can understand it.

**Michelle Swenarchuk:** Yes, yes. It has had some effect, but not at the most essential level that I was about to talk about. So after the report came out, the government of Canada issued an action plan in response to this report and has, indeed, followed some of its recommendations, mostly about making its approval system more transparent, more available to the public.

It's important that the government of Canada did not contest the scientific findings of the Royal Society, so it's not as if the government thinks they've got it wrong. But what the government hasn't changed is what I wanted to talk about next, which is the essence of the regulatory system itself. And it's my view - and really, the view of the Royal Society - that we can't rely on the regulatory system as it's now devised and as it operates in Ottawa. We can't rely on it to assure us that these crops are safe because the crops aren't tested, and I'll just come to that in a minute. Yes?

**Wilbur MacDonald (PC) (Chair):** Eva has a question.

**Michelle Swenarchuk:** Sure.

**Eva Rodgerson (PC):** We had an earlier presentation by the Food Standards Agency, and I don't know if there's more than one Royal Society, but there's two quotes here that say in 2002, the Royal Society updated its earlier report on GM plants for food use and human health. It concluded there's no evidence that the presence of GM foods cause allergic reaction. And then it says this also poses no significant risk to human health in eating GM and DNA will have no ill effects, so I'm just wondering are there two Royal Societies?

**Michelle Swenarchuk:** I'm not aware of that updating. But in the first report, they said we don't know whether allergic reactions are caused because the question has not been studied, so that would be consistent.

**Eva Rodgerson (PC):** This says it was updated in 2002. I'm (Indistinct).

**Michelle Swenarchuk:** Well, there was - I'd like to look at that.

**Eva Rodgerson (PC):** Okay.

**Michelle Swenarchuk:** I'm not sure it's the same report. But as I say, it's consistent because what they said is we need to study the effects of these products and we're not studying them now, so we can't tell you whether they're safe or not.

**Wilbur MacDonald (PC) (Chair):** Go ahead.

**Richard Brown (L):** The Royal Society said, is it canola drifting genetic pollution?

**Michelle Swenarchuk:** Yes.

**Richard Brown (L):** So the government - the current government - is presently out to tender for an RFP for a bio-diesel plant and wishing to grow 30,000 acres of canola on PEI, so should we hold off until . . .

**Michelle Swenarchuk:** Well, I would. One other paper on that question of genetic flow is . . .

**Richard Brown (L):** Because canola seems to be the worst, is it, for genetic pollution?

**Michelle Swenarchuk:** Well, I'm not an agrologist, so I won't answer that, but what I would recommend to you is - and I think you've had some discussion already - Dr. Ann Clark, who's in Plant Agriculture in the University of Guelph, writes and is a scientist and a crop scientist and follows this question. She's written a paper called *GM Crops Are Not Containable*, and she's reviewed the science on that point. I think she may be interested in coming to speak to you at some point.

**Wilbur MacDonald (PC) (Chair):** Yes. I understand she's coming.

**Michelle Swenarchuk:** Right. And her conclusion is, essentially - and this makes sense. I mean, we all know that pollen blows.

**Richard Brown (L):** Yeah. I learned that, at least, from Leo.

**Michelle Swenarchuk:** That these plants are, in fact, uncontrollable, that the gene flow happens.. Let me just quote from her paper.

**Richard Brown (L):** So having 30,000 acres of canola we're putting ourselves quite at risk.

**Wayne Collins (PC):** Mr. Chairman, (Indistinct) clarify a little bit. You can grow canola to a sufficient yields conventionally and still contribute to the raw product of a bio-diesel plant.

**Michelle Swenarchuk:** Right.

**Wayne Collins (PC):** If you just grow it conventionally.

**Michelle Swenarchuk:** Right.

**Richard Brown (L):** That would be a good recommendation of the committee that non-GMO canola must be a part of the RFP.

**Wayne Collins (PC):** It doesn't have to be one and not the other. You can grow it conventionally.

**Richard Brown (L):** No, but that would be a good suggestion for the committee, then. I'd move a motion at the end of the meeting that the RFP should include for the bio-diesel plant that non-GMO canola will be only considered. Would you agree to that?

**Wayne Collins (PC):** I don't think that this committee's at the stage right now to make those motions. I don't think that's quite where we're going on the bio-diesel plant.

**Wilbur MacDonald (PC) Chair :** Let's not get off the subject.

**Richard Brown (L):** But if that's a condition . . .

**Wayne Collins (PC):** I just wanted to point out to you that you can grow canola both ways.

**Richard Brown (L):** Really? Well, let's grow non-GMO canola.

**Wayne Collins (PC):** That's a simple situation.

**Wilbur MacDonald (PC) (Chair):** Okay, let's let Michelle continue.

**Michelle Swenarchuk:** I have one copy of this paper by Ann Clark, and I'll leave it with you.

**Wilbur MacDonald (PC) (Chair):** Fine. We'll have it copied and sent to the committee.

**Michelle Swenarchuk:** Sure, okay. Oops, time is passing, so let's go back to the regulatory system of Canada. And what the Royal Society said of it is essentially this - and as you heard before - GM crops are approved in this country on the assumption that they are substantially equivalent in the risks they cause to the conventional crops from which they were derived.

The Royal Society looked at that and said essentially, it's inappropriate to assume that a GMO crop has the same risks attached to it as the conventional crop from which it was derived . If the Government of Canada tested each of these crops appropriately long term with testing protocols that met peer review requirements in science and if at the end of that testing, one saw that the risks associated with the crops were substantial equivalent to those of the conventional crops.

Then the Royal Society said there might be grounds to approve them. The Royal Society says that would be an inappropriate precautionary approach to these crops, test them, don't use this idea of substantial equivalence as it is now used by the government to essentially exempt these crops from testing. So instead of saying, is GM canola about the same in its risks, the environment as conventional canola, let's test it and find out, no we don't do that. This concept of substantial equivalence as an assumption was developed in OECD countries, Organization of Economic Cooperation and Development countries in the early 90's really for the purpose of introducing GM crops without testing.

So we don't test them for their food impacts. We don't test them for environmental impacts. We actually can not have any confidence that they are safe. As regards to the fact that they are now throughout the food system and haven't been tested, what the Royal Society says in general I think applies to that problem. Again we don't know whether people are having allergic reactions to GM food in the food system. We don't know if there are toxic to some people. Not necessarily to everyone, but whether it's vulnerable populations, children, elderly, we just don't know. It doesn't mean we can

say those reactions aren't happening, we can't assume that there are positive results if we don't have evidence because we never looked at the problem. That's really the situation that we have in this country with regard to GM effects both on the health side and on the environment side.

On the environment side we have though clear evidence of a very significant environmental effect which is the contamination right across the prairies flowing from these crops into other crops, conventional crops and into wild areas.

So essentially if we were to do what the Royal Society advised which is test them to find out if the risks are substantial equivalent than we'd be in a position to know what their effects are, but we're not doing that. So as an environmental lawyer, I just frankly don't have any confidence in the approvals that are given because actual effects haven't been looked at and I think that's particularly unacceptable now that we can see the very wide spread effects of the crops in the prairies.

And that brings me to my last point.

**Wilbur MacDonald (PC) (Chair):** Can we just ask a question before - when the canola which seems to be the worst - it's the what do you call that, the blossom that blows.

**Michelle Swenarchuk:** Pollen.

**Wilbur MacDonald (PC) (Chair):** Pollen which - when you say it contaminates other crops. Does it change them too? Does it change them dramatically or what happens to - suppose it gets into a weed or we call them yellow weeds here, which is the main weed on PEI, I guess. What happens when it hits - when that - cross takes place there?

**Michelle Swenarchuk:** Ask Ann Clark that question. But first of all they show up when farmers don't want them and they are very hard to eradicate. And then of course somehow the farmer has on his or her land patented seed from Monsanto which he or she didn't buy and ask - that's Percy Schmeiser's situation and as I say, the technology use agreements that farmers sign to grow this stuff is related to the fact that this seed is patented so the farmer who gets volunteer patented canola plants growing on his or her land

may have a very substantial problem with Monsanto coming in and saying you know, you're growing our seed.

So I think there's a range of environmental effects and I think some of them are actually reviewed in Ann Clark's paper, so you can get more from that.

**Wilbur MacDonald (PC) (Chair):** Sure. That's fine.

**Michelle Swenarchuk:** Just on the legal effect though which is going to be my last point. It's not clear in Canadian law who's liable for genetic contamination from these plants blowing all over the place.

If you are a farmer and you keep a tiger on your land, a dangerous animal, and it escapes and kills your neighbour's cattle, you're liable for the loss of the cattle because you kept a dangerous animal. That's well established in law. But it's not clear whether this kind of contamination of your farmer's field makes you liable. If the neighboring farmer is an organic farmer and has GM crops blowing on, they can't sell their crop as organic. It will no longer be certifiable, so they have clear economic loss.

In Saskatchewan, as you may have heard, the organic farmers are now suing Monsanto for the proliferation of GM canola which has led them to say that they can't grow canola anymore because they can't keep it GM free, the GM pollen is just everywhere. As far as I know they're not suing their neighbour farmers, they're suing the ultimate producer which is the company, but that whole question of liability, I think has to be a real question of concern for any government that considers taking further steps with GM because the law is not settled here and people's rights really are affected by the fact that these crops as Ann Clark says, are non containable and can affect neighbour farmers.

**Richard Brown (L):** So in growing 30,000 acres of GMO canola on PEI, we're really putting at risk our organic farmers.

**Michelle Swenarchuk:** I really think that's correct. I don't think that's a heretical position. I think that's a very conservative approach. You can't contain the pollen.

**Andy Mooney (PC):** I want to throw one thing out. (Indistinct) farmers have 30,000 acres of GMO canola, you don't even know what's going to be growing and the thing is this biodiesel plant doesn't have to be based on canola. It could be soy, it could be many things, so -

**Richard Brown (L):** Yes but the press release said canola.

**Andy Mooney (PC):** I just wanted to throw a couple of (Indistinct)

**Richard Brown (L):** But no, it's a good discussion. I agree so we should settle a GMO canola right now.

**Andy Mooney (PC):** The fact that you come this far and you certainly know your topic.

**Richard Brown (L):** Are you going (Indistinct) organic farms?

**Wilbur MacDonald (PC) (Chair):** Let's Andy have the floor. Okay.

**Andy Mooney (PC):** Anyway I just wanted to ask a couple of questions.

**Richard Brown (L):** Government's already made up it's mind for GMO. Because they (Indistinct) .

**Andy Mooney (PC):** Whenever Richard is done. I'll certainly ask the question here, are you finished?

**Richard Brown (L):** Yes.

**Andy Mooney (PC):** Basically -

**Richard Brown (L):** She's not (Indistinct)

**Andy Mooney (PC):** No.

**Michelle Swenarchuk:** I am but he's - accept for his question, yes.

**Andy Mooney (PC):** Anyway, basically on the thing that you were mentioning volunteers, but your volunteer is basically just a crop. Like basically a potato volunteer is one that comes up the next year from the previous crop and you mentioned the risks of using BT and I'm not for or

against, I'm just asking some questions to get some debate going, but basically in a nutshell, when I looked into the possibility of growing genetically modified potatoes which we haven't and it's not on the Island here anyway, but basically in a nutshell what the company said is that they would not like to see a 100 per cent GM crops of any sort. Reason behind it is simply this. In a three year crop rotation, we're growing potatoes.

If we have a third GM potatoes with resistance to Colorado potato beetle, the logic behind it is simply this. If the Colorado potato beetle which is one of our biggest pests here, it kills 99 per cent of them let's say and you're concerned with a super bug well if you have 30 per cent of your potatoes that are GM, Colorado potato beetles moves from field to field. Theoretically they think you're going to get them with your conventional spray on one of the fields, you should lower the amount of spray material that you are putting on basically because you are using less on your 30 per cent - on your GMO crop.

Some of the things that you've mentioned as far as like the increase of herbicides in the US, but also in your statement you said there was tremendous increase in canola and soy production which would increase that naturally anyway even if they're only using a little bit, like I'm just putting some of the questions out there and Percy Schmeiser seems to be mentioned a lot at our presentations and one thing, myself, I don't know, the courts in three cases have found him - have sided on Monsanto's side that he claims there are some seed that blew off a truck or something and affected his field, while it ended up planted in even rows in 90 per cent of the fields.

**Michelle Swenarchuk:** Okay can I respond - do you want me to take more time on the Schmeiser situation.

**Andy Mooney (PC):** Sure.

**Michelle Swenarchuk:** I think first of all, it's important to keep in mind that the court - that Schmeiser won as much as Monsanto won at the Supreme Court of Canada because although Monsanto won the patented question, the court (Indistinct) Schmeiser of paying damages and cost to Monsanto and that's quite extraordinary. So the decision came down - Schmeiser didn't entirely



lose in the Supreme Court of Canada.

The second question about the amount of GM canola on his land - the figures that were excepted by a lower court judge for the amount of canola that was there were the figures that went up to the Supreme Court of Canada. And that's the way it is with an appeal. The highest levels of courts don't go back and retry all the factual issues. But it's pretty dubious that those figures were accurate and in fact they were independent studies of the amount of canola on his fields which were much lower than the Monsanto's figures that the court ending up accepting. So you know there's no question that some of the seed that he planted had come up along the roadside and was GM seed. But there's a lot of question about how much he actually planted, so I just think it's important to look at that case and be aware first of all that you know it kind of came down the middle.

Monsanto won what was important for them which was the perverse decision from the court that having a patent on the gene gave them effective control of the seed. That of course is contrary to the case that I argued in and that we won in before saying that we wouldn't patent higher life forms in Canada. So that was kind of perverse but they extended the patent which Monsanto had on the gene to the seed and that really what Monsanto won in the case. But in terms of relieve from paying damages and costs Schmeiser won big too.

**Andy Mooney (PC):** And I just wanted to let you know. I'm not attacking what you are saying, I'm just wanting to get more information because you have a tremendous history in this. I just want to put out one more scenario just for your personal opinion. If Prince Edward Island was a GMO free province and I'm going to stick to the potato industry which I know quite well. If Prince Edward Island was a GMO province - right now we buy in seed from other provinces. And I know there's no work being done on GMO potatoes at the present time but if a few years ago there was and maybe they are still volunteers on the go. So if we were a GMO province and as an example some of the processors do what they call an ELISA test on some of the potatoes that will identify GMO so they say.

I'm not going to get into names but let's say a producer was selling to one of the processors and this ELISA test shows up GMO and if we are a

GMO province, GMO free province what the devil would happen if this processor IF by chances it was GMO and it came in on a volunteer from seed from out of Canada. One thing right off the bat the federal government in - when you buy seed from of province you get a certificate with the seed in order for them to sell it that it's clear of virus and the whole nine yards, they don't test for GMO presently.

The ELISA test from what I understand is very inaccurate and in some companies use it as saying - I heard of a company that denied potatoes from someone said they were GMO well the ELISA test should basically - it just flag it so that the sample goes on to another federal lab to actually check. All I'm saying is this what terrifies me being a farmer is that if you're a GMO-free province, you mind your own business because markets are very hard right now as it is and something happens - somebody things you have GMO by the time you have proven yourself that you don't, you could pretty much be destroyed in the market place. As one farmer said to me goodness they probably won't set next to you in church you know that's how tough it is. It's just terrifies me on what can happen and you being a lawyer.

**Michelle Swenarchuk:** Well I think, I'm not going to give you a legal opinion of the top of my head, but I think what you -

**Richard Brown (L):** (Indistinct) .

**Michelle Swenarchuk:** The problem you've identified is exactly the kind of problem results from the uncertainty of liabilities. So I'm not sure who ends up getting liable for what in your situation. If someone is going to suffer economic loss, that's really what I'm saying to you is that really the - especially since you already have GMO's on the Island, you really have to look at this problem of where liabilities are going to lie because at some point, somebody is going to be nailed and the lawsuits are going to fly and it's going to be a problem. I think that's a good example of one.

**Andy Mooney (PC):** But that person may not - hypothetically, that person may not of even had a GMO product there to begin with.

**Michelle Swenarchuk:** But you say, you can have

that problem whether PEI is decreed GMO free or not because the mere fact that it's on the Island means that someone may have a shipment contaminated with it that they don't want. So you know you can already have that problem.

**Andy Mooney (PC):** Thank you.

**Wilbur MacDonald (PC) (Chair):** Eva.

**Eva Rodgerson (PC):** I understand earlier in your presentation that you said there is already proof that there's super bugs and super weeds?

**Michelle Swenarchuk:** I think what - I think super weeds, yes. There is already evidence of I think it's canola that is triple herbicide resistance. That is there are some plants that already - because of the cross breeding of transgenic canola plants, there are some volunteer canola plants that are resistance to three different herbicides.

**Eva Rodgerson (PC):** So do you know where that is - is that in this Royal Society Report?

**Michelle Swenarchuk:** Well I read from the Royal Society the proliferation of the weed problem across the prairies. So it's certainly, I think, accepted that there's a significant problem. I think that Ann Clark's paper refers to triple herbicide resistant.

**Eva Rodgerson (PC):** Yes, because we've been asking this question to different presenters and this is what happens -

**Michelle Swenarchuk:** She can certainly answer that one for you.

**Eva Rodgerson (PC):** She can answer that one.

**Michelle Swenarchuk:** Yes.

**Eva Rodgerson (PC):** But you said there's no evidence yet of super bugs, that you know of?

**Michelle Swenarchuk:** I don't know.

**Eva Rodgerson (PC):** Okay. That's all.

**Wilbur MacDonald (PC) (Chair):** Wayne and than Richard.

**Wayne Collins (PC):** Thank you, Mr. Chair. According to our background material, we have about 850 acres of canola being grown on Prince Edward Island, about 200 acres would be, I'm told GMO varieties, but over 600 acres are being grown conventionally. And you mentioned as well in Saskatchewan people do grow canola conventionally, right? So I just wanted to make that clear, but your group The Canadian Environmental Law Association, you've outlined quite a number of concerns you have about GMO's. Has your association launched any lawsuits themselves over the issue of GMO's or is that part of your association mandate in anyway.

**Michelle Swenarchuk:** It is part of the mandate. We are - I should of explained this earlier. We're funded largely by the Ontario Legal Aid Plan, so we represent people, low income people and environmental groups. We do law reform, we do public legal education. Our mandate says that our clients have to be Ontario based, we also do national level work, but we don't have clients in Saskatchewan, so other people are doing those lawsuits. So our involvement has been on the regulatory end attempting to persuade the government to fix the regulatory system and then the bio-safety negotiations at that end.

**Wayne Collins (PC):** We have, I believe, still to come here, a representative from Health Canada and that's the arm of - I'm told the CFIA looks after the side, the animal feed and things of that nature, but as far as human testing is concerned I'm told it's under the umbrella of Canada.

**Michelle Swenarchuk:** Right the testing is, but CFIA approves all the products. All the approvals come from there.

**Wayne Collins (PC):** Yes, until there's some kind of joint work with them, but you can help is under the heading of Health Canada, right.

**Michelle Swenarchuk:** Right.

**Wayne Collins (PC):** What do you think should be the proper question to be poised to those people when they arrive here. I'd like to pick your brains a little bit since you say you've been working on this regulatory side for quite sometime.

**Michelle Swenarchuk:** Well actually the document that I left with the Clerk is my attempt to

draft a model approach to regulating GMO's. And basically I drafted it to incorporate the Royal Society recommendations. So to me the question is - to me the requirement is that they stop using substantial equivalence as an assumption and an exemption from testing and the requirement is that the products be tested for safety impacts with the advice of independent scientists. So you know that's the question for them. Why aren't you testing?

**Wayne Collins (PC):** And do you go so far as to describe the kind and what would be the minimum testing and such?

**Michelle Swenarchuk:** I don't, for a couple of reasons. First of all, I'm not a scientist and secondly, even the Royal Society didn't - you see biotechnology is one word for thousands of different technology and thousands of different potential products. So the kind of protocol, testing protocol for GM canola for allergy would be different than GM canola for toxicity would be different than corn *et cetera et cetera*.

So what the Royal Society said about that is that the government should develop appropriate protocols for testing each of these products with independent scientific advice, with peer reviewed scientific advice and by the way the government scientists actually admitted to the Royal Society that they find themselves in a conflict of interest in giving these approvals because of course, the Government of Canada is a huge funder of biotech products. And you know certainly that's our assessment that and it was the Royal Society's assessment that there's a clear conflict of interest amongst government scientists because they work for the government that basically wants these products.

So the idea that the testing protocols and the testing experiments would be conducted with maximum independent scientists was an important part of what the Royal Society said too.

**Wayne Collins (PC):** That issue of conflict of interest sounds like the basis for a possible lawsuit against the federal government, wouldn't it?

**Michelle Swenarchuk:** Could be. It's not an easy kind of case to prove, regulatory negligence. I think it would be nice to try, but it wouldn't be easy.

**Wayne Collins (PC):** Okay, thank you.

**Wilbur MacDonald (PC) (Chair):** Richard.

**Richard Brown (L):** Thank you, Mr. Chairman. Well we've learnt today that our organic farmers are at risk of genetic pollution by GMO canola. So if one field is growing GMO and another is grown with non GMO and the non GMO - could the non GMO farmer be sued by the GMO drifting into his field.

**Michelle Swenarchuk:** It's Monsanto that gets very unhappy when its patented seeds are growing on fields for which they weren't purchased.

**Richard Brown (L):** So we are also putting our farmers at risk here than if we're saying some will grow GMO canola and some will not grow GMO canola. If they get seed from the non GMO fields, Monsanto will probably come after them?

**Michelle Swenarchuk:** They'll likely hear from Monsanto, yes.

**Richard Brown (L):** So it's quite a risk?

**Michelle Swenarchuk:** I think it's a risk.

**Wilbur MacDonald (PC) (Chair):** Cletus first, Cletus and then Andy.

**Cletus Dunn (PC):** Thank you very much, Michelle. It's very informative. I guess my question is that we here on Prince Edward Island have a million acre farm. We grow over 110,000 acres of potatoes. An issue that has been going since probably the early 90's is that amount of herbicides, pesticides and insecticides that we use here and the environment impact that it has especially on our groundwater where 67 per cent of the people on PEI depend on groundwater for their water supply. Looking at who you represent, the Environmental Law Association. It must - because we're being told or being led to believe that GMO will solve some of our - those other environmental issues and it must be a difficult position for you to be in and sit in the middle here trying to determine if we can actually reduce the effort on one side by using another product that's going probably have other concerns.

**Michelle Swenarchuk:** Yes, if I had evidence that

herbicide use, pesticide use overall decreases with the use of GM crops, I'd say so, but I don't think that's been demonstrated. I think the overall picture is as I said earlier, with some crops in some situations herbicide use is less, with some it's the same as with conventional products and in some situations it's more. So I think the jury is really out and I don't think that we can assume that pesticide use, herbicide use declines with the use of GMO crops.

**Cletus Dunn (PC):** You don't have to answer this question. If it does show a reduction. What side of the fence are you on?

**Michelle Swenarchuk:** Well if it shows a reduction in herbicide use than that's an argument, that's a positive thing for GMO's and I think the - what we actually need is the testing that would give us the full picture of all their environmental and health effects and then we'd be in a position to make good decisions about them because we don't have that kind of picture. As some farmers have said you know, we just started on this huge experiment and it's out there and it's having affects and we are not in control. So I would say if it could be demonstrated that it reduces herbicide use, that would be an argument in favour of GMO's for sure. But it's not demonstrated.

**Wilbur MacDonald (PC) (Chair):** Andy.

**Michelle Swenarchuk:** I've kind of overrun my time here.

**Wilbur MacDonald (PC) (Chair):** That's okay. It's quite interesting.

**Jim Bagnall (PC):** Trying to get away from us?

**Michelle Swenarchuk:** I'm just thinking of other people who want to talk to you.

**Andy Mooney (PC):** Two quick points. One is like basically when you set down and look at some of the conventional ways of plant breeding and where they're coming up with new strains of potatoes and things. With some of the scientists explains some of the conventional methods which seem kind of alien when you are not into plant science as well. It's - they don't seem all that different from when GMO - except moving different traits from different families I guess.

But the other point I just want made as well, Richard had mentioned lawsuits between farms with cross contamination and the whole nine yards. One thing as a conventional farmer on the Island here, the year that the A2 blight hit that was just devastating for the province here. We've had like gardeners and things that wanted to grow everything completely organic and they didn't put any protection on for blight and it was a wick that draw tremendous hardship on a lot of farms and there was never any complaints launched on these gardens and things. The farms just had to step up their protection on their crops.

So I just want that known as well. I mean it's - and I'm in a quandary is what's the best - I know if - and the only reason why I'm bringing all this out today is because you're one that seems to have a fair bit of knowledge on this and it's 'darned if you do and darned if you don't' with some of the GMO products that they are coming out with. Look on the potato side, and actually to be honest, truthful, I've even visited a few farms in the Ukraine that Monsanto had potatoes on and their logic behind what they were doing there is they thought that in Ukraine where the people starve at one time.

They all have the right to own a little plot of land even the ones from the cities and on the weekends they look after their gardens and from one weekend to the next the Colorado potato beetle annihilate their plants. They go and there'd be nothing but stocks left and the thought than was that if they had a variety of potato that had resistance to this. It would ensure them having something left because they just didn't spray or they sprayed too heavy. I just wonder just with this debate - sometimes when I talk to constituents and they bring it up it's either one or the other, we have to find ways to reduce the amount of sprays and herbicides and pesticides we use and I'm just wondering sometimes you have to try to find whatever tools are available to do it.

**Michelle Swenarchuk:** I'm not sure this is the tool to do it.

**Wilbur MacDonald (PC) (Chair):** Richard.

**Richard Brown (L):** I just want to make one thing clear. We're talking, you know, cross-pollination and, you know, letting nature, that's nature deciding cross-pollination. Nature will decide if I'm going to pollinate with this potato and that potato.

Nature will decide what genes will be taken from each to make that new potato. GMO, we are deciding; not nature. We are. We're pulling the nucleus out of that cell, pulling the chromosomes and putting new ones in and God knows where those chromosomes are coming from. That's my problem. Like we're making it look like, oh, GMO, it's nice. The plants will reject it or human beings will reject it. We're in the nucleus of the cell. We're taking nature on. We're taking nature out of the process. I'd rather see nature decide what chromosomes or what genes it will combine into a chromosome to make a new species or a new potato or whatever.

**Andy Mooney (PC):** And whenever you get your facts down straight, I'll sit back and listen to you but on the potato side, we don't use pollination for breeding potatoes. It's just not the process we're using.

**Richard Brown (L):** No, no.

**Andy Mooney (PC):** I mean I'm saying here . . .

**Richard Brown (L):** So you're . . .

**Andy Mooney (PC):** All I'm saying is the bottom line is on this debate there's some statements being made out there that no matter what you're growing, it's going to cross-pollinate with every other plant known to man. I mean it has to be in the same family and the bottom line is if you're growing GM canola - and I'm not defending one over the other - but it's not GM canola is not going to cross with potatoes. It's not going to cross with grain and it's going to cross with other canolas or plants in that family. I just want that . . .

**Richard Brown (L):** So you're saying that they can't take a gene out of another plant and force it into . . .

**Wilbur MacDonald (PC)(Chair):** I think what we're getting into is a little debate and Michelle, you've come all the way from Toronto, right, and we appreciate that very much. And I must say when you started, you said: I dare mention the word, "Toronto", but Prince Edward Island and Toronto has had a very distinguished relationship.

A number of years ago, not very many, we went up to help clear your streets. Do you remember that?

**Michelle Swenarchuk:** How could we forget.

**Wilbur MacDonald (PC)(Chair):** But also your mayor, your former mayor came down and offered us 500 trees, I think it was.

**Michelle Swenarchuk:** Is that right?

**Wilbur MacDonald (PC)(Chair):** But I don't think they ever arrived so when you go back to Toronto, will you tell them there to get those trees down here? We want them.

**Michelle Swenarchuk:** I'll do that.

**Wilbur MacDonald (PC)(Chair):** And thank you so much for coming.

**Michelle Swenarchuk:** Thank you.

APPLAUSE

**Part III - Cooper Institute: Marie Burge**

**Wilbur MacDonald (PC) Chair :** I see that we do have Marie Burge from the Cooper Institute. Marie, would you like to come up to the table please. I see you have two people with you.

**Marie Burge:** Yeah, clones. We were cloned eh.

**Wilbur MacDonald (PC)(Chair):** You're cloned.

**Marie Burge:** We needed some real experiments here.

**Wilbur MacDonald (PC)(Chair):** Would you like to introduce the people with you?

**Anne Wheatley:** I'll do that. My name is Anne Wheatley and I'm with Cooper Institute. Marie Burge and Leanne MacLeod are also - we're going to make the presentation together today.

**Wilbur MacDonald (PC)(Chair):** Okay so you people proceed then.

**Anne Wheatley:** Okay. I realize we're running a bit late.

**Wilbur MacDonald (PC)(Chair):** And I'll try and get our panel to wait until the end of your presentation to ask questions.

**Anne Wheatley:** Okay.

**Wilbur MacDonald (PC)(Chair):** You see our microphones are not loudspeakers. They're just to do recording, okay.

**Unidentified:** We'd like to hear though.

**Wilbur MacDonald (PC)(Chair):** Sure, okay, so you people speak up then. Maybe Father, you can come up closer. Okay, go ahead, dear.

**Anne Wheatley:** Alright, thank you. Cooper Institute welcomes this opportunity to make a presentation to the Legislative Assembly Standing Committee on Agriculture, Forestry, and the Environment. We hope that our submission will give some indication of a citizen's approach to genetically modified organisms in PEI agricultural production.

Cooper Institute was founded in 1984. It's a development, education, and community development institution, which works on global and local development issues. The members of the collective, some of whom are here today, represent the following sectors: development educators, non-governmental organizations, community and organizational development animators, health care workers, university professors, professional church people, farmers, trades people, unionized and unorganized workers, people on low incomes, people who are under-employed or unemployed homemakers and parents.

Well, for the past 21 years, Cooper Institute has worked with many groups in the area of research, organizational development, and community development. In October and November of last year, Cooper Institute, in partnership with the Latin American Mission program, helped citizen hearings on food issues in O'Leary, North Milton, and Poole's Corner. Sixteen local citizens in those areas prepared and presented briefs on a wide range of concerns about the need for ecologically sound production practices and access to healthy food. Only two people had been requested to address genetically modified organisms in relation to food production and food safety; however, the great majority of the presenters and approximately 100 participants took common positions on the issue of genetically modified organisms and related issues.

While Cooper Institute has a respect for science and has some knowledge of the science of GMO, we put a great deal of emphasis on the value of community wisdom. It's our opinion that governments have adopted an unwarranted reverence for every word that comes from the mouth of science. In recent decades, a number of unfortunate public policies and programs have been legislated against the intuition of the community. On the other hand, government has sometimes been pressured to adopt some people-friendly policies and practices.

Our presentation today will emphasize three areas of concern: growing corporate control of science, the need for exercise of precautionary principle, and PEI potential as a genetically modified organism-free zone.

Now Marie will continue.

**Marie Burge:** I'll address, first of all, the growing corporate control of science. And you're going to hear all the way through this our quotation from the presentations we heard at the citizens' hearings last fall because those are the voices that are really important, I think, in our presentation.

One of the most obvious concerns which we have heard from Prince Edward Island's citizens comes from their knowledge that corporations are gaining more and more control of scientific experimentation. In recent years, governments have withdrawn from agricultural testing and inspections to such a degree that the majority of this essential work is carried on in the private sphere. Many universities depend very heavily on large transnational corporation for their research funding. Food production and food safety research is often sponsored by the very industries that are poised to gain from results favourable to their interests. These corporations are chomping at the bit to establish GMO technology and to take full control of the seed industry.

An indicator of how eager are the transnational corporations to own and control genetically modified organisms is their frenetic takeover of other large corporations. By various styles of mergers and acquisitions, they are buying up seed in bio-tech companies. Monsanto spent \$8.5 billion to get control of some of these companies. DuPont put over \$9 billion to take over the world's largest seed company; that is, Pioneer Hybrid.

Dow has bought Cargyle Seeds, North America. Monsanto seed technology alone was responsible for over 90 per cent of the GM crops produced last year. In other words, Monsanto and the other giant corporations are aggressively pursuing their goal of effective, irreversible control of the food system. This means controlling the seed; therefore, controlling the producers and therefore controlling the lives of citizens who consume food.

At the citizens' hearing on food issues in North Milton on October 26, 2004, a presenter made the following dramatic statement. Even if GMO were proven to have no harmful effects, even if GMO were proven to contribute to human health, even if GMO were proven to protect and enhance the environment, we're still going down the wrong road because GMO are the ticket for corporations to take permanent ownership and control of our food system.

Questions we hear often in the community as we go from one end of the Island to the other are the following: What's the rush? What is this sizzling love affair between some governments and corporations? Why do some governments fall over practically in submission when corporate sponsored scientists make their weighty statements? Why do some governments and corporations, corporation allies listen only to scientific conclusions that suit them? Many of these scientific conclusions, by the way, we find have taken on a tone which is much too absolute to be truly scientific.

Why do some governments, so many governments waive their mandate to govern the corporations and neglect to search out the real interests of the citizen? Why do PEI bureaucrats sometime come off as apologists for corporations like Monsanto? Why do some farmers come out in the media defending the interests of the very trans-nationals, which as a sector, has brought such large number of Island farmers to ruin? Why when the good of the community is at stake are citizens' concerns so easily labelled "fearmongering"? Why is there such a scarcity of public funds to support citizens' study of the GMO issue?

The use of GMO technology is, first of all, a citizen issue. It is citizens of this generation and the next who have to live with the new GMO world. At least we should have access to plain language information and access to the means of influencing

public policy around this issue. If GMO technology becomes more prevalent, it has the potential of radically changing our lives, our daily lives. As citizens, we deserve ample opportunity to make informed choices. We need to have governments recognize that the GMO issue is big; basically, an issue of democracy. Governments need to find ways to hear the voice of the community and to understand what citizens are saying and to actually recognize the wisdom of the community. Hopefully, the hearings that you're hearing right now are part of this process of actually hearing from the community. We hope so.

The next issue that we want to address is the need for exercise of the precautionary principle. When we were preparing this submission, a man came into our office and he saw the title of this section and he said: What is the meaning of that - precautionary principle? Our reply was pretty smart, I think - was it means before you take a step, look down and make sure you know what you're stepping into - not a bad suggestion for people who live on livestock farms. And then he said: Oh yes, look out for the banana peelings under your feet.

We are proposing that before we jump unto the GMO path, we need to have reasonable assurance of safety. Now according to Daniel Schulman, whom you heard earlier, that means that we need that assurance over two or three generations. So I think we have to go back to that really important point that we heard earlier this afternoon. This isn't something that by next December we'll have this tested. He said - and we believe - it's two or three generations that we have to look at so this rush that we're on is totally inappropriate.

Another person making presentations at the citizen hearings said: In the 21<sup>st</sup> Century, new technologies are outstripping society's ability to fully review their safety and enact legislation to curb their excesses. In view of this time gap, I urge - she said - citizens to insist that governments err on the side of caution rather than granting uncontrolled license to corporations.

There are, however, some scientists who promote precaution themselves. They tell us that careful examination of the GMO path, the one we are on, that that careful examination is really essential because neither the scientists nor the bio-tech

industry nor the industries' lawyers nor governments can possibly be totally clear about what that path is. They are not sure what GMO technology is now and they certainly do not know what it could be in the future. David Suzuki, a well-known geneticist, environmentalist, and social justice promoter questions the fast-track science he's witnessing among his fellow scientists in relation to GMO. He goes so far as to call it shoddy science. He points out that real science progresses by proving many hypotheses wrong over and over again. Instead, in their rush to respond to corporations' desire to commercialize technology, many pro-GMO scientists are prematurely claiming their hypotheses to be true rather than going the scientific route and take their hypotheses and seeing if they can be proved wrong. This is bad science. David Suzuki says: It grieves me as a geneticist to have to say that I am appalled at the way my fellow scientists have rushed to proclaim the enormous economic promise of genetic engineering with almost no serious discussion about the alternatives or enormous potential cost. I am a critic, he says, not of genetics but of my fellow scientists and the way they have been blinded by the hype and the enormous promise of money.

**Anne Wheatley:** I'd like to talk now a little bit about the potential of PEI becoming a GMO-free zone. When citizens have an opportunity to debate the issue of genetically modified organisms, they have little problem seeing the possibility and the advantage of PEI, of Prince Edward Island becoming GMO free. They understand that being a small, manageable jurisdiction, and being an Island provides perfect political and geographical conditions for such a direction for PEI. GMO-free PEI should be good news for producers. In the world of supply and demand, there is an increase in the number of countries closing their doors to GMO products. We have already heard from potato processors here on PEI that they will not deal in GMO potatoes. We have already heard - sorry - at the same time, new markets for organic products are increasing. A commitment to organic farming is incompatible with the growing of GMO crops. Even at this stage of a small, GMO-based production, the livelihood of PEI organic farmers is under constant threat because of the vulnerability of their crops to contamination. This is a critical situation.

PEI could look at Zambia as a shining model for the world. In spite of their needs of food supplies of every kind from wherever they can get it, they have opted to be a GMO-free nation. If Zambia, a country under great economic stress can make this stand, why couldn't we with all our resources create a GMO-free PEI for this generation and for the future.

Here is what some of the other presenters at the citizen hearings on food issues said about this issue. One said: I believe that from the point of view of the environment, agricultural marketing and public health, the banning of GMO crops in this province will turn out to be a positive, long-term investment. I call on citizens to urge the provincial government a matter of the highest priority to declare Prince Edward Island a GMO-free province. Another said: Making the Island a GMO-free zone will generate interest all around the world. It will be seen as a bold and courageous step. And yet another said: The good news is that it's not too late to take back the reins of control over our food system and even better news is that Islanders are quickly becoming aware of the seriousness of the situation and will support the government on this issue. There is no more urgent issue facing us, no greater legacy a government can leave than to take up the challenge and demonstrate the kind of courage and leadership our present situation clearly demands.

In conclusion, Cooper Institute urges the standing committee to recommend strongly that the Government of Prince Edward Island begin immediately the process beginning with the moratorium for a long-term policy of making PEI a GMO-free zone.

Thank you very much for receiving our submission and for holding these hearings.

**Wilbur MacDonald (PC)(Chair):** Thank you very much.

APPLAUSE

**Wilbur MacDonald (PC) Chair :** Eva, some questions.

**Eva Rodgerson (PC):** I'm wonder. I know Wayne talked about it earlier. Are you talking just banning GMO foods that are presently on the shelf as well



as growing them, just for clarification?

**Marie Burge:** Well, we're talking particularly about growing them. We're talking about agriculture that's here. But we would want to go beyond that as well. Like our concern is about production on Prince Edward Island when we say GMO free. But the next step to that is then the discussion of labeling that we would make demands about labeling as well. That's, we haven't addressed that.

**Eva Rodgeron (PC):** So your main thing is not about food safety. It's about . . .

**Marie Burge:** Let's start at where we can start it and control it for sure. But I think that government and health institutions have an obligation also as time, you know, now to advise people what they're eating. Like I want to know all of the different things and then I can make some decisions about that after. And I think the point was made here earlier this afternoon it's a decision that's really hard to make. I think it was, Wayne, you said that there's such a high percentage of food that we now have on the shelves.

**Eva Rodgeron (PC):** And medicines as well.

**Marie Burge:** Exactly.

**Eva Rodgeron (PC):** This is where I'm trying to differentiate with the different groups. Is it a concern? Like some of them come out and talk a lot about food safety. So if it's food safety, you know, there's a big aspect of this. Then there's a much bigger task than just not growing GMO foods, probably a bigger task than not growing GMO foods here. So I guess that was just a question.

**Marie Burge:** It's certainly one, making GMO-free Island for production is within our power for sure. It's in our immediate power - immediate. It's not something that we have to wait and work out with, you know, with labeling regulations and so on, which we really need to have. Like our concern would cover both and so would the citizens that we talk to. Like we talked a lot about the very little access we have to food that we know is safe and we do have a lot of food on PEI that we know is safe food.

**Eva Rodgeron (PC):** Well, the things that all . . .

over the years and I think of my husband with mussels, always ate mussels. One night he ate three - just violently ill. We have no way of knowing yet what caused that. My daughter-in-law ate kiwi fruit, you know, we thought that food was healthy. She was ready to have her first child but she didn't, pretty near didn't survive. I know people that get stung by a bee. Like we've got so many of these things to deal with. It's got to be a real task to define what is doing all the things that already have been in place for years?

**Marie Burge:** Well, thankfully, we do have other institutions besides the PEI Government working on that but it may be slow but certainly, Canada Health Agency has a big division now that's looking carefully at health issues in relation to food. But I think it's important for us to be able to say, we, at least we know that what's grown here is GMO free.

**Eva Rodgeron (PC):** And one statement that I think in the earlier part of the presentation which seemed to stand out more was the fear of corporate control. That seemed to stand out almost equally or more than the fact of . . .

**Marie Burge:** Well, they go hand in hand. This is one other aspect of corporate control that we're seeing happening but at a rate that we've never seen before. Like we've seen corporate control from the perspective of corporations taking control of the retail sector or the transportation sector. That's going on all the time. This one has a speed to it that is really frightening.

**Eva Rodgeron (PC):** Thank you.

**Wilbur MacDonald (PC)(Chair):** Wayne.

**Wayne Collins (PC):** Miss Wheatley, I agree you in your statements saying that were Prince Edward Island to declare itself GMO free, you know, a statement heard far and wide and, obviously, the interest in this community, it's pretty clear how great the interest is in this topic. But regarding the advantages of a GMO-free Prince Edward Island, I wonder if you could expound on that a little bit for us because I'm having a little difficulty understanding where the economic advantage would be. Now we hear up and down the east coast, the organic marketplace is insatiable and what have you but I mean when you consider that our major crop right now, potatoes, is GMO free

and we're having a dickens of a time finding markets for our potatoes right now, where would the economic advantage be for the Island's agricultural industry?

**Anne Wheatley:** I think what we've heard is that it would open up the potential for increased organic farming, more production and better marketing possibilities for the organic sector and that's one of the ways it would be an advantage to be GMO free.

**Wayne Collins (PC):** Not necessarily organic potatoes though but it would be organic all, any other crops.

**Anne Wheatley:** And the flip side of that is that having GMO crops grown on PEI really puts that industry at risk, that farming sector at risk.

**Marie Burge:** We've had people declare that if PEI were declared and known world-wide as GMO free that our doors would be broken down. I'm not sure about potatoes because . . .

**Richard Brown (L):** You mean if we had enough crops our doors would be broken?

**Marie Burge:** That's a whole other question because you've got a question of production gone wild with no control on anything so there's a whole other . . .

**Wayne Collins (PC):** I agree it enhances the Island's green marketability, if you will, out there. There's no question about that.

**Marie Burge:** But also, like in Europe and a lot of countries throughout the world, people are much more aware of this problem than we are and they've been working on it for a long time and they really are looking for and making demands like that.

**Wayne Collins (PC):** When you consider right now that we have I think it's 8400 acres of soybeans that have been modified to be tolerant to a herbicide. Of the 3,000 acres of corn right now I think between 1,000 and 2,000 acres are BT corn and when it comes to canola, there's only about 200 acres of canola out there right now that are GMO varieties. And that, to our knowledge anyway, this committee's knowledge, is the extent of our GMO participation at the moment in

agriculture on PEI. Take all that out of the mix and tell me how we're going to be at an economic advantage.

**Marie Burge:** Advertise it. Like you, there have been examples of what the PEI Government has done in terms of advertising, especially potatoes.-

**Wayne Collins (PC):** Food Trust.

**Marie Burge:** Yeah. So as far as we're concerned, and the people we have heard speak to us, is that we can claim that as a - we would be like Zambia and have that courage to say: We're GMO free and who wants GMO free products? I mean it's not just going happen by saying, oh well, we're GMO free. We do the aggressive marketing of our Island as a GMO-free Island.

**Wayne Collins (PC):** Again, my point is our major product is GMO free, our major agricultural product.

**Marie Burge:** It's over-produced. We have at least . . .

**Wayne Collins (PC):** That's another chapter.

**Marie Burge:** Another chapter, 30,000 acres too much. Not only for the market but for the land.

**Wilbur MacDonald (PC)(Chair):** I just wonder if you understand what is taking place in the corn. They grow GMO corn but you have to grow non-GMO corn in the same field. I forget how they do it, so many rows per, is it? Apparently, that has something to do with the corn borer.

**Andy Mooney (PC):** European corn borer.

**Wilbur MacDonald (PC)(Chair):** Corn borer. Which is a terrible thing in the corn industry and a number of years ago, a lot of farmers grew corn and they dropped it because of the cost but it has returned very . . . especially the eastern end of the province. I don't know about the other end. It's returned very strong in some areas for the dairy industry and the only way they can do it right now is GMO corn mixed with the non-GMO corn to control this corn borer and, of course, corn is not exported. It's ate here. Like it's all chopped up. I do believe there's a few people that take the cob off. I think they just use that for . . .

**Andy Mooney (PC):** High-moisture corn for silage.

**Wilbur MacDonald (PC) (Chair):** High-moisture corn for - I guess for the hog industry?

**Andy Mooney (PC):** Yeah, for silage and in/or dairy.

**Wilbur MacDonald (PC) (Chair):** So there's another problem that we have.

**Marie Burge:** Of course, and that's not the biggest problem. There's a whole question here also that just declaring tomorrow that the PEI government is going to say - a moratorium. That doesn't mean that it's going to clear out all the problems out of there, but organic farmers would talk to you about the fact that there are ways of controlling pests besides that and it may take a couple of generations because some of the things that we've done that have done damage to the natural cycle, it took us maybe 50 years, 60 years to do it. It may take us that many years to - like, we have to look at the long picture. I know it's really -

**Wilbur MacDonald (PC) (Chair):** How do you say it to a farmer?

**Marie Burge:** You don't say that to a farmer. Have a heart.

**Wilbur MacDonald (PC) (Chair):** No, it's a serious question that we have to answer.

**Marie Burge:** I know it's a serious question.

**Wilbur MacDonald (PC) (Chair):** How do you say to a farmer today, this year, you're not going to grow GMO corn. You're going to have to put up the regular corn. It's going to fall down, it's going to be terrible for you and all of that. How do we do that?

**Richard Brown (L):** Cavendish and McCain's did it with potatoes.

**Wilbur MacDonald (PC) (Chair):** No, no. I'm asking a question on corn now.

**Richard Brown (L):** You just said it.

**Wilbur MacDonald (PC) (Chair):** No, Richard. I know you're not a farmer, but corn is distinct from

potatoes, and that's the problem. I've had farmers come to me and say it.

**Marie Burge:** Yes, it's kind of a basic necessity for livestock.

**Wilbur MacDonald (PC) (Chair):** Of their livestock, see.

**Marie Burge:** No, it's -

**Wilbur MacDonald (PC) (Chair):** Our problem is a little bigger, and I have no idea how we're going to solve all of these problems, but apparently out there, it's quite a problem, and what we've really got to find out is what the connection there to GMO corn and to regular corn and why do they have. . .

**Marie Burge:** Why is that happening?

**Wilbur MacDonald (PC) (Chair):** And why do they have to be grown in the same field in order to control the . . . ?

**Marie Burge:** And then the question is do they really have to be, or is there some other alternative?

**Wilbur MacDonald (PC) (Chair):** There's the answer, maybe some alternative.

**Marie Burge:** Yes.

**Wilbur MacDonald (PC) (Chair):** And maybe before long, we'll hear the alternative.

**Marie Burge:** And some other alternative, also, to feeding corn for a generation or so of cattle, and maybe governments have to come to the wire on that and look over the whole feed industry in that respect, find out alternatives, what are some alternatives for. . .

**Wilbur MacDonald (PC) (Chair):** It seems that this lady at the back, but I'll ask you to come up after, dear. It seems that we go in cycles in the farming industry on PEI. About 30 years ago, corn was just booming and then it faded into nothing, and now it's back again. Maybe in another five years, it'll be gone.

But for example, just recently, we read where soybean rust has destroyed soybeans in

Argentina, and is moving very rapidly through the southern part of the States, but it doesn't last over the winter, so that may be -

**Marie Burge:** Okay, so we've always had those cycles, like I think the question we have to ask ourselves: Well, what is the solution? And we're trying to say: Let's not fall into the GMO trap because that's a two or three-generation thing. I want to just recommend a book to you.

**Wilbur MacDonald (PC) (Chair):** Sure.

**Marie Burge:** You've probably all read it anyway.

**Wilbur MacDonald (PC) (Chair):** No, we haven't.

**Marie Burge:** *Pandora's Picnic Basket*.

**Wilbur MacDonald (PC) (Chair):** I've heard of it, yes. Is it Pandora's Box, the same thing as - no? It's a different one.

**Marie Burge:** Alan McHughen. It's written by Alan McHughen and it's Oxford. . .

**Wilbur MacDonald (PC) (Chair):** Is it available at the library?

**Marie Burge:** There might be. This is kind of . . .

**Wilbur MacDonald (PC) (Chair):** We'll ask the clerk to get one.

**Marie Burge:** Yeah. It's from the Oxford University Press, but it has a lot of science there, but it's in our language. It's not totally another area, so I'd suggest that for the committee, this would be a very interesting book to read.

**Wilbur MacDonald (PC) (Chair):** We thank you very much for coming.

**Marie Burge:** Oh, you're welcome, and thank you.

APPLAUSE

**Wilbur MacDonald (PC) (Chair):** We have now Dorena - is it? - Hall from the Council of Development and Peace, and what's her name - and Mary Boyd with her, and the lady at the back, what would you like to say? Would you like to come up?

**Pamela Courtney Hall:** I would like to get back to the question that arose about why farmers have been trying to grow conventional crops and non conventional crops.

**Wilbur MacDonald (PC) (Chair):** Would you like to come up to the front and answer that question, dear? Come up to the microphone. I guess we can do that. Do you want to take a seat over there or - right there, sure. It's just so it can be recorded.

**Pamela Courtney Hall:** Some genetically modified crops are grown to deal with the problems of insect pests, especially soft-bodied larvae, and that's where developing plants that can produce the toxin that the bacteria BT produces, those are the ones that the biotech industries have been using up to this point, and very serious problems about insect resistance arose and the only solution people could come up with was: Well, if you have alongside every GM plot, if you have a conventional crop, then hopefully the insects that develop resistance on the GM plots will meet with the insects from the conventional, so that's - it's a measure that has been used to deal with the problem of pest resistance to try to prevent the problem of super bugs. There are lots of problems with it. I'll talk about it when I give a presentation.

**Wilbur MacDonald (PC) (Chair):** Okay, and would you identify yourself, dear?

**Pamela Courtney Hall:** : Yeah, I'm Pamela Courtney Hall with the University of Prince Edward Island.

**Wilbur MacDonald (PC) (Chair):** Okay. We look forward to it.

APPLAUSE

**Part IV - Development and Peace Group:  
Dorena Hall and Mary Boyd**

**Wilbur MacDonald (PC) (Chair):** Would you go ahead, dear?

**Dorena Hall:** Yes, thank you. My name is Dorena Hall and I'm the chair of the PEI Council of Development and Peace, and Mary Boyd is on our council and on the executive as well as treasurer, and Mary will certainly help with any questions or clarifications that might be needed.

Mr. Chairperson, the Canadian Catholic Organization for Development and Peace which is known as Development and Peace, adds its voice to the many who expressed both gratitude and congratulations to the Province of Prince Edward Island for this important initiative. Thank you for inviting Development and Peace to share our views.

Development and Peace is the official international development agency of the Canadian Catholic Church. It is a membership-based organization founded in 1967 by Canada's bishops, laity and clergy to fight poverty in the countries of the south and to promote greater international justice.

Inspired by gospel values, particularly the preferential option for the poor - the goals of Development and Peace are to support initiatives by people in the global South to take control of their lives, and to educate Canadians about North-South issues. Our education advocacy and fund-raising work here at home is carried out by Development and Peace members from coast to coast.

Over the past 37 years, Development and Peace has provided \$441 million to finance 13,900 projects in 70 countries in Africa, Asia and Latin America. \$86 million of this amount has been allocated to emergency aid.

Four years ago, Development and Peace's partner organizations, especially peasants and small farmers in countries of the global South, asked us to launch an educational campaign to alert Canadians about the threat of corporations controlling seeds and to ask the Canadian government to use its influence to stop the patenting of seeds and other life forms in their country.

In two years of this campaign, Development and Peace collected over 400,000 postcards asking the federal government to intervene at the World Trade Organization to stop corporations from patenting seeds and all forms of life. Over 5,000 signatures were collected in the parishes on Prince Edward Island.

What is genetically modified organisms? All living organisms that occur naturally are the result of thousands - and sometimes billions - of years of evolution. Some plant and animal species evolve

naturally. Others in the field of agriculture are the result of interventions directed by farmers and other plant breeders.

Genetic engineering is the process of altering evolution by recombining in a laboratory. For example, joining together in new combinations DNA from different sources and inserting them into the genomes of organisms to make genetically modified organisms or GMOs.

DNA comes from living organisms and is discovered by scientists when they identify which DNA or gene sequence is supposedly responsible for certain traits. The scientists then patent the particular gene sequence they have discovered, despite the fact that a gene sequence is a product of nature and not an invention. Through these patents, the scientists claim rights over the GM varieties into which they engineer these DNA sequences. Most genetic engineering activities are carried out by large transnational corporations. In fact, in the case of seeds, most are engineered by four multinational companies: Monsanto, Syngenta, Bayer CropScience and DuPont.

Almost all GM seeds are patented under the intellectual property laws in the United States of America, the only country that currently allows patents on living organisms. Ownership of a patented DNA sequence found in a GM seed allows the patent holder to sue anyone who markets or who deliberately or inadvertently grows the seed without paying royalties.

The process of producing and then patenting a GM seed is very costly, and consequently, ownership is concentrated in the hands of a few. For example, in 2001, 91 per cent of all GM crops grown worldwide were from Monsanto-patented seeds. In the case of rice, 90 per cent of patents are owned by corporations and research labs of the developed countries.

Currently, 97 per cent of patents in the world are the property of applicants in the OECD countries. Thus, although it is in theory, true, it is in practice of fallacy to claim that poor communities can develop their own seeds and then patent them. The practice is far too costly to be accessible to most and the follow-up is even more onerous.

In fact, the vast majority of the people in the world, particularly the poor, earn their livelihood and

ensure food security from cultivating crops that were developed by generations of conventional plant breeding by farmers and public scientists.

In the south, the development of conventional plant varieties depends on farmers being able to save seeds each year and freely exchange them with others. However, the proliferation of patented seeds outlaws this practice.

Indeed, to ensure that no farmer will even be able to illegally save patented seeds, Monsanto has developed and continues to pursue a controversial terminator technology - a patented GM seed that self-destructs at the end of every season, forcing farmers to buy more.

GM foods and bio-patenting: Development and Peace is opposed to the patenting of all seeds, whether they are GM seeds or not. At the heart of the debate on patenting are the notions of discovery and invention. Discovery is generally not patentable, whereas an invention is.

As we have noted above, GM seeds are the result of a laboratory intervention carried out on gene sequences produced by nature. Conventional seeds are purely and simply an example of the result of nature's evolving biodiversity. To put a patent on a living organism that represents thousands of years of collective heritage is stealing from the communities who should benefit from the biodiversity represented by this genetic heritage.

Food security in the world today: Development and Peace approaches the debate on GM crops from the angle of food security. It is a duty for the whole of mankind to become more keenly aware of the imperative need to secure for all people the first and basic freedom: Freedom from hunger.

Pope Paul VI told young people at the 1965 Young World Assembly which celebrated the UNFAO's 20<sup>th</sup> anniversary: Church social teaching shows that it is the duty of Christians to work for social justice, including the right for all to have access to food.

The right to food is also recognized in the United Nations' human rights system. At the end of the Second World War, the 1948 Universal Declaration of Human Rights set out the premise that ensuring people basic rights, including food, is the best way to prevent a recurrence of war.

The basic human right to food was again enumerated in the 1966 International Covenant on Economic, Social and Cultural Rights, becoming a binding international obligation for all states that were to ratify.

Now what has this to do with Prince Edward Island? The tsunami that devastated parts of Asia reminded us once again that we live in a global village where what happens in one part of the globe affects all of us.

Secondly, all of us shop in supermarkets and grocery stores that carry similar products made in many parts of the globe. We know that crops such as canola, soybeans, corn and cotton are genetically modified and that 70 per cent of food items sold in the stores contain GMO ingredients.

All of us wear cotton, most of which is genetically modified, and we forget that cotton is arguably the most pesticide-laden crop in the world. We have no idea what it means to wear this material next to our bodies, just as we have no idea what is the effect of eating GMO foods.

Monsanto and other suppliers of GMO seeds, fertilizer and insecticides sell to Island farmers as they do to farmers all around the world. Here, as in the global South, we are turning to organic food production as a means to grow healthier food, but GMOs can jeopardize that future due to contamination and soil depletion.

In addition, it is clear that citizens wish for a hunger-free world which acknowledges everybody's right to food that has been proven healthy. We believe that GMOs, which have not been proven safe, are not the solution to hunger.

Why is hunger still prevalent? Despite the promises of past decades, according to the UN Food and Agricultural Organization, some 840 million people in the world today suffer from hunger or malnutrition, and each year, at least 36 million die of hunger and related causes. The same FAO has asserted several times that our planet should be able to feed the entire population adequately. In fact, according to the FAO, the per capita availability of food has been increased by about 18 per cent in the last few years.

According to Indian theologian Josanthony Joseph, we have over 15 kilos of food per day for

every person in the world today. Studies by UN agencies, development NGOs, and even governments have shown hunger to be linked to the following root causes: Civil wars and international conflicts which cause developing world farmers to abandon their lands and crops; inequitable land distribution in poor countries, depriving the poor of land for sustenance farming; lack of access to credit for poor farmers and lack of transport infrastructure to allow transport and the marketing of crops; poverty and lack of money to buy food in urban developing country areas; indebtedness of developing countries where debt service repayments mean fewer resources are available to ensure food to citizens; the AIDS pandemic - which in some regions means HIV-affected labourers are weak and unable to produce adequate harvests, turning a mild food shortage into a serious crisis; government corruption and manipulation which deliberately, to achieve political aim, deprives certain sectors of the population of food; world trade rules which allow Northern agriculture subsidies to flood the markets of the South with cheap imports.

Can GM foods offer a solution? Looking at the issue of bio-patenting from the perspective of the hungry, we have to conclude that what is unethical, and therefore unacceptable is not the fact that research is being done that could perhaps create better crops and assist in the food security of the world. What is unacceptable is the fact that bio-patenting allows the control of the world's food supply to be concentrated in fewer and fewer hands.

That's from Josanthony Joseph, Indian theologian. In his evaluation of the suitability of GM foods to alleviate hunger in Africa, Aaron deGrassi offers the following analogy: One would not use lasers to cut tomatoes simply because lasers seem more advanced or scientific, when a good-quality knife would do the job much better at a fraction of the cost.

It is with this in mind that we might best reflect on GM foods as the solution for world hunger in the short term. The Zambian government's refusal to accept US GM food aid as a short-term solution in the face of serious food shortages was given much media coverage. Critics should, however, review this refusal in the light of the fact that other sources of conventional, non-GM food aid were and still are available for the alleviation of serious

food shortages.

New Delhi-based food and trade policy analyst, Devinder Sharma described the US's offer to GM food aid to southern Africa in 2003 as a commercial enterprise designed to open up the markets of the region, an action which he goes on to term, morally repugnant and anti-humanitarian.

GM foods as a more long-term solution to hunger: The premise that GM technology will increase yields is a myth. Yields from GM soybeans are no longer higher than those high-yielded conventional varieties.

In one study, Monsanto's GM soya had 6 per cent lower yields than non-GM soya, and 11 per cent less than high-yielding non-GM soys. A further study carried out in 1998 by the USDA economic research service showed that yields were not significantly different in GM versus non-GM crops in 12 of 18 crop region combinations.

Furthermore, there are better ways to improve yields for poor farmers that do not rely on expensive foreign technologies. GM seeds are patented seeds, and farmers who cultivate them are obliged to buy new seeds each year for a particular crop or risk becoming criminals, as has been the case in the US and in Canada with what happened to Percy Schmeiser. This is contrary to the Third World farmers' traditional practice of exchanging seeds at the end of each season.

It is difficult to see how having to pay royalties for seeds each season would improve things for poor rural farmers. Bio-safety concerns around GM crops have not been sufficiently studied in order to be able to guarantee that they are safe to the environment or public health.

No one has proven, for example, that they will not cross-pollinate. Widespread cultivation of GM crops could alter the world system of biodiversity in such a way that eventually rural farmers in the South could have no alternative but to cultivate only GM crops do nothing to address the root causes of hunger, including lack of access to land, water, energy, affordable credit, local markets and infrastructures.

Increased use of GM crops in the developing world may bring about increased human rights violations, particularly in countries where judicial systems are

weak. In North America, for example, Monsanto has filed over 70 civil suits against farmers that it accuses of illegally using its patented seeds. These suits pose a real threat of financial ruin for these farmers, who in most cases claimed that the GM seeds were blown into their fields by the wind.

In the South, patent holders' attempts to monitor whether patented seeds are being used by small-scale farmers could turn into veritable witch hunts, with peasant farmers unable to pay for legal defense.

Our conclusion - the preferential option for the poor: The approach of Development and Peace to promoting food security in the world today is based around the gospel of preferential options for the poor. On considering GM foods, it is clear that Third World farmers do not need this expensive technology as their communities' food security can be assured by other, more appropriate low-tech means.

It is also clear that GM food technology has been developed by transnational companies who are more interested in transferring food production into fewer and fewer hands, creating and ensuring profits for shareholders rather than addressing world hunger.

The notion of putting profits before all other concerns, as in the case with the trans-nationals involved, is contrary to all Catholic social teachings. To genetically engineer the basic heritage and sustenance of humankind in the goal of seeking profit is unethical and unacceptable.

Secondly, given the fact that there is no pressing need for GM technology, and as the risks it may pose to human health and environment are still unknown, GM crops should not be promoted in the developing world.

Mr. Chairperson, the Development and Peace Council, which encompasses the whole of this province, recommends that Prince Edward Island be made a GMO-free zone. We believe the safety of this food has not been established and that the precautionary principle should be applied to this technology.

We also believe that far from overcoming hunger, it will exacerbate poverty and hunger. In India, thousands of small farmers are committing suicide

because they can't afford the cost of GMO crops and some are experiencing serious crop failure. Thank you.

APPLAUSE

**Wilbur MacDonald (PC)(Chair):** Do we have some questions for our panel? Eva.

**Eva Rodgerson (PC):** Same question as the last presenter. The last statement there was around food safety. Are you also recommending that we not, like all the stuff, like I guess as Wayne brought up earlier, I'm still trying to get a picture here. All the ones that's already coming in, are you recommending as well that we ban those as well, like for food safety?

**Mary Boyd:** Well, yes, for food safety there's two concerns. I think one is that the GMO crops that are grown on PEI are being fed to our livestock, to our pigs and our cows and chickens and so on and those animals are ingesting those genes and passing them on to the consumer. So what is the affect of that on our health from what we are growing directly here on PEI? And secondly, when you go to the supermarket and you, if you don't shop discriminately and look for all these things and really change your eating habits to try to eat healthy, you are exposing yourself to unknown effects of this process. But here we ask that we stop growing GMO crops to make it a GMO free zone with no crops grown. But also we've always asked that all the GMO foods be labeled so that people - and that they be mandatory, the labeling, - so that people can make their own choice. We have a right to know. It's part of that universal declaration of human rights and the rights we spelled out here. We have a right to know what we're eating. We have a right to know if the food we're eating has not been proven safe. That's a basic human right and, therefore, we say compulsory labeling and no growing of GMO crops here.

**Eva Rodgerson (PC):** Okay. Yeah, what you're eating. Most of the concern is around the labeling in all the information I have read here and so I was just wanting to clarify. So you have a food safety concern and you have an environmental concern.

**Mary Boyd:** Yes. Certainly, there's a lot of unproven areas, as you heard the previous speakers outline, about the environment and in



those countries of the south, they experienced soil depletion when they planted these crops. It has a direct detrimental affect on the soil in those countries. I guess I go back too to Dr. Christie when he says that they're of no benefit to the consumer, these crops, and these foods. Our conventional food is proven. There may be lots of problems with it but then we also have an alternative for better food with organic, so what is . . . the only reason we have this food is that Monsanto and some of the big companies decided that if they would put food through this process, then they could patent it and then they could own it and they could make profits and that's the whole rationale for it.

**Eva Rodgerson (PC):** Well, there's been a big move on over the last number of years to reduce . . . well, there's pesticides or herbicides in the province. You know, this has been . . . it's got national attention and, you know, whether it be fish kills or whether it be whatever. So it seems like the bigger fear that we've been hearing more and more global thing is the fear of all the crop protectants or whatever that we're using. So my understanding of a lot of this was it was to try and help the farmer that's producing the food to get more dollar 'cause as we see right across the country, I don't know if we're going to have more farmers. I mean right now I know many of them are just on the brink of not being here because they can't get enough for their product so this is . . . when we look at this trying to decide, you know, how can we reduce pesticides and herbicides. And some people say it doesn't reduce so I guess this is the kind of thing we're looking for as we go through is to see what are the benefits or whatever.

**Mary Boyd:** I would like to say one thing about our approach to food. I've been sitting here and I've been listening to the conversations around the table every week and we're very, very pre-occupied with the market, you know. And that means I think the outside market. And you know, we just said we're planting too many potatoes and we just, we've got to alter the way we do agriculture.

If we were planting more organic food, we'd have more farmers. If we made this a GMO-free zone and an organic-friendly province, we'd have a lot more farmers because it's more labour intensive and it's smaller farms and we would have an

increase of farmers and, I think, an increase of sales outside. I can't see from anything so far that we're reducing pesticides.

I can't see that we're cutting costs in any way and, of course, you heard Michelle Swenarchuk saying that we're increasing the liability that somebody's going to get sued pretty soon. And I guess, you know, what we're saying to you in Prince Edward Island is this serves no useful purpose. It doesn't improve anything. It doesn't cut costs. It doesn't help the environment and it may open up a lot of farmers to a lot of liability. There is an alternative that belongs to the green economy, which is the wave of the future, and that's where the energy would be better put.

**Eva Rodgerson (PC):** Okay, thank you.

**Wilbur MacDonald (PC)(Chair):** Cletus.

**Cletus Dunn (PC):** Thank you, Dorena, for your presentation. I guess I concur with everything that you said. I share your concern regarding people controlling the food chain. I guess I was very troubled knowing I was going to sit in today on the meeting was that when I watched TV last night and saw what was going on in Sudan and people starving to death and we're concerned. I imagine if those people in Sudan were offered a GMO product they would have taken it. I guess that was a reality check for me was that if we can produce foodstocks for some of this population. I totally agree with where you're coming from. But if the pestilent is there that's causing them starvation and death by hundreds of thousands and we have a system where you can put food in their plate and their bellies . . .

**Dorena Hall:** Well, why do we have to offer them GMO foods? Why can't we offer then the food we have, the regular food we have?

**Cletus Dunn (PC):** No, I'm saying the GMO product was designed to be pestilent resistant to their situation. No, I totally agree with what you're saying but I'm saying that hasn't happened.

**Cletus Dunn (PC):** I guess I'm just . . . when you see the devastation some of those countries have.

**Dorena Hall:** They tell us that we have enough food in the world for everybody. I think our report said 15 kilos for every person. So the food is not

getting to the people and, you know, what is the reason for that? I mean if we have the GMO foods, are they still going to get it? You know, I don't think that's the question really.

**Mary Boyd:** Yeah. I think that, and we've been in these discussions on PEI and some farmers said maybe we could send potatoes but the point was always made that where there's a famine or a disaster like that, that the surrounding countries close by always have enough food to be able to send in. They need cash to buy it to send it into the hungry. There's nothing proven that GMO crops, for instance, would overcome the situation in the Sudan and when there's civil war and people can't get access to food, it's those barriers, you know, that are the worst.

In fact, in India because the yields - we put something on the back of the sheet showing that and you'll get it - showing that in India a number of farmers have committed suicide because the cost of the GMO seeds, fertilizers, herbicides are much, much greater than conventional and it was a situation of a drought too that they find it that the crops failed, that they had a much smaller yield than the conventional crops. Not only that, no, I'm sorry. I'm getting it confused with cotton. They planted cotton and they had to pay a lot more for the GMO seeds and everything that went with it. Then the cotton crops failed. Then the ones that did survive - and there was a much lower yield than the conventional crops, they were short grain instead of the long grain that the people wanted so the demand was down and that put the price down even more. And the farmers at the end of it, they all wept. They wept and then some committed suicide and this huge . . .

I've heard Dr. Vandenna Shiva, who is somebody I would love if we do a video conferencing, to have her speak to this committee - she's a scientist in India - and she outlined the tragedy of the hundreds upon hundreds of farmers in India who have committed suicide recently and she connects it with the introduction of GMO crops. So you know, I just want to read a one-liner here that I think is interesting when that was one of the things that the multi-nationals claimed that GMO crops could overcome hunger and somebody said: Who are you trying to kid that Monsanto cares about world hunger? It doesn't.

**Wilbur MacDonald (PC)(Chair):** Okay, Richard.

**Richard Brown (L):** As you clearly stated earlier - I'm not a farmer but I am a consumer - and I think consumers have the right to know what's in their food. Where do you get the statistic that 75 per cent of all food that is on grocery stores is GMO?

**Mary Boyd:** Up to, that statistic has been going around for a long time because corn, canola, soy . . .

**Richard Brown (L):** Who produced it?

**Mary Boyd:** You, go to the grocery shelf and take a box of cookies. Read the ingredients. Look at the salad dressings. Look at mayonnaise. Look at ice cream. Look at, et cetera, et cetera, and see how much canola or soy and it's fact. I've read it. I can get it for you in several places in fact if you'd like.

**Richard Brown (L):** So what's the use of labeling then if 75 per cent is GMO?

**Mary Boyd:** Well, people don't, a lot of people don't know. They don't shop indiscriminately.

**Richard Brown (L):** You know, we don't have much of a selection left.

**Mary Boyd:** And when you do have to shop that way, you don't have much choice in the Superstore.

**Richard Brown (L):** Thank you.

**Wilbur MacDonald (PC)(Chair):** Wayne.

**Wayne Collins (PC):** Just sort of a clarification there about that 75 per cent of those processed foodstuffs on the shelves and I think that's a general figure. I've heard it from several sources but I think that what they say there is that the issue of detectability of genetically modified content in those highly refined products - this is from our background material - highly refined sugar, starch, and oils from corn, soy, canola, and cottonseed, the contention is they no longer have the detectable or intact DNA or protein.

So when any of these are used as a food ingredient, it becomes impossible to verify or refute a claim of GM free. Would you agree that in some instances . . . I know in Europe, apparently, they

have a labeling threshold for GM content of 0.9 per cent over there. But the people can mis-document and mis-label there as well because of all the products that are coming out, whether it's cheeses or the whole gamut. But what's in those, even though it began as a GM product, by the time it's refined that much, is it that serious a threat at that stage, do you think?

**Mary Boyd:** Well, I mean there's - I wish we had time to share some of the research like Dr. Pusztai's research on potatoes, another person that you should get. People have done experiments with rats on a lot of these areas and have found, yes, the affects are serious. One of the things they're discovering is more inflammation of the stomach lining and bigger veins, which are susceptible to bursting. That's, they've been documenting cases like that. Now the thing is with GMOs, they can be separated at source. What happens in Canada is that they mix the corn together so you don't know what's GMO. They could separate that. They could separate soybeans. They could separate canola and put them aside and why they mix them, I don't know but they shouldn't.

**Wayne Collins (PC):** Is that only in Canada, Mary?

**Mary Boyd:** Well, Canada is one of the big offenders. Canada is very, very pro-GMO at a federal level and it's a big pusher. And I don't know if you noticed in the news on the 9<sup>th</sup> of February, there's a UN convention that's trying to stop the terminator seed and there was a leaked memo saying that Canada was going to back the United States to defeat that motion so that the terminator seed, that that convention against the use of the terminator seed would be overturned. Now, it wasn't overturned and I don't know what Canada did. We should find that out, really.

**Wayne Collins (PC):** I just want one final question again. You talked about, you know, an emphasis in discussion here about the markets, right.

**Mary Boyd:** Mmhm.

**Wayne Collins (PC):** And forgive me because I do tend to ask a number of questions in that regard because, ultimately, I mean we are at heart an agricultural province. I mean it really is the cornerstone of our economy and so I think we got

to be very careful in terms of whether we have a ban or don't have a ban and what consequences that might have. We heard earlier today. Mr. Schulman was saying that as far as he's concerned in 12 hours through Boston, there's an insatiable market down there for organically grown products. What we don't have organic potatoes on PEI. We don't have GMO potatoes on PEI.

**Mary Boyd:** No.

**Wayne Collins (PC):** Why don't we have more organically grown potatoes on PEI? I mean if that's the case that the markets are less than 12 hours away.

**Mary Boyd:** Well, I think that it's slow. I think it's just that - and farmers might answer that better than me - that farmers have to start taking the plunge and the PEI Government has to assist farmers in getting away from the more conventional agriculture into the organic growing. And it's not right to leave the whole onus on the farmer to do that alone. The farmer needs assistance, needs some support systems because that takes a bit of transition time.

**Wayne Collins (PC):** How would declaring PEI a GMO-free zone, how would that have an affect on accelerating that move towards organically grown potatoes and that potatoes is our crop and that's how we know how to grow well?

**Mary Boyd:** Well, it would eliminate that kind of alternative and it would focus on what is the alternative and I want to say this that right here in PEI it's hard to get organic produce. If you want to eat organic, go into the Superstores and see how much organic produce is there for you to buy.

The Farmer's Market is one place where a number of people go and rely on the Farmer's Market for organic food but there could be a lot more market here and certainly in other places. We just have to produce it and advertise ourselves. But I think assistance really is needed for that transition. I think it's scary. I don't know. You know, a farmer with a family and has everything invested in that and then decides I may take this step now to get away from this, and start and they have to think very long term, and I think the organic producers existing on PEI right now all deserve a medal because they have, they have made that transition and they've done that with a lot of sacrifice.

**Wayne Collins (PC):** Can that transition be made in significant numbers successfully without having to impose a GMO ban or will the GMO ban have any affect on that transition?

**Mary Boyd:** Well, I can see the GMO ban could have an affect on that; I really could because for once and for all, people would be clear that there isn't a magic bullet there that, you know, a great market for people and let's get realistic and let's go after what is possible and good and healthy and proven safe, you know.

**Eva Rodgeron (PC):** And getting back to the earlier discussion there and we've been reading a lot of material on this and this is where it's going to be hard to know what to propose here. I did want to read a couple of lines from the World Food Program. The World Food Program recently reported that the number of people suffering from malnutrition increased by 25 million from 815 to 840 million. The most compelling case for bio-technology and more specific GM crops is our capability to and they have a whole list of benefits. So this is the World Food Program.

**Mary Boyd:** Pro-GMO. Well, see there's so much money. Even the federal government put \$50 million into promoting the benefits of GMOs and that's being increased to \$250 million - tremendous propaganda out there. But we're saying - we outlined the causes of hunger in the world and also show that if there's 15 kilograms of food available to every person in the world every day, then you have to look at why aren't they able to, why are people starving? It's a total disgrace, so morally repugnant to think that we're living in this world and tolerating this.

**Eva Rodgeron (PC):** Like I say, again, this is the confusing thing. You get large, the World Food Program, I would think should be, you know, a program that's done a lot of research. I don't have enough history on it but I just happened to read that after Cletus spoke there about the people starving and they list one, two, three, four, five, five reasons why they think this would be a great benefit in alleviating malnutrition and starvation so it's going to be . . .

**Mary Boyd:** That's a topdown program but, you know, 1.4 billion peasants, that's how many peasants there are in the world, small farmers growing their own traditional seeds that they saved

from year to year and supplying their food and they're the ones who are terrified of GMOs and they're the ones who are saying: My Gosh! You know, at the end of the year, we have to turn around. We never had to buy seeds before. Now we have to buy the seeds but we also have to buy the fertilizer, the herbicides, and some of those crops are not up to par at all. They're not producing more yield. They're producing less yield in many cases.

I heard a story. I was in South Africa this summer and South Africa is one of the promoters of GMOs more than other parts of Africa and I heard of a story of an African country where, you know, they planted corn and the corn looked fine. The ears looked healthy. It was GMO corn. When they opened it up, there was nothing inside. So it's not proven at all that in all conditions, soil, circumstances that it's going to produce a crop. It can fail and it is failing.

**Wilbur MacDonald (PC)(Chair):** Cletus.

**Cletus Dunn (PC):** Just a quick comment and you're talking about labeling and use the figure of 75 per cent of what we have on the shelf is GMO. I think one thing we have done in the beef and hog industry and very successful in the chicken industry; the chickens, all the eggs now with numbers on them. So it's the traceability of products rather than the labeling is that we can trace things back to exactly where they came from, what they were fed, what farm they came from and things like that. So maybe we should look at the traceability as well as labeling.

**Mary Boyd:** It's important too.

**Wilbur MacDonald (PC)(Chair):** I'll have to call it. Some of the members have other things to do. I want to thank you very much for coming. I appreciate it very much.

**Mary Boyd:** Thank you.

APPLAUSE

**Wilbur MacDonald (PC) Chair :** I would ask the members if we could get a couple of more dates. Could we have next Wednesday and the following Wednesday afternoons for two weeks for two more date? Thank you.

**Marian Johnston (Committee Clerk):** The second and the ninth.

**Wilbur MacDonald (PC)(Chair):** The second and the ninth, is that okay?

**Richard Brown (L):** How many more presenters do you have? (Indistinct)

**Wilbur MacDonald (PC) Chair :** I know. I think we, we're only doing about four.

**Richard Brown (L):** Four a week.

**Marian Johnston (Committee Clerk):** Four or five.

**Richard Brown (L):** Four or five a week. So we're talking 13 .. .

**Wilbur MacDonald (PC)(Chair):** I suspect some of them will drop out, don't you?

**Marian Johnston (Committee Clerk):** Yes.

**Wilbur MacDonald (PC) Chair :** Yes. Okay. So it's agreed to have the next three weeks. Okay. Increase them to three if we can. Motion to adjourn. So moved.