Public Opinion Research on Biotechnology

Canada-U.S. Tracking survey

Final Report

Prepared for:
Biotechnology Assistant Deputy Minister Coordinating Committee (BACC), Government of Canada

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Introduction

Decima Research is pleased to present this report on a public opinion research program conducted in March of 2004 for the Biotechnology Assistant Minister Coordinating Committee (BACC), Government of Canada.

This survey marks the second wave of research tracking attitudes among Canadians and Americans about biotechnology and related issues.

The research was comprised of a telephone survey of a random sample of 1559 respondents. In all, 778 Canadians and 781 Americans were interviewed, yielding a margin of error of 3.46% in each of the two countries.

The research was designed to accomplish three major objectives:

- Track levels of awareness, familiarity and interest in the biotechnology sector and key biotechnology issues
- Track perceptions of risks and benefits associated with key biotechnology issues, and key drivers of support and opposition
- Investigate emerging issues associated with the field of biotechnology.

Much of the survey has been tracked from the benchmark survey in March 2003. There are, however, three new areas that were investigated:

- Molecular farming
- Genomics
- Genetic Information and Privacy

The data collection work began on March 19, 2004, and ended on March 30, 2004.

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Highlights

On the whole, opinions on key issue areas that have been tracked year over year show only slight changes in this wave of research. Awareness, familiarity, and support for biotechnology all remain fairly consistent in the two countries. Americans tend to claim greater familiarity with the field as well as greater support for the field as a whole than Canadians do, by a margin of about 10% in both cases. Overall support for the field of biotechnology as a whole sits at 63% in Canada and at 73% in the U.S.

The benefits of biotechnology for health as well as for the economy, as seen today and even more so as perceived for the future, continue to outweigh the drawbacks, in both Canada and the U.S.

On applications of biotechnology, attitudes are extremely consistent in the two countries. Both Canadians and Americans demonstrate – almost equally – continued widespread support for applications in health and the environment. There is, however, less support for applications in other areas, such as GM food. Moreover, there is a notable gap between opinions in the two countries on the issue of GM food, both in applications as well as the field of research as a whole. Canadians tend to express higher levels of trepidation about GM food than Americans, and that trepidation in Canada is expressed more in this wave than in previous waves of research.

In fact, this wave of research suggests an increase in opposition to GM food in Canada. Now a clear majority of 53% in Canada says they are uncomfortable buying foods with GM ingredients.

One of the new areas investigated in this survey was molecular farming, in plants and animals.[1] The results suggest that there are some marked differences between Americans and Canadians on molecular farming. It also suggests that people in both countries view these two kinds of applications differently, and they scrutinize them carefully.

It is clear that plant-related applications tend to be more widely acceptable than animal-related applications, and that applications that have health benefits tend to be more widely acceptable than applications with industrial benefits. Canadians tend to be broadly supportive, but have more concerns than Americans about environmental applications. Overall the evidence suggests that like most applications, people employ the same case-by-case risk/benefit analysis for molecular farming applications as they do for other biotechnology ones.

[1] Crops (plant molecular farming) or animals (animal molecular farming) are genetically engineered to produce medical and industrial products, including human and veterinary drugs and biologics and industrial and research chemicals. At this time in Canada, no plants for molecular farming have been approved for commercial field production. Some organizations have been doing research on plants with novel traits (PNTs) for molecular farming in laboratories and greenhouses, as well as for a limited number of approved confined research field trials.

- 83% of Americans agree with the use of genetic modification of plants that produce interleukin, an enzyme used in health treatments, while 80% of Canadians have similar views.

- 85% of Americans agree with the use of fast growth plants to produce biodegradable plastic products; fewer Canadians (78%) hold this opinion.

- Americans (60%) are more supportive than Canadians (50%) of the use of genetically modified animals to produce higher quality industrial products.

While tested previously in Canada, a series of issues associated with genomics were investigated in both countries in this wave of research. Core perceptions regarding the field of genomics proved to be very similar in both Canada and the U.S. Indeed, misperceptions about the definition of genomics are similarly evident, and similarly pronounced in the two countries. It appears that residents of both countries confuse genomics and biotechnology, believing that biotechnology is the basic science, and genomics is the application of that science.

When provided with clarity on the definition of genomics, in both countries there is widespread support for this field of endeavour, with more than 70% support in Canada and more than 80% in the U.S.

Canadians and Americans both assign a high value to the potential of genetic information. They see it as essential to the future of heath care. In total, more than 80% of both Americans and Canadians believe that genetic research will play a significant role in the future of health care, and more than 65% believe there are more benefits than drawbacks to studying genetic information.

Americans tend to be more willing to contribute their genetic information to research: 80% say they are very or somewhat willing to contribute their genetic information to research, compared to 74% among Canadians.

Moreover, tracking suggests that the willingness to contribute genetic information to research has decreased significantly in Canada over the past year. The number indicating they are “very willing” has fallen from 56% in March 2003 to 37% this year.

The softening in opinion on this issue in Canada is paralleled by the growing wish that the government give a higher level of focus to privacy issues (39% compared to 25% last year), rather than to issues of ensuring research takes place (26%, down from 30% last year).

Overall, the data in this area point to growing concerns about privacy issues associated with genetic information. While this has not affected views about the role and importance of this information to the future of health care, it may over time begin to affect views about how health research is done and how peoples’ personal genetic information is used in that research.

Main Findings

Familiarity, Awareness, Interest and Support

Familiarity with biotechnology in both Canada and the U.S. has remained relatively stable over the past year. Americans are still more familiar than Canadians are. Our tracking, however, shows that over time, there has been a slight increase in familiarity in Canada. Slightly more than half of Canadians, 57%, are familiar with biotechnology, which includes 7% who indicate they are very familiar. Although this number is unchanged from the last wave of research, this still represents the highest level of familiarity in this country since September of 2000, however, familiarity has shown a very slight upward trend over time in Canada.

In the U.S., familiarity is up 1% from the same time last year, to 68%. Here, 11% indicate they are very familiar.

This wave sees a narrowing of the gap in awareness of biotechnology between the two countries. In Canada, a one-point increase is seen – from 44% to 45% who say they are aware – while at the same time, awareness dropped by seven points to 46% in the U.S.

The majority of Canadians and Americans are interested in biotechnology, and equally so in each country: 17% of Canadians are very interested and another 54% are somewhat interested, while in the U.S. these numbers are 20% and 54%. Gender plays a slight role in levels of interest: more American men (22%) are “very interested” in biotechnology than Canadian men (16%), however women in both countries are equally “very interested” (18%).

Public opinion towards biotechnology continues to suggest that Americans are generally more supportive of biotechnology in general than Canadians. On the surface, this gap seems to be widening: Three quarters (74%) of Americans support biotechnology, up three points from last winter, while at the same time 61% of Canadians support biotechnology, down two points from last winter. Looking a little further to past waves reveals however that although numbers indicate a slight decrease in support among Canadians, support is up 10% from September 2000.

Genomics

Views regarding genomics are similar in Canada and the United States. The first key point on genomics is that it appears that residents of both countries confuse genomics and biotechnology. Individuals tend to think biotechnology is the basic science, and genomics is the application of that science. When provided with clarity on the definition, there is widespread support for genomics.

A slight majority, 55% of Canadians and 52% of Americans, believes genomics involves the use of genetic information to develop new products and processes, while 36% of Canadians and 38% of Americans think genomics is the study of genes and how genes work.

Familiarity with the field of genomics is higher among Americans (49%) than among Canadians (41%). One in five residents in each country indicate they are not at all familiar. Americans are also generally more supportive of genomics than Canadians. Support is, however, generally high: three quarters of Americans and seven in ten Canadians give some level of support for work in the field. The main difference is in the level of this support: While Canadians are only slightly more likely to say they somewhat support the technology (54% vs. 52% in the U.S.), Americans are more likely by six points to say they strongly support it (22% vs. 16% in Canada).

Applications

In this wave examples of "traditional" biotechnology applications were once again tested, namely health, environmental, agriculture or food, and industrial applications.

Americans tend to agree in higher numbers with the use of biotechnology applications in general. For the applications tested, support in the U.S. ranged from at par with support in Canada (for some health applications), to 12 points higher (for GM corn).

Most applications in health and environment are appealing to Americans and Canadians alike. On the health side, using biotechnology while helping to cure type 1 diabetes by inserting GM cells into the pancreas is an application that fully 86% of Canadians as well as Americans agree with. The genetic modification of stem cells from bone marrow that can treat certain forms of blindness is accepted by 84% of Canadians and Americans, while a slight variation to this, genetic cloning of stem cells to treat blindness, finds support with 80% of Canadians and 82% of Americans.

As for environmental applications, the use of genetically modified plants to break down pollutants and toxic waste is supported by 85% of Canadians and 88% of Americans. The development of trees that have been genetically modified in order to take on larger than normal amounts of carbon, which in turn may help reduce greenhouse gasses, finds support among three quarters (74%) of Canadians and 82% of Americans.

Using genetically modified enzymes that break down corn and turn it into a source of fuel, producing products like ethanol also finds a high level of support: 78% in Canada and a full 87% support in the U.S.

Although majorities in both countries still agree with using biotechnology for food applications, support here is lower than for applications in other fields, and most evidently so in Canada. Genetically modified wheat, modified to resist disease, is supported by 72% of Americans and by 61% of Canadians. The lowest level of support in both countries is for corn genetically modified to resist pesticides: Only a slight majority (55%) of Canadians support this application,

as well as two-thirds (67%) of Americans. A relatively high number of Canadians, 14%, say they strongly disagree with the use of biotechnology for this application.

Molecular Farming

One of the new areas investigated in this survey was molecular farming, both in plants and animals. The results suggest that there are some marked differences between Americans and Canadians on molecular farming. It also suggests that people view these two applications differently and scrutinize them carefully. It is clear that plant-related applications tend to be more widely acceptable than animal-related applications, and that applications that have health benefits tend to be more widely acceptable than applications with industrial benefits. Canadians tend to be broadly supportive, but have more concerns than Americans about environmental applications. Overall the evidence suggests that like with most applications, people employ the same case-by-case risk/benefit analysis when it comes to molecular farming.

Looking more closely to the specific applications tested in this wave of research, fully 83% of Americans agree with the genetic modification of plants that produce interleukin, an enzyme used in health treatments, while 80% of Canadians have similar views. The gap between the two countries is wider for the second plant molecular farming application, this one an environmental one: 85% of Americans agree with the use of fast growth plants to produce biodegradable plastic products; fewer Canadians (78%) hold this opinion.

The gap is even wider when it comes to molecular farming of animals for industrial purposes. While Canadians are divided, 50% are supportive and 47% are opposed, a small majority (60%) of Americans are supportive of the genetic modification of animals to produce products of a higher volume or of a higher quality. In the survey, respondents were given the example of goats that would produce milk containing spider silk that is stronger and lighter than any product currently in use, that can be used to make things like bulletproof vests or surgical thread.

Benefits and Drawbacks of Biotechnology

The benefits of biotechnology on health and the economy continue to outweigh the drawbacks, both as seen today and as expected for the future. This is true for both Canada and the U.S., although Americans are more optimistic about its impacts on both aspects of society.

However, Americans and Canadians alike believe that biotechnology offers more benefits to human health than to the economy. In the United States, four in ten (41%) believe biotechnology brings major benefits to health of Americans today, while another 41% believes it brings modest benefits to the current health of Americans. Over the longer term, 45% of Americans believe it will bring major benefits to their health and 38% believe it will bring modest benefits.

In Canada, while 32% of Canadians agree it brings major benefits to the health of Canadians today, more people see it being a major health benefit for the future (38%). Another 45% see it as a modest health benefit today and 37% for the longer term.

Turning now to the economy, both Americans (29%) and Canadians (29%) feel biotechnology will brings major benefits to the economy today. However, 38% of Americans feel that it will bring major benefits to the economy in the future compared to 29% of Canadians. Moreover, slightly less than half in each country believe in the modest benefits of biotechnology, both now and in the years ahead.

Even though the benefits of biotechnology seem to outweigh the drawbacks in both countries, that is not to say that individuals are not aware of the potential risks associated with such technologies.

Risks

Canadians tend to be more cautious about the risks associated with biotechnology than Americans. Canadians are more likely to suggest that the government should slow the use of biotechnology, and that genetically modified products provide more risks than benefits.

One in five (22%) Canadians strongly agree that government should slow the use of biotechnology until more is known about the risks. Only 14% of Americans feel the same way. Genetically modified foods still raise a cautionary flag: 60% of Canadians believe genetically modified food products provide fewer benefits and more risks, while 53% of Americans would agree with that. As well, 52% of Canadians and 48% of Americans feel that genetically modified health products provide fewer benefits and more risks.

Research is key to comfort with biotechnology products. Fully three quarters of Americans (76%) and Canadians (73%) agree that if ongoing long-term research were to be conducted on biotechnology products after they were approved for sale, it would make them feel more comfortable.

Although Canadians approach biotechnology with more caution, they realize that biotechnology is part of the future, so they acknowledge that the best way to address the situation is to make it as safe as possible. Three in ten (31%) Canadians strongly agree, and another 56% somewhat agree with the statement that biotechnology is part of the future so all one can do is make sure it is as safe as possible. About the same numbers of Americans agree (30% strongly and 58% somewhat.)

Furthermore, more than three quarters (78%) of Canadians and 84% of Americans agree that some risks need to be accepted in order to achieve benefits of biotechnology like new cures for serious illnesses. Slightly less, although still majorities in both countries, would be willing to accept some risk to achieve benefits like new foods that contain vitamins and medicine: 63% of Canadians and 71% of Americans agree with taking risks to those ends.

One reason why Canadians indicate more caution towards biotechnology may be that they do not see Canada as a world leader in the field of biotechnology research. This perceived lack of involvement and subsequent lack of familiarity could explain why Canadians are more cautious than the Americans.

Government, Biotechnology and Regulations

Familiarity with ways in which biotechnology is regulated is low in both Canada and the U.S. However, a fairly strong majority of Canadians and Americans are confident in Health Canada and the FDA's abilities to ensure safety of biotechnology products. In fact, 57% of Canadians who are not familiar with the regulation of biotechnology were still confident in Health Canada's ability to regulate the field.

Only 2% of Canadians are very familiar and another 20% somewhat familiar with the ways in which biotechnology is regulated in Canada. Americans are only slightly more familiar: 2% are very familiar and 26% are somewhat familiar with ways in which biotechnology is regulated in the United States.

Governments of both countries are seen as not doing enough to study and monitor the impact of biotechnology by slight majorities in each country: 60% say so about the Government of Canada and 56% about the American government. The majority of Canadians and Americans also feel that their governments should work with other nations to develop international standards and regulations: 85% of Canadians feel that the Government of Canada should not go it alone, while 77% of Americans feel the same way about their government.

Even though residents of both countries want government involvement in biotechnology, almost all (93% of Canadians and 91% of Americans) feel that their government's role is to inform individuals about biotechnology, leaving the ultimate decision of whether or not to use these products to the individuals.

Canadians want the Government of Canada to have a role in biotechnology, and they believe that this should encompass more research into the area. Canadians are very confident in the abilities of the government and Health Canada to play a bigger role.

Genetically Modified Food

Not surprisingly, Canadians are more cautious about genetically modified food than Americans. Canadians are less comfortable with genetically modified food, are less likely to believe they have eaten a GM food product, and are less likely to indicate they would continue buying a product if it was to contain genetically modified ingredients. As a result of this vigilance, Canadians are more likely than Americans to say a new labeling system for genetically modified food is needed, and they are more likely to believe that this system should be mandatory.

Half (52%) of Americans are comfortable with buying genetically modified foods, compared to 45% of Canadians. The number of Canadians who are comfortable with buying genetically modified foods has decreased seven points March 2002.

Furthermore, a quarter of Americans would continue to buy a food product that contained genetically modified ingredients, while only 19% of Canadians would. About three in ten residents in both countries would buy it anyway, but plan to find out more, while a third in each country would not buy it until they found out more. In Canada, 17% say they would just not buy it again, while 11% of Americans would do the same.

Labeling is another issue that was touched upon in this survey, in relation to GM food. Fully 85% of Canadians believe a new labeling system is needed and 77% believe that system should be mandatory. In the U.S., 82% believe it is needed and 70% feel it should be mandatory.

This data indicate that Canadians are not yet at a point where they feel comfortable with genetically modified food. In fact, comfort levels have continually decreased since March 2002.

Driving Concern

In this study, Canadians and Americans were asked about their concerns about different products using biotechnology, genetically modified food, genetically modified health products, and genetically modified environmental products. For most Canadians and Americans, the primary concern they have when it comes to all GM foods and GM health products is the long-term risk to human health.

Two thirds (67%) of Canadians and 69% of Americans state long-term risks to human health as their primary concern with GM health products, while the same risk plays a role to 62% of Americans and 64% of Canadians when it comes to GM foods.

Health also plays a role with it comes to risks associated with genetically modified environmental products, however it is not the dominant concern for most. A third of Canadians and Americans chose long-term risk to human health as primary concern about GM environmental products. However, most are likely to state the long-term risk to the environment as their primary concern with GM environmental products: 47% of Americans and 46% of Canadians hold this concern.

Genetic Information and Privacy

Canadians and Americans assign a high value to the potential of genetic information. They see it as the future of heath care, and many want to learn more about their genetic characteristics. Yet while interest remains high, the willingness to contribute genetic information has decreased in the past year.

The number of Canadians interested in knowing more about their genetic characteristics has increased from 26% last year to 32% this year. However, the willingness to contribute genetic information has decreased significantly among Canadians from 56% to 37% this year in the same time period.

Americans are somewhat more willing to contribute: 45% are very willing to contribute their genetic information. They are also slightly more interested in their own genetic make-up (35% saying they are very interested.)

A plurality of Canadians (39%, up from 25% last year) feels that the government should put more emphasis on privacy than on research and development when it comes to genetic information. Still, a quarter believes R&D should be pursued with greater emphasis, and 31% believe the focus should be equally divided. These views are similar in the U.S.

Overall, the data in this area point to growing concerns about privacy issues associated with genetic information. While this has not affected views about the role and importance of this information to the future of health care, it may over time begin to affect views about how health research is done and how people's personal genetic information is used in that research.