

# Bioproducts Production and Development Survey 2009

**CONFIDENTIAL when completed**

Si vous préférez recevoir ce questionnaire en français, veuillez nous appeler au 1-866-445-4323.

**Correct as required**

C0001	Legal Name	<input type="text"/>
C0002	Operating Name (Business Name)	<input type="text"/>
C0008	First Name	<input type="text"/>
C0028	Last Name	<input type="text"/>
C0004	Address	<input type="text"/>
C0005	City	<input type="text"/>
C0006	Province/Territory	<input type="text"/>
C0007	Postal Code	<input type="text"/>

## Information for respondents

### Purpose of Survey

Statistics Canada is conducting this survey on behalf of Agriculture and Agri-food Canada. The objectives of the survey are to provide statistical information on the bioproducts sector and produce a profile of firms engaged in the production and/or development of bioproducts in Canada. The survey focuses on the key characteristics and activities of firms that develop or produce bioproducts as part of their firm's activity in Canada.

Bioproducts is an emerging sector of the Canadian economy and their impact has the potential to be felt through all parts of Canada's society. An accurate understanding of bioproducts requires comprehensive data. Information from this survey may be used by businesses for economic or market analysis, by trade associations to study industry performance, government departments, agencies and industry development practitioners to assist in and evaluate policy, programs and initiatives that promote growth, and by the academic community for research purposes.

### Authority

Collected under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S-19. Completion of this questionnaire is a legal requirement under the *Statistics Act*.

### Confidentiality

Statistics Canada is prohibited from publishing any statistics that would divulge information obtained from this survey that relates to any identifiable business, institution or individual. Data are treated in strict confidence, used for statistical purposes and released in aggregate form only. The confidentiality provisions of the *Statistics Act* are not affected by either the *Access to Information Act* or any other Legislation.

### Record Linkage

In order to enhance the information you provide in this survey, Statistics Canada plans to combine the responses relating to your organization with the information previously provided on the Bioproducts Survey from 2003 and 2006. The combined information will be kept strictly confidential and used only for statistical purposes.



### Assistance

If you have questions or require assistance, please contact

Telephone: 1-866-445-4323

Fax: 1-888-869-0972

### Instructions

The questionnaire should be completed and returned within 30 days of receipt in the provided envelope.

## Contact Information

### Who should complete this questionnaire?

A knowledgeable senior person in your firm such as the owner, president, vice president, corporate executive officer, a research and development (R&D) manager or production manager can complete this questionnaire.

C0013	First name	<input type="text"/>	C0017	Telephone number	<input type="text"/>
C0054	Last name	<input type="text"/>	C0027	Extension	<input type="text"/>
C0014	Position title	<input type="text"/>	C0016	Fax number	<input type="text"/>
C0020	Web site address	<input type="text"/>	C0018	E-mail address	<input type="text"/>

## Reporting Period and Coverage

The **reporting period for this survey is the FISCAL YEAR 2009/2010**, unless a specific question indicates otherwise. This period would relate to your firm's 2009 reference year. In the event your firm's fiscal year has not ended before the completion of this survey, we ask that you provide your best estimate when responding.

For the purpose of this survey, please report information for your 12 month fiscal period for which the FINAL DAY occurs on or between April 1, 2009 and March 31, 2010. Please indicate below the period covered by this report.

C0011		YYYY		MM		DD
	From	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
C0012		YYYY		MM		DD
	To	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Coverage** of the survey relates to your firm's **Canadian bioproducts** activities. These activities should be separated from your firm's non-bioproducts activity. These activities can be any combination of development and/or production of intermediate or final bioproduct goods.

If your firm operates multiple establishments, please complete a **separate** questionnaire for each establishment engaged in bioproducts production or development in Canada.

## Definitions

### Bioproducts

Bioproducts are products (**OTHER THAN FOOD, FEED, AND MEDICINES**) made from renewable biological inputs (often referred to as using a biomass feedstock).

For the purpose of this survey, we are interested in "**non-conventional industrial bioproducts**". Examples include: biofuels (e.g., ethanol, biodiesel), organic chemicals (e.g., biopolymers), pesticides, non-conventional building/construction materials and composites. Traditional bioproducts, such as wood products could be considered in scope for this survey only if they were made by a non-conventional or novel process.

For a list of types of **bioproducts included** in this survey please refer to the table in question 4 on page 3.

Examples of **excluded** bioproducts are: e.g., food, nutraceuticals, feed, medicines, structural lumber, dimensional wood products, paper, and conventionally made fiberboards, wood pellets, parallum, oriented strand board (OSB), composite wood products, and compost.

### Biomass

Biomass refers to renewable biological materials.

For the purpose of this survey biomass feedstocks includes:

- biological materials from forestry, agriculture, marine and aquaculture sources, or of a micro-biological origin;
- by-products from processing (e.g., agricultural/ forestry/ pulp & paper/ food/feed processing);
- recycled bio-materials (e.g., construction/ demolition materials);
- and waste materials (e.g., municipal solid wastes).

## Section A – Bioproducts Involvement

### 1. What year did your firm begin operations in Canada?

C010000

### 2. What year did your firm begin its bioproducts related activities in Canada?

C020000

### 3. In 2009, what best describes your firm's involvement with Bioproducts?

(Check all that apply)

- C030001 ☐ A. Conducting bioproduct research and development **without** sales of Bioproducts → Go to Section B
- C030002 ☐ B. In production **with** sales of bioproducts → Go to Section B
- C030003 ☐ C. Involved in biomass improvement
- C030004 ☐ D. Provide services **only** (e.g. engineering, regulatory, legal or management) for the bioproducts industry
- C030005 ☐ E. Provide technology to bioproducts producers

If you are not involved in the development or production of bioproducts, therefore you did not check either A or B in the above question, please return the 2009 bioproducts survey in the accompanying prepaid envelope.

**Thank you for your collaboration.**

## Section B – Production and Development of Bioproducts

4. In 2009, please identify the stage of development and the type(s) of bioproducts your firm is producing or developing. For each bioproduct on the market, please report the percentage of total bioproduct revenue (in 2009). **Please exclude food, nutraceuticals, feed, lumber and medicines.**

Type of Bioproduct	Stage of development (Check all that apply)			Percentage of Total Bioproducts Revenue
	R & D	Product Development/ Proof of Concept	In Production/ on Market	
<b>Liquid Fuels</b>				
a. Ethanol (for fuel)	C040101 <input type="radio"/>	C040102 <input type="radio"/>	C040103 <input type="radio"/>	C040104 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
b. Biodiesel (for fuel)	C040111 <input type="radio"/>	C040112 <input type="radio"/>	C040113 <input type="radio"/>	C040114 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
c. Other liquid fuels (e.g., methanol, butanol, etc.)	C040121 <input type="radio"/>	C040122 <input type="radio"/>	C040123 <input type="radio"/>	C040124 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
d. Gaseous Fuels (e.g., bio-gas, syngas, hydrogen, etc.)	C040131 <input type="radio"/>	C040132 <input type="radio"/>	C040133 <input type="radio"/>	C040134 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
e. Solid Fuels (e.g., agri-straw pellets, agri-wood pellets, etc.)	C040141 <input type="radio"/>	C040142 <input type="radio"/>	C040143 <input type="radio"/>	C040144 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
f. Bioenergy (e.g., electricity, heat, co-generation, etc.)	C040151 <input type="radio"/>	C040152 <input type="radio"/>	C040153 <input type="radio"/>	C040154 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
<b>Organic Chemicals</b>				
g. Lubricants and greases	C040201 <input type="radio"/>	C040202 <input type="radio"/>	C040203 <input type="radio"/>	C040204 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
h. Polymers	C040211 <input type="radio"/>	C040212 <input type="radio"/>	C040213 <input type="radio"/>	C040214 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
i. Adhesives	C040221 <input type="radio"/>	C040222 <input type="radio"/>	C040223 <input type="radio"/>	C040224 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
j. Fine chemicals	C040231 <input type="radio"/>	C040232 <input type="radio"/>	C040233 <input type="radio"/>	C040234 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
k. Solvents	C040241 <input type="radio"/>	C040242 <input type="radio"/>	C040243 <input type="radio"/>	C040244 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
l. Other organic chemicals, specify: C040255 <input type="text"/>	C040251 <input type="radio"/>	C040252 <input type="radio"/>	C040253 <input type="radio"/>	C040254 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
m. Bio-pesticides (e.g., insecticides, fungicides, herbicides)	C040301 <input type="radio"/>	C040302 <input type="radio"/>	C040303 <input type="radio"/>	C040304 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
n. Bio-catalysts and Bio-enzymes	C040401 <input type="radio"/>	C040402 <input type="radio"/>	C040403 <input type="radio"/>	C040404 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
<b>Materials and Composites</b>				
o. Composites	C040501 <input type="radio"/>	C040502 <input type="radio"/>	C040503 <input type="radio"/>	C040504 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
p. Fibreboard/agri-fibre panels	C040511 <input type="radio"/>	C040512 <input type="radio"/>	C040513 <input type="radio"/>	C040514 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
q. Materials (e.g., foam, insulation, masonry, road materials, cement, geofibres, geotextiles, etc.)	C040521 <input type="radio"/>	C040522 <input type="radio"/>	C040523 <input type="radio"/>	C040524 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %
r. Other Bioproducts, specify: C040605 <input type="text"/>	C040601 <input type="radio"/>	C040602 <input type="radio"/>	C040603 <input type="radio"/>	C040604 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %

## Internal Use of Bioproducts

5a. In 2009, did your firm produce any bioproducts within the firm that were then used INTERNALLY? (e.g., for heat, electricity or other use)

- C051000 1 ☐ Yes  
3 ☐ No → Go to Question 6a

5b. In 2009, what is the total estimated cost savings (in Canadian Dollars) from using INTERNALLY produced bioproducts?

C052000 \$

## Production of co-products

In the production of a bioproduct, other co-products are often jointly produced for sale.

For example

- Distiller dry grains and CO<sub>2</sub> may be co-products of ethanol production.
- Glycerine may be a co-product of biodiesel fuel production.
- **Include** co-products produced from the same production stream as the bio-products.
- **Exclude** co-products that are considered bioproducts (see definition on page 2) that were reported in Question 4.

6a. In 2009 did your firm produce co-products for sale, from the same production stream as your bioproducts? (if producing the co-products includes additional processing by your firm, answer 'yes')

- C061001 1 ☐ Yes  
3 ☐ No → Go to Question 7

6b. In 2009, what types of co-products for sale were produced by your firm? (Check all that apply)

- |   |   |
|---|---|
| C062001 <input type="radio"/> Distillers grain (wet or dry) | C062006 <input type="radio"/> Protein meal                                  |
| C062002 <input type="radio"/> CO <sub>2</sub>               | C062007 <input type="radio"/> Lignin  |
| C062003 <input type="radio"/> Glycerine                     | C062008 <input type="radio"/> Food ingredients (e.g., starch, gluten, etc.) |
| C062004 <input type="radio"/> Fertilizer                    | C062009 <input type="radio"/> Other, please specify:                        |
| C062005 <input type="radio"/> Compost                       | C062010 <input type="text"/>  |

## Section C - Use of Biomass

7. In 2009, what was your primary biomass source for your operations in Canada? (e.g., the biomass source that represents the greatest portion of your operating costs). (Please check one option only)

- C070001 1 ☐ Agricultural Biomass  
2 ☐ Forestry Biomass  
3 ☐ Marine and aquaculture materials or products  
4 ☐ Food processing or slaughtered or rendered by-products  
5 ☐ Food service by-products  
6 ☐ Municipal solid waste  
7 ☐ Other, specify: C070002

8. Please indicate the type of biomass your firm used to produce its bioproducts, in 2009 in Canada. For each type of biomass, please report your best estimate of the total amount used in metric tonnes.

Please exclude biomass used for food, nutraceuticals, feed, lumber and medicines.

Check (✓) if used	Type of biomass	Estimated amount (in metric tonnes)
	<b>Agricultural Biomass</b>	
C080100 <input type="radio"/>	<b>Grains/Oilseeds (and products)</b>	
	Wheat grain (include seed equivalent of starch or flour)	C080101 <input type="text"/>
	Corn grain (include seed equivalent of starch or oil)	C080102 <input type="text"/>
	Canola/Rapeseed (include seed equivalent of oil)	C080103 <input type="text"/>
	Soybean seed (include seed equivalent of oil)	C080104 <input type="text"/>
	Other oilseeds seed or crushed seeds : flax, mustard, sunflower, specify: C080106 <input type="text"/>	C080105 <input type="text"/>
	Other grains: barley, rye, oats, specify: C080108 <input type="text"/>	C080107 <input type="text"/>
C080200 <input type="radio"/>	<b>Other field crops (crops grown as field crops, not included in category above)</b>	
	Hemp (seed and whole plant)	C080201 <input type="text"/>
	Pulse seed (lentils, field peas)	C080202 <input type="text"/>
	Forages (e.g., alfalfa)	C080203 <input type="text"/>
	Potatoes	C080204 <input type="text"/>
	Sugar beets	C080205 <input type="text"/>
	Other, specify: C080207 <input type="text"/>	C080206 <input type="text"/>
C080300 <input type="radio"/>	<b>Horticulture crops (e.g., vegetable, fruit, herbs)</b>	
	Other, specify: C080302 <input type="text"/>	C080301 <input type="text"/>

Continued on page 7 →

## 8. (Continued)

Check (✓) if used	Type of biomass	Estimated amount (in metric tonnes)
C080400 <input type="radio"/>	<b>Primary Livestock products/by-products</b>	
	Milk and milk solids	C080401 <input type="text"/>
	Manure	C080402 <input type="text"/>
	Other, specify: C080404 <input type="text"/>	C080403 <input type="text"/>
C080500 <input type="radio"/>	<b>Dedicated biomass crops (e.g., hybrid poplar/willow)</b>	C080501 <input type="text"/>
C080600 <input type="radio"/>	<b>Crop residues (e.g., straw, stover, shives)</b>	
	Grain	C080601 <input type="text"/>
	Flax	C080602 <input type="text"/>
	Corn	C080603 <input type="text"/>
	Other, specify: C080605 <input type="text"/>	C080604 <input type="text"/>
C080700 <input type="radio"/>	<b>Forestry biomass (forestry products/slash, mill waste/residue)</b>	
	Forest residue (e.g., harvest residue, pine-beetle salvage)	C080701 <input type="text"/>
	Mill processing residues (e.g., black liquor, wood chips)	C080702 <input type="text"/>
	Urban wood residues (e.g., construction/demolition debris, industrial wood waste, trees)	C080703 <input type="text"/>
C080800 <input type="radio"/>	<b>Marine and aquaculture materials/products (e.g., algae)</b>	C080801 <input type="text"/>
C080900 <input type="radio"/>	<b>Food processing, slaughter/rendered by-products</b>	C080901 <input type="text"/>
C081000 <input type="radio"/>	<b>Food service by-products (e.g., recycled restaurant fats)</b>	C081001 <input type="text"/>
C081100 <input type="radio"/>	<b>Municipal organic solid waste (e.g., yard waste)</b>	C081101 <input type="text"/>
C081200 <input type="radio"/>	<b>Other biomass, specify:</b> C081202 <input type="text"/>	C081201 <input type="text"/>

**9a. In 2009, did you have any contracts with suppliers to provide your biomass for your operations in Canada?**

C091000 1 ☐ Yes

3 ☐ No → Go to Question 10

**9b. What type of supplier(s) did your firm have contracts with:**

(Check all that apply)

C092001 ☐ Farmer

C092002 ☐ Grain supplier

C092003 ☐ Food/feed processor, food service (e.g., restaurants)

C092004 ☐ Municipality

C092005 ☐ Forestry harvesters

C092006 ☐ Forestry mill

C092007 ☐ Pellet producer

C092008 ☐ Other, specify:

C092009

**10. In 2009, what percentage of your firm's primary biomass was transported the following distances from its original source to your processing facility?**

Include your operations in **Canada** only.

	% of total weight of biomass used
a. 0 km (on site)	C100001 <input type="text"/> <input type="text"/> <input type="text"/> %
b. Less than 50 km	C100002 <input type="text"/> <input type="text"/> <input type="text"/> %
c. 50 to less than 100 km	C100003 <input type="text"/> <input type="text"/> <input type="text"/> %
d. 100 km to less than 500 km	C100004 <input type="text"/> <input type="text"/> <input type="text"/> %
e. 500 km or more	C100005 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>TOTAL</b>	<b>1 0 0 %</b>

C100099 ☐ Don't know source

**11. In 2009, what percentage of your firm's primary biomass is sourced from:**

*Include your operations in **Canada** only.*

**% of total weight  
of  
biomass used**

a. British Columbia	C110001	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
b. Alberta	C110002	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
c. Saskatchewan	C110003	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
d. Manitoba	C110004	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
e. Ontario	C110005	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
f. Quebec	C110006	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
g. New Brunswick	C110007	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
h. Nova Scotia	C110008	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
i. Prince Edward Island	C110009	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
j. Newfoundland and Labrador	C110010	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
k. North West Territories, Yukon, Nunavut	C110011	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
<b>International Sources</b>		
l. United States	C110012	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
m. Mexico	C110013	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
n. Other foreign, specify: C110015 <input type="text"/>	C110014	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> %
<b>TOTAL</b>		<b>1 0 0 %</b>

C110099 ☐ Don't know source

## Section D – Benefits from producing or developing bioproducts

12. As a firm producing and/or developing bioproducts, please rate the importance of the following benefits to your firm.

Factors which influence your decision to produce and/or develop bioproducts		Degree of importance (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Using biomass to reduce production costs	C120001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Expectation of opportunities to benefit from reducing environmental impact (e.g., greenhouse gas reduction)	C120002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Your firm sees an opportunity to increase product range to increase sales and market share (e.g., products targeted at green markets)	C120003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Other, specify: C120005 <input type="text"/>	C120004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

- 13a. Has your firm considered a new location for a bioproduct establishment in Canada in the last 3 years, or over the next 2 years?

C131000 1 ☐ Yes  
3 ☐ No → Go to Question 14

- 13b. How important are the following factors to your firm in locating a bioproducts facility?

Factors affecting your decision in locating a bioproducts facility		Degree of importance (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Proximity to biomass	C132001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Proximity to head office or other existing firm facilities	C132002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Local infrastructure (e.g., transportation facilities, hospitals, colleges, etc.)	C132003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Access to skilled labour	C132004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
e. Financial incentives (e.g., government programs)	C132005	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
f. Community driven incentives to encourage firms to locate	C132006	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
g. Other, specify: C132008 <input type="text"/>	C132007	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

## Section E – Barriers to producing or developing bioproducts

14. Please rate the following barriers to production and/or development of bioproducts by your firm.

Barriers to production and/or development of bioproducts by your firm		Degree of barrier (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Unreliable quantity of biomass	C140001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Unreliable quality of biomass	C140002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Cost of biomass (e.g., price, transport cost etc.)	C140003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Difficulty in entering commercial marketplace	C140004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
e. Cost of developing environmental indicators (e.g., lifecycle analysis)	C140005	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
f. Lack of skilled human resources	C140006	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
g. Lack of financial capital	C140007	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
h. Cost and timeliness of regulatory approval	C140008	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
i. Ongoing regulatory costs/requirements (e.g., on-site requirements for engineers, etc.)	C140009	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
j. Lack of adequate product standard certification	C140010	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
k. Other, specify: C140012 <input type="text"/>	C140011	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

## Section F – Firm Characteristics

15. What is the ownership structure of your firm?  
(Please check one only)

- C150000
- 1 ☐ Sole proprietor/ partnership
  - 2 ☐ Cooperative
  - 3 ☐ Private Corporation based in Canada
  - 4 ☐ Private Corporation based outside Canada
  - 5 ☐ Publicly Traded Corporation based in Canada
  - 6 ☐ Publicly Traded Corporation based outside Canada

**16. Is your firm a subsidiary of another larger Multi-National Enterprise (MNE)?**

- C160000    1 ☐ Yes
- 3 ☐ No

**17. How did your firm become involved in developing and/or producing bioproducts?**

(Please check one only)

- C170000    1 ☐ Mainly as a result of **domestic** activities of your firm  
(e.g., utilization of by-products, as part of a R&D project etc.)
- 2 ☐ Mainly as a result of **International** activities of your firm  
(e.g., utilization of by-products, etc.)
- 3 ☐ In co-operation/collaboration with other firms or organizations
- 4 ☐ Merger with/acquisition of another firm/or firm's bioproducts activities
- 5 ☐ Acquired/licensed technology from a **domestic** firm or lab
- 6 ☐ Acquired/licensed technology from a **foreign** firm or lab
- 7 ☐ Other means, specify:

C170001

**18a. Is your firm a spin-off?**

(A spin-off is defined as a new firm created to transfer and commercialize inventions and technology developed in universities, firms or government laboratories.)

- C181000    1 ☐ Yes
- 3 ☐ No → Go to Question 19

**18b. Your firm is a spin-off from?**

(Please check one only)

- C182000    1 ☐ University/academic institution
- 2 ☐ Another firm
- 3 ☐ Government agency/lab
- 7 ☐ Other, specify:

C182001

## Section G – Human Resources in Bioproducts Production or Development

Please enter the following information about employees in your firm in the year 2009.

- *Employees are all workers for whom you completed a Canada Revenue Agency T-4 statement for the 2009 tax year*
- **Include** working owners.
- **Include** part-time employees who worked 26 weeks or more in 2009.
- **Include** all employees working in Canada at this firm only.
- **Exclude** Co-op students.
- **Exclude** employees who worked less than 26 weeks during the calendar year 2009.

### 19. What is the total number of employees who worked for this firm at least 26 weeks during 2009?

C190000

Employees

### 20. Please provide your best estimate of total salary costs for all employees in your firm in 2009.

Report in Canadian dollars. If '0' (zero) please indicate '0'. Do not leave blank.  
Report only for Canadian operations.

C200000

\$

Employees who had **bioproducts related responsibilities** in 2009 are those employees who spent at least **fifty percent** of their **time** in 2009 **and** who spent more than **fifty percent** of their **usual work week** in 2009 performing tasks related to bioproducts research or production.

### 21. Please provide the number of employees in 2009 who spent at least fifty percent of their time performing duties related to the production, development, or administration of bioproducts.

	Number of employees with bioproducts responsibilities
a. Scientific research and development (e.g. scientists, R&D managers, etc.)	C210001 <input type="text"/>
b. Engineers	C210002 <input type="text"/>
c. Lab technicians	C210003 <input type="text"/>
d. Management/marketing/finance	C210004 <input type="text"/>
e. Production/operators	C210005 <input type="text"/>
f. Other, specify: C210007 <input type="text"/>	C210006 <input type="text"/>
<b>TOTAL</b>	C210008 <input type="text"/>

**22. Please provide your best estimate of total salary costs for bioproduct related employees in 2009.**

Report in Canadian dollars. If '0' (zero) please indicate '0'. Do not leave blank.  
Report only for Canadian operations.

C220000

\$

**23a. In 2009, did your firm have any job vacancies related to bioproducts (including R&D and production)?**

C231000

1 ☐ Yes

3 ☐ No → Go to Question 24a

**23b. Please indicate the degree for which the following factors affected your efforts to fill bioproducts related job vacancies in 2009.**

Factors affecting your efforts to fill bioproduct related job vacancies		Degree of effectiveness (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Compensation requirements by candidates too high	C232001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Candidates unwilling to relocate	C232002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Capital/resources insufficient to attract candidates	C232003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Lack of highly qualified candidates	C232004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
e. Lack of bioproduct specific education available in colleges, universities, etc.	C232005	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
f. Sector instability/insecurity	C232006	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
g. Other, specify. C232008 <input type="text"/>	C232007	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

## Section H – Firm Financial Profile

### Financial Information

- Report dollar amounts in Canadian Dollars.
- Report for fiscal years ending in 2008 and 2009.
- Please DO NOT leave blank, enter 0 if applicable.
- Report for Canadian operations within this firm only.
- If figures are not available please provide best estimates.

	Fiscal year ending in 2008	Fiscal year ending in 2009
<b>24a. What was this firm's TOTAL GROSS REVENUE from all sources.</b> (Enter total revenue for all Canadian operations within this firm only, in Canadian dollars)	C241001 \$ <input type="text"/>	C241011 \$ <input type="text"/>
<b>24b. What percentage of total gross revenue reported in question 24a was obtained through the sale of bioproducts?</b>	C241002 <input type="text"/> <input type="text"/> <input type="text"/> %	C241012 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>24c. What percentage of bioproduct sales reported in question 24b was obtained through the export of bioproducts?</b>	C241013 <input type="text"/> <input type="text"/> <input type="text"/> %	C241013 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>24d. What was the total cost of all biomass input?</b> (Enter total cost for all Canadian operations within this firm only, in Canadian dollars)	C241004 \$ <input type="text"/>	C241014 \$ <input type="text"/>
<b>24e. What was the total amount spent on Research and Development (R&amp;D) within this firm?</b> (Enter total cost for all Canadian operations within this firm only, in Canadian dollars).  <b>Exclude</b> R&D work that was contracted out or outsourced.	C241005 \$ <input type="text"/>	C241015 \$ <input type="text"/>
<b>24f. What percentage of total R&amp;D expenses reported in question 24e was spent on R&amp;D for BIOPRODUCTS?</b>	C241006 <input type="text"/> <input type="text"/> <input type="text"/> %	C241016 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>24g. What percentage of total R&amp;D spending reported in question 24e was spent on R&amp;D for BIOMASS?</b>	C241007 <input type="text"/> <input type="text"/> <input type="text"/> %	C241017 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>24h. What was the total amount spent on Bioproduct R&amp;D that was contracted out or outsourced by this firm?</b> (Enter total cost for this firm only, in Canadian dollars)	C241008 \$ <input type="text"/>	C241018 \$ <input type="text"/>

## Section I – Business Practices

### 25a. In 2009, did your firm contract out any bioproducts related activities?

Contracting out work can be referred to as outsourcing where by money is paid for a service on a contractual agreement.

C251000 1 ☐ Yes

3 ☐ No → Go to Question 27a

### 25b. Please indicate which of the following bioproduct related activities your firm contracted out (outsourced) in 2009. Report only for operations in Canada. (Check all that apply)

C252001 ☐ Business Activity

C252002 ☐ Production of goods

C252003 ☐ Management and business administration

C252004 ☐ Engineering services

C252005 ☐ Regulatory services

C252006 ☐ Research and development

C252007 ☐ Other, specify:

C252008

### 26. Please rate the level of importance that each of the following reasons had on your decision to contract out in 2009.

Reasons for contracting out		Degree of importance (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Access outside scientific expertise/knowledge	C260001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Activity area is outside core competence of firm	C260002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Faster completion of the work	C260003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Lower risks to the firm	C260004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
e. Increase your physical capacity (Infrastructure, equipments, etc.)	C260005	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
f. Access external R&D expertise	C260006	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
g. Access regulatory affairs expertise	C260007	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
h. Access production facilities	C260008	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
i. Other, specify: C260010	C260009	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

**27a. In 2009, was your firm involved in bioproducts related cooperative/collaborative arrangements with other firms or organizations?**

*(Please include both those inside and outside of Canada.)*

C271000 1 ☐ Yes

3 ☐ No → Go to Question 30

Cooperative and collaborative arrangements involve the active participation in projects between your company and other companies or organizations in order to develop and/or continue work on new or significantly improved bioproducts processes and/or products. Pure contracting-out work, where money is paid for a service, is not regarded as cooperative and/or collaborative arrangement.

**27b. In 2009, what was the number of cooperative/collaborative arrangements you had with other companies or organizations?**

C272000 ☐ ☐ ☐ ☐ ☐

**27c. In 2009, how many of these cooperative/collaborative arrangements involved more than one other partner?**

C273000 ☐ ☐ ☐ ☐ ☐

**28. Please indicate which of the following partner types your firm (in Canada) collaborated with during the previous 3 years.**

*(Check all that apply)*

C280001 ☐ Other firms in Canada

C280002 ☐ Other firms outside Canada (exclude your own firm's operations outside Canada)

C280003 ☐ University in Canada

C280004 ☐ University outside Canada

C280005 ☐ Federal Government Agency or Lab

C280006 ☐ Provincial Government Agency or Lab

C280007 ☐ Other, specify:

C280008

29. Please rate the level of importance that each of the following reasons had on your decision to cooperate/collaborate with partners.

Reasons for cooperative/collaborative arrangements		Degree of importance (Please check <u>one</u> only)			
		Low	Medium	High	Not Applicable
a. Access outside scientific expertise/knowledge	C290001	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
b. Conduct research and development	C290002	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
c. Access to biomass	C290003	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
d. Access production/manufacturing facilities	C290004	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
e. Access marketing/distribution channels	C290005	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
f. Access partners intellectual property	C290006	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
g. Access capital	C290007	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
h. Access regulatory affairs expertise	C290008	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>
i. Other, specify: C290010 <input type="text"/>	C290009	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>

## Section J – Strategies for environmental performance

30. In 2009, did your customers ask about your environmental practices?

C300000 1 ☐ Yes

3 ☐ No

31. Does your firm have an environmental plan (e.g., ISO 14001) in place for 2009?

C310000 1 ☐ Yes → Go to Question 33a

3 ☐ No

32. Does your firm plan to implement an environmental plan (e.g., ISO 14001) within three years?

C320000 1 ☐ Yes

3 ☐ No

## Section K – Intellectual Property

**33a. In 2009, did your firm have bioproducts related patents or pending patents?**

C331000 1 ☐ Yes

3 ☐ No → Go to Question 35a

**33b. Please indicate the number of bioproducts related patents and pending patents your firm had in 2009 by geographical area.**

Geographical area	Existing patents	Pending patents
a. In Canada (Canadian Intellectual Property Office (CIPO))	C332001 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C332011 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b. In the United States (U.S. Patent & Trademark Office (USPTO))	C332002 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C332012 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c. In Europe (e.g., European Patent Office)	C332003 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C332013 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
d. Other, specify: C332024 <input type="text"/>	C332004 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C332014 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

**34. Please Indicate the number of unique bioproduct patent applications submitted by your firm and the number granted in 2008 and/or 2009.**

Year	Number submitted	Number granted
2008	C340001 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C341001 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
2009	C340002 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C341002 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

**35a. In 2009, did your firm have bioproducts trademarks?**

C351000 1 ☐ Yes

3 ☐ No → Go to Question 36

**35b. Please Indicate the number of registered trademarks and the number of unregistered trademarks in 2008 and/or 2009.**

Year	Number of registered trademarks	Number unregistered trademarks
2008	C352001 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C352101 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
2009	C352002 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	C352102 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

36. In 2009, did your firm assign or license bioproducts related intellectual property (IP) rights to another firm?

- C360000 1 ☐ Yes  
3 ☐ No

37. In 2009, did your firm acquire bioproducts related intellectual property (IP) rights from another firm?

- C370000 1 ☐ Yes  
3 ☐ No

## Section L – Raising Capital

38a. Did your firm attempt to raise capital (including capital from government sources) for purposes related to bioproducts in 2008 and/or 2009?

- C381000 1 ☐ Yes  
3 ☐ No → Go to Question 42a

38b. Why did your firm attempt to raise capital related to bioproducts in 2008 and/or 2009?  
(Check all that apply)

- C382001 ☐ R&D purposes/expand R&D capacity  
C382002 ☐ Proof of concept/pilot project  
C382003 ☐ New plant/facility  
C382004 ☐ Expanding current facility  
C382005 ☐ Marketing/commercialization  
C382006 ☐ Operating funds  
C382007 ☐ Repay current investors  
C382008 ☐ Retrofit of existing facility  
C382009 ☐ Other, specify:

C382010

39. Was your firm successful in raising any capital in 2008 and/or 2009?

- C390000 1 ☐ Yes  
3 ☐ No

40. Please indicate your target amount of funds and amount of funds raised for the year(s) 2008 and/or 2009 in Canadian dollars. If '0' (ZERO) please indicate '0', do not leave blanks.  
Report only for Canadian operations.

Year	Target Amount	Amount raised
2008	C400001 \$ <input type="text"/>	C400101 \$ <input type="text"/>
2009	C400002 \$ <input type="text"/>	C400102 \$ <input type="text"/>

#### 41. What external sources provided funds for bioproduct activities in 2009?

Source of funds	% of total raised from each source
a. Canadian based private venture capital	C410001 <input type="text"/> <input type="text"/> <input type="text"/> %
b. American based private venture capital	C410002 <input type="text"/> <input type="text"/> <input type="text"/> %
c. Other private venture capital	C410003 <input type="text"/> <input type="text"/> <input type="text"/> %
d. Banks, Cooperatives, Credit union	C410004 <input type="text"/> <input type="text"/> <input type="text"/> %
e. Angel investors/family	C410005 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>Government sources</b>	
f. Government loans (e.g. BDC, FCC, EDC, STDC)	C410006 <input type="text"/> <input type="text"/> <input type="text"/> %
g. Matching funds	C410007 <input type="text"/> <input type="text"/> <input type="text"/> %
h. Grants (e.g. IRAP)	C410008 <input type="text"/> <input type="text"/> <input type="text"/> %
i. Other, specify: C410010 <input type="text"/>	C410009 <input type="text"/> <input type="text"/> <input type="text"/> %
j. PO (Initial Public Offering)/SPO (Secondary Public Offering)	C410011 <input type="text"/> <input type="text"/> <input type="text"/> %
k. Private placements	C410012 <input type="text"/> <input type="text"/> <input type="text"/> %
l. Other, specify: C410014 <input type="text"/>	C410013 <input type="text"/> <input type="text"/> <input type="text"/> %
<b>TOTAL</b>	<b>1 0 0 %</b>

#### Section M – Government Support Programs

42a. In the past 5 years, did your firm apply for benefits for bioproduct related activities under the Scientific Research and Experimental Development (SR&ED) tax program?

C411000 ☐ Yes

3 ☐ No → Go to Question 43

42b. How much did you apply for in 2009? Please report for fiscal year 2009 and in Canadian dollars.

If '0' (zero) please indicate '0'. Do not leave blank.  
C422000 \$

42c. What are your cumulative credits?

C423000 \$

43. In the past 5 years, has your firm received Industrial Research Assistance Program (IRAP) funding?

- C430000 1 ☐ Yes  
3 ☐ No

## Section N – Use of other Government Programs

44a. In the past 5 years, did your firm apply to any programs sponsored by Agriculture and Agri-food Canada that relate to bioproducts?

- C441000 1 ☐ Yes  
3 ☐ No → Go to Question 45

44b. Please fill in the following table of programs by indicating those your firm has applied for, approved and took part in (e.g., received funding)

Agriculture & Agri-food Canada (AAFC) or AAFC sponsored Program <i>Check (✓) all that apply</i>	Did you your application approved?	Did you take part in the program?
C442001 <input type="radio"/> ecoABC (Agriculture Biofuels Capital Initiative)	C442101 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442201 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442002 <input type="radio"/> Agri-Opportunities Program	C442102 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442202 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442003 <input type="radio"/> Broker Program	C442103 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442203 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442004 <input type="radio"/> Agri-Innovation Program	C442104 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442204 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442005 <input type="radio"/> Agricultural Co-operative Development Initiative (Ag-CDI)	C442105 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442205 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442006 <input type="radio"/> Canadian Agriculture and Food International Program	C442106 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442206 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442007 <input type="radio"/> Agri Bioproducts Innovation Program (ABIP)	C442107 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442207 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442008 <input type="radio"/> Canadian Agri science Clusters Initiative	C442108 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442208 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442009 <input type="radio"/> Developing Innovative Agri Products	C442109 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442209 1 <input type="radio"/> Yes 3 <input type="radio"/> No
C442010 <input type="radio"/> Advancing Canadian Agriculture (ACAAF)	C442110 1 <input type="radio"/> Yes → 3 <input type="radio"/> No	C442210 1 <input type="radio"/> Yes 3 <input type="radio"/> No

45. Approximately, how many minutes did you spend collecting the data and completing this questionnaire?

C9910

Hour(s)

C9909

Minutes

Comments

C9920

C9913

C9914

C9915

C9916

Thank you for your assistance.

Please return the questionnaire in the accompanying prepaid return envelope.