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November 1999

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According to many people, including scientists such as David Suzuki, scientific advances are not always consistent with or beneficial to consumers when long-range effects are unknown. This is the key issue behind the groundswell of opposition to genetically engineered food, an agricultural and marketing phenomenon that started in Europe. Despite the potential benefits of improved foodstuffs for alleviating global hunger, the caution and uncertainty expressed by such groups as Greenpeace have led to scientific innovation once again becoming a contentious political and social issue.

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Introduction

Genetics In Food: Changing Mother Nature

In Canada, it all started with the simple potato. In 1995 a loophole in federal regulations allowed experimental crops of genetically altered potatoes to enter the marketplace without the knowledge of environmentalists or consumers. The NewLeaf potato was the first transgenic crop a crop containing genes from another species to be grown and distributed in Canada. It contains genetic material from a pest-killing bacteria that has been inserted into its own genetic structure. The genetically modified (GM) potatoes are designed to kill off the Colorado potato beetle, a common pest in potato fields, which eats the plant's leaves. The NewLeaf potatoes reduce the need for pesticides to be sprayed on the potato fields because the potato plant itself has been made toxic to the beetle.

These new GM potatoes made it to the Canadian marketplace before receiving the approval of the federal Health Department and Agriculture Canada. This occurred because the NewLeaf potatoes were originally grown as trial crops, and as such, they did not require environmental approval because they were to be grown under controlled conditions. But the trial NewLeaf potatoes were mixed into regular potato supplies and distributed to consumers before the crop was declared safe. Since that time, the federal loophole has been closed; however, a host of other genetically modified food products are now being consumed by Canadians.

Safety is at the heart of the debate over genetically modified

foods. Supporters of GM foods argue that the new foods pose no threat to human health, animal health, or the environment. They also argue that GM foods, and the biotechnology that created them, will make it possible to feed the world's poor through the higher yield and longer storage capacity of the new foods. Opponents of GM foods argue that no long-term studies have yet been done that can prove these new products are truly safe. In the meantime, they say, the products are flooding the market, are unlabelled, and have made consumers guinea pigs in what the detractors say is in fact a huge GM food experiment. At the bare minimum, the opponents argue, GM foods must be labelled so that consumers can make their own decisions over whether or not they want to eat these foods.

The controversy over GM foods is developing into a major struggle for credibility. Caught in the middle of the debate are consumers. On the one hand, biotechnology companies like Monsanto, Dupont, and Novartis whose profits also fund research projects into new uses for biotechnology are spending millions of dollars to convince consumers that GM foods are safe and that the critics are wrong. On the opposing side, grassroots groups such as Greenpeace and The Council for Canadians as well as high-profile individuals like geneticist David Suzuki and Prince Charles, the latter a proponent of organic farming, are demanding that the biotechnology companies, which are also criticized for having too large a role in the agricultural economy, be made more accountable. Although the Canadian government's current policy is that GM foods are safe, the opponents of such genetic engineering point to the fact that in 1999 that same government chose to ban the use of Monsanto's bovine growth hormone, a chemical injected into cows to increase their milk production. But the debate over GM foods is not just a war of words; the winner will determine the very nature of the food chain.

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Process and Product

Genetics In Food: Changing Mother Nature

Unlike the food that previous generations bought and consumed, our food today is a much more complex consumer product and one that has often reached us after undergoing numerous processes: highly technical and scientific agricultural practices, extensive transportation networks, and frequently elaborate marketing, packaging, and presentation. In the good old days as some would call them, food was a relatively uncomplicated matter. Although concerned about getting enough to eat as well as the quality of the foods they ate, people generally did not think a great deal about what might be in their food other than the natural vitamins, minerals, and other nutritional components. Food was food, a carrot was a carrot, peanut butter was a relatively simple foodstuff. Much food today, however, is the product of a high-tech industry and often as much the end-product of the laboratory as of the land on which or in which it was produced. Vegetables and fruit, for example, may have been grown a long way from where we live, and thanks to modern transportation and specialized packaging and preserving techniques, reach our neighbourhood stores fresh and edible in a way that could never have happened a century ago.

Over the last 50 years, foods have been increasingly processed and manufactured, undergoing numerous stages, like many industrial products, and have been enhanced, improved, and even re-invented, as is the case for example, with broccoflower, which is both broccoli and cauliflower. It is not really surprising,

therefore, that the next level of processing of foods involves the basic building blocks of all organic material: genes. Today, as many as 70 per cent of processed foods sold in Canada may contain genetically modified ingredients. Approximately 60 to 70 per cent of canola, 25 per cent of soybeans, and 25 per cent of corn is genetically modified. These are examples of staple foods that are refined and used to process many other foods. From canola, for example, we create a vegetable oil that does not raise cholesterol levels in humans, as other oils do.

Biotechnology in the Shopping Cart

As you watch this News in Review video story for the first time, make notes on how biotechnology is being used to alter food. In your notes, try to include the types of foods that have already been modified, how they have been modified, and future modifications that are planned. After watching the video, discuss how the genetic modification of plants today is different from the classical breeding of plants that was practised for many years.

Biotechnology in the Public Marketplace

Now, create two columns in your notebook with the headings Supporting Arguments and Opposing Arguments and while watching the video a second time make point-form notes of the arguments for or against genetically modified foods.

Follow-up Activity

Write a one-page opinion piece in which you explain your reaction to the controversy surrounding genetically modified food.

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Informed Opinion

Genetics In Food: Changing Mother Nature

On October 26, 1999, the polling firm Angus Reid reported that only about half of Canadian consumers are aware of the issue of genetically modified foods. Of those 50 per cent, many stated that they wanted to know more before making up their minds about the issue. An informed decision requires examining arguments on both sides of an issue and often a complex issue will have a number of opposing points of view. In the case of genetically modified foods, arguments tend to be polarized, for or against, and each side supports its view with reference to scientific data.

Farmers, supported by the scientific community, have been improving plant breeding and crop modification for hundreds of years. By simply collecting and planting seeds (the DNA package) only from plants that are seen to have high yields or be resistant to harmful natural phenomena, farmers have practised a relatively simple agricultural modification program. These and other more scientifically advanced modifications that select genetically superior plants have enhanced the yield of crops, improved storability, and increased disease resistance. But until recently these changes occurred within a particular species, not across species. Genetically modified foods are created by changing the genetic structure of one species by crossing it with another species. In accordance with natural biological laws, however, the two unrelated species would not normally reproduce, that is combine or exchange their DNA, if it weren t for

human intervention in a laboratory. Examples of this type of biotech gene manipulation include: crossing the wax moth gene into a potato to keep it from bruising; placing a fish gene into a tomato to increase frost resistance; and introducing a human gene into a pig to produce leaner meat.

As is often the case with scientific innovation, questions arise about the short-term and long-term effects of modifying natural processes. Arguments for or against such procedures are soon heard. This is especially true of biotech gene manipulation. Below you will find statements that argue both sides of this debate. After reading the arguments, write a one-page opinion piece that summarizes your thoughts, ideas, or feelings on the issue.

Any politician who tells you these products are safe, and that [this] is known through scientific testing, is either very, very stupid or they're lying. We have no idea what the long-term consequences will be on the public. There's no way our health authorities can test all possible combinations and permutations over a large enough population over a long enough period to be able to say with assurance that they are harmless. So basically, by slipping it into our food without our knowledge, without any indication that there are GM organisms in our food, we are now unwittingly part of a massive experiment. David Suzuki, geneticist and host of CBC's *The Nature of Things*

Biotechnology is going to help solve problems that we face going into the next century. Some things we are going to see are: reduced allergies; development of more nutritious food; increased nutritional production to feed a growing global population; diagnostic systems that will help us reduce e-coli and other bacteria found in organic food, meat, and unpasteurized fruit drinks. We will see a dramatic reduction in the use of pesticides as farmers are given varieties that allow them to better manage their production. Other environmental benefits will be crops that use fertilizer more efficiently and tolerate stress conditions such as heat and drought more effectively. Murray McLaughlin, president and CEO of Foragen Technology Ventures Inc., Guelph, Ontario

One impact of GM foods on the environment is that we are going to end up with the biotech equivalent of toxic waste dumps. We may develop organisms we cannot get rid of. We already know the terrible environmental impact of such organisms as the gypsy moth and Dutch elm disease, or exotic fishes. Once released, these organisms cause havoc and are literally impossible to control. Jane Risler, biotech specialist, United States National

Wildlife Federation

Higher agricultural productivity is, of course, an economic good by definition. It is also an environmental good, reducing pressures to destroy remaining forests and colonize marginal lands to feed expanding populations, especially in the developing world. From an editorial in *The Globe and Mail*, August 23, 1999

If genetically engineered seeds allow farmers to increase food production, won't that mean a reduction in prices for their crops? What would be the motivation for farmers to invest money and energy into this technology if it is not economically remunerative to do so? Gail McCormack, Guelph citizen

The risks of modern genetic engineering have been studied by technical experts at the National Academy of Sciences and the World Bank. They conclude that we can predict the environmental effects by reviewing past experiences with those plants and animals produced through selective breeding. None of these products of selective breeding have harmed either the environment or biodiversity. Jimmy Carter, former president of the United States

Nature is like an elastic, you can only stretch it so far. Nature comes back to us. We see evidence of this all the time. Like antibiotic resistance in humans due to the use of antibiotics in our meat supply. And DDT resistance in mosquitoes. Ann Clark, crop scientist, University of Guelph.

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The Organic Alternative

Genetics In Food: Changing Mother Nature

As more and more people begin to question the quality of our food supply (for a multitude of reasons), many are beginning to look for alternatives to the traditional methods of food production and distribution. For some people, organic fruits and vegetables are becoming an attractive alternative. Organic foods are produced without the aid of chemical fertilizers or pesticides. As well, organic farmers do not use genetically altered seeds, drugs, hormones, or radiation in the production of food products.

In their book, *Real Food: For A Change*, authors Wayne Roberts, Rod MacRae, and Lori Stahlbrand outline 10 reasons why consumers should make the switch to buying organic foods. Below are three of these reasons. How might someone working in an agribusiness dependent on high-tech processes counter each of these reasons? What follow-up questions could you ask of the authors to assist you in assessing their statements?

1. Better Health

Nutrients in food come from nutrients in soil. If nutrients in the soil are depleted from farmers growing the same crops year after year, complex nutrients disappear. This is what happens with most conventional vegetables and fruit. As well, most conventional vegetables are given a wax coating to prevent the wrinkles that come with age. Many conventional fruits are also manipulated before being sold in supermarkets. Bananas, for example, are picked green and are then forced to ripen through

the application of ethylene gas. As well, oranges from Florida are green when they are ripe on the tree, but then are turned orange through the application of dye. The labels indicating the use of dye appear on the warehouse crates but never appear on the individual oranges themselves.

2. Better Taste

Organic food is grown in composted soil rich in nutrients and minerals. As a result, food grown organically tastes better and is often sweeter than conventional foods.

3. Less Anxiety

Organic foods can never be exposed to chemicals or pesticides and therefore are purer and safer than conventional foods. Conventional foods are never assessed for purity; they are assessed for risk. It is the job of health inspectors to assess the inherent risk of a food, but inspectors only assess one risk at a time. This system can sometimes result in errors because humans are generally exposed to more than one risk at a time. Therefore, we are not tested for the domino effect conventional foods may have on us.

Investigating the Alternative

You may wish to learn more about the benefits of organic food by contacting the Canadian Organic Growers, at P.O. Box 6408, Station J, Ottawa, ON K2A 3Y6 for materials. You may also access the organization's Web site at www.gks.com/cog. After examining and assessing the organization's materials, give reasons why you find the information credible or not.

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Grassroots Regulation

Genetics In Food: Changing Mother Nature

In the mid-1990s, many farmers in North America embraced the production of GM crops. They were inspired by the promises of increased output and profits. Genetically modified crop production seemed to be a win-win situation for them. But public opinion began to shift, and today more and more consumers are demanding to know which foods have been genetically altered and which have not.

These consumer demands have reached politicians, farmers, and food processors. Although government officials and politicians in the United States and Canada still claim GM foods pose no health hazards or environmental risks, some businesses are voluntarily taking action in response to consumer demands. For example, on August 31, 1999, Archer Daniels Midland, one of the largest food processors in the United States, announced that it would require its suppliers to begin segregating GM crops from non-GM crops. Previously, farmers were able to dump GM crops and non-GM crops into the same storage facilities. As a result, when the crops were brought to food processors for processing, the entire shipment was contaminated by the GM crops. Archer Daniels decided to require that crops be stored separately because more and more customers were beginning to demand non-GM ingredients in their foods.

Anti-GM sentiments like these, which are just starting to grow in North America, can be found throughout the world. In Britain, anti-GM activists have been so successful that it is difficult to find

GM products on supermarket shelves. As well, the 15 nations of the European Union have passed regulations requiring the labelling of all products with GM ingredients. Australia, New Zealand, Brazil, Mexico, Japan, and South Korea are all currently drafting similar regulations. Last summer, Japan's two leading breweries announced they would stop using GM corn by the year 2001. In September 1999, H.J. Heinz Company and Gerber Products Company announced they would no longer use genetically modified corn or soybeans in any of their baby products. And giant food processors Nestle, Unilever, and Cadbury Schweppes have pledged to go GM-free.

In early September, Greenpeace, the Sierra Club, the Council of Canadians, and about 20 other Canadian groups met in Ottawa to map out a common anti-GM campaign. Later this fall, Canadian consumers will be the target of an anti-GM advertising campaign, supermarkets will be pressured to drop GM foods, and food manufacturers will be challenged to use non-GM ingredients.

In addition, in December 1999, a class-action lawsuit will be filed against biotechnology giants Monsanto, DuPont, and Novartis, accusing them of restricting farmers' freedom to choose what seed they plant. The lawsuit will be filed simultaneously in 30 countries by two Washington, D.C., groups, the Foundation on Economic Trends and the National Farm Family Coalition, as well as individual farmers across North America, Latin America, Asia, and Europe. The lawsuit will argue that the three biotechnology companies have gained too much control of farming practices through their dominance of the market and ownership of patents on GM seeds. In all likelihood, the lawsuit will continue for years, but if courts rule against the biotech companies, it may have a significant impact on the industry worldwide.

In the Court of Public Opinion

At present, a number of key organizations are working hard to inform the public on this issue and to influence public opinion. Below are some of the major organizations involved in this information campaign. Assign investigative reporters to gather information on each and to report the position on genetically modified foods presented by the organization assigned. The reporter should also summarize facts and figures relevant to this discussion, the role the organization is playing in terms of food production, and the organization's mandate.

Foundation on Economic Trends

This is a U.S. non-profit organization led by author Jeremy

Rifkin, whose professional expertise is the examination of emerging trends in science and technology and their impacts on the environment, the economy, and society www.biotechcentury.org

National Farmers Union

This national organization presents farmers perspectives on biotech issues www.nfu.ca

Agricultural Groups Concerned About Resources and Environment (AgCare)

This collective provides crop producers perspectives on biotechnology, unsustainable agriculture, and responsible use of new farm technologies www.agcare.org

The Council of Canadians

This independent citizens group provides a critical voice on key national issues www.canadians.org

Health Canada, Health Protection Branch

As part of its mandate, this department of the federal government addresses the regulatory process and safety assessment of GM foods www.hc-sc.gc.ca

Information Systems for Biotechnology

This organization offers results of hundreds of agricultural biotechnology risk assessment experiments www.nbiap.vt.edu/

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The Demand for Labelling

Genetics In Food: Changing Mother Nature

Scientist David Suzuki has said that there are already too many GM seeds and products in the marketplace to totally stop production of these products. But Suzuki and a growing number of other groups and individuals are calling for the introduction of mandatory labelling for all GM crops. Advocates of this policy argue that this is the only way consumers will be able to choose between foods that contain GM material and those that do not. Canada's current food-inspection policy states that labels are required only if a genetic modification alters the nutrition of a food or if it poses an allergy risk. But many critics argue that the problem with this policy is that there is simply no way to trace adverse reactions back to GM products. Gillian K. Hadfield, a professor of law at the University of Toronto, points out that without mandatory labelling it will be impossible for scientists and researchers to track the correlations between increased consumption of GM foods and increased or decreased incidence of disease. Labelling requirements for any product, however, mean an additional cost and logistical complications for a producer.

At present, the Canadian government is drafting voluntary labelling regulations. Federal Minister of Agriculture Lyle Vanclief is against mandatory labelling because, according to him, in jurisdictions where such a policy has been adopted it has been impossible to enforce. But the government's new regulations may well be out of step with the desires of many Canadians and

many throughout the world community. In fact, as a result of consumer pressure, one of the world's biggest biotech companies, Novartis, is advocating that all GM crops and food products made from them be labelled. Wolfgang Samo, head of agribusiness at Novartis, said, "There is no need from a scientific and safety perspective, but if we believe in the consumers' right to choose, the industry cannot reasonably argue against labels facilitating this choice."

Ironically, Canadian farmers who decided not to begin producing GM crops are now starting to reap some rewards. As Britain and other countries in the European Union are starting to pull GM crops off their supermarket shelves and label all products that contain GM ingredients, Canadian farmers growing conventional foods are getting a larger share of the market. Canadian soybean farmers not using GM seeds, for example, are grabbing sales in the Japanese market that used to be dominated by farmers in the United States.

Discussion

Mandatory labelling that indicates whether a food contains genetically modified material is an additional cost that a producer must take into consideration. Costs like these are often passed along to the consumer. Given that no definitive answer to this debate is available to the general public at this point consumers must inform themselves and make up their own minds as to the safety of genetically modified foods does the Canadian consumer have the right to demand such labelling? Justify your opinion carefully.

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Biotechnology Corporate Giants

Genetics In Food: Changing Mother Nature

The biotechnology industry was initially made up of hundreds of small companies, but throughout the 1990s many of these small companies were purchased by large corporations. These U.S.-owned biotechnology giants, which now prefer to be called life science corporations, produce biotech products that have both agricultural and medicinal applications. Monsanto Chemical Corporation is the largest biotech company in the agricultural field and is one of the largest sellers of pharmaceuticals in the United States. DuPont is the world's largest seed supplier. Novartis is the world's largest chemical company.

A Controversial History

Monsanto is at the centre of the controversy over GM foods because it is the largest producer of GM products and is no stranger to controversy. Since the time the company was founded in 1901, it has produced a number of industrial-use products that in the course of events have been proven to be toxic to human and animal health and the environment. One such product was polychlorinated biphenyls, or PCBs for short. Monsanto had been producing PCBs for approximately 40 years before they were declared a cancer-causing agent and banned in the United States and Canada. Another toxic product produced by Monsanto was dioxin. Dioxin was a chemical often used in herbicides but it was banned in 1957 after it was linked to a host of health problems in humans. But the most notorious product manufactured by the company was Agent Orange. Agent

Orange was used by the United States military during the Vietnam War in the 1960s and 70s. This chemical was sprayed on the forests in Vietnam and Laos to defoliate the trees and make it easier for U.S. soldiers to fight their way through the jungles. In total, it is estimated that 76 million litres of Agent Orange were sprayed on 2.5 million hectares of South Vietnam's forests. Agent Orange, which contains dioxin, is associated with birth defects and cancer in laboratory animals. Some U.S. soldiers exposed to Agent Orange suffered similar medical problems although a direct causal link has not been clearly established and brought a class-action suit against the manufacturers. The suit was eventually settled out of court. As a result of the company's negative history, many of Monsanto's U.S. employees report that they are afraid to tell their neighbours that they work for the company. And in the late 1990s, Monsanto's Chief Executive Officer, Robert Shapiro, was given the challenge of reshaping the company's image from one of a manufacturer of dangerous chemicals to an enlightened, forward-looking institution crusading to feed the world.

Monsanto and Agriculture

Monsanto produces pest-resistant corn, potato, and cotton seeds. These seeds have been genetically altered to produce high levels of Bt toxin, which is an insecticide. These seeds have a high yield because less product grown from these seeds is destroyed by pests. Monsanto also produces Roundup Ready GM seeds for canola, corn, cotton, and soybeans. These herbicide-tolerant seeds have been modified to produce crops that can survive being sprayed by the herbicide Roundup, which is also produced by Monsanto. Farmers who use the Roundup Ready seeds enjoy the advantage of having virtually no weeds in their fields.

Although many farmers are pleased with the quality of the produce that can be grown from the GM seeds, more and more of them are concerned about the high level of control exerted over farmers who buy these GM seeds. Since the seeds are patented, farmers need permission from Monsanto to grow them and must pay a \$6.07 per hectare fee over and above the seed cost. In addition, before using the seeds, farmers must sign a technology use agreement, or TUA, with Monsanto. This agreement restricts farmers to using Roundup herbicide, prohibits farmers from saving and reusing seeds (which is a traditional farming practice), and gives Monsanto the right to conduct surprise inspections and take samples from farmers' fields for up to three years after the farmer stops buying Monsanto's seeds. Monsanto argues the terms of the TUA are necessary because it needs to protect its patent on the seeds.

Monsanto Goes to Court In Canada

In 1999, 16 prairie farmers were accused by Monsanto of growing Roundup Ready crops without permission. One farmer, Percy Schmeiser, has filed a \$10-million countersuit against Monsanto, accusing the company of defamation. Schmeiser claims that he never knowingly planted the Roundup Ready seeds and that they must have blown onto his 364-hectare canola farm from a neighbouring field or off one of the many trucks that transport seed along the highway beside his farm.

Opponents of Monsanto hope that when this case goes to court, negative publicity for the company will result. Schmeiser and his lawyers will attempt to discredit Monsanto by suggesting that the company has the unreasonable right to enter land without permission to obtain seed samples from suspect farms and that, in the Schmeiser case in particular, the company struck a secret deal with the local seed mill to obtain a portion of the farmer's seeds for analysis. In addition, the case will be made that Monsanto set up a snitch line to get farmers to report on suspected violators, hired a private investigation firm in Saskatoon to track suspect farmers, and even offered farmers a free leather jacket if they turned another farmer into the company. Schmeiser believes that the case will result in a public outcry against Monsanto and the control it exerts over farmers.

Discussion

In your opinion, what are the key issues in the situation described above? What rights are at stake? How does the question of ownership play a role in this situation? What are the legal and marketing implications? In what way is this similar to the issue of copyright? How is it different?

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Genetics In Food: Changing Mother Nature

1. In March 1998, Monsanto announced that it was working on a technology protector system, commonly referred to by the company as the terminator. This technology uses genetic engineering to kill seeds after one planting. Because the seeds become sterile after one year, farmers would have to go back to Monsanto every year for more seeds. On October 4, 1999, Robert Shapiro, president of Monsanto, promised to not market the terminator seeds. Many people, however, fear that Monsanto, or another biotech firm, will move ahead with this technology at a later date. What are the implications of this kind of technology? Are you aware of other kinds of technology that protect a producer's product from misuse? You may wish to research Monsanto (www.monsanto.com), who developed the technology, and the Rockefeller Foundation (<http://rockfound.org/frameset.html>), which opposes it, to learn more about this technology.

2. Concerns over food quality have resulted in a number of trade disputes worldwide. Consumers and governments of individual countries feel they should be able to set their own standards for food quality and take action against food products they believe have not been proven 100 per cent safe. Research one of the following disputes and report on your findings to your classmates. What do they all have in common? How do they differ?

(a) British farmers want the government to ban the importation of

French livestock because some of it has been fed sewage.
(b) The French government is refusing to allow British beef into the country because of continued concerns over mad cow disease.

(c) Britain wants to ban Belgian poultry and dairy products because of high levels of carcinogenic dioxins.

(d) The European Union does not want to import beef from the United States because cows have been injected with growth hormones.

(e) The European Union does not want to import Canadian beef because of concerns of high levels of steroids and antibiotics in the meat.

3. In May 1999, the results of a laboratory study were published in *The New Scientist* that showed that the caterpillars of monarch butterflies could be poisoned by pollen from genetically modified corn. The corn had been modified to produce the Bt toxin, which is an insecticide. Locate a copy of the study, conducted by Cornell University entomologist John Losey, and analyze the potential environmental impact of this finding.

4. On October 23, 1999, the Food and Consumer Products Manufacturers of Canada expressed concern that the federal government, in response to criticisms by anti-GM lobbyists, is not doing enough to reassure Canadians that our food supply is safe. The group says the government has to do more than deliver speeches if it wants Canadians to believe that food is safe to eat. Contact this group to learn more about what they would like to see the Canadian government do to promote Canadian food products. You will find its Web site at www.consumer.ca.

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Using both the print and non-print material from various issues of **News in Review**, teachers and students can create comprehensive, thematic modules that are excellent for research purposes, independent assignments, and small group study. We recommend the stories indicated below for the universal issues they represent and for the archival and historic material they contain.

The Clean Air Act, December 1990

Disappearing Ozone: Danger in the Sun? March 1992

Global Warming: A Progress Report, May 1995

Human Reproduction: Redefining Life, October 1996

The Disappearing Forest, December 1997

Cutting Emissions: New Fuels For Cars, February 1998

Keeping Milk Safe: Canada Bans BST, March 1999

Other Related Videos Available from CBC Learning

Does Your Resource Collection Include These CBC Videos?

High Tech Harvest: Biogenic Foods
Field of Genes

