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Presentation to the United Church of Canada's

Division of Mission in Canada

Workshop on

Farm Land: How to Care for it and Still Maintain a Livelihood?

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"Future Challenges in Ontario Agriculture - Biotechnology"

by

Anne Mitchell, Executive Director

The Canadian Institute for Environmental Law and Policy (CIELAP)

CIELAP Shelf:

**Mitchell, Anne; Canadian Institute for
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The Canadian Institute for Environmental Law and Policy (CIELAP) was founded in 1970. We have worked since then on emerging law and policy issues which affect Canada and the world. We recently celebrated 25 years of environmental law and policy research and education with a dinner in Toronto last September. Clifford Lincoln, Parliamentary Secretary to the Deputy Prime Minister and Minister of the Environment, was our after dinner speaker. We were joined by our partners in Costa Rica, industry and government representatives, other NGO representatives, volunteers and board members from across Canada.

CIELAP's interest in biotechnology spans more than a decade. In 1984 we held a two-day conference on the regulation of biotechnology products. In 1985 we published a report on regulatory options for biotechnology products entitled "Biotechnology and the Environment: A Regulatory Proposal." This also appeared as an article in the Osgoode Hall Law Journal. In 1987-88 we participated in consultations on biotechnology provisions in the Canadian Environmental Protection Act. In 1988 we prepared a two-volume study, Biotechnology Policy Development, for the Ontario Ministry of the Environment. This year we have published "The Citizen's Guide to Biotechnology", submitted a response to the Ontario Ministry of Economic Development and Trade on the Biotechnology Council of Ontario's report "Enabling Biotechnology" and proposed to the Standing Committee on Environment and Sustainable Development that a new and separate part of CEPA be enacted to deal specifically with biotechnology products. We have also published recently a report on Sustainable Agriculture in Canada.

Today you are looking at the very real issues of how to survive as farmers in Ontario. I have been asked to address one of the real challenges to your survival - that of the development of biotechnology. In particular, I am going to focus on the whole development of genetically engineered foods and how this challenges the survival of the family farm. I am also going to talk about consumer concerns and perhaps suggest ways forward with farmers and consumers working together.

Biotechnology will undoubtedly affect all of our lives and those of our children. Biotechnology applications make up a technological revolution of immense power.

Biotechnology is, and will be beneficial in a wide range of activities. But is this technological revolution going to cure all ills and allow us to live happily ever after? Should we not be taking the time to ask ourselves what is this revolution really about? Who is benefitting? What are we accomplishing? What are we doing? How is this revolution going to affect us as farmers? How is it going to affect our society? And societies around the world, particularly in developing countries? How can we make sure that any public investment in biotechnology goes to these applications that will benefit society? Are the poor in Canada or in other parts of the world going to be better off? Are genetically engineered food products going to help feed the hungry? Do peasants in Mexico need the flavr savr tomato? Do we really need mushy peas or upscale pasta? Do we need rBGH milk? What will that development do to the small family farm in Canada? Are genetically engineered crops for export going to help farmers here or peasant farmers in the developing world? How can we ensure that this technology develops safely and for the common good? Are these naive questions to ask?

It has been said that 1996 could be the watershed year for agricultural biotechnology companies worldwide. There are dozens of new products in the pipeline. I would like to raise two main areas of concern. First, the concern about the health and environmental impacts of these new products. Second, the concern about the overall research direction of biotechnology. With genetic engineering, the agricultural industry is developing new plant and animal varieties and new foods.

We should not be surprised that a technology with such potential power raises enormous ethical, social, environmental, health and economic questions. The 1993 Decima survey of Canadian public attitudes toward biotechnology showed that Canadians recognize that biotechnology is extremely powerful. Two-thirds of the respondents believe that it offers some or much benefit to society. Two-thirds also believe that biotech poses some or much danger to society.

The 1994 Optima report found that many Canadians felt that they were inadequately informed about biotechnology. They were uneasy about how developments in biotech "fit into their value systems". There was a consensus that government should regulate biotechnology with a view to public safety. Government should also ensure that new products hold

minimum health and safety risks for individuals, society and the environment.

OVERHEAD - ROLE OF GOVERNMENT

On the role of government, 84% agreed that it should be to enforce regulations on activities in biotech; 81% said the government should consult the public on regulating biotech products and uses. Only 37% said that government should financially support biotech research in companies.

These surveys reflect public support for certain applications of biotechnology, and resistance to others. It has been said that the Canadian public is in a state of "yellow alert" about the development and use of many forms of biotechnology.

A 1994 survey by the Federation Nationale des Associations de Consommateurs du Quebec produced similar results. "The fears and apprehensions of respondents are far stronger than feelings of hope and wonder with respect to science" wrote the author of the study.

What are some of these fears and apprehensions?

The first is very basic. Is it right to manipulate the blue print of life of either humans or other species? Do we have the right to play God? Is the technical sweetness of doing what appears possible leading researchers to ignore the moral and ethical consequences of their research?

Do we want or need genetically engineered food? Huge amounts of public money are being invested for what purpose? It is not to feed the hungry because the investment, in Canada at any rate, is in crops that will fetch a good price, such as up scale pasta and mushy peas - to name two - rather than staples.

OVERHEAD - FOOD

In the same Optima Survey, 83% agreed that product labels should describe the biotech method used; 77% disagreed with the view that it is not important to label biotech food products; only 27% agreed that they would biotech-produced food if it cost less. (p 17).

Other concerns. Who owns genetic information? For what purpose? How do we control biotechnology products and their genetic materials, once in the environment? How do we make sure that life-forms that are self replicating do not do so accidentally?

Who among the scientific community do we believe or trust? The scientific literature reflects wide concerns regarding the lack of adequate methodologies and data to properly assess the environmental and health effects of the products of biotechnology.

How do we know what the consequences will be of the introduction of new life forms into the environment? The potential risks are described as "low probability, high consequence risk". What is the present capability to address the consequences if something goes wrong? According to the Union of Concerned Scientists, the unexpected effects of new genes in a gene pool cannot be ruled out. We simply do not have the knowledge to comprehend the scale of the ecological hazard arising from the creation of new transgenic species.

OVERHEAD - RISKS AND BENEFITS

Only 28% agreed that Canadians should accept risks from biotech developments if it strengthens the economy; 33% agreed that biotechnology would make the world a riskier place to live in; 39% agreed that those who control the development of biotechnology will ensure that it is only used for moral purposes, but 37% disagreed with that view.

The public also has concerns about the value and purpose of many emerging applications of biotechnology, particularly in agriculture, fisheries and forestry. Are these applications consistent with the principles of environmentally sustainable development? Or are the applications treating symptoms of environmentally unsustainable resource management practices, rather than their causes. Are the benefits real or imaginary? Some applications do not respond to any identified need at all. For example, upscale pasta or mushy peas.

Concerns include the potential environmental and health effects of the production and consumption of such foods. The public wants genetically

engineered food to be clearly labelled as such. In the Optima 1994 survey, the respondents were asked if a tomato were genetically engineered, would you want the label to say this - 95% responded yes, and only 5%, no.

These concerns extend beyond Canada to the developing world. Traditional farming methods in the third world are practised around frequent crop rotation and mixed cropping. Increased reliance on herbicide and pesticide resistant crops may lead to increased monoculture in areas that have traditionally relied on raising a variety of crops as the basis of a subsistence economy.

Some of the most common plant applications are those that have the Bt gene added (*Bacillus thuringiensis*). Thus creating strains of pest-resistant crops. Bt is a naturally occurring bacterium that produces a protein that is toxic to some insects. It is currently available as an agricultural pesticide. It is used by organic and other sustainable growers. When spliced into the genetic makeup of a plant, Bt becomes more effective because the plant produces the protective protein at high levels throughout the growing season. Critics fear its widespread use could lead to the creation of Bt-tolerant insect strains. This would make the pesticide and Bt-implanted crop varieties useless. The agri-industry response is to develop new biopesticides.

There is also a concern about creating herbicide-resistant plants. The concern is particularly acute when the manufacturers of these varieties are also manufacturing the herbicides to which the new crops are being made resistant. The question is raised about the role of agricultural biotechnology in entrenching the reliance on chemical herbicides.

The 20 or so transnational corporations that control most of the world's agricultural trade have not shown that the priority is to relieve world hunger. In the developing world they are welcomed by governments looking for investment and new technology. They operate in several countries at once and can use financial systems to their advantage. World trade and globalization are built on the commodity dependence of poor countries. The shortterm interests of profit will always overwhelm the longterm interests of economic security and environmental protection as long as the mobility of finance capital and investment is unregulated. A globalized

economy has to be about more than just productivity and competitiveness. It also has to be about the health, safety and economic life of all of our communities, here and in other parts of the world.

Fair trade linking the north and the south in a pattern of cooperation rather than competitiveness would be more likely to provide food security. The produce of small farmers needs to be safeguarded against that of industrial farmers in the rich world. The latter may be cheaper, but the former is the only way forward if we are concerned about sustainability and self reliance. What about patenting and intellectual property rights? Many argue that the patenting of life is immoral. Human beings cannot "own" other forms of life, or elements of persons, in this way. The public is also concerned about the collecting and patenting of biological materials. Multinational firms and agencies of northern governments are collecting materials from indigenous peoples. They are also collecting plants used in these traditional societies as medicinal substances. How should consent to use such materials be obtained? Who owns such materials and knowledge? How do you adequately compensate indigenous communities for any products discovered in this way? Can you adequately compensate such communities? Who should profit from indigenous knowledge? Should anyone? Should corporations?

There is also concern over patent applications for various seeds. This would force farmers in both the developed and developing nations to buy their seeds each season rather than retaining some seeds at each harvest.

So what do we do? At one end of the spectrum we could ban all applications of biotechnology until society is satisfied with the answers to its concerns. At the other end of the spectrum, corporations have the power and therefore they can just continue, unchanged. If this were to happen, those who oppose the development of biotechnology may resort to consumer boycotts and may become increasingly confrontational. I hope there is a third alternative. Multinationals, consumers, farmers and governments have to come together to work out a way to manage this revolution so that it contributes to a more just and humane world.

Consumers want governments to focus on the evaluation and regulation of biotechnology products. Consumers want to be sure that their health and

the environment will be protected. Consumers do not want their tax dollars spent on promoting the development and commercialization of biotechnology products unless they are convinced that the product is meeting a need of society.

In Canada there has to be a public process to address the ethical, social, economic, environmental and health concerns and to help government develop policies for both the support and regulation of biotechnology. Such a process could have both educational and policy development functions. It could also build consensus around the appropriate direction of public policy regarding biotechnology. It would more likely ensure that government actions toward biotechnology would promote the public interest rather than the private interests of the biotechnology sector. It would reflect the range of public opinion on biotechnology. Members of the public should be included in this process, not just as 'consumers' of biotechnology products, but as having a right and role to contribute their community sensibilities and expertise to the process of public policy development.

CIELAP has already put forward a fairly detailed proposal to the Government of Ontario. We have suggested that the government of Ontario consider the sponsorship of a Task Force on Biotechnology. This Task Force would help the government to develop policies for the support and regulation of biotechnology. CIELAP has laid out for the province the specific functions of the task force, its general goal and a variety of techniques to help it develop its recommendations.

Such a Task Force on Biotechnology in the province would address the lack of an overall policy framework for biotechnology. It would at the same time educate the public and build consensus on a course of action by the province. It would also provide the province with a means of more effectively targeting public support for the development of biotechnology in areas where there are clearly established needs. This would be consistent with the principle of making public investments in areas where there is real public need. The province of Ontario could take a leadership role in the establishment of a legitimate public space for discussion on the enormous implications of the technological revolution before us.

CIELAP has also proposed major revisions to the federal government's

approach to the regulation of biotechnology. These were presented to the House of Commons Standing Committee on Environment and Sustainable Development as part of its review of CEPA. We have recommended that there be a new and separate part of CEPA to deal specifically with biotechnology products that may enter the Canadian environment or be exported from Canada. We also recommended that the public should have a greater role in decisions on biotechnology products. This should include the right to appeal decisions, the right to be informed of tests in their community, and the right to access the information used to evaluate the biotechnology product.

CIELAP is also part of a steering committee set up by the Federal Government to guide a consultation process on biotechnology. This came out of the government's 1994 document *Agenda: Jobs and Growth: Building a More Innovative Economy*. The steering committee has determined that a detailed overview of the immediate and longterm social, ethical, environmental, and economic issues surrounding biotechnology applications is needed. This could provide the foundation of a meaningful public consultation on the implications of the emerging applications of biotechnology for Canadians.

It is in the agri-food area that divergence between consumers and biotechnology companies appears to be greatest. Consumers want accessible, objective and impartial information on biotechnologies provided by trustworthy independent agencies. They want information, not advertising, and do not trust biotechnology companies to provide it. Consumers want to be reassured by strict regulations as the biotechnology revolution occurs. And they want genetically engineered products to be labelled as such. Consumers want the right to information, and the right to choose, to be respected.

The biotechnology revolution is upon us. It is in all of our interest to work out some way of collectively managing it for the benefit of society and the environment. Otherwise, consumers may organize their buying power and boycott certain companies and products.