



Bioproducts development and production survey 2006

Confidential once completed

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.

Si vous préférez ce questionnaire en français, veuillez nous appeler au 1-866-897-5474

Information for the Respondent

Purpose of Survey

Statistics Canada is conducting this survey to produce a profile of firms engaged in the development or production of bioproducts in Canada. The survey focuses on the key characteristics and activities of firms that develop or produce bioproducts as part of their company's activity.

Bioproducts are 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 and agencies to assist policy formation, and by the academic community for research purposes.

Reporting Period and Coverage

Please report for **2006** on bioproducts development and/or production activities of your firm in Canada unless a specific question indicates otherwise. If your firm operates multiple establishments, please complete one questionnaire for your entire Canadian operations

Authority

Collected under the cuthority 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

conder 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. The combined information will be kept strictly confidential and used only for statistical purposes.

Who should complete this questionnaire?

A knowledgeable senior person in your firm, such as a research and development (R&D) manager or production manager, can complete this questionnaire.

Assistance

If you have questions or require assistance please contact

Tel: 1-866-897-5474 Fax: 1-888-869-0972

Email: sieidinfo@statcan.ca

Please provide the following information

Name of person completing form	Title
00001	00002
Phone	Fax
00003 () -	00004 () -
E-mail	Web Address
00005	00006

5-5300-506.1: 2006-12-19 STC/SAT-465-75366







Section 1 - Development and production of bioproducts and use of biomass

Bioproducts are defined as products (OTHER THAN FOOD, FEED, AND MEDICINES) made directly or indirectly with biological or renewable agricultural (plant or animal), marine or forestry **BIOMASS** material. These products may be new or novel in nature or traditional products made of or with new or novel biomass.

1. a) Please indicate in the table below your firm's activity in the development and/or production of bioproducts using the above definition as your guide. Please indicate the number of bioproducts in all stages of development that apply. Also, if more than one type of bioproduct please indicate the percentage that contributes to the total bioproduct activity.

	Number of bioproducts in each stage of development			
Type of bioproduct	R&D	Proof of concept/ product development	In production/ on market	
Liquid fuels (biodiesel, ethanol)	01001	01002	01003	
Gaseous fuels (methane)	01011	01012	01013	
Solid fuels (paper sludge, wood)	01021	01022	01023	
Biochemicals (biosolvents, bioadhesives, biosurfactants, biolubricants, fine chemicals, etc.)	01031	01032	01033	
Bioplastics	01041	01042	01043	
Biocontrol agents (biopesticides, biofungicides, bioherbicides)	01051	01052	010-2	
Fibre composites	01061	01062	01063	
Fibreboard/ agri-fibre panels	01071	0.072	01073	
Biocatalysts	01081	\$1082	01083	
Other bioproducts or biomaterials, please specify 01090bxt	01091	01092	01093	

% c tota biopro activ	al duct
01004	%
01014	%
01024	%
01034	
	%
01044	%
01054	
01064	%
01074	%
01084	%
	%
01094	
	%

1. b) Does your firm develop or produce co-products as a result of your principle bioproduct activity? (Co-products, sometimes referred to as by-products, are incidental or secondary products produced during the manufacture of a bioproduct, which can themselves be sold. For example, dried distillers grains (DDG) are a co-product of echanol production.)

10	3 (No	
	¹ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	If yes, what is the co-product(s)?
		01111txt

1. c) What percentage of your firms bioproducts are:

Sold directly to consumers or distributors	01210	%
Sold to other firms to be used as input(s)	01220	%
Used internally	01230	%
None, all still in development stage	01240	%
	•	

Total 100%

1. d) Does your firm operate as a biorefinery?

(The biorefinery process involves the feeding of biobased materials into one end of a process and drawing off a range of intermediate, co-products or end products at the other end of the production line).

01310	3	No
	1	Yes

Biomass is defined as renewable or sustainable feedstock/materials of agriculture, animal, forestry, marine or aquaculture origins or from municipal and/or industrial waste.

2. a) Please indicate in the table below your firm's use of biomass in its operations. Use the above definition as your guide. Please indicate the percentage that each type of biomass contributes to total biomass used as input.

Type of biomass	% of total biomass used as input
AGRICULTURAL BIOMASS	
Crops	
1) Grains and oilseeds	
Wheat	02001 %
Oats	02002 %
Rapeseed	02003 %
Barley	02004 %
Rye	02005 %
Flaxseed	02006 %
Corn	02007 %
Canola	02008 %
Soybeans	02009 %
2) Special crops	
Field peas	02010 %
Buckwheat	02011
Mustard seed	02012
Tobacco	02013 %
Herbs	020 4 %
Dry beans	12015 %
Canary seed	2016 %
Sunflower seed	02017 %
Rice	02018 %
Lenti ^l s	02019 %
Hemp	02020 %
Sugar beets	02021 %
Forages	02022 %
3) Horticulture	
Citrus fruits	02023 %
Non-citrus fruits	02024 %
Potatoes	02025 %
Vegetables	02026 %
4) Other	
Coconut	02027 %
Sugar cane	02028 %
Cotton	02029 %
Coffee (beans/grounds)	02030 %

Type of biomass	% of total biomass used as input
Livestock	
Dairy	02031 %
Animal products and by-products, animal waste (e.g. casein, fat, manure)	02032
Dedicated biomass crops	
Switchgrass	02033 %
Hybrid poplar	02034 %
Canada yew	02035 %
Kenaf	02036 %
Wheatgrass	02037 %
Cottonwood	02038 %
Sisal	02039 %
Silve: maple	02040 %
Triticale	02041 %
Jute	02042 %
Crop recidues	
Crop residues Corn stover	02043
Wheat straw	02044 0/
Flax straw	70
Hemp shives	02045 %
Fibres	·
<u>- 13133</u>	70
Sugar beet pulps	70
Bagasse	02049 %
Forestry biomass: forestry products/slash; mill waste/residues, wood and wood residues	%
Marine and aquaculture materials/products	02051
	02052
Food processing by-products	%
Industrial organic waste (e.g. sludge)	02053
Municipal organic waste (e.g. household waste, hospital waste)	02054
Other sustainable/ renewable feedstock/ materials (please specify) 02055txt	02055
	%

Yes If yes, please indice 021111td	icate the type(s) of supplier(s):
	ent or production of bioproducts and you are not usi ducts survey in the accompanying prepaid envelope.
nat percent of your firm's principal bioma	ass is transported from?
0 km (On site)	03010 %
Less than 50 km	03020 %
50 km to less than 100 km	03030 %
100 km to less than 500 km	03040 %
500 km or more	03050 %
	Total 100%
nat percentage of your firm's biomass is	s obtained from:
British Columbia	04010
Billion Goldmala	
Alherta	0401
Alberta	0.012
Saskatchewan	0.017 %
Saskatchewan Manitoba	% 0'012 % 0'013 % 04014
Saskatchewan Manitoba Ontario	% 0-012 % 0-013 % 04014 % 04015
Saskatchewan Manitoba Ontario Quebec	04014 % 04015 % 04016
Saskatchewan Manitoba Ontario Quebec New Brunswick	04017 % 04017 % 04017 % 04017 % 04017 % 04017 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia	01012 % 01012 % 04013 % 04014 % 04015 % 04016 % 04017 % 04018
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island	0-012 % 0-1012 % 0-1013 % 04014 % 04015 % 04016 % 04017 % 04018 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador	04012 % 04014 % 04015 % 04016 % 04017 % 04018 % 04019 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador Yukon Territo y	04012 % 04014 % 04015 % 04016 % 04017 % 04018 % 04020 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador Yukon Territory Northwest Territories	0-1012 % 0-1013 % 0-1014 % 0-1015 % 0-1015 % 0-1015 % 0-1016 % 0-1016 % 0-1017 % 0-1018 % 0-1019 % 0-1
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador Yukon Territory Northwest Territories Nunavut	0-1012 % 0-1013 % 04014 % 04015 % 04016 % 04017 % 04018 % 04019 % 04020 % 04021 % 04030 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador Yukon Territory Northwest Territories	0-1012 % 0-1013 % 04014 % 04015 % 04016 % 04017 % 04018 % 04019 % 04020 % 04021 % 04022 %
Saskatchewan Manitoba Ontario Quebec New Brunswick Nova Scotia Prince Edward Island Newfoundiand and Labrador Yukon Territory Northwest Territories Nunavut	0-1012 % 0-1013 % 04014 % 04015 % 04016 % 04017 % 04018 % 04019 % 04020 % 04021 % 04030 %

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Section 2 - Benefits from developing or producing bioproducts

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

Benefit		Degree of importance Low → High	า
Reduced production cost	06001	1 2 3 4 5	
Reduced energy consumption	06002	1 2 3 4 5	
Reduced damage to the environment/ greener and cleaner products	06003	1 2 3 4 5	
Developed new market niche/new products/ differentiated products	06004	1 2 3 4 5	
Increased product range	06005	1 2 3 4 5	
Improved product value/performance	06006	1 2 3 4 5	1
Increased sales/market share	06007	1 2 3 4 5	
Promotion of community development	06008	1 2 3 4 5	
Other, please specify:	06009	1 2 3 4 5	
	00009		

Section 3 - Barriers to developing or producing bioproducts

7. Please rate the importance of the following parriers in hindering the development and/or production of bioproducts by your firm.

Barriers		Low ·	Degre	e of impo	rtance	▶ High
Unreliable quantity of biomass	07001	1	2	3	4	5
Unreliable quality of binmass	07002	1	2	3	4	5
Higher price of Liomass	07003	1	2	3	4	5
Higher transportation cost of biomass	07004	1	2	3	4	5
Difficulty in entering commercial marketplace	07005	1	2	3	4	5
Lack of skilled human resources	07006	1	2	3	4	5
Lack of financial capital	07007	1	2	3	4	5
Restrictions on intellectual property (IP) rights	07008	1	2	3	4	5
Cost and timeliness of regulatory approval	07009	1	2	3	4	5
Lack of adequate product standard certification	07010	1	2	3	4	5
Other, please specify: 07011txt	07011	1	2	3	4	5

Section 4 - Firm characteristics
08010
8. a) What year did your firm begin operations?
08020
8. b) What year did your firm begin its bioproducts related activities?
9. How did your firm become involved in developing and/or producing bioproducts? (Please check one)
09001 Mainly as a result of activities of your firm (as part of an R&D project)
09002 In co-operation/collaboration with other firms or organizations
09003 Merger with/acquisition of another firm
⁰⁹⁰⁰⁴ Purchase of another firm's bioproducts development activities
Other means, please specify
09005txt
10. Is your primary business activity the development and/or production of bioproduc's?
No ► If no, please indicate what your primary business activity is:
10011bt
¹ Yes ► Go to question 11
les do lo question II
11. Is your firm a spin-off? (A spin-off is defined as a new firm reated to transfer and commercialize inventions
and technology developed in universities, firms or government laboratories.)
11010 3 No ► Go to question 12
Yes Yes, is your firm a spin-off from:
(Please check one)
11020 C'niversity/academic institution
11021 Another firm
Government agency/lab
^{1 023} Other, please specify
11023txt
12. Are your operations in Canada part of a larger Multi-National Enterprise (MNE)?
¹²⁰¹⁰ ³ No
1
Yes
13. Is your firm a:
12010
Private firm Go to question 14
Public firm If public, what is the majority stock ownership of your firm? (Please check one)
13021 Canadian
13022 American
13023 Mexican
13024 Other country
Other country

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Section 5 - Human resources in bioproducts development or production

14. a) For the purpose of this survey employees are defined as those workers for whom you completed a Canada Revenue Agency T-4 statement for the 2006 tax year. Include working owners. Do not include students. Only count employees working in Canada and if an employee performs more than one duty, report their primary responsibility. Count each person only once. Please report the total number of employees in Canada in 2006 and the number of employees with bioproduct responsibilities. If '0' (zero) indicate '0'.

Type of employee	Total number of employees in Canada in 2006	Number of employees with bioproduct responsibilities
Scientific research and development (e.g. scientists, R&D managers, etc)	14011	14012
Engineers	14021	14022
Lab technicians	14031	14032
Management/marketing/finance	14041	14042
Production/operators	14051	14052
Administration/human resources	14061	14062
Other please specify 14070txt	14071	14072
Total	140	14082
What were your total salary costs for all employees is y Report for fiscal year 2006 and in thousands of dollars (\$ If '0' (zero) please indicate '0'. Do not leave blank . Report only for Canadian operations		\$
What were your total salary costs for binproduct related Report for fiscal year 2006 and in hous ands of dollars (\$ '0' (zero) please indicate '0'. To not leave blank . Report only for Canadian operations.	000).	\$
pes your firm have any bio roducts related vacancies?		
No Gc to question 16 1 Yes Ves, please indicate whether you strongly	v disagraa ar strangly ag	aroo that the followin

Factors		Strongly disagree	•		-	Strongly agree
Compensation requirements by candidates too high	15020	1	2	3	4	5
Candidates unwilling to relocate	15021	1	2	3	4	5
Capital/resources insufficient to attract candidates	15022	1	2	3	4	5
Lack of highly qualified candidates	15023	1	2	3	4	5
Lack of bioproduct specific education available in colleges, universities, etc.	15024	1	2	3	4	5
Sector instability/insecurity	15025	1	2	3	4	5
Other, please specify						
	15026	1	2	3	4	5

Section 6 - Firm financial profile

Revenues, costs, and research & development (R&D) expenditures

16. Please complete the following table. If information is not available please provide a carefully considered estimate. Report for fiscal years 2005 and 2006 and in thousands of dollars (\$ '000). If '0' (zero) please indicate '0'. **Do not leave blanks**. Report only for Canadian operations.

	2005	2006
	(\$ '000)	(\$ '000)
	16011	16012
Total firm revenues (all sources)		
	16021	16022
Revenues from bioproducts		
	16031	16032
Revenues from bioproducts exported		
	16041	16042
Total cost of biomass input	10011	100 12
	16051	16052
Total R&D spending		
	16061	16062
R&D spending on bioproduct development		
	16071	16072
R&D spending on biomass development		
	16081	16082
Bioproducts R&D spending contracted out		

Section 7 - Business practices

Contracting activities

17	a١	Did v	our firm	contract	out hio	products	rc'ated	activities in	2006?
11.	a,	DIG 1	your milli	Contract	Out DIO	products	IJ. LEGG	activities ii	1 2000:

17010	3 🔘	No		Go to question 13
	1 🔾	Yes		

If yes, for each contract type listed below, please indicate the number and value of contracts. Peport for fiscal year 2006 and in thousands of dollars (\$ '000). If '0' (zero) please indicate '0'. **Do not leave blanks**. Report only for Canadian operations.

Contract type	Number of contracts	Total value of contracts in 2006 by purpose (\$ '000)				
	contracts	R&D	Regulatory	Production	Management	
CRO (Contract research organization)	17011	17012	17013	17014	17015	
CMO (Contract manufacturing organization)	17021	17022	17023	17024	17025	
University/ academic institution	17031	17032	17033	17034	17035	
Government lab	17041	17042	17043	17044	17045	
Other, please specify 17050txt	17051	17052	17053	17054	17055	
Total	17061	17062	17063	17064	17065	

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					2		
	Total number of employees by contracting out activities		ed	0	17118	3	
7. c) Please rate to contract o	the level of importance that each	ach (ft	he ronowii	ng reasor	ns had on	your dec	cision
Re	easons for contracting out		Low •	Degre	ee of impo	rtance	▶ High
Access out	side scientific nowledge	17200	1	2	3	4	5
Activity are competence	a outside corc e of firm	17201	1	2	3	4	5
Faster com	pletion of the work	17202	1	2	3	4	5
Lower ricks	to the firm	17203	1	2	3	4	5
Increase yo (infrastructu	our physical capacity ure, equipments, etc.)	17204	1	2	3	4	5
Cost reduc	ction related to						
R&D activ	ities	17205	1	2	3	4	5
Regulator	y affairs	17206	1	2	3	4	5
Production	1	17207	1	2	3	4	5
Other, pleas	se specify	17208	1	2	3	4	5

17. b) Did contracting out in 2006 replace bioproduct employees in your firm?

Scientific research and development (e.g. scientists, R&D managers, etc.)

Management/marketing/finance

Administration/human resources

If yes, please indicate the number of bioproduct employees replaced for each group

Type of Employee Replaced

Number of bioproduct

employees replaced

17112

17113

17114

17115

No Go to question 17c

Yes

listed below:

Engineers

Lab Technicians

Production/operators

Other, please specify

Collaborative arrangements

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 is not regarded as cooperative and/or collaboration.

18. a) Was your firm involved in bioproducts related cooperative/collaborative arrangements with other companies or organizations in 2006? (*Please include both those inside and outside of Canada.*)

18010	3	No Go to question 19
	1 🔵	Yes
		▼
		If yes , please provide the number of cooperative/collaborative arrangements you had with other companies or organizations in 2006:
		number of cooperative/collaborative arrangements

18. b) Please provide the number of arrangements by purpose and partner type for 2006:

	Number of arrangements by partner type						
Arrangement purpose	Other firm	University/ academic institution	Governmen: lab or agency	Primary agriculture producer			
Access to biomass	18021	18022	18023	18024			
To conduct research & development (R&D)	18031	18032	18033	18034			
Lower expenses	18041	1%042	18043	18044			
Production/ manufacturing	18051	18052	18053	18054			
Regulatory affairs	18061	18062	18063	18064			
Access markets/ distribution channels	1807	18072	18073	18074			
Access to Intellectue!	3081	18082	18083	18084			
Access Copital	18091	18092	18093	18094			
Access others' knowledge and skills	18101	18102	18103	18104			
Other, please specify 18110bxt	18111	18112	18113	18114			

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Section 8 - Intellectual property

19. a) Does your firm have biobroducts related baterits of bending bateri	19. a)	e bioproducts related patents or pending	patents?
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19010	3 🔘	No		Go to question	19c
	1 🔵	Yes			

If yes, please indicate the number of bioproducts related patents, pending patents and expired patents your firm had in 2006 by Patent Office:

Patent office	Existing patents	Pending patents	Expired patents
Canadian Intellectual Property Office (CIPO)	19021	19022	19023
U.S. Patent & Trademark Office (USPTO)	19031	19032	19033
European Patent Office	19041	19042	19043
Other, please specify	19051	19052	19053

19. b) Indicate the number of unique bioproduct patent applications submitted by your company and the number granted in 2005 and/or 2006:

Year	Number submitted Number granted
2005	19111
2006	19121 19122

19. c) Does your firm have bioproducts related trademarks?

19210	3 🔘	No		Go to question 20
	1	Yes		

If yes how many bioproducts related trademarks? Indicate the number of registered trademarks and the number of unregistered trademarks 2005 and/or 2006:

Year	Number of registered trademarks	Number of unregistered trademarks
	19211	19212
2005		
	19221	19222
2006		

instrument 20011 20012 20013 20014	instrument 20011 20012 20013 20014	instrument Canadian limits Canadian limits		number of IP rights granted n 2006:	Number with	Number with	Number with	Total income from
Licensing agreement Patent assignment Technology transfer agreement Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? The please specify 20041 Tother, please specify 20041 Tother, please specify 20041 Tother, please specify 20041 Tother, please specify If yes, for each type of intellectual property rights from another firm in 2006? Intellectual property In 2006: Intellectual property Instrument Tother, please specify 20111 Tother, please specify 20121 20122 20123 20131 20144 Cother, please specify 20141 20142 20143 20144	Licensing agreement Patent assignment Technology transfer agreement Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? No Go to question 21 Yes If yes, for each type of intellectual property and the total cost to your firm in obtaining IP in 2006: Intellectual property Instrument Licensing a reement 20111 20112 20113 20114 Cost to your firm of obtaining IP in 2006 (\$ '000) Licensing a reement Patent assignment Patent assignment Patent assignment 20121 20122 20133 20134 20144 Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to your firm acquire in 2006 (\$ '000) Cost to	Licensing agreement Patent assignment Technology transfer agreement Other, please specify 2004 2004 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? **Test of the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument Number with USA firms Number with other country firms Cost to your firm in 2006 (\$ '000) Licensing agreement 20111 20112 20113 20114 Potent assignment 20121 20122 20123 20124 Potent assignment 20131 20132 20133 20134 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 20144 Other, please specify 20141 20142 20143 2014		Intellectual property instrument	Canadian firms	USA firms		(\$ '000)
Patent assignment Technology transfer agreement Other, please specify 20041 Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? 20110 No Go to question 21 Yes If yes, for each type of intellectual property instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument Intellectual property instrument Conadian firms Number with Other country firms Cost to your firm of obtaining IP in 2006 (\$ 000) Licensing agreement Paten, assignment Technology transfer agreement Other, please specify 20141 20142 20143 20144	Patent assignment Technology transfer agreement Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? Patent assignment Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? For a question 21 Yes If yes, for each type of intellectual property instrument listed below please indicate the number of IP rights acquired by ountry and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument Intellectual property instrument Cost to your firm of obtaining IP in 2006 (\$ '000) Licensing a reement 20111 20112 20113 20114 Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 2006 (\$ '000) Cost to your firm of obtaining IP in 20112 20113 20114 Did your firm in 2006?	Patent assignment Technology transfer agreement Other, please specify 20041 Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? 20110 No Go to question 21 Yes If yes, for each type of intellectual proper, instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument		Licensing agreement	20011	20012	20013	20014
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Other, please specify 20040bd Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? 20110 3 No ► Go to question 21 1 Yes If yes, for each type of intellectual property instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument C. nadian firms Number with other country firms Cost to your firm of obtaining IP in 2006 (\$ '000)	Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? 20110 3 No Go to question 21 Yes If yes, for each type of intellectual property instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument Intellectual property instrument Cost to your firm of obtaining IP in 2006 (\$ '000) Licensing agreement 20111 20112 20113 20114 Patent assignment Technology transfer agreement Other, please specify 20141 20142 20143 20144	Did your firm acquire bioproducts related intellectual property rights from another firm in 2006? 20110 3 No Go to question 21 Yes If yes, for each type of intellectual property instrument listed below please indicate the number of IP rights acquired by country and the total cost to your firm in obtaining IP in 2006: Intellectual property instrument Intellectual property instrument Cost to your firm of obtaining IP in 2006 (\$ '000) Licensing a reement 20111 20112 20113 20114 Ectan, assignment Yechr.ology transfer agreement Other, please specify 20141 20142 20143 20144			20031	20032	20033	20034
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Other, please specify	Other, please specify	Other, please specify	-	Intellectual property instrument Licensing agreement	C. nadian firms	USA firms	other country firms	of obtaining IP in 2006 (\$ '000)
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20. a) Did your firm **assign or license** bioproducts related intellectual property (IP) rights **to another firm** in 2006?

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Section 9 - Raising 21. a) Did your firm atten in 2005 and/or 200	npt to raise funds, including government funding, for purposes related to bioproducts
²¹⁰¹⁰ ³ No ►	Go to question 24
¹ ○ Yes ▶	If yes, why did you attempt to raise funds in 2005 and/or 2006? Indicate each category that applies to your firm.
	21020 R&D purposes/expand R&D capacity
	21021 Proof of concept/pilot project
	21022 Regulatory expenses
	21023 Production/manufacturing capability
	21024 Marketing/commercialization
	Operating funds
	21026 Repay current investors
	Other, please specify
	21027bt
21110 2	cessful in raising funds in 2005 and/or 2006?

²¹¹¹⁰ ³ ○ No ▶	Go to question 23
¹ O Yes ▶	If yes, please indicate your target amount of funds and amount of funds raised for the
	year(s) 2005 and/or 2006 in thousands of dollers (\$\circ\$ '000). If '0' (ZERO) please indicate '0',

do not leave blanks. Report only for Cariadian operations.

Year	Tai vet (\$ '00u)	Amount raised (\$ '000)
2005	21111	21112
2006	`1121	21122

22. What sources provided funds for bioproduc, activities in 2006?

Source of fund.	% of total raised from each source
Canadian based private venture capital	22001
American based priva a venture capital	22002
Other private ventur a capital	22003
Banks, Cooperatives, Credit union	22004
Angel investors/family	22005
Government sources Government loans	22006 %
Matching funds	22007
Grants	22008
Other, please specify	22009 %
IPO (Initial Pubic Offering)/ SPO (Secondary Public Offering)	22010 %
Private placements	22011 %
Collaborative arrangements, alliances	22012
Other, please specify	22013
22013bt	%

Total 100%

23. [23. Did lender(s) limit or refuse your request for funds in 2005 and/or 2006?					
	²³⁰¹⁰ ³ No F Go to question 24					
	Yes If yes, what reasons did the lender(s) in 2005 and/or 2006? Indicate each re	-				
	²³⁰²⁰ Further product developme	nt or proof of concept re	quired			
	23021 Lack of integration within so	upply chain				
	23022 No proof of market demand	i				
	23023 Insufficient specific manage	ement skills/expertise				
	Funds not available due to	capital market condition	s			
	23025 Intellectual property protect	tion is not available for fi	rm's technology in Canada			
	Other, please specify					
	23026txt					
			1			
Sec	ction 10 - Government support programs	,A				
	In the past 5 years, did your firm apply for benefits for biop Research and Experimental Development (SR&ED) tax pr		unuer the Scientific			
	²⁴⁰¹⁰ ³ ○ No ► <i>Go to question 25</i>					
	Yes If yes, report for fiscal year 2006 and If '0' (zero) please indicate '0'. Do not		(\$ '000).			
	How much did you apply for in 2006? What are your cumulative credus?	240.30 \$				
	During 2005 and/or 2006, did your firm use any of the follor provincial/territorial governments for activities related to Please check all that apply, excluding SR&ED.					
		Governme	ent programs			
	ivr es of programs	Federal government	Provincial/ territorial government/ municipal			
	Technology support and assistance programs	25011	25012			
	Loans and/or loan guarantees	25021	25022			
	Export assistance programs	25031	25032			
	Information or Internet services	25041	25042			
	Support for training	25051	25052			
	Marketing assistance	25061	25062			
	Other, please specify 25070bxt	25071	25072			

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Section 11 - Strategies used in 2006

26. How important were each of the following strategies for your firm in 2006?

Strategies		Low	•	Degre	ee of impo	ortance	→ High
Knowledge development strategies							
Acquired and used knowledge obtained from other industry sources such as industry associations, competitors, clients and suppliers	26011	1	2		3	4	5
Acquired and used knowledge obtained from public research institutions including universities and government laboratories	26012	1	2		3	4	5
Used and updated databases of scientific information	26013	1	2		3	4	5
Developed firm policies and practices for knowledge/intellectual property protection	26014	1	2		3	4	5
Developed/encouraged staff education/upgrading	26015	1	2		3	4	5
Conducted an Intellectual Property Audit to ensure protection of products and processes at all stages of development	26016	1	2		3	4	5
Business strategies				A			
Increased firm size through acquisition, merger or joint venture	26021	1	2	9	3	4	5
Supply chain development	26022	1	2	d	3	4	5
Entered product trials/adapted products or processes for increased market penetration	26023	1	2		3	4	5
Began new research and development project	26υ. 1		2	\bigcirc	3	4	5
Expanded into foreign markets	26025	1	2	\bigcirc	3	4	5
Other, please specify 26026txt	26026	1	2		3	4	5
pproximately, how many minutes did you spenduestionnaire? 27010 minutes	d colle	ecting t	he d	ata a	nd com	pleting t	his
inchis —							

Thank you for your assistance. Please return the questionnaire in the accompanying prepaid return envelope.