



Genencor Household Sustainability Index

Consumer Attitudes & Adoption of Biobased Products

(USA & Canada - April 2011)

Summary Report

This report presents results from proprietary research commissioned by Genencor to measure American and Canadian consumer awareness, perceptions and attitudes about household green products generally, and biobased products in particular.

The research is based on telephone surveys conducted by Environics Research with representative samples of 2,000 Americans and 2,000 Canadians (18 years and over), between April 5 and 17, 2011. For each country, samples of this size will produce results accurate to within plus or minus 2.2 percentage points, in 19 out of 20 samples.

Overview

By now the concept of environmentally sustainable, or “green” household products is well established in the minds of US and Canadians consumers. Most consider themselves to be at least somewhat familiar with such products, and this extends to all regional and demographic strata of the population. Majorities in both countries now report recent purchases of green products, although this is much more common in Canada (71%) than in the USA (53%), due largely to a difference in purchasing green household cleaning products. Such purchases cover a wide range of product categories, but very few consumers regularly purchase more than one or two types of green products.

With familiarity comes confidence, although many consumers express healthy skepticism about green product claims about being better for the environment. Most are more likely than not to be reasonably confident about such claims, but few hold this view without some reservation. Such confidence grows with familiarity among US consumers (although not so among Canadians).

There is currently some public recognition of the term “biobased” as it applies to household products, indicated by 40 percent of American consumers and 35 percent of Canadians. Understanding of what types of products fit this category is limited, the most common associations being with ethanol fuel and cleaning products, in both cases identified by fewer than one in five in either country.

While consumers may not yet fully understand what exactly is meant by “biobased” such products are credibly seen as green. Strong majorities of consumers in both countries believe that biobased products such as ethanol made from plant material, low temperature laundry and dish detergents, and clothing produced with biobased enzymes likely, if not definitely, fit their own definition of a green product. Such views are strongly linked to consumers’ broader confidence in green product claims, but not so with general awareness of the biobased concept.

Consumers’ ready acceptance of biobased products as environmentally sustainable is based on their broader views about what constitutes a green product. When consumers are prompted with specific green product characteristics, most view each as legitimate criteria for being more environmentally sustainable, including being made from renewable materials, requiring less energy to produce or use, and

containing little or no harmful materials. In comparative terms, consumers are a bit less sure about water conservation as a criteria for making products green.

What perhaps matters most is whether consumers are prepared to actively choose biobased products over competing choices, and this research indicates there is clear interest in doing so, at least in principle. Majorities in both countries say they would be at least likely to purchase such products (provided that cost and effectiveness were comparable with the alternatives) and roughly one in four say they would definitely do so. Such intentions are strongest among those consumers who are familiar with green products and generally confident about their claims, indicating this is an important pre-condition for making biobased a personal purchase criteria.

Consumers' attitudes and orientation around green and biobased products are notably similar between the USA and Canada, and the broad conclusions are essentially the same for both countries. Canadians are somewhat more active in green product purchasing and confident about green product claims, while Americans are more apt to have heard about biobased household products. Across demographic strata, youth appear to be most positive about green and biobased products, while there are less consistent differences across gender, socio-economic status and region.

Consumer orientation to green household products

Familiarity with green products. Consumers in both Canada and the USA express a notable level of familiarity with green products generally, which were defined on the survey as those “better for the environment than comparable products.” Three-quarters in each country say they are at least somewhat familiar with this concept, with about one in five indicating they are “very” familiar.

Familiarity with green products
April 2011



- In both countries, expressed familiarity is somewhat higher among women than men, among those with at least some post-secondary education and those aged 30 to 59. At the same time, it is low income and Hispanic Americans who are most likely to say they are *very* familiar with green products.
- In the USA, familiarity is highest in the mountain region (83%), and lowest in west-north central (64%) and west south central (66%) regions. Those who say they are *very* familiar are most apt to live in the New England and Pacific regions (27%, in each).
- In Canada, familiarity is similar across English Canada (85%), but noticeably lower in Quebec (59%)

Recent green product purchases. Majorities of consumers report their household has purchased at least one green product in the previous two months, with this proportion considerably higher in Canada (71%) than in the U.S. (53%). Most report no more than one or two such green purchases over this time period.

Green product purchases – past two months

April 2011

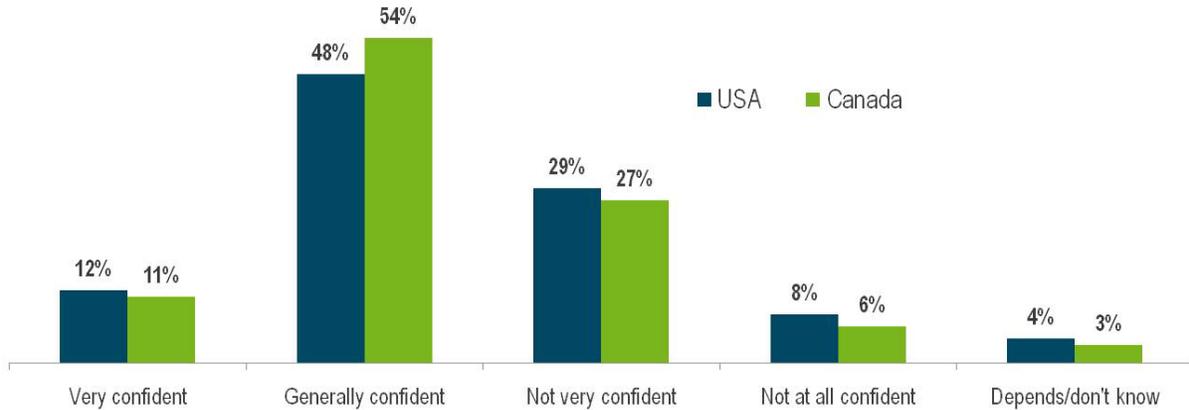
	USA N=1,849	Canada N=1,860
Any mention	53	71
Household cleaning products	27	50
Personal care products (soap, shampoo)	2	11
Paper products/recycled paper	8	9
Energy efficient light bulbs/CFLs	8	7
Organic food items	1	7
Garbage/recycling/compost bags	2	5
Detergents/soap/liquid soaps/dryer sheets	10	4
Recyclable/biodegradable products (general)	1	4
Energy efficient appliance	2	3
Other food items	3	3
Reusable shopping bags	2	2
Products with bio-based/natural ingredients/materials	*	2
Other (<2%)	8	8
None/don't know	47	29

Subsample: Those aware of products labeled or promoted as "green products"

- Among Canadian consumers, by far the most common purchase are household cleaning products (50%), followed by personal care products (e.g., soaps, shampoo), paper products, energy efficient light bulbs and organic food.
- In the USA, the relative order of product categories are similar, but there is considerably less mention of household cleaning products (27%) and to a lesser extent personal care products and organic food.
- In both countries, purchase of green products is lowest among consumers aged 60 and over. Women are only moderately more likely than men to report such purchases, with the difference showing up mostly with household cleaning products. In the USA, men are more apt to buy energy efficient light bulbs (12% versus 5% of women).

Confidence in green product claims. With familiarity comes confidence, although many consumers express some degree of skepticism about how much better green products are in terms of their impact on the environment. Roughly six in ten Americans (60%) and Canadians (65%) are very or generally confident that green products on the market today are better than other products, although only one in ten are “very” confident in this. About one-third lack confidence in such green product claims.

Confidence in green products as better for the environment
April 2011



Subsample: Those aware of products labeled or promoted as “green products”

- In the USA, confidence in green product claims is strongest among low income consumers (those with household incomes under \$25,000), those 18 to 29 years of age, and Hispanics.
- In Canada, confidence is highest among francophones and consumers under 45 years of age.
- In both countries, women are marginally more apt than men to express confidence in green product claims.
- Confidence in green products increases somewhat with level of familiarity. In the USA, consumers who are very familiar with green products are almost twice as likely as consumers overall to say they are very confident that such products are better for the environment (22% versus 12%). This relationship is not as strong in Canada.

Criteria for what makes a product green

Awareness of green product criteria. When consumers are asked what characteristics make green products better for the environment (unprompted, without responses being offered), eight in ten in both countries can identify at least one such criteria. However, none are mentioned by a significant proportion, indicating that most consumers have a limited understanding of what makes household products green products.

Consumers are most likely to say that green products are those that contain few or no toxic materials or ingredients, with somewhat fewer saying they are products that break down naturally once disposed of or generate less pollution from manufacture or use (Canadians are more likely than Americans to identify each of these characteristics, especially the first). No other characteristic is identified by as many as one in ten in either country. Specific reference to biobased materials is given by only two percent in Canada, and none in the USA. One in five could not offer any response to this question.

What makes green products better for the environment?

April 2011

	USA	Canada
Few or no toxic materials/ingredients	22	36
Breaks down naturally when disposed of	15	19
Generate less pollution from manufacture or use	6	14
Can be recycled or reused	7	8
Made from organic/natural materials	8	8
Consume less energy in their production	1	5
Have smaller carbon footprint/don't release greenhouse gases	6	5
Made from recycled materials	5	5
Better for environment/ecosystem/enviro-friendly	6	3
Consume less energy in their use	7	3
Less packaging/waste/less for landfill	5	3
Fewer phosphates	-	2
No harmful health effects	-	2
Made from bio-based materials	-	2
Composition/ingredients	3	1
Natural/safer/better for people or animals	5	-
Does not pollute/air/water/no emissions	6	-
Other (<2%)	12	14
Don't know/not applicable	22	18

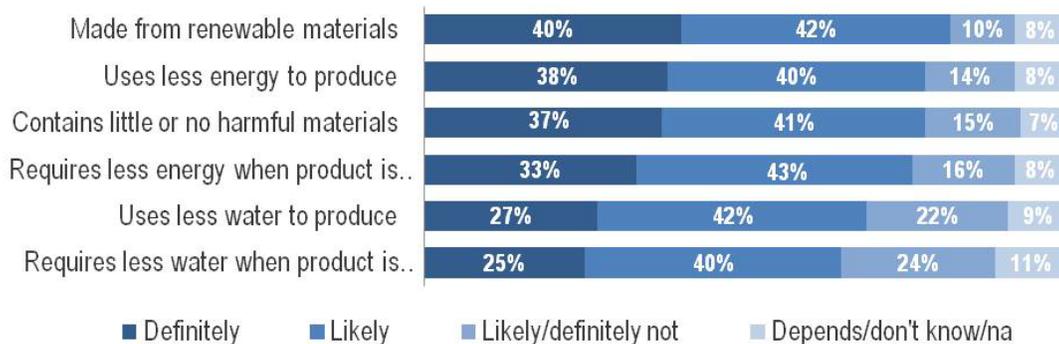
- Mention of few or no toxic materials is most common in the New England and Pacific regions of the USA, and in Canada among residents of Toronto and individuals with a university degree.

- In Canada, Quebec residents are most likely to emphasize products that break down naturally in the environment, while Vancouver residents are most apt to identify products that are made from natural or organic materials.

Perceptions of green product characteristics. While consumers may have limited awareness of what makes green products better for the environment, most can effectively judge such criteria when they are presented. Among six factually correct criteria presented, clear majorities in both countries say that each either definitely or likely makes a product a green product.

Characteristics that make products green - USA

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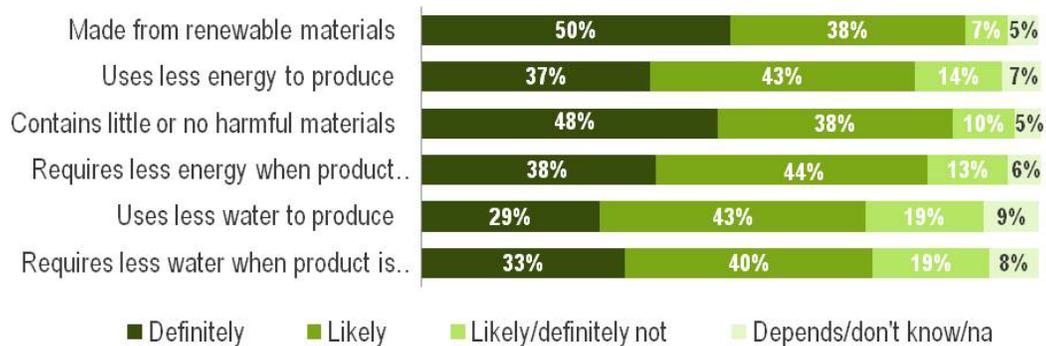


* Split sample – n=1,008

** Split sample – n=1,003

Characteristics that make products green - Canada

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* Split sample – n=1,025

** Split sample – n=975

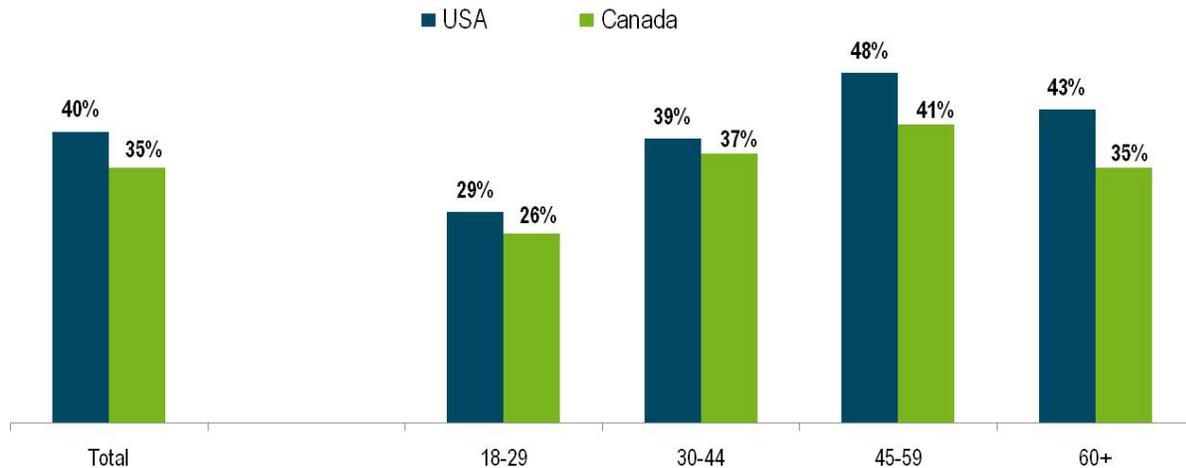
- In both countries, consumers are most likely to express certainty that products made from renewable materials are green products (40% of Americans, 50% of Canadians).
- In the USA, almost as many say that products that use less energy to produce, which contain little or no harmful materials, or use less energy when used are definitely green products. Somewhat fewer express such certainty when it comes to products that require less water to produce or less water when used.

- Perceptions are similar in Canada, although consumers place comparatively greater certainty on products that contain little or no toxic materials, and less on those that require less energy to produce.
- In the USA youth (aged 18 -29) are more likely than older cohorts to express certainty about each of these product criteria, except using less water when products are used (where they are at the national average). This pattern is less consistent in Canada, although significant in the case of products that are made from renewable materials (65% of Canadians aged 18-29 say this definitely makes it green, compared with fewer than 50% across older generations).
- Gender differences are not substantial, but men are somewhat more likely to express certainty about product criteria, and most notably in the case of using less water when produced. The one exception is with products that contain little or no toxic materials – women in both countries are more likely than men to say this definitely makes a product green.
- In the USA, Consumers' level of certainty about these product characteristics is strongly linked to their general familiarity with green products – the more familiar they are of green products the more likely they are to say each of these criteria definitely makes a product green. This link is much weaker among Canadian consumers.
- Confidence in green product claims is also a key factor in how consumers view these product characteristics. In both countries, it is those consumers who express the strongest confidence in green product claims generally who are most apt to consider each criteria to definitely make a product green.

Opinions of biobased household products

Awareness of biobased product concept. A significant minority of Americans (40%) and Canadians (35%) say they recall hearing the term “biobased” to describe products or product ingredients.

Recall term “biobased” for products/ingredients
April 2011 By age



- In the USA, recall of biobased products is highest among consumers 45 to 59 years of age (48%) and residents in non-Metro areas (46%), and lowest among Hispanics (31%) and Americans 18 to 29 (29%).
- In Canada, awareness is highest among anglophones (44%) and lowest among francophones (12%) (which could be due in part to the French language version of the term), as well as among Canadians 18 to 29 (26%) and those in the lowest income bracket (26%).
- There is no gender difference in such stated recall of the term “biobased” as it applies to products and product ingredients.
- Awareness of the biobased concept is strongly linked to consumers’ level of awareness about, and confidence in, green products.

Consumers were then provided with a brief definition of biobased products, and asked to identify any products they know of that are made with or contain bio- based ingredients (without prompting). Fewer than half in the USA (42%) and Canada (41%) could provide any response to this question, and this group named a wide variety of products although none were mentioned by more than small proportions.

The most commonly mentioned biobased products are fuel products such as ethanol and biodiesel (identified by 17% of Americans and 18% of Canadians), followed by cleaning products (e.g., detergents, soap), fabric and clothing (lingerie, hemp, bamboo), household and personal care products (paper products).

Aware of biobased products

April 2011

	USA	Canada
Aware of any	42	41
Fuel products	17	18
Cleaning products	16	10
Fabric and clothing	8	10
Household and personal care products	6	4
Food products	2	3
Home improvement products	1	2
Outdoor/garden products	1	1
Plastics/biodegradable plastics (general)	2	2
Bags (general)	-	2
Other	3	7
No/none/dk	58	59

- In the USA, mention of ethanol is most noticeable among consumers with higher levels of income and education, men, Americans aged 45 to 59, and whites, and only marginally more commonly in the Midwestern region (where ethanol production is most heavily concentrated). Women are somewhat more likely to identify cleaning products, household products and fabrics, although also less apt to name any products at all.
- In Canada, ethanol is most widely mentioned in western Canada and among men, while least so among francophones.

Credibility of biobased products as green products. Apart from what knowledge consumers may or may not have about biobased products, such products are seen by most to be credibly “green.” Three specific types of biobased products were presented to survey respondents, and in each case a strong majority of consumers in both countries considered the example to be likely if not definitely a green product.

Are these biobased products “green” products?

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Of the three products, consumers in the USA were most likely to consider ethanol fuel for vehicles (based on plant material such as corn and wood chips) to be definitely a green product (39%), with another 33 percent saying it is likely so. Canadian consumers expressed a similar view, although less likely to be certain (31% say definitely a green product).

Eight in ten Americans (79%) and Canadians (83%) say laundry and dishwasher detergents that clean at lower temperatures (thereby reducing energy requirements for hot water) are likely or definitely a green product, with definite responses marginally higher among Canadians.

Three-quarters of Americans (75%) and Canadian (78%) consumers consider as “green” clothing made with a biobased enzyme that reduces the use of energy, water and certain chemicals, although fewer than three in ten say this is definitely the case (perhaps because there is low public familiarity with enzymes in the manufacture of clothing).

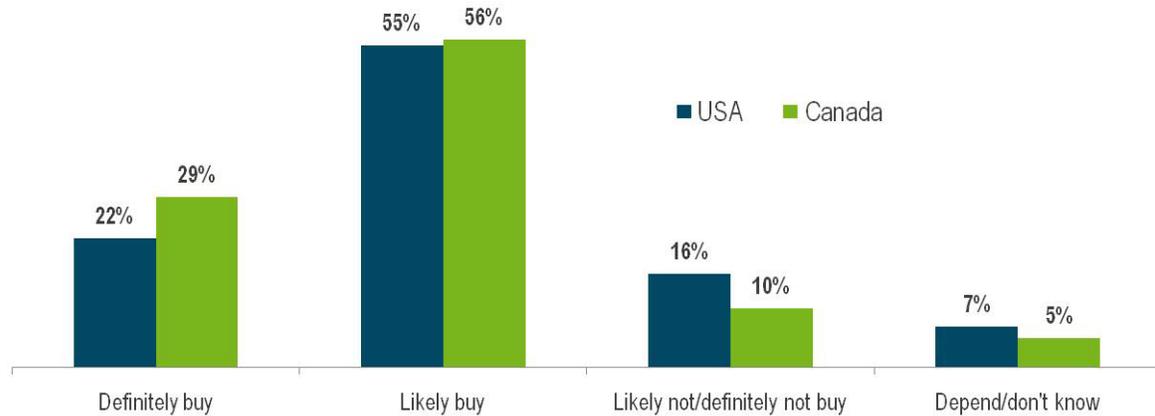
- In the USA, certainty about the green-ness of ethanol fuels is strongest in the Northeastern region and in Metro areas, as well as among younger consumers (under 45) and Hispanics. Low temperature detergents are most apt to be seen as green by consumers with lower levels of education, while youth (18-29) are most apt to believe clothing made with bio-based enzymes are definitely green. There is not difference in the perspectives of men and women.
- In Canada, there are few regional or demographic differences in views across the population. Ethanol and low temperature detergents are somewhat more apt to be seen as green by consumers with lower levels of education and income.

- In both countries, certainty about the green-ness of all three biobased products is modestly related to familiarity with green products, but strongly linked to confidence in such products claims as better for the environment. At the same time, such certainty is not related to whether or not consumers have previously heard about biobased products.

Interest in buying biobased products. Apart from perceptions of biobased products as being better for the environment, what level of interest do consumers express in purchasing such products? Results from the research show strong interest in both countries, with about eight in ten saying they would likely if not definitely purchase such products instead of non-biobased products comparable on cost and effectiveness. Definite interest in such products is somewhat more widespread in Canada (29%) than in the USA (22%).

Likely to buy biobased products?

April 2011



- In the USA, definite interest in purchasing biobased products is notably similar across the country, and higher only among consumers 18 to 29 years of age (27%).
- In Canada, such interest is most widespread in Quebec (42%), among women (32%, versus 26% of men), and also among consumers 18 to 29 (35%).
- In both countries, definite interest in purchasing biobased products is strongly related to familiarity with green products, with confidence in green product claims, and with the view that each of the three biobased product examples is definitely a green product. Purchase interest is not related to prior awareness of the biobased concept.