December 1, 2005

Standing Committee on Agriculture, Forestry and Environment
First Report of the Third Session Sixty-second General Assembly
Genetically Modified Organisms

Mr. Speaker and Members of the Legislative Assembly:

Committee Mandate

The Standing Committee on Agriculture, Forestry and Environment is charged with matters concerning agriculture, forestry and the environment.

On December 16, 2004, the following motion was passed in the Legislative Assembly of Prince Edward Island:

> WHEREAS developments in the field of biotechnology have made possible the introduction of genetically modified organisms (GMOs); living modified organisms (LMOs); transgenic organisms and genetically engineered organisms;
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> AND WHEREAS developments in biotechnology have broad agricultural, aquacultural, industrial, medical and other applications;
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> AND WHEREAS such organisms are said to have the potential to provide significant benefits to human health, nutrition, the economy and the environment;
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> AND WHEREAS Health Canada has been approving the use of GMO crops since 1995, based on their safety for human health and the environment;
>
> AND WHEREAS Canada is the third-largest producer of genetically modified organisms in the world;
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> AND WHEREAS Prince Edward Island has the potential to increase the research, development and application of GMOs and other biotechnologies;
>
> AND WHEREAS notwithstanding their ongoing utilization and development, the introduction of products based on GMOs has raised a number of scientific, economic, social, environmental and ethical concerns;
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> AND WHEREAS these concerns have had an impact on the acceptance of GMOs in the marketplace;
>
> AND WHEREAS some jurisdictions in the United States, Europe and Australia have proposed or implemented restrictions and regulations on the production and marketing of GMO products;

AND WHEREAS some jurisdictions have developed systems for the co-existence between certain GMOs and conventional crops;

AND WHEREAS there may be a market advantage in producing products that are GMO-free;

AND WHEREAS Prince Edward Island is seeking ways to differentiate its agricultural, fisheries and aquacultural food products in the marketplace;

AND WHEREAS there are passionate opinions on both sides of this question;

THEREFORE BE IT RESOLVED that the Legislative Assembly of Prince Edward Island refer this question to the Standing Committee on Agriculture, Forestry and Environment and to direct said committee to seek public input on this issue;

THEREFORE BE IT FURTHER RESOLVED that the Standing Committee submit a progress report back to the Legislative Assembly during the spring session of 2005.

Committee Membership

Permanent members of your Committee are:

Wilbur MacDonald, Chairman (District 6, Belfast-Pownal Bay)
Wilfred Arsenault (District 24, Evangeline-Miscouche)
Richard Brown (District 12, Charlottetown-Kings Square)
Ron MacKinley (District 16, North River-Rice Point)
Fred McCardle (District 19, Borden-Kinkora)
Andy Mooney (District 1, Souris-Elmira)
Hon. Mitch Murphy, Provincial Treasurer (District 20, Kensington-Malpeque)
Eva Rodgerson (District 25, West Point-Bloomfield)

Substitute members included:

Jim Bagnall (District 4, Montague-Kilmuir)
Wayne Collins (District 15, Winsloe-West Royalty)
Cletus Dunn (District 26, Alberton-Miminegash)
Helen MacDonald (District 22, St. Eleanors-Summerside)

Definition of Genetic Modification

Your Committee recognizes that genetic modification implies making any change to the genetic makeup of an organism by any intentional means whatsoever. For the purposes of this report, however, the terms *genetic modification* and *genetically modified* (or GM) will have narrower

meanings, and will refer to the application of specific techniques of biotechnology (the deletion, change or moving of genes within an organism, or the transfer of genes from one organism to another, or the modification of existing genes or the construction of new genes and their incorporation into any organism) in the production of foods and food ingredients. The terms of reference for your Committee did not extend to the generation of organisms using standard, or traditional, breeding techniques, or cover mutagenesis not involving genetic engineering techniques.

Committee Activities

The Standing Committee on Agriculture, Forestry and Environment was directed by the Legislative Assembly on December 16, 2004, to seek public input on the issue of genetically modified (GM) organisms. As stated in its report of May 24, 2005, your Committee placed advertisements in newspapers across the province, inviting the public to share their issues and concerns. The immediate response was intense, and was received from provincial, national and international sources. The high degree of public interest has been sustained over the past year, resulting in the highest reaction your Committee has ever experienced to a call for input.

During 2005, your Committee held a total of 15 meetings to consider the issue of GM organisms, and received briefs and heard presentations from a total of 138 groups and individuals. In addition, your Committee reviewed dozens of briefing notes prepared by researchers; read books, magazines and other publications provided by the various presenters in support of their testimony; and responded to hundreds of email inquiries. Your Committee also received numerous telephone calls and had many personal contacts which served to reinforce to your Committee the importance of the issue to the people of Prince Edward Island, Canada, and around the world.

Public response focused on various issues: short-term and long-term impacts on human health; environmental concerns and the importance of biodiversity; consumers' right to know about production methods; trends of globalization and privatization; ethical considerations; and trade and economic consequences. It was a challenge to your Committee to become informed of all of the relevant developments in science, technology, policy, politics, shifts in popular opinion, and law in the field of genetic resources. The issues involved in the production, regulation and marketing of foods containing ingredients derived from GM organisms are complex, and positions are entrenched. There are those who believe that biotechnology has provided significant benefits for farmers and consumers. Others hold the view that it is only the owners of the technology who benefit, while the population as a whole may have to bear health and environmental risks. Some see it as a means to enhance food supplies in poor regions of the world, while others fear it will lead to exploitation of those vulnerable countries.

Debate on the issue was polarized, at times heated, and it would be fair to say that there were instances where each side attempted to discredit the values, tactics and evidence of the other. However, throughout the process, your Committee has accepted that there are strongly-held and contrary views on the topic of GM organisms, and has maintained a neutral forum for discussion.

Your Committee has appreciated the opportunity to listen and to learn, and come away with a broader understanding of opposing viewpoints.

Public Consultations

Since last reporting to this Legislative Assembly, your Committee met six times: on September 13, September 14, September 15, October 13, November 9 and November 24, 2005.

At its meeting of **September 13, 2005**, your Committee heard from Mr. Tyler Bjornson, Vice President Corporate Affairs; and Mr. John Mayko, Agronomic Research and Extension Manager, of the Canola Council of Canada; and Health Canada, represented by Ms. Karen McIntyre, A/Director, Food Policy Integration; and Mr. Paul Mayers, A/Associate Director General of the Director General's Office. They were followed by Mr. Raymond Loo of the PEI Certified Organic Growers' Co-op, and Dr. Robert Coffin, a potato researcher who appeared as a private citizen. Finally, your Committee heard from Mr. Gilles Michaud and Ms. Helen McQuaid of the Christian Life Community.

The representatives of the Canola Council of Canada indicated that about 95% of the 13 million acres of canola grown in Canada are herbicide-tolerant varieties; over three-quarters of this are GM varieties. They also indicated that co-existence with non-GM canola is possible, but only if a reasonable threshold for detectability is established. They told your Committee that there is no price premium for non-GM canola in world markets, with Canadian canola competing on price with non-GM Australian canola in Pacific Rim markets.

Health Canada outlined the department's role and responsibilities in the process of approving plants with novel traits for human consumption, including recent procedural changes to enhance transparency and boost public input to the review process. They expressed confidence that Health Canada's assessment process assured that approved products were safe to consume.

Mr. Loo, an organic producer, indicated that the organic farming industry worldwide has set a zero tolerance level for detectability of GM content. As a result, and because of the potential for cross-pollination of organic crops by neighbouring GM crops, the PEI Certified Organic Growers' Co-op supports a ban on GM crops in order to protect their industry. Mr. Loo also expressed the opinion that such a ban would better position Island farmers to market their products in the United States, the European Union and Japan. In addition, Mr. Loo briefly presented the preliminary results of the George Morris Centre (a Canadian agri-food think tank) study, entitled *Assessment of the Opportunities for Marketing Non-GM PEI Agricultural Products* which addressed the effect of a GM-free status on market potential.

Dr. Coffin provided your Committee with some additional background on the role of plant breeding, including GM techniques, in controlling insects and plant diseases. He also identified widespread ignorance and misunderstanding of agriculture as a source of opposition to particular agricultural techniques. Finally, he advocated improved education to enhance understanding and tolerance for a diversity of choice in farming methods.

The final presenters at this meeting, Mr. Michaud and Ms. McQuaid, presented a number of concerns about genetic modification, including corporate control, human health and environmental safety, the impact on the sustainability of agriculture, and the adequacy and trustworthiness of the regulatory system in Canada. They concluded that the government needs to build capacity to detect GM organisms, and to test their effects independently from the corporations that own them. In addition, they said government should require labeling of all GM foods and should underwrite better education of the populace so they can make better-informed decisions about these foods.

On **September 14, 2005**, your Committee met with members of the Food Action Committee, of the Ecology Action Center, represented by Ms. Jenny Book, Ms. Lisa Isaacman, Ms. Sylvia Mangalam; Ms. Jeanne Cruikshank, Vice President, Atlantic Region, of the Canadian Council of Grocery Distributors; Mr. Tony Reddin, of the Atlantic Chapter of the Sierra Club of Canada; Ms. Daphne Davey, appearing as an individual; representatives of the PEI Potato Board, Mr. Kevin MacIsaac and Ms. Mary Kay Sonier; Mr. Danny Hendricken, National Farmers Union; and Mr. Ifo Ikede, a private citizen.

The representatives of the Food Action Committee, located in Halifax, Nova Scotia, claimed that a GM-free status would not only protect and improve this province's environment but would also provide considerable economic opportunities. They based this on assertions that the safety of GM crops is questionable and on their expectation that the number of countries and companies desiring and insisting GM-free products would consistently increase in the future.

Ms. Cruikshank outlined the voluntary Canadian labeling standards for GM foods and discussed their marketability in the context of food retailing. Ms. Cruikshank said that studies sponsored by her organization strongly suggest that GM content is an issue only for a narrow niche market. Most consumers expect safe, high-quality food as a matter of course, and base their buying decisions on price.

Ms. Davey shared her belief that GM crops should be included in a list of prohibited agricultural products and practices because of concerns about human health, agricultural health and environmental health. She said there is substantial scientific disagreement about the health, safety and environmental benefits of GM crops and considers these concerns adequate to justify a ban in Prince Edward Island. Mr. Reddin, presenting the position of the Sierra Club of Canada, concurred, and listed a number of factors, including corporate control of agriculture and environmental contamination, as reasons to implement this precautionary measure.

The PEI Potato Board, which represents the more than 500 potato growers in the province, put forward the position that growers should have the flexibility to grow any crop variety which has been approved by the federal regulators. They also presented information about the history of the production and sale of GM potatoes in the province. In contrast, Mr. Hendricken, of the National Farmers Union, favoured a ban on GM crops. Mr. Hendricken emphasized concerns about

concentration of corporate control over farming via patenting of seeds and ownership of seed companies. He also expressed the opinion that banning GM crops and livestock feeds would give Prince Edward Island producers a distinct marketing advantage.

The final presenter at this meeting, Mr. Ikede, cited a number of studies which identified risks and hazards of GM crops. He contended biotech corporations misrepresent their products and withhold negative results from regulators. Mr. Ikede favoured the introduction of a ban of GM crops for Prince Edward Island.

Your Committee held a third full day of public hearings on **September 15, 2005**, hearing from Mr. Eddy Dykerman, President; Mr. Robert MacDonald, Past President; and Mr. Mike Nabuurs, Executive Director of the PEI Federation of Agriculture. They were followed by Ms. Joan Cullen, private citizen; Dr. Éric Darier representing Greenpeace; Dr. Philip Schwab, Vice President Policy and Sector Affairs, BIOTECanada; Dr. Irené Novaczek, Executive Director; and Ms. Laura Fanning, Institute of Island Studies; Ms. Judy Bayliss, representing CUSO; and Ms. Mary Boyd, Director of the MacKillip Centre for Social Justice. Ms. Boyd also accompanied Dr. Bert Christie, representing the PEI Health Coalition, as the final presenters at this meeting.

Mr. Dykerman identified several main advantages of GM crops, namely, reduced pesticide use, improved yields, improved soil conservation and opportunities to grow totally new crops. He also suggested that the evidence for a market advantage from a GM-free status for the province was very uncertain. Mr. MacDonald added his comments that the presence of GM soybeans in Prince Edward Island did not affect his production or sale of non-GM soybeans to Japanese markets. He stated that the key to successful co-existence of GM and non-GM crops was a matter of careful crop management and record-keeping. Accordingly, the PEI Federation of Agriculture's position is that the government would do better to develop co-existence and identity preservation protocols than to ban GM crops in this province.

Ms. Cullen shared her view that both GM crops and chemical-intensive agriculture threatens biodiversity and the sustainability of agriculture. In a similar vein, Dr. Darier expressed the Greenpeace position in opposition to the environmental release of GM crops because of concerns these crops might threaten biodiversity, among other objections.

Dr. Schwab outlined the breadth and economic value of the biotechnology industry in Canada and presented the BIOTECanada position that a ban of GM crops in this province was not justified and, in addition to the adverse effects on Island agriculture, might well discourage future expansion of biosciences research here.

Dr. Novaczek expressed the opinion that our understanding of the science of genetic modification is inadequate to justify, ethically, the environmental release of any GM crop variety. She also presented the view that as a small, isolated jurisdiction, the province is well-suited to establish a GM-free, high-value, low-volume market niche and differentiate itself from volatile mass commodity markets. Ms. Bayliss took the position that the purported benefits of GM crops

are a false promise and she supports the development of a unique GM-free Island identity in harmony with our economy and island environment. In agreement was Ms. Boyd, who said that there are too many unknowns about GM crops and that, as a result, it was the position of the MacKillop Centre for Social Justice that GM organisms should be banned in Prince Edward Island. Dr. Christie, who presented the concerns of the PEI Health Coalition, was also in support of a ban. The Coalition's position was that health and safety studies of GM foods are still inadequate, despite calls for improvements from several private and government-sponsored organizations and commissions.

Your Committee next met on **October 13, 2005**, hearing from the PEI Federation of Labour, represented by Mr. Leo Cheverie; Dr. Pamela Courtenay-Hall; Deborah Kelly-Hawkes and Mr. Blair Ross, appearing as individuals; Mr. Raymond Loo appearing on behalf of the PEI Certified Organic Growers' Co-op Steering Committee working with the George Morris Centre; Mr. James Rodd, of the Island New Democrats; Sister Bethany Doyle CSM, from the Earth Circle Group of the Sisters of Saint Martha; and from Mr. David Ling and Mrs. Edith Ling, organic producers.

Mr. Cheverie asserted that the health effects of GM foods needed to be examined in the long term before their approval and use. He advocated mandatory labeling and the adoption of the precautionary principle, which, in his view, means not allowing GM organisms to be produced, pending adequate safety testing has been done. Dr. Courtenay-Hall discussed the polarization of the debate about GM foods. She expressed the opinion that Canada lacks an effective regulatory system and that this province is ideally suited to opt out of the genetic experiment. Both Ms. Kelly-Hawkes and Mr. Ross presented the position of the PEI Fundamental Rights Party that GM organisms, along with chemical farm inputs, should be banned in the province.

Your Committee was pleased to receive a copy of a draft report prepared by the George Morris Centre, a national independent agri-food think tank, presented by Mr. Loo. The report, *Assessment of the Opportunities for Marketing Non-GM PEI Agricultural Products*, examined whether establishing Prince Edward Island as a designated GM-free zone would be a differentiating factor that could improve the marketing of the province's agri-food products, benefitting both organic and conventional producers. The George Morris Centre undertook a literature review and conducted industry interviews to determine the size and scope of the non-GM commodity and food market. The 105-page report provided an overview of penetration strategies for various international markets, prioritized key markets for the province, and ended with an evaluation of the potential success in creating a GM-free production zone in Prince Edward Island.

The report represented the most comprehensive look received by your Committee concerning the feasibility and potential benefits of establishing the province as being GM-free. It concluded that a strategy based on establishing a such a production zone would essentially see the province remain a producer of commodities, with producers remaining caught in the commodity trap of low prices. Finally, the research suggested that the overall demand for products whose only

differing attribute is that they are free of GM ingredients will diminish in all markets over the next 5-10 years. The study advocated further development of organic agriculture in the province.

Mr. Rodd presented the position of the PEI New Democratic Party that GM crops are incompatible with organic agriculture and should be banned on the Island for this and other reasons. The Earth Circle Group expressed the conclusion that, in the interests of promoting safe and sustainable food production, there should be a moratorium on GM crops in Prince Edward Island, complemented with government support for increased organic food production. Mr. and Mrs. Ling presented your Committee with an overview of the evolution of their farm practices over many years. They shared their concerns about the health and safety of GM crops and, consequently, they support an Island-wide ban on them.

For its meeting on **November 9, 2005**, your Committee issued a personal invitation for Dr. Robert Coffin to present a lecture on basic genetic terminology and concepts. They also requested Health Canada respond to a series of written questions which were provided to the federal department in advance. Your Committee thanks both Dr. Coffin and the representatives of Health Canada for their willingness to appear before your Committee for a second time in this phase of its work. The final scheduled presenters to your Committee were Hon. Kevin MacAdam, Minister; and Mr. Wayne Hooper, Deputy Minister, Department of Agriculture, Fisheries and Aquaculture. Minister MacAdam indicated it will be, ultimately, consumers who decide whether GM products are acceptable, and provided the example of the power of consumer preferences in the case of the NatureMark potato. While he expressed the confidence of the provincial government in the federal regulatory process, he also indicated support for calls for more transparency in that area. He affirmed the department's commitment to ensuring that all sectors of the primary industries–conventional, organic and those utilizing GM organisms–continue to grow and develop for the benefit of all Islanders.

On **November 24, 2005**, your Committee met, *in camera*, to begin consideration of its final report to the Legislative Assembly on this topic.

In addition to the meetings convened to hear testimony or to formulate its report, your Committee spent considerable time studying many written submissions. There were contributions made from consumer and health groups, biotech developers, farmers, federal and provincial government departments, academic institutions, non-governmental organizations, faith-based groups, and many individuals.

Their views were divergent, with virtually no middle ground. Many stated that GM foods are different from foods made by other processes. Because of this difference, they were concerned that as-yet unforeseen negative effects on human and environmental health might ensue; and proposed an immediate moratorium on GM organisms until studies conclusively prove their safety. Respondents also expressed distrust in corporations that develop and market GM organisms and voiced concern that large, multinational firms are exerting excessive control over farmers, farming practices and the food supply, both domestically and internationally. There

were also concerns about patenting life forms; as well as comments regarding broader social justice and religious issues. A significant number of responses offered assurance that the writers would seek out and purchase agricultural products from Prince Edward Island, if a ban on GM organisms were implemented. Written briefs from the corporate sector and governments called for a constructive and reasoned dialogue on the key issues, with informed participation and a science-based knowledge of the area as a starting point. They emphasized the values of biotechnology, and maintained the competency and objectivity of the Canadian regulatory environment.

Recommendations

After considering all the evidence, your Committee is pleased to offer the following recommendations:

1. **Your Committee recommends that the regulation of products derived from biotechnology continues to meet the most stringent scientific standards and that it keeps pace with both the technology and the new types of products being developed.**

Your Committee received many submissions on the topic of health and safety of GM foods. The facts and opinions presented differed but your Committee noted that everyone agreed that consumers want to know that the food they eat and prepare for their families is safe and nutritious. They want a variety of convenient, healthful food products at a reasonable cost. More broadly, they want to be assured that technological advances are occurring to keep the food supply safe, and that research and development is being undertaken to protect their loved ones.

Before a GM agricultural or food product can be produced and marketed in Canada, it must undergo a number of scientific safety assessments. These assessments are designed to determine that the product is not dangerous for humans, animals, or the environment. Government of Canada evaluators conduct these safety assessments, taking into consideration expert advice from the global scientific community and the latest scientific literature. Together, the Canadian Food Inspection Agency (CFIA) and Health Canada are responsible for assessing the safety of GM agricultural and food products. They have a strict process in place which is consistent with international standards.

The CFIA evaluates new agricultural products for safety and effectiveness. The Agency sets safety standards for seeds, plants, animal feeds and feed ingredients, veterinary biologics, and fertilizers, including those that are produced through modern biotechnology.

Before being grown commercially, GM plants are subjected to several years of confined research field trials. During this time their interaction with the broader environment is restricted. The information from the research field trials is then used in another safety assessment that looks at the environmental impacts of the plant, including the potential of the plant to become a weed or to invade natural habitats; the potential to affect wild plants that are related to the modified plant;

the potential for the plant to become a new plant pest; the potential impact of the plant or its gene products on other species (including humans); and the potential impact on biodiversity.

Health Canada measures the safety of all foods developed through biotechnology according to the requirements outlined in the Guidelines for the Safety Assessment of Novel Foods. Scientific evaluators with expertise in chemistry, microbiology, molecular biology, nutritional sciences, and toxicology look at the following: how the food crop was developed and what changes were made in the plant's molecular structure; how the GM food compares in composition and nutrition with its counterpart food that has not been modified; whether the GM food contains new toxins (substances that may cause harm to animals, humans, or the environment); whether the GM food may cause allergic reactions.

Another of Health Canada's key responsibilities is to monitor potential long-term health trends associated with health products and food, including biotechnology-derived products. If Health Canada has any concerns about the safety of a product while doing the scientific assessment, it is not approved for sale in Canada.

Canada's safety assessments are based on standards set by the Codex Alimentarius Commission, the international standard-setting body within the joint food program of the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) of the United Nations, as well as the Organisation for Economic Co-operation and Development (OECD). The standards were developed through extensive consultations with technical experts and consumers.

Your Committee was told that, over the past eleven years of reviewing the safety of GM foods, Health Canada has not found any scientific evidence showing that GM foods are any less safe than their traditionally-produced counterparts.

Comparison with American Regulatory Environment

In comparing the Canadian and American regulatory environment, your Committee found that both countries' approach to the food safety assessment of GM plants and the products derived from them is consistent with international guidance in this area developed by the Codex Alimentarius Commission, and is therefore very similar. Both countries conduct rigorous, science- based assessments of plants with novel traits and the foods and feeds derived from them.

However, there are a few important distinctions in the regulatory framework. In Canada, the *Novel Foods Regulation* creates a mandatory requirement for notification prior to a product entering the market. In the United States, GM plants are covered by the FDA's 1992 policy entitled, "Statement of Policy: Foods Derived From New Plant Varieties." Historically, the food industry generally has initiated consultation with the FDA during the pioneer stages of a new technology, even if there is no legal obligation to do so. In the 1992 policy, the FDA noted that it expected this practice of consultation to continue with respect to GM foods. Notification of FDA is voluntary; nevertheless, product developers routinely notify FDA.

In addition to its mandatory requirement for notification, Canada is the only country in the world that assesses novel foods, plants and novel livestock feeds that have new traits introduced by any technique, including traditional breeding techniques and mutagenesis, and not simply traits that have been introduced through genetic engineering. This approach can be considered the most scientifically valid approach given that a trait that is introduced through traditional breeding methods may be the same as introduced through genetic engineering. Both crops would require a pre-market review in Canada, but the traditionally-bred crop would not require one in the United States.

Your Committee is assured that regulatory mechanisms to ensure the biosafety of GM crops are in place in Canada. Food safety protocols have been established, and all GM crops released for commercial sale have undergone a mandatory food safety assessment and have been established to be safe to humans and animals.

Your Committee believes that Canada has one of the safest food supplies in the world. This country has a system of laws, regulations, inspections and product approval procedures that protects the health and safety of our food supply. Therefore, your Committee's recommendation in this area is that the exacting standards of the regulatory regime be maintained.

2. Your Committee recommends that the government of Prince Edward Island support the use of labeling of food products, produced or sold within Canada, indicating they contain, or do not contain, GM ingredients; and

3. Your Committee recommends that the Government of Canada continue its work in international forums to develop a harmonized, international standard for labeling of GM foods.

Your Committee recognizes the heightened interest on the part of consumers regarding foods that are and foods that are not products of genetic modification. Countries around the world have examined approaches for identifying such foods through labeling; many have adopted mandatory labeling for any product that has been genetically modified.

Proponents of mandatory labeling say people just want to know what they are putting in their mouths. They assert labeling upholds the values of consumer sovereignty and makes possible a range of legitimate consumer interests ranging from a desire to avoid allergic reactions to the opportunity to exercise informed buying decisions. Those opposed take the view that consumers will see the labels as a warning and avoid the foods marked as containing GM ingredients, and that food processors will remove these products from the market rather than place labels, thereby limiting consumer choice. There is the concern that special labeling of food products to indicate how they are produced–rather than just their content–adds no useful knowledge and can disrupt markets by creating undesirable barriers to trade.

Canada has in place a regulatory framework for the food, feed, and environmental safety of products of biotechnology, including for foods. Under this standard mandatory labeling is required where the foods have significant nutritional or compositional changes, or where potential health and safety risks exist that could be mitigated through labeling. It is not required to indicate that the food is a product of genetic modification.

In April 2004, the federal government announced the official adoption by Standards Council of Canada, of the Standard for Voluntary Labeling and Advertising of Foods That Are and Are Not Products of Genetic Engineering, as a National Standard of Canada. This means that consumers could start to see more labels on some food ingredients and food items indicating whether or not they are a product of genetic engineering. The standard for voluntary labeling is intended to provide further guidance for food companies and manufacturers, which could help consumers make food choices.

In summary, food label and advertising claims pertaining to the use or non-use of GM organisms or ingredients are permissible in Canada, provided such claims are truthful; not misleading; not deceptive; not likely to create an erroneous impression of a food's character, value, composition, merit or safety; and are in compliance with the regulatory requirements set out in relevant legislation.

To provide consumer choice, your Committee supports labeling of foods that are and are not products of genetic modification, and points out that such labels should be informative, understandable and verifiable. Further, your Committee believes that the speed at which labeling appears in the marketplace will be driven by the importance of the issue to consumers; and points out that labeling may provide a producer or processor with flexibility to accentuate or differentiate their product in the marketplace, and thus provide a market advantage.

4. Your Committee recommends that the government of Prince Edward Island continue its support to the life sciences sector of the provincial economy, as a source of economic growth.

The world has witnessed extraordinary advances in science over the last few decades. Biotechnology, a term covering a broad range of scientific activities used in many sectors, including food, health and agriculture, is presenting us with new knowledge, products and methods. It can be a powerful tool to increase food production, protect the environment, improve the nutritional value of food and produce pharmaceuticals. The life sciences hold many prospects for society and have the potential to contribute significantly to this province's economy. Canada's biotechnology sector has expanded rapidly in the last decade in terms of industry-wide revenues, the launch of new companies and the diversification of its products. The Canadian bio-economy is the second largest in the world, with revenues of $4 billion annually. Prince Edward Island is home to 15 bioscience companies which employ 400 people, and produce $60 million in annual revenues. In addition are the bioscience related jobs and economic impact of research at academic institutions.

As recently as November 2005, the Prince Edward Island BioAlliance, a network of individuals and organizations dedicated to building the bioscience-based economic sector of the province, participated in a community forum in Charlottetown, Prince Edward Island, focusing on the bioscience industry and next-generation prosperity. The goal of the forum was to educate Islanders on how business, science and education are working together to spur economic growth and create career opportunities in Prince Edward Island. Your Committee believes that there is a role for government, as well.

As the traditional boundaries among pharmaceutical, agricultural, chemical, and energy sectors blur and erode, Prince Edward Island can take advantage of this opportunity to build on the province's natural roots, focusing on technologies and products related to bioactive compounds and their application to human and animal health and nutrition. The bioscience sector represents a tremendous opportunity for the province to expand its presence in the knowledge economy. Your Committee recommends the government of the province continue its work in this emerging economic sector to generate prosperity for current and future generations.

5. Your Committee recommends that the government of Prince Edward Island continue its support for organic farmers in the province.

The agriculture industry is the major contributor to the Prince Edward Island economy. Annual farm cash receipts exceed $350 million, and the industry accounts for one in every four jobs in the province. The sustainable growth and development of the industry is critical to the future of the province and its rural communities. The Committee is strongly supportive of measures taken by the provincial government to work closely with all sectors of the agriculture and food industry to promote its continued growth and development and, at the same time, identify and promote opportunities to increase its diversification.

One such opportunity is the growing organic niche market. Sales of organic products are climbing as more and more organic food is being sold through mainstream grocery stores. The organic industry in Canada has been increasing at a rate of 15% each year over the past decade, and projections for 2005 indicate organic retail sales growth may increase to more than $3 billion.

Provincially, the Department of Agriculture, Fisheries and Aquaculture is committed to the continued development of organic production in Prince Edward Island. An organic and low input development officer works closely with all sectors of the organic industry. The department provides financial assistance to producers for organic certification and inspection. It provided annual grants of $50,000 to the Organic Agriculture Centre of Canada at the Nova Scotia Agricultural College, and continues to provide $20,000 annually to the Atlantic Canada Organic Regional Network (ACORN) to support the development of a regional organic industry. The department has also appointed an integrated pest management specialist to work with all sectors of the agriculture industry to adopt environmentally-based practices to control pests and diseases. The department has also established a pesticide reduction pilot program to research and demonstrate new practices that reduce the on-farm use of pesticides.

Your Committee believes in family farms and other enterprises that contribute to sustainable rural communities, and recommends the supports provided by the provincial government continue.

6. Your Committee recommends that the province of Prince Edward Island host an international symposium on the theme of bioethics and societal choices.

Humans have cross-pollinated plants and cross-bred animals for centuries, but recent technological developments that permit manipulation to extend to the genetic level have provoked reactions from various sectors, ranging from optimism, to cautiousness, to moral outrage and fear. Your Committee reports that it heard testimony reflecting all viewpoints, and that consensus was elusive. Presenters argued that this genetic revolution was both a good thing and a bad thing; a way to imbue foods with better nutritive value and a danger to health; a hope for feeding the world and a threat to the environment; a boon to farmers and a corporate takeover of the code for all life.

The Standing Committee on Agriculture, Forestry and Environment recommends that Prince Edward Island host an international symposium with the goal of providing an open forum for interested parties to come together to explore some of the issues surrounding biotechnology in the global economy and, specifically, opportunities and challenges for researchers, entrepreneurs, political leaders, policy makers and practitioners.

Beyond the discussions of health and safety, your Committee recognizes that there are economic, ethical, social and political aspects to the production, sale and consumption of GM organisms. More broadly, humankind has acquired the power to transform the processes of all living species, including its own–a power that is both exciting and ominous. Given the rapid pace of technological advancements in genetics and biology, it is not surprising that society is grappling with the social, ethical and legal implications of our ability to decipher and control the blueprint for life. Opinions differ sharply on the implications, but there is more general agreement that advances in technology are occurring at a rate faster than social policies can be devised to guide them.

Without doubt, biotechnology will be the most important technological revolution of the next century. Biotechnology will change the way we produce food, the way we treat or prevent diseases and will provide new ways to preserve the environment. Biotechnology, as well, will change the way we think about life.

Your Committee recognizes that the development of scientific knowledge should be accompanied by public debate on societal choices and the informed participation of citizens. Bioethics attempts to identify the social and cultural implications of breakthroughs in life sciences, to anticipate its applications, and to ensure that such progress benefits humanity. Your Committee feels that it would appropriate for the government of Prince Edward Island to organize and host an independent conference to foster dialogue among academic institutions, scientific experts, industry representatives, consumer groups, agricultural producers, government departments, faith-based groups, and other interested parties.

To date, consultations have provided an opportunity for individuals, and representatives of academia, government, industry and public interest groups to identify and consider major issues in agricultural biotechnology. Your Committee believes it is crucial to continue the dialogue sparked by its public hearings in an expanded format.

The symposium should feature a who's who of business and industry leaders, scientists, government representatives, advocates and activists from across North America and abroad. It must offer world class speakers, and a unique forum of networking and social opportunities. The goal is to facilitate an inclusive and deep conversation among stakeholders, to build greater understanding and establish a foundation for positive actions in this complex area of public policy.

7. Your Committee recommends that industry, government and supply chain partners continue their collaboration to differentiate and brand Prince Edward Island agri-food products.

Agriculture is a multi-billion dollar global industry, with both major and minor players exporting and selling their products around the world. Prince Edward Island producers have to operate in this tough and competitive international market, and are totally vulnerable to market conditions and factors determined elsewhere. The province is a very small competitor in a very large marketplace where the lowest-cost producers predominate.

Your Committee recognizes that the traditional commodity-based agricultural model is no longer working well for many Prince Edward Island producers. In its report to this Legislative Assembly in May 2004, your Committee endorsed a vision of the way ahead for Prince Edward Island agriculture based on differentiating our products in the marketplace. Your Committee consistently kept this strategy in mind during its consultations, and considered the question as to whether establishing a GM-free zone would provide sufficient product differentiation for the province's agri-food products to command price premiums. The answer was *no*.

The most compelling evidence supporting this conclusion was contained in the draft report prepared by George Morris Centre concerning its assessment of the opportunities for marketing non-GM agricultural products. The report presented up-to-date information specific to Prince Edward Island. In summarizing the key findings from a number of targeted interviews, the report stated:

> *All respondents (in one shape or form) stated that PEI had enormous and valuable credence factors that could be used to highlight and enhance the marketability (and value) of PEI products; whether they be GM, non-GM or organic.*
>
> *These include the pristine clean and green unspoiled environment, the history, and the rustic nature of the environment. Particularly in Japan, Anne of Green Gables was deemed a powerful credence factor that PEI producers could take advantage of through well-targeted marketing efforts.*

and,

> *...credence factors such as PEI's clean and green unspoilt environment, an island isolated from urban development and, above all, "Anne of Green Gables." Our research identified that the benefits of successfully establishing a link between "Anne of Green Gables" and PEI agri-food products would have far greater weight in the marketplace than a GM-free production zone.*

Your Committee has accepted the conclusions drawn from research conducted by the George Morris Centre. Your Committee endorses the activities now underway with the goal of branding agricultural products from Prince Edward Island, and suggests these efforts be strengthened, taking into account the conclusions reached by the George Morris Centre on linking Prince Edward Island's agricultural products to the intangible and emotional response the province can create in consumers worldwide.

8. Your Committee supports the development of new crop technology, as well as existing production methods of both conventional and organic producers. Therefore, your Committee recommends a co-existence model be adopted.

Co-existence between different systems of agriculture and their respective supply and distribution chains is not an entirely new challenge to farmers, processors and retailers. Effective co-existence between conventional and organic farming occurs within the province now. Your Committee believes that a similar model for effective co-existence can be readily established for GM crops and those produced by conventional and organic farming. Potential measures to secure the co-existence of GM, conventional and organic production may include, but not be limited to, specified crop rotations, set-back distance between fields, control of volunteers, cleaning of agricultural and transportation equipment, and courses for producers in organic and GM crop cultivation.

The question arises as to how the provisions for successful co-existence should be implemented. Your Committee considered three avenues to achieve this goal: (a) no special initiatives are taken to secure co-existence; (b) voluntary agreements are negotiated to solve potential problems (c) the establishment of actual regulation. Your Committee agreed that the co-existence of GM, conventional and organic crops presupposes good farm management and due diligence among all producers. A key element of good farm management is co-operation and exchange of information among producers. As stewards of the land, Island farmers have decades of experience working with their neighbours and living in harmony.

On a macro scale, one recent example of co-operation among producers was the agreement to reduce potato acreage for the 2005 crop year. Your Committee was also given the example of several local farmers agreeing to protect a neighbour's crop by segregating high-virus potatoes**.**

Your Committee concluded that with proper management practices, including buffer zones, segregating harvested crops, coordinating planting dates, and co-operation, co-existence is possible.

Your Committee also heard from representatives of the Prince Edward Island Federation of Agriculture that producers in this province are fully capable, experienced and able to work with their neighbours to secure agreements to permit each to choose whether to produce organic, conventional, or GM crop varieties. The decision to grow a particular crop should be made at the local farm level, and not by government. Farmers should be allowed to continue to select the method of agricultural production that best suits their needs and markets.

Your Committee agrees that it is both fair and practical to allow producers to continue this practice without adding to their regulatory burden, and therefore is recommending the use of voluntary agreements to define co-existence. Your Committee suggests that the provincial Department of Agriculture, Fisheries and Aquaculture has a role to play in developing co-existence guidelines, in consultation with producers. Finally, your Committee encourages the department to monitor the development of legislative and regulatory initiatives concerning co-existence in other parts of the world.

Conclusion

This report marks the completion of your Committee's work on the issue of GM organisms; however, we will continue to take an active interest in matters pertaining to developments in the areas of regulation, the monitoring of long-term human health and environmental effects, the labeling of foods containing GM ingredients, and the integration of social and ethical considerations into public policy discussions and decision making.

Respectfully submitted,

Wilbur MacDonald
Chairman
Standing Committee on Agriculture, Forestry and Environment

Appendix A

Summary of Recommendations

1. **Your Committee recommends that the regulation of products derived from biotechnology continues to meet the most stringent scientific standards and that it keeps pace with both the technology and the new types of products being developed.**

2. **Your Committee recommends that the government of Prince Edward Island support the use of labeling of food products, produced or sold within Canada, indicating they contain, or do not contain, GM ingredients; and**

3. **Your Committee recommends that the Government of Canada continue its work in international forums to develop a harmonized, international standard for labeling of GM foods.**

4. **Your Committee recommends that the government of Prince Edward Island continue its support to the life sciences sector of the provincial economy, as a source of economic growth.**

5. **Your Committee recommends that the government of Prince Edward Island continue its support for organic farmers in the province.**

6. **Your Committee recommends that the province of Prince Edward Island host an international symposium on the theme of bioethics and societal choices.**

7. **Your Committee recommends that industry, government and supply chain partners continue their collaboration to differentiate and brand Prince Edward Island agri-food products.**

8. **Your Committee supports the development of new crop technology, as well as existing production methods of both conventional and organic producers. Therefore, your Committee recommends a co-existence model be adopted.**

Appendix B

Interveners

1. Allergy and Environment Illness Group
2. Aquabounty Farms
3. Arnold, Doris
4. Arsenault, Kevin
5. Association of Registered Acupuncturists of Prince Edward Island
6. Atlantic Grains Council and Graingrowers of Canada
7. Barrette, Josee
8. Belaire, Steven
9. Berthelet, Annie
10. BioAtlantech
11. BIOTECanada
12. Blueprints for the Future
13. Bradbury, Ray
14. Brandon, Jennifer
15. Californians for GE-Free Agriculture
16. Canadian Canola Council
17. Canadian Catholic Organization for Development and Peace
18. Canadian Council of Grocery Distributors
19. Canadian Environmental Law Association
20. Canadian Food Inspection Agency
21. Canadian Health Coalition
22. Chow, Sheldon
23. Christian Life Community
24. Christie, Bert

25. Clark, E. Ann
26. Clausheide, Gary
27. Coffin, Robert
28. Cooper Institute
29. Copleston, Marion
30. Council of Canadians
31. Courtenay-Hall, Pamela
32. Critchley, Mark
33. CropLife Canada
34. Cruchet, Dominique
35. Cullen, Joan
36. CUSO
37. Darrach, Harold
38. Davey, Daphne
39. de Roode, Susan
40. Diakun, Aladdin
41. Duff, Pam
42. Earth Circle Group, Sisters of St. Martha
43. Eastern Cooperative Health Organization
44. Engineer, Rukshana
45. Environmental Health Cooperative
46. Epp, Raymond
47. Estill, Glen
48. Feldstein, Evelyn
49. Feldstein, Peter
50. Figeac, Sebastien
51. Fischer, Lorne

52. Food Action Committee, Ecology Action Center
53. Foundation of Future Farming
54. Frank, Andrew
55. Friedrich, Delaine
56. Galon, Anna
57. Godin, Patrice
58. Gray, Kathryn
59. Greenpeace
60. Health Canada
61. Hefernan, Pat
62. Hodgins, Carol
63. Hornyansky, Monica
64. Huebener, Paul
65. HumanEarth Mission Group, CND
66. Hutchinson, Richard
67. Ikede, Ifo
68. Industry Canada
69. Institute for Responsible Technology
70. Institute of Island Studies
71. Irvine, Wade
72. Island Grain and Protein Council
73. Iversen, Linda
74. Johnston, Susan
75. Kaiser, Debra
76. Kelly Hawkes, Deborah
77. Kern, Gail
78. Kessels, Guillermo

79. Kneen, Brewster
80. Kropf, Therese
81. Kuby, Lolette
82. L'Union paysanne
83. Lamond, Bill
84. Lane, Jerry
85. Liedtke, Audy
86. Ling Tai, Lui
87. Ling, David and Edith
88. MacCormack, Marie
89. MacDonald, Diana
90. Mackenzie, Sandra
91. MacKillop Centre for Social Justice
92. MacNearney, David
93. Maier, Karl
94. Maki, Jeanne
95. McCord, Katherine
96. Muller, Valerie
97. Nadudvari, Timo
98. National Farmers Union
99. National Assembly of Quebec
100. New Brunswick Partners in Agriculture
101. Newby, Max
102. Nordin, Don
103. Novaczek, Irené
104. Olszewski, Karina
105. Peppin, Tim

106. Pinto, Luan
107. Prince Edward Island Certified Organic Growers' Co-op
108. Prince Edward Island Certified Organic Growers' Co-op Steering Committee
109. Prince Edward Island Federation of Agriculture
110. Prince Edward Island Federation of Labour
111. Prince Edward Island Health Coalition
112. Prince Edward Island New Democratic Party
113. Prince Edward Island Potato Board
114. Prong, Doug and Lisa
115. Province of Prince Edward Island, Department of Agriculture, Fisheries and Aquaculture
116. Rabishaw, Barry
117. Renkema, Gary
118. Rew, Doreen
119. Ross, Blair
120. Rowe, Marilyn
121. Samaroden, James
122. Schouela, Lorisa
123. Schwinghamer, Timothy
124. Scott, Harvey
125. Sierra Club of Canada, Atlantic Chapter
126. Soil Association
127. Soloman, Lloyd
128. Spragg, Derek
129. Stonevick, Paula and Jeremy
130. Sullivan, Meara

131. Van Miltenburg, Eric
132. Vancowerk, L.
133. Verleun, Peter
134. Wadsworth, Debbie
135. Webster, Heather
136. Webster, Sarah
137. Wolf, Hanne
138. Woodruff, Croft

Appendix C

Committee Membership

Wilbur MacDonald, Chairman (District 6, Belfast-Pownal Bay)
Wilfred Arsenault (District 24, Evangeline-Miscouche)
Richard Brown (District 12, Charlottetown-Kings Square)
Ron MacKinley (District 16, North River-Rice Point)
Fred McCardle (District 19, Borden-Kinkora)
Andy Mooney (District 1, Souris-Elmira)
Hon. Mitch Murphy, Provincial Treasurer (District 20, Kensington-Malpeque)
Eva Rodgerson (District 25, West Point-Bloomfield)

Substitute members included:

Jim Bagnall (District 4, Montague-Kilmuir)
Wayne Collins (District 15, Winsloe-West Royalty)
Cletus Dunn (District 26, Alberton-Miminegash)
Helen MacDonald (District 22, St. Eleanors-Summerside)

Meetings Convened

1. January 10, 2005
2. January 19, 2005
3. February 2, 2005
4. February 9, 2005
5. February 16, 2005
6. February 23, 2005
7. March 2, 2005
8. March 9, 2005
9. May 19, 2005
10. September 13, 2005
11. September 14, 2005
12. September 15, 2005
13. October 13, 2005
14. November 9, 2005
15. November 24, 2005