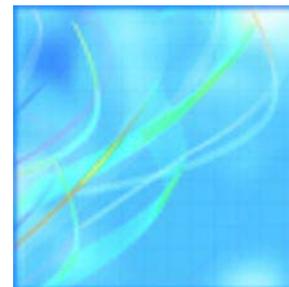


Catalogue no. 22-202-X

Greenhouse, Sod and Nursery Industries



2008



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Statistics Canada
Agriculture Division
Crops Section

Greenhouse, Sod and Nursery Industries

2008

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

The following staff members have contributed to this publication:

Eric Brazeau, Suzanne Danis, Serge DesRoches, Sheba Mirza, Wendell Pitt, Jake Purdy, Rosaria Spataro and Leah St.Michael.

This publication was prepared under the direction of:

- **Marco Morin**, Chief,
Crops Section
- **Lorie Shinder**, Head,
Horticulture Unit

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Highlights

Overall trends

In Canada, the total greenhouse area decreased for the second year in a row. This situation was accompanied by lower production and sales of greenhouse products, notably plants and flowers, and by lost jobs in the sector. The nursery sector also experienced a slight decrease in sales.

In 2008, the total greenhouse area was 20.8 million square metres, compared with 20.9 million square metres in 2007. Sales of greenhouse products decreased by 7.6% to \$2.1 billion in 2008.

As for total operating expenses, they came in at \$2.0 billion (-5.0%). Labour costs totalled \$544 million and represented 27.7% of total operating expenses for greenhouses. Compared with 2007, the total number of seasonal and permanent greenhouse workers decreased by 8.6% to 38,375 in 2008.

In 2008, sales of nursery products came to \$610 million, compared with \$630 million in 2007 (-3.2%). For sod farms, sales of cultivated sod increased slightly by 0.5%, reaching nearly \$128 million in 2008.

Flowers and plants

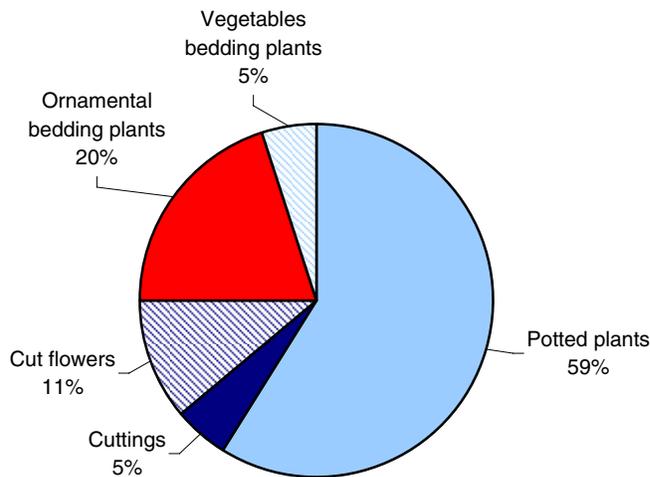
The survey reveals that production of flowers and plants was responsible for 47.9% of total greenhouse area and represented 61.1% of total sales of greenhouse products in 2008. Total sales of flowers and plants, however, came to \$1.3 billion, compared with \$1.5 billion in 2007, which is a decrease of 13.6%. Ontario, the largest producing province, experienced a decrease of \$160 million in sales of greenhouse flowers and plants.

Production of potted flowers and plants ranked first, with sales of \$647 million. Sales of ornamental plants for transplanting and cut flowers reached \$226 and \$126 million respectively. However, the value of sales in all categories of flowers and plants decreased between 2007 and 2008.

In 2008, Canadian greenhouses produced more than 208 million potted flowers and plants, 236 million cut flowers, 262 million tree seedlings, 639 million ornamental plants for transplanting, 357 million edible plants for transplanting and 65.8 million cuttings.

Chart 1

Sales distribution of cultivated greenhouse flowers and plants in Canada, by category, 2008



Note(s): Exclude resale activities of flowers and plants, as well as tree seedling sales.

Costs for specialized producers of greenhouse flowers and plants were more than \$1.1 billion. Labour costs represented 30.3% of total costs for greenhouses specializing in the production of flowers and plants. The purchase of plant materials and other growing costs (fertilizer, pesticides, etc.) were also among the main expenditure items.

Vegetables

Unlike ornamental production, sales of fruits and vegetables increased by 3.7% between 2007 and 2008. In 2008, fruit sales reached more than \$813 million. Ontario production represented 58.5% of sales of greenhouse fruits and vegetables in Canada. The discovery of a phytosanitary problem in the tomato production in Mexico in the summer of 2008 gave a boost to Canadian producers. Sales of tomatoes increased by 4.5% to almost \$372 million. This growth was observed mainly in Quebec and British Columbia. Sales of peppers, cucumbers and lettuce reached \$212 million, \$187 million and \$24.1 million respectively. This represents an increase compared with 2007. Miniature cucumbers and greenhouse peppers were in demand in domestic and American markets.

Costs for fruit and vegetable producers reached \$669 million in 2008. Labour costs, the principal individual expenditure item, came in at \$163 million, which was one quarter of total operating expenditures. Other operating expenses (interest, property taxes, insurance, packaging, repairs and labour contracts) represented 30.7% of total costs for producers specializing in greenhouse fruits and vegetables.

Nurseries and sod farms

In 2008, more than one thousand nurseries in Canada sold trees, shrubs, seedlings and plants valued at \$610 million. Ontario, British Columbia and Quebec represented respectively 45.6%, 29.9% and 11.5% of total sales of nursery products. Resale activities of nursery products, i.e., the sale of products not grown on site, represented 25.2% of total sales. Nursery products were principally sold to landscape contractors (27.7%), garden centres (22.5%), chain stores (14.2%) as well as direct sales (10.5%).

The survey collects information on nursery plants produced in fields and in containers. The different categories of cultivated plants appear here in decreasing order of importance in terms of volume: tree seedlings, fruit-bearing plants and shrubs, conifers, shade or flowering trees, and deciduous shrubs (including rosebushes).

Costs for producers of nursery products reached \$501 million in 2008. Labour costs were at \$200 million and represented 39.9% of total costs for nurseries. Nurseries employed 12,140 seasonal and permanent workers in 2008.

In Canada, nearly 200 farms were involved in sod cultivation. The total sod area decreased by 5.4% to 22,569 hectares. A total of 8,950 hectares of sod were sold in 2008. Ontario, Quebec and Alberta were among the main sod-producing provinces. In 2008, total sales of sod, including resale activities, came in at \$130 million.

In 2008, costs for sod producers reached \$106 million. The main expenditure item is for other operating costs, i.e., expenditures on fertilizer, pesticides, property taxes, interest, insurance, repairs, fuel and electricity. These costs came to \$66.9 million, compared with \$36.9 for labour costs. The sector employed nearly 1,800 workers, of whom three fourths were seasonal workers.

Related products

Selected publications from Statistics Canada

21-010-X	Net Farm Income - Agriculture Economic Statistics
21-011-X	Farm Cash Receipts - Agriculture Economic Statistics
22-003-X	Fruit and Vegetable Production
22-008-U	Canadian Potato Production - Updates
23-221-X	Production and Value of Honey and Maple Products

Selected CANSIM tables from Statistics Canada

001-0006	Production and value of greenhouse vegetables, annual
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Selected surveys from Statistics Canada

3416	Annual Greenhouse, Sod and Nursery Survey
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Statistical tables

Table 1
Greenhouse total area and months of operation, 2007

	Total greenhouses	Area							Total months of operation	
	number	Total greenhouse area		Glass		Rigid plastic		Poly-film		
		'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet		'000 of square metres
Newfoundland and Labrador	60	614	57	9 ^E	1 ^E	606	56	..	..	365
Prince Edward Island	20	382	35	x	x	x	x	..	..	120
Nova Scotia	116	2,115	196	645 ^E	59 ^E	1,470	137	..	..	720
New Brunswick	82	1,795	167	x	x	x	x	..	..	480
Quebec	800	26,762	2,486	2,500	232	24,262	2,254	..	..	5,485
Ontario	1,200	124,000 ^r	11,520 ^r	34,000 ^r	3,159 ^r	90,000	8,361	..	..	10,200
Manitoba	135	2,938	273	x	x	x	x	..	..	855
Saskatchewan	168	2,532	235	92	9	2,440	227	..	..	945
Alberta	350	11,615	1,079	815 ^E	76 ^E	10,800	1,003	..	..	2,500
British Columbia	545	53,200 ^r	4,942 ^r	31,200	2,899	22,000 ^r	2,044 ^r	..	..	4,600
Canada	3,476	225,954^r	20,992^r	69,373^r	6,445^r	156,581^r	14,547^r	..	..	26,270

Table 2
Greenhouse total area and months of operation, 2008

	Total greenhouses	Area							Total months of operation	
	number	Total greenhouse area		Glass		Rigid plastic		Poly-film		
		'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet		'000 of square metres
Newfoundland and Labrador	50	714	66	x	x	x	x	628	58	320
Prince Edward Island	15	271	25	x	x	x	x	252	23	84
Nova Scotia	105	2,079	193	F	F	42	4	1,412	131	675
New Brunswick	75	1,744	162	x	x	x	x	1,698	158	465
Quebec	740	26,936	2,502	3,168	294	1,886	175	21,882	2,033	5,240
Ontario	1,190	123,676	11,490	32,275	2,998	16,882	1,568	74,519	6,923	10,522
Manitoba	125	3,275	304	2 ^E	0 ^E	F	F	2,972	276	750
Saskatchewan	145	2,237	208	78	7	222	21	1,937	180	825
Alberta	335	10,409	967	540	50	1,341	125	8,527	792	2,400
British Columbia	515	52,037	4,834	34,437	3,199	2,300	214	15,300	1,421	4,500
Canada	3,295	223,378	20,752	71,161	6,611	23,089	2,145	129,128	11,996	25,781

Table 3
Specialized greenhouse fruit and vegetable producers' area, 2008

	Total greenhouses	Area							Total months of operation	
	number	Total greenhouse area		Glass		Rigid plastic		Poly-film		
		'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet		'000 of square metres
Atlantic provinces	45	F	F	x	x	31	3	F	F	310
Quebec	170	6,534	607	F	F	F	F	4,347	404	1,320
Ontario	215	74,961	6,964	17,244	1,602	10,869	1,010	46,848	4,352	2,025
Prairie provinces	95	3,774	351	75	7	F	F	3,228	300	825
British Columbia	105	25,525	2,371	21,500	1,997	2,243	208	F	F	900
Canada	630	111,306	10,341	40,756	3,786	13,985	1,299	56,566	5,255	5,380

Table 4-1
Area, production and value — Greenhouse tomatoes

	Area		Production		Value
	'000 of square feet	'000 of square metres	'000 of pounds	'000 of kilograms	'000 of dollars
2007					
Newfoundland and Labrador	11	1	13 ^E	6 ^E	22 ^E
Prince Edward Island	79	7	x	x	x
Nova Scotia	514	48	3,500 ^E	1,588 ^E	F
New Brunswick	58	5	150 ^E	68 ^E	F
Quebec	5,022	467	41,335	18,749	46,820
Ontario	32,420 ^r	3,012 ^r	295,000 ^r	133,810 ^r	210,500 ^r
Manitoba	57 ^E	5 ^E	x	x	F
Saskatchewan	53	5	163	74	311
Alberta	1,500	139	15,000	6,804	12,000
British Columbia	10,250 ^r	952 ^r	94,500 ^r	42,864 ^r	81,000 ^r
Canada	49,964^r	4,642^r	450,368^r	204,284^r	355,613^r
2008					
Newfoundland and Labrador	19 ^E	2 ^E	F	F	F
Prince Edward Island	51	5	214	97	224
Nova Scotia	F	F	F	F	F
New Brunswick	F	F	F	F	F
Quebec	5,788	538	43,413 ^E	19,692 ^E	51,854 ^E
Ontario	31,002	2,880	280,904	127,416	204,579
Manitoba	60	6	F	F	F
Saskatchewan	45	4	200	91	390
Alberta	738	69	7,871	3,570	7,189
British Columbia	11,850	1,101	118,481	53,742	101,442
Canada	50,184	4,662	456,413	207,026	371,670

Table 4-2
Area, production and value — Greenhouse cucumbers

	Area		Production		Value
	'000 of square feet	'000 of square metres	'000 of dozens	'000 of dollars	
2007					
Newfoundland and Labrador	F	F	F	F	F
Prince Edward Island	x	x	x	x	x
Nova Scotia	140 ^E	13 ^E	57	637	637
New Brunswick	71	7	23	259 ^E	259 ^E
Quebec	1,553	144	x	x	x
Ontario	21,600	2,007	20,000 ^r	126,500	126,500
Manitoba	F	F	F	F	F
Saskatchewan	52	5	21 ^E	239 ^E	239 ^E
Alberta	2,100	195	1,800	18,800	18,800
British Columbia	4,430 ^r	412 ^r	4,500 ^r	29,063 ^r	29,063 ^r
Canada	29,956^r	2,783^r	27,041^r	179,421^r	179,421^r
2008					
Newfoundland and Labrador	x	x	x	x	x
Prince Edward Island	x	x	x	x	x
Nova Scotia	F	F	F	F	F
New Brunswick	F	F	F	F	F
Quebec	738	69	226	1,902	1,902
Ontario	22,081	2,051	20,736	130,659	130,659
Manitoba	F	F	F	F	F
Saskatchewan	36	3	20	204 ^E	204 ^E
Alberta	1,985	184	3,125	20,923	20,923
British Columbia	4,795	445	4,976	33,063	33,063
Canada	29,770	2,766	29,202	187,422	187,422

Table 4-3
Area, production and value — Greenhouse lettuce

	Area		Production		Value
	'000 of square feet	'000 square metres	'000 heads		'000 dollars
2007					
Newfoundland and Labrador	F	F	x		x
Prince Edward Island	x	x	x		x
Nova Scotia	x	x	x		x
New Brunswick	F	F	F		F
Quebec	1,299	121	x		x
Ontario	F	F	x		x
Manitoba	0	0	0		0
Saskatchewan	x	x	x		x
Alberta	8	1	x		x
British Columbia	257 ^E	24 ^E	F		2,500 ^r
Canada	1,769	164	23,989		23,047^r
2008					
Newfoundland and Labrador	x	x	x		x
Prince Edward Island	x	x	x		x
Nova Scotia	13	1	3		13
New Brunswick	F	F	F		F
Quebec	1,229 ^E	114 ^E	F		F
Ontario	164 ^E	15 ^E	F		2,209 ^E
Manitoba	0	0	0		0
Saskatchewan	2	0	9 ^E		16 ^E
Alberta	F	F	F		F
British Columbia	F	F	F		F
Canada	1,567	146	F		24,166

Table 4-4
Area, production and value — Greenhouse peppers

	Area		Production		Value
	'000 of square feet	'000 of square metres	'000 of pounds	'000 of kilograms	'000 of dollars
2007					
Newfoundland and Labrador	x	x	x	x	x
Prince Edward Island	x	x	0	0	2
Nova Scotia	F	F	F	F	F
New Brunswick	F	F	x	x	F
Quebec	62	6	78	35	129 ^E
Ontario	20,000 ^r	1,858 ^r	93,600	42,456	130,000 ^r
Manitoba	x	x	F	F	x
Saskatchewan	15 ^E	1 ^E	F	F	F
Alberta	700	65	3,500	1,588	6,000
British Columbia	12,100	1,124	60,000	27,216	65,000 ^r
Canada	32,909^r	3,057^r	157,224	71,315	201,240^r
2008					
Newfoundland and Labrador	0	0	0	0	0
Prince Edward Island	x	x	x	x	x
Nova Scotia	20 ^E	2 ^E	F	F	20 ^E
New Brunswick	F	F	F	F	F
Quebec	F	F	F	F	F
Ontario	19,329	1,796	89,873	40,766	127,563
Manitoba	F	F	F	F	F
Saskatchewan	12 ^E	1 ^E	34 ^E	15 ^E	F
Alberta	682	63	3,392	1,538	5,744
British Columbia	12,800	1,189	60,748	27,555	78,128
Canada	32,910	3,057	154,231	69,958	211,691

Table 5
Specialized greenhouse flower and plant producers' area in 2008

	Total greenhouses	Area								Total months of operation
		Total	Glass		Rigid plastic		Poly-film			
	number	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	'000 of square feet	'000 of square metres	number
Atlantic provinces	170	3,528	328	F	F	126	12	3,113	289	1,050
Quebec	440	15,023	1,396	1,074	100	1,425	132	12,524	1,164	3,005
Ontario	885	45,796	4,255	14,158	1,315	5,283	491	26,354	2,448	7,710
Prairie provinces	445	10,814	1,005	441	41	1,009	94	9,365	870	2,850
British Columbia	350	21,069	1,957	8,115	754	2,192	204	10,762	1,000	3,200
Canada	2,290	96,228	8,940	24,076	2,237	10,033	932	62,119	5,771	17,815

Table 6
Greenhouse flower and plant production and sales by category, 2008

	Total potted plants		Total cuttings ¹		Total cut flowers	
	Production	Sales	Production	Sales	Production	Sales
	thousands	'000 of dollars	thousands	'000 of dollars	thousands	'000 of dollars
Newfoundland and Labrador	479	2,347	x	x	x	x
Prince Edward Island	105	375	0	0	x	x
Nova Scotia	F	F	0	200	F	F
New Brunswick	2,608	10,681 ^E	x	5,065	170	380
Quebec	43,553	107,121	F	F	F	F
Ontario	105,275	316,931	23,319	14,354	149,424	74,541
Manitoba	F	14,479 ^E	F	F	x	x
Saskatchewan	1,430	5,428	64 ^E	7	x	x
Alberta	7,565	33,899	1,365 ^E	2,646	F	F
British Columbia	37,624	147,537	F	26,373	76,680	44,184
Canada	207,989	646,872	65,827	53,763	235,819	126,192
	Bedding plant ornamental		Bedding plant vegetables			
	Production	Sales	Production	Sales		
	thousands	'000 of dollars	thousands	'000 of dollars		
Newfoundland and Labrador	6,112	2,531	332	237 ^E		
Prince Edward Island	1,060 ^E	1,040	95 ^E	69 ^E		
Nova Scotia	F	3,071	F	520		
New Brunswick	116,796	12,442	12,333	1,642		
Quebec	111,498	38,185	F	7,458		
Ontario	222,541	80,949	257,935	26,033		
Manitoba	F	F	3,842	2,009		
Saskatchewan	14,739	6,548	2,454	903		
Alberta	37,456	24,642	3,518	2,893		
British Columbia	78,837	40,432	37,193	11,278		
Canada	639,097	225,522	356,644	53,040		

1. Excludes tree seedling plant sales.

Table 7
Indoor potted plant production by variety

	Indoor potted plants						
	Azaleas	Lilies	Poinsettias	African violets	Tropical foliage and green plants	Gerberas	Miniature roses
	thousands						
2007							
Newfoundland and Labrador	x	15	42	F	x	12 ^E	x
Prince Edward Island	0	x	x	0	0	x	0
Nova Scotia	x	x	x	0	F	11	x
New Brunswick	x	7	223	12	x	96	x
Quebec	F	F	929	F	762 ^E	F	F
Ontario	1,700	4,150	4,360	10,350 ^E	F	3,100	10,325
Manitoba	x	x	x	x	F	9	F
Saskatchewan	x	10	98 ^E	0	15	12	F
Alberta	9 ^E	65	350	x	65	30 ^E	x
British Columbia	F	F	1,851	830 ^E	1,747 ^E	884	x
Canada	1,898	4,918	8,196	11,908	F	4,340	10,659
2008							
Newfoundland and Labrador	x	F	32	x	x	6 ^E	0
Prince Edward Island	0	x	x	0	0	0	0
Nova Scotia	x	F	F	0	F	F	F
New Brunswick	x	F	211	x	56	9 ^E	2
Quebec	x	F	687	x	1,142 ^E	183 ^E	F
Ontario	1,260	3,268	3,977	F	F	2,693	6,448
Manitoba	x	F	F	x	F	5	1 ^E
Saskatchewan	F	F	F	x	F	4	F
Alberta	F	64 ^E	378	F	21 ^E	F	F
British Columbia	F	F	1,589	673 ^E	3,159 ^E	671	F
Canada	1,306	4,038	7,246	F	F	3,613	7,031

Table 7 – continued

Indoor potted plant production by variety

	Indoor potted plants						
	Orchids	Kalanhoe	Primula	Cyclamen	Tulips	Indoor hanging pots	Other indoor pots
	thousands						
2007							
Newfoundland and Labrador	0	x	15	x	0	..	..
Prince Edward Island	0	x	x	0	x	..	..
Nova Scotia	0	x	23	x	x	..	..
New Brunswick	0	7	x	x	x	..	..
Quebec	x	35	72	168	17	..	..
Ontario	1,000	7,640	933	2,900	2,516	..	..
Manitoba	x	x	5	x	x	..	..
Saskatchewan	0	2	x	x	0	..	..
Alberta	x	x	40	x	x	..	..
British Columbia	486	706	2,041	109	46	..	..
Canada	1,613	8,435	3,238	3,237	2,603	..	..
2008							
Newfoundland and Labrador	0	x	2	x	x	F	x
Prince Edward Island	0	0	x	0	0	0	0
Nova Scotia	0	F	F	F	F	F	F
New Brunswick	x	F	F	x	F	18	111
Quebec	x	F	F	F	F	206	F
Ontario	3,386	3,090	663	1,248	2,127	945 ^E	23,236
Manitoba	x	x	F	F	x	F	F
Saskatchewan	0	F	F	x	x	4	F
Alberta	0	F	31	x	F	7	F
British Columbia	F	828 ^E	998	F	19 ^E	F	F
Canada	5,069	3,968	1,756	1,561	2,199^E	1,325	25,854

Note(s): Includes flowers grown or given some cultural treatment and sold.

Table 8
Outdoor potted plant production by variety

	Outdoor potted plants							Total potted plants ¹	
	Begonias	Chrysanthemums	Geraniums	Impatiens	Petunias	Hosta	Outdoor hanging pots		Other outdoor pots
	thousands								
2007									
Newfoundland and Labrador	63	18	62	35	x	..	..	..	..
Prince Edward Island	6	x	34	1	x	..	..	..	..
Nova Scotia	72	x	229	65	x	..	..	..	..
New Brunswick	85	372	430	x	141	..	..	..	..
Quebec	900	590	5,312	903	639	..	..	..	..
Ontario	3,600	12,000	11,000	2,470	1,600	..	..	..	..
Manitoba	121	x	86 ^E	F	186 ^E	..	..	..	..
Saskatchewan	43	11 ^E	381	81	112	..	..	..	..
Alberta	215	F	1,000	85	700	..	..	..	..
British Columbia	1,428	1,472 ^E	6,370	1,278	1,376	..	..	..	..
Canada	6,534	14,778	24,904	5,183	4,893	..	..	..	..
2008									
Newfoundland and Labrador	91	F	43	44 ^E	47	14 ^E	111	42 ^E	479
Prince Edward Island	2	4 ^E	25	4	3	4	19	14	105
Nova Scotia	F	F	F	F	F	6 ^E	F	F	F
New Brunswick	96	327	F	144	143	F	187	822	2,608
Quebec	811	696	5,163	6,417 ^E	F	98	1,753	21,991	43,553
Ontario	2,812	6,288	9,279	2,052	1,360	129	5,359	13,704	105,275
Manitoba	127 ^E	F	F	F	F	38 ^E	F	F	F
Saskatchewan	62	F	239	53	100	13	137	F	1,430
Alberta	292	F	921	77	948	14	543	3,329	7,565
British Columbia	1,288	1,314 ^E	5,417	667	1,305	F	1,285	14,201	37,624
Canada	5,672	9,643	22,791	9,643	6,753	432	10,080	60,606	207,989

1. Includes both outdoor and indoor plants (tables 7 and 8).

Table 9
Cuttings and tree seedlings

	Cuttings					Total cuttings	Tree seedlings greenhouse production
	Chrysanthemums	Poinsettias	Geraniums	Impatiens	Other cuttings		
	thousands						
2007							
Newfoundland and Labrador	x	x	x	x	x	..	0
Prince Edward Island	0	0	0	0	0	..	0
Nova Scotia	x	0	x	0	x	..	x
New Brunswick	x	x	x	x	x	..	0
Quebec	x	x	F	F	13,999	..	x
Ontario	2,500	2,900	12,400	4,300	66,000	..	93,500
Manitoba	0	0	x	x	x	..	x
Saskatchewan	x	0	16 ^E	x	x	..	x
Alberta	x	0	F	x	4,000	..	58,030
British Columbia	x	x	x	x	11,805	..	300,000
Canada	12,536^E	4,872	15,593	5,500	100,890	..	476,010
2008							
Newfoundland and Labrador	0	0	x	x	0	x	0
Prince Edward Island	0	0	0	0	0	0	0
Nova Scotia	0	0	0	0	0	0	x
New Brunswick	x	x	x	x	x	x	x
Quebec	x	0	F	F	F	F	x
Ontario	x	1,866	4,142	4,044	13,254	23,319	49,906
Manitoba	0	0	4 ^E	x	F	F	x
Saskatchewan	0	0	3 ^E	F	F	64 ^E	9,515
Alberta	x	0	84 ^E	F	1,265 ^E	1,365 ^E	39,394
British Columbia	x	2,011	F	295 ^E	11,511	F	126,250
Canada	F	4,008	8,820	5,870	39,745	65,827	262,101

Table 10
Greenhouse cut flower production by variety

	Stems					
	Alstroemeria	Chrysanthemums	Daffodils	Freesia	Gerberas	Iris
	thousands					
2007						
Newfoundland and Labrador	0	..	x	0	0	0
Prince Edward Island	0	..	0	0	0	0
Nova Scotia	x	..	0	x	x	x
New Brunswick	0	..	x	0	0	0
Québec	x	..	0	0	x	0
Ontario	10,400	..	x	x	28,000	x
Manitoba	0	..	x	0	0	0
Saskatchewan	0	..	0	0	x	0
Alberta	0	..	0	0	x	0
British Columbia	6,800 ^E	..	x	x	17,750	x
Canada	17,623	..	2,366	F	46,371	6,061^E
2008						
Newfoundland and Labrador	0	0	x	0	0	0
Prince Edward Island	x	0	0	0	0	0
Nova Scotia	x	x	0	x	x	0
New Brunswick	x	x	x	x	x	x
Québec	F	x	0	0	F	x
Ontario	8,030	7,323	x	x	30,249	4,610
Manitoba	0	0	x	0	0	0
Saskatchewan	0	0	0	0	0	0
Alberta	x	0	0	0	0	x
British Columbia	F	7,367 ^E	x	x	20,128	F
Canada	14,636^E	14,815	2,688	F	51,353	5,798

Table 10 – continued

Greenhouse cut flower production by variety

	Stems						Total cut flowers
	Roses	Snapdragons	Tulips	Lilies	Lisianthus	Other cut flowers	
	thousands						
2007							
Newfoundland and Labrador	..	x	x	0	0	..	..
Prince Edward Island	..	0	x	0	0	..	..
Nova Scotia	..	x	0	x	0	..	..
New Brunswick	..	x	x	x	0	..	..
Quebec	..	x	x	x	x	..	..
Ontario	..	14,100	41,600	9,600 ^E	x	..	..
Manitoba	..	0	x	x	0	..	..
Saskatchewan	..	0	0	0	0	..	..
Alberta	..	0	0	x	0	..	..
British Columbia	..	6,910 ^E	F	5,350	F	..	..
Canada	..	21,103	56,685	15,603	1,042^E	..	..
2008							
Newfoundland and Labrador	0	0	x	0	0	0	x
Prince Edward Island	0	0	1,813	0	0	0	x
Nova Scotia	0	x	0	x	x	F	F
New Brunswick	0	x	x	27	x	x	170
Quebec	F	x	F	F	x	F	F
Ontario	8,408	11,783	47,840	F	x	11,434	149,424
Manitoba	0	x	0	x	0	x	x
Saskatchewan	0	0	0	0	0	0	x
Alberta	0	x	x	x	x	F	F
British Columbia	F	F	19,000 ^E	3,735	x	F	76,680
Canada	13,710	14,078	69,034	F	F	20,604	235,819

Note(s): Includes flowers grown or given some cultural treatment and sold.

Table 11
Ornamental flower and plant sales and resales

	Retail florists	Domestic wholesalers	Mass market chain stores	Other greenhouses	Exported	Direct sales to the public ¹	Government	Other channels	Total sales
thousands of dollars									
2007									
Newfoundland and Labrador	x	F	2,412	30 ^E	0	3,535	x	F	x
Prince Edward Island	x	x	x	x	x	1,453	x	0	2,056
Nova Scotia	3,900	x	x	x	x	5,388	152	486	18,875
New Brunswick	3,408	1,355	F	1,801	x	8,300	270	320 ^E	38,052
Quebec	38,500	18,200	50,000	5,500	6,500 ^E	46,000	x	F	174,000
Ontario	90,500	230,000	200,000	50,000	79,500	90,000	3,500	31,000	774,500
Manitoba	F	F	F	670	x	11,800	493 ^E	674 ^E	x
Saskatchewan	787	3,837 ^E	2,443 ^E	930	x	11,000	x	1,706	21,131
Alberta	9,000	F	13,700	F	x	40,000	x	14,500	83,511
British Columbia	32,000	80,000	74,200	24,050	29,000	33,300	15,500	39,700	327,750
Canada	181,731	338,339	367,469	86,274	134,061	250,776	25,387	94,022	1,478,059
2008									
Newfoundland and Labrador	391 ^E	x	1,416	F	0	3,653	F	x	6,010
Prince Edward Island	x	0	x	x	0	1,854	0	x	2,476
Nova Scotia	F	F	F	x	x	4,132	62 ^E	F	F
New Brunswick	3,888	1,357	x	1,135	x	6,102	209	364	32,261
Quebec	39,906	20,006	48,551	4,570	15,913	46,344	3,931	6,310	185,530
Ontario	56,419	177,416	162,521	44,109	71,193	84,549	2,716	15,400	614,323
Manitoba	F	F	F	1,196	F	10,535	376 ^E	F	33,485 ^E
Saskatchewan	951	F	F	973	x	7,315	489	F	17,954
Alberta	6,016	2,557	10,964	x	x	41,932	1,992 ^E	7,826 ^E	74,111
British Columbia	33,681	55,175	84,175	20,165	35,073	22,588	10,245	30,795	291,896
Canada	150,580	258,741	337,473	75,007	140,031	229,004	20,048	64,621	1,275,506

1. Includes roadside stands and owner-owned retail outlets.

Table 12
Total value of greenhouse products

	2007			2008		
	Fruit and vegetable sales	Ornamental flower and plant sales ¹	Total greenhouse sales	Fruit and vegetable sales	Ornamental flower and plant sales ¹	Total greenhouse sales
thousands of dollars						
Newfoundland and Labrador	F	x	7,348	F	6,010	6,200
Prince Edward Island	552	2,056	2,608	256	2,476	2,732
Nova Scotia	5,053 ^E	18,875	23,928	F	F	23,765
New Brunswick	472	38,052	38,524	F	32,261	32,637
Quebec	75,522	174,000	249,522	79,366	185,530	264,896
Ontario	484,970 ^r	774,500	1,259,470 ^r	475,366	614,323	1,089,689
Manitoba	F	x	31,527	404	33,485 ^E	33,889
Saskatchewan	691	21,131	21,822	754	17,954	18,708
Alberta	37,345	83,511	120,856	35,000	74,111	109,110
British Columbia	178,857 ^r	327,750	506,607 ^r	215,159	291,896	507,055
Canada	784,154^r	1,478,059	2,262,213^r	813,175	1,275,506	2,088,680

1. Includes resale value.

Table 13
Greenhouse vegetable and flower producers' operating expenses

	Plant material purchase for growing on ¹	Plant material purchase for resale ¹	Gross yearly payroll ²	Electricity ³	Natural gas
thousands of dollars					
2007					
Newfoundland and Labrador	1,530	716	2,300	..	0
Prince Edward Island	x	x	823	..	x
Nova Scotia	2,683	3,256	7,200	..	x
New Brunswick	7,265	4,300	11,700	..	F
Québec	24,100	14,000	71,000	..	10,500
Ontario	141,400	110,000	270,000	..	121,000
Manitoba	5,900	2,000	10,500	..	1,700
Saskatchewan	3,600	1,940	6,385	..	1,176
Alberta	11,500	6,000	33,000	..	12,500
British Columbia	71,800 r	35,700 r	122,000	..	41,205 r
Canada	270,264 r	177,922 r	534,908	..	188,212 r
2008					
Newfoundland and Labrador	1,486	1,134	2,202	156 E	0
Prince Edward Island	625	x	763	132 E	0
Nova Scotia	F	F	F	534 E	0
New Brunswick	7,478	2,339	11,156	573	0 s
Québec	29,326	15,275	71,748	9,047	10,909
Ontario	141,866	50,015	261,146	26,416	111,231
Manitoba	6,668	F	12,497 E	511	1,585
Saskatchewan	4,110	496	5,917	456	950
Alberta	15,428	4,542	33,618	3,363	9,649
British Columbia	77,162	27,501	135,994	11,254	35,699
Canada	286,793	105,525	543,620	52,441	170,024
	Heating Oil	Other type of fuel	Other crop expenses	Other operating expenses	Total operating expenses
thousands of dollars					
2007					
Newfoundland and Labrador	719	47	600	996	6,906
Prince Edward Island	x	x	254	739	2,574
Nova Scotia	1,167	x	2,046	8,107	25,931
New Brunswick	1,208 E	840	6,108	10,625	42,149
Quebec	11,500	7,137	16,518	70,500	225,255
Ontario	26,000	16,000	103,000	312,000	1,099,400
Manitoba	104	300	1,700	6,113	28,317
Saskatchewan	172 E	316	1,769	3,500	18,858
Alberta	x	x	11,000	24,000	99,101
British Columbia	585	11,851 r	61,000 r	173,900 r	518,041 r
Canada	41,652	39,101 r	203,994 r	610,479 r	2,066,532 r
2008					
Newfoundland and Labrador	671	25	695	961	7,330
Prince Edward Island	226	x	225	468	2,522
Nova Scotia	752	F	F	F	F
New Brunswick	F	603	6,886	6,628	36,771
Quebec	11,574	6,860	25,074	53,390	233,205
Ontario	17,359	17,717	114,647	248,396	988,794
Manitoba	89	369 E	3,123	6,411 E	32,694 E
Saskatchewan	F	340 E	1,981	2,410	16,949
Alberta	0	848	9,560	20,478	97,486
British Columbia	690	13,000	86,028	131,379	518,706
Canada	32,757	41,535	250,578	480,496	1,963,768

1. Includes value of flowers, plants, cuttings, seeds and bulbs purchased.

2. Includes seasonal and permanent labour.

3. Electricity expenses (lighting, airflow fan and heating).

Table 14
Specialized greenhouse vegetable producers' operating expenses, 2008

	Plant material purchase for growing on ¹	Plant material purchase for resale ¹	Gross yearly payroll ²	Electricity ³	Fuel	Other crop expenses	Other operating expenses	Total operating expenses
thousands of dollars								
Atlantic provinces	F	x	F	F	F	F	F	F
Quebec	2,815 ^E	x	16,019 ^E	F	8,438 ^E	7,851 ^E	19,685 ^E	59,153 ^E
Ontario	31,211	x	98,215	11,213	93,375	52,817	111,846	398,679
Prairie provinces	2,999	x	7,630	3,290	5,948	2,654	8,893	31,454
British Columbia	13,003	x	40,429	3,718	26,766	26,175	64,525	175,198
Canada	50,099	F	163,169	24,262	135,018	89,848	205,621	668,714

1. Includes value of flowers, plants, cuttings, seeds and bulbs purchased.
2. Includes seasonal and permanent labour.
3. Electricity expenses (lighting, airflow fan and heating).

Table 15
Specialized greenhouse flower and plant producers' operating expenses, 2008

	Plant material purchase for growing on ¹	Plant material purchase for resale ¹	Gross yearly payroll ²	Electricity ³	Fuel	Other crop expenses	Other operating expenses	Total operating expenses
thousands of dollars								
Atlantic provinces	11,731	6,074 ^E	19,322	997	3,744	9,234	15,851 ^E	66,952
Quebec	23,364	12,736	45,576	3,869	16,024	13,105	24,567	139,240
Ontario	100,802	37,664	147,302	13,419	52,153	48,699	116,472	516,511
Prairie provinces	21,020	6,315	41,946	3,290	8,522	11,481	19,735	112,308
British Columbia	59,470	18	71,784	5,303	16,538	41,912	47,287	242,312
Canada	216,386	62,807	325,930	26,879	96,980	124,429	223,913	1,077,323

1. Includes value of flowers, plants, cuttings, seeds and bulbs purchased.
2. Includes seasonal and permanent labour.
3. Electricity expenses (lighting, airflow fan and heating).

Note(s): Excludes vegetable bedding plant producers.

Table 16
Specialized greenhouse vegetable bedding plant producers' operating expenses, 2008

	Plant material purchase for growing on ¹	Plant material purchase for resale ¹	Gross yearly payroll ²	Electricity ³	Fuel	Other crop expenses	Other operating expenses	Total operating expenses
thousands of dollars								
Atlantic provinces	x	x	x	x	x	x	x	x
Quebec	F	x	F	F	89 ^E	85 ^E	F	666 ^E
Ontario	178 ^E	0	1,531 ^E	F	578 ^E	2,106 ^E	548	5,305 ^E
Prairie provinces	F	0	x	F	F	x	F	F
British Columbia	F	x	F	x	x	x	x	F
Canada	309	F	2,039	F	722	2,275^E	791	6,573

1. Includes value of flowers, plants, cuttings, seeds and bulbs purchased.
2. Includes seasonal and permanent labour.
3. Electricity expenses (lighting, airflow fan and heating).

Table 17
Labour - Total greenhouse employees

	2007			2008		
	Total greenhouse employees ¹					
	Seasonal ²	Permanent ³	Total	Seasonal ²	Permanent ³	Total
	number					
Newfoundland and Labrador	335	250	50	300
Prince Edward Island	110	70	10	80
Nova Scotia	895	540	F	820
New Brunswick	1,035	550	375	925
Quebec	6,900	4,630	2,120	6,750
Ontario	17,300	9,900	6,500	16,400
Manitoba	1,100	825	225	1,050
Saskatchewan	1,605	1,100	150	1,250
Alberta	4,400	2,400	800	3,200
British Columbia	8,300	4,350	3,250	7,600
Canada	41,980	24,615	13,760	38,375

1. Including mixed operations (vegetables, flowers and plants).
2. Seasonal employees who worked less than 8 months during the year.
3. Permanent employees who worked more than 8 months during the year.

Table 18
Labour - Specialized greenhouse producers, 2008

	Vegetable			Flower and plant			Vegetable bedding plant		
	Seasonal ¹	Permanent ²	Total	Seasonal ¹	Permanent ²	Total	Seasonal ¹	Permanent ²	Total
	number								
Atlantic provinces	140	F	190	1,100	600	1,700	x	x	x
Quebec	490	660 ^E	1,150	3,040	1,145	4,185	45 ^E	0	45 ^E
Ontario	2,750	2,240	4,990	6,275	3,910	10,185	65	30 ^E	95
Prairie provinces	275	220	495	3,750	920	4,670	F	x	15 ^E
British Columbia	1,090	870	1,960	2,730	1,700	4,430	x	F	F
Canada	4,745	4,040	8,785	16,895	8,275	25,170	142	45	187

1. Seasonal employees who worked less than 8 months during the year.
2. Permanent employees who worked more than 8 months during the year.

Table 19
Nursery area, 2008

	Total nurseries	Total field area		Total container area		Total area	
	number	acres	hectares	acres	hectares	acres	hectares
	Newfoundland and Labrador	10	0	0	F	F	F
Prince Edward Island	0	0	0	0	0	0	0
Nova Scotia	20	F	F	35	14	245 ^E	99 ^E
New Brunswick	15	170	69	F	F	F	F
Quebec	220	4,870	1,971	670	271	5,540	2,242
Ontario	460	21,000	8,498	1,880	761	22,880	9,259
Manitoba	35	800	324	120	49	920	372
Saskatchewan	30	F	F	50	20	F	F
Alberta	190	6,300	2,550	F	F	10,100	4,087
British Columbia	300	6,300	2,550	F	F	9,000	3,642
Canada	1,280	40,850	16,531	F	F	F	F

Table 20
Nursery tree and plant production (field and container), 2008

	Trees and plants					
	Coniferous trees	Fruit trees	Shade/ornamental trees	Coniferous evergreen shrubs	Evergreen broadleaf shrubs	Deciduous shrubs (including roses)
	thousands					
Field grown						
Atlantic provinces	F	5	F	F	x	F
Quebec	F	101 ^E	F	F	F	F
Ontario	319	712 ^E	215	228	F	182
Prairie provinces	72	23	197	8 ^E	F	105
British Columbia	1,832	567	4,463	431	F	552
Canada	2,891	1,409	4,918	681	582^E	981
Containers grown						
Atlantic provinces	x	0	x	0	x	F
Quebec	32,514 ^E	80	13	F	F	328
Ontario	215	44 ^E	194	942	679	2,439
Prairie provinces	106 ^E	61	81 ^E	321	5	1,221
British Columbia	F	F	F	4,731 ^E	649	2,147
Canada	42,643	220	936	6,105	1,880	6,192

Table 20 – continued

Nursery tree and plant production (field and container), 2008

	Trees and plants				
	Vines	Perennials and annuals	Small fruits bushes	Nursery tree seedlings	Other
	thousands				
Field grown					
Atlantic provinces	x	x	x	x	0
Quebec	x	F	F	F	F
Ontario	494	14	F	1,220	F
Prairie provinces	F	F	F	632	3
British Columbia	9	F	F	F	F
Canada	506	F	71,549^E	F	F
Containers grown					
Atlantic provinces	x	x	0	0	x
Quebec	F	843	F	F	F
Ontario	206	F	13	4,136 ^E	326
Prairie provinces	17 ^E	706	41	8,708	148
British Columbia	F	3,134	F	53,818	F
Canada	448	12,358	644^E	89,476	1,687^E

Table 21
Nursery stock sales and resales

	2007			2008		
	Sales	Resales ¹	Total sales	Sales	Resales ¹	Total sales
	thousands of dollars					
Newfoundland and Labrador	x	x	x	F	x	F
Prince Edward Island	x	x	x	0	0	0
Nova Scotia	4,246	2,100	6,346	2,750 ^E	F	F
New Brunswick	4,700	832	5,532	5,621	F	6,455 ^E
Quebec	55,989	22,762 ^r	78,751 ^r	47,456	F	70,252
Ontario	197,500	76,000 ^r	273,500 ^r	208,000	70,000	278,000
Manitoba	7,701	3,000	10,701	F	1,719	12,405 ^E
Saskatchewan	3,727	2,522	6,249	2,400	914	3,314
Alberta	32,000	14,800	46,800	34,836	16,484	51,320
British Columbia	159,000	34,300	193,300	144,146	38,791	182,937
Canada	465,215	156,373^r	621,588^r	456,239	153,795	610,034

1. The process of buying trees, shrubs, plants, seedlings, cuttings, etc. and selling it within a short time period with minimal care or maintenance.

Table 22
Nursery sales distribution, 2008

	Direct sales to the public ¹	Fruit growers	Landscape contractors	Garden centres	Mass merchan- disers	Sold to other growers	Exported	Govern- ments	Other channels	Total sales
	thousands of dollars									
Atlantic provinces	F	F	F	832 ^E	x	x	430	763	3,221	11,805
Quebec	F	F	14,660	16,784	6,975	3,484	F	9,498	F	70,252
Ontario	19,490	10,945	79,955	71,200	52,000	22,900	8,400	6,300	6,810	278,000
Prairie provinces	13,792	309	34,108	8,159 ^E	F	x	F	4,938	698	67,039
British Columbia	12,231	5,805	38,572	40,343	26,984	24,373	10,794	6,041	17,796 ^E	182,937
Canada	64,349	20,406	169,435	137,319	86,683	53,307	22,171	27,540	28,824	610,034

1. Includes roadside stands and owner-owned retail outlets.

Table 23
Sod area sales and resales

	Farm sod reporting	Total sod area		Sod area grown for sales		Gross sales		
		number	acres	hectares	acres	hectares	Revenue from sod grown	Revenue from sod resale
							thousands of dollars	
2007								
Newfoundland and Labrador	15	650	263	350	142	2,121	0	
Prince Edward Island	5	200	81	70	28	494	0	
Nova Scotia	10	2,900	1,174	850	344	5,333	0 ^s	
New Brunswick	5	575	233	305	123	x	0	
Quebec	50	12,000	4,856	5,300	2,145	26,970	1,175	
Ontario	65	28,000	11,331	10,500	4,249	54,000	1,675	
Manitoba	10	x	x	x	x	2,200	0	
Saskatchewan	5	x	x	x	x	x	0	
Alberta	20	11,000	4,452	4,000	1,619	25,000	0	
British Columbia	15	1,400 ^r	567 ^r	890	360	7,700 ^r	0	
Canada	200	58,665^r	23,741^r	22,905	9,269	125,903^r	2,855	
2008								
Newfoundland and Labrador	15	460	186	230	93	2,201	0	
Prince Edward Island	5	220	89	70	28	475	0	
Nova Scotia	10	2,420	979	785	318	5,049	0	
New Brunswick	5	720	291	250	101	1,123	x	
Quebec	45	12,650	5,119	6,860	2,776	31,982	916	
Ontario	60	25,000	10,117	8,500	3,440	45,214	1,008	
Manitoba	10	1,000	405	200 ^E	81 ^E	F	0	
Saskatchewan	5	400	162	200	81	2,024	0	
Alberta	20	11,500	4,654	4,050	1,639	31,103	x	
British Columbia	15	1,400	567	970	393	8,270	0	
Canada	190	55,770	22,569	22,115	8,950	128,443	2,190	

Table 24
Nursery and sod producers' operating expenses, 2008

	Nursery				Sod				
	Plant material purchased for growing on ¹	Plant material purchase for resale ¹	Gross yearly payroll ²	Other operating expenses	Total operating expenses	Sod for resale	Gross yearly payroll ²	Other operating expenses	Total operating expenses
	thousands of dollars								
Newfoundland and Labrador	x	x	F	F	F	x	913	1,127	2,677
Prince Edward Island	0	0	0	0	0	0	162	x	x
Nova Scotia	F	F	1,256 ^E	F	F	x	2,488	2,922	5,416
New Brunswick	201	x	1,396	758	2,378	x	446	365	998
Quebec	7,703	7,127	22,183	14,696	51,708	497	7,966	12,352	20,814
Ontario	29,205	41,752	92,037	79,051	242,045	580	15,311	30,247	46,138
Manitoba	1,225 ^E	1,213	3,798 ^E	F	11,039 ^E	0	190 ^E	F	x
Saskatchewan	231	368 ^E	965	546	2,110	0	588	1,582	2,170
Alberta	4,018	7,825	13,405	11,069	36,317	x	7,180	15,229	22,426
British Columbia	22,770	11,196	64,867	54,004	152,837	0	1,681	2,782	4,463
Canada	65,455	69,846	200,206	165,854	501,361	1,924	36,923	66,928	105,775

1. Includes the value of flowers, plants, cuttings, seeds and bulbs purchased.
2. Includes seasonal and permanent labour.

Table 25
Nursery and sod labour, 2008

	Nursery			Sod		
	Seasonal ¹	Permanent ²	Total	Seasonal ¹	Permanent ²	Total
	number					
Newfoundland and Labrador	25 ^E	F	30 ^E	70	10 ^E	80
Prince Edward Island	0	0	0	10	0	10
Nova Scotia	125 ^E	10 ^E	135 ^E	70	35	105
New Brunswick	60	15	75	30	5	35
Quebec	1,910	300	2,210	340	90	430
Ontario	3,500	1,670	5,170	524	141	665
Manitoba	160	60	220	x	F	30
Saskatchewan	170	20	190	x	x	30
Alberta	750	200	950	200	100	300
British Columbia	1,650	1,510	3,160	60	30	90
Canada	8,350	3,790	12,140	1,349	426	1,775

1. Seasonal employees who worked less than 8 months during the year.
2. Permanent employees who worked more than 8 months during the year.

Data quality, concepts and methodology

Introduction

Statistics Canada has conducted an annual survey of the greenhouse industry since 1955, of the nursery industry since 1956 and of the sod industry since 1982. The survey is designed to provide an indication of the economic situation of the primary greenhouse, sod and nursery stock production industries. The survey is designed to provide insight into the general economic situation of the industry. To this end, data are provided on market structure and production inputs.

The survey is designed to collect information on area planted, labour, payroll, cost for growing-on and for resale, gross revenues, as well as the distribution of gross sales by channel of distribution.

The greenhouse target population includes all of the commercial greenhouse growers as identified by the 2006 Census of Agriculture and reconciled with the previous known population. For the sod and nursery operations, the survey focuses on operations that grow some or all the commodities they sell. As a result, firms that only distribute sod or nursery stock, or just landscape and lay sod are excluded from the survey. The survey is also designed to estimate the total value added of the agricultural side of nursery/sod but also picks up value added from the non-growing (i.e. marketing) portion of each operation. Note too that value added from landscaping and laying sod is excluded from the revenue estimates even when the responding firm grows nursery stock or sod. The survey estimates for greenhouses, sod farms and nurseries are calculated using probability sampling methods

Concepts and definitions

Greenhouse industry

Prior to 1986, the target population included all commercial greenhouse growers. In 1986, the target population was redefined to include only commercial greenhouse growers with a growing area of 7,500 square feet or more.

In 1992, it was decided to include all of the commercial greenhouse growers as identified by the 1991 Census of Agriculture and reconciled with the previous known population. Due to the changed methodology, the estimates since 1992 are not comparable with the corresponding 1991 estimates.

A greenhouse can be defined as an operation where plants are grown under glass, plastic or similar type of protection. In 2008, we also ask respondents to report area under poly-film or polyethylene.

A breakdown of sales, indicating channels of distribution and flower varieties sold, assists in the determination of the market structure. All sales figures published represent prices paid to the grower. Data collected on important inputs of production include the number of employees, gross yearly payroll, total investment and area operated under glass and plastic.

Greenhouse operating expenses include payroll, plant material purchases, heating, lightning, ventilation costs, other crop expenses (fertilizer, pesticides, and growing mediums) and other operating expenses (interest, land taxes, insurance, packaging, repairs to farm buildings, machinery, equipment and vehicles, and contract work). In 2008, electricity expenses for lightning, airflow fans and heating were reported inside a specific expense item.

The concept for full-time employment has been revised for Greenhouse, Sod and Nursery (GSN) 2003 data in accordance with the definition used at Statistics Canada and endorsed by the International Labour Organization. Full-time employment consists of persons who usually work 30 hours or more per week at their main or only job. Prior to 2003, full-time employment was defined as persons working 8 months or longer and part-time employment

consisted of persons working less than 8 months of the year. In 2008, respondents to the survey must report the number of seasonal workers (less than 8 months contract) and permanent (more than 8 months contract).

The tables for cut flowers, potted plants, cuttings and propagating material have been updated to reflect changes in the industry.

Nursery and sod industry

Before 1992, estimates essentially pertained to commercial operations that allocated a portion of their surface area to sod or seedlings and had annual gross sales of \$75,000 or more. Since 1992, estimates have pertained to nurseries with 5 acres or more, and sod operations of 40 acres or more in regions other than the Atlantic (10 acres or more in the Atlantic region).

The survey estimates in previous years were simply a tabulation of all responding operations fitting the above two criteria. Due to the changed methodology, the 1992 and subsequent estimates are not directly comparable with the corresponding 1991 estimates.

The survey collects dollar data on two commodities: sod and nursery stock. Sod is a standard commodity whereas nursery stock requires precise definition. The term "nursery stock" covers a diverse range of non edible, living plant material grown in field or in containers and sold with its root system intact. Nursery stock includes annual and perennial plants ranging from woody plants (e.g. trees, shrubs and rose bushes) to bedding plants and potted outdoor flowers.

The end purpose of the plants may be ornamental or functional (e.g. fruit trees, grape vines and forestry seedlings). Plant sizes range from seedlings to fully grown trees. "Nursery stock" excludes Christmas trees and various inputs such as growing medium (e.g. peat moss and top soil), fertilizer and pesticides.

In 2008, nurseries and sod operating expenses are separated.

Methodology and data quality

Survey frame

The survey frame has been designed to include all operations cultivating greenhouse, sod and nursery products based on the latest Census of Agriculture. Institutional farms, farms on Indian reservations, Hutterite colonies as well as operations from Yukon, the North West Territories and Nunavut were excluded from the survey. After these exclusions, the remaining farms represent the initial survey frame.

Observations from the 2008 survey frame were extracted from the 2007 Annual Greenhouse, Sod and Nursery Survey and the 2006 Census of Agriculture, to which were added some operations coming from external sources. The new operations are either new farms since the 2006 census or farms missed by the 2006 census.

Excluded from the survey frame were areas of glass or plastic greenhouses maintained for non-commercial plants. Also excluded were greenhouse only operations in Quebec, Ontario and British Columbia with less than 5,000 square feet and greenhouse sales of less than \$10,000. Greenhouse only operations in the remaining provinces with less than 1,000 square feet were excluded from the survey frame. Furthermore, sod only operations with less than 40 acres (10 acres in the Atlantic) and nursery only operations with less than 5 acres were excluded from the survey frame.

Sample selection

For each province, three strata were defined. The first stratum includes all operations with a greenhouse area of less than 1 acre and greenhouse sales of less than \$110,000 and with no nursery or sod area. The second stratum includes operations with a greenhouse area of less than 1 acre and greenhouse sales of less than \$110,000, a nursery area greater than zero and less than 5 acres, and no sod area. The remaining operations were put in a third stratum. For each province, operations were sampled in the first two strata and then a census was taken of all operations in the third stratum. For each stratum, the minimum sample size was 15 and the maximum design weight was 10.

Overall, the sample size was determined in order to achieve a target CV of 0.01 (1%) for greenhouse sales, greenhouse area and nursery area at the provincial level. The final sample size for this survey was 4,094.

For this survey, we used two questionnaire versions: one full version requesting all the required information and one abridged version that essentially requests totals. Following the sample selection, we allocated one of the two versions of the questionnaire to each operation sampled. We assigned one of the two versions to operations based on their province of operation and sales volume. At the end, we had attributed the full version to 3,015 operations and the abridged version to 1,079 operations.

Data collection

The reference period for this survey is calendar year 2008. Respondents received a copy of the questionnaire through the mail in early February 2009 and most of them were interviewed by telephone between February 16 and March 8, 2009.

Data collection for the 2008 Annual Greenhouse, Sod and Nursery Survey was undertaken using a "Computer Assisted Telephone Interview" (CATI) system. Some respondents, who have previously mentioned that they did not want to be interviewed over the phone, mailed back the questionnaire to the Ottawa Head Office.

During the data collection period, some respondents asked to not be interviewed over the phone. They were asked to complete the questionnaire and send it back to the Ottawa Head Office.

Response rates

Information was received from nearly 88% of the sample. Non-responding units (i.e. no-contacts and refusals) are dealt with by adjusting the initial sample weights (raising factor adjustment).

Edit and imputation

With the introduction of the CATI methodology, it is now possible to implement edit procedures at the time of the interview. Computer programmed edit checks in the CATI system inform interviewers during the interview of possible data errors, which can then be corrected immediately by the interviewer and respondent. The CATI system significantly reduces the need for subsequent telephone follow-up, thereby reducing respondent burden and survey processing time. Erroneous data and partially completed questionnaires are imputed using historical data.

Sampling and non-sampling errors

The statistics contained in this publication are based on all agricultural operations and, as such, are subject to sampling and non-sampling errors. The overall quality of the estimates depends on the combined effect of these two types of errors. Sampling errors arise because estimates are derived from sample data and not from the entire population. Sampling error is quantified using the coefficient of variation (CV). The lowest is the CV, the smallest is the sampling errors.

Non-sampling errors are errors which are not related to sampling and may occur throughout the survey operation for many reasons. For example, non-response is an important source of non-sampling error. Coverage, differences in the interpretation of questions, incorrect information from respondents, mistakes in recording, coding and processing of data are other examples of non-sampling errors.

Estimation

We weighted the information collected from the respondents to produce estimates representative of all of the operations in the greenhouse, sod and nursery industry in our survey frame. We produced estimates at the national and provincial level for different totals and sub-totals of industry variables. During the weighting, we took into consideration both versions of the questionnaires and made sure that all of the estimates produced for all variable types remained representative of all of the operations in the survey frame.

Data quality

The estimates in this publication are based on a probability sample of farming operations. The potential error introduced by sampling can be estimated from the sample itself by using a statistical measure called the coefficient

of variation (CV). Over repeated surveys, 95 times out of 100, the relative difference between a sample estimate and what should have been obtained from an enumeration of all farming operations with respect to the sample estimates would be less than twice the coefficient of variation. The sample estimate, plus or minus twice the CV is referred to as the confidence interval.

For the 2008 Annual Greenhouse, Sod and Nursery Survey, CVs at the Canada level range generally from 2% to 10% for the variables that are more frequently reported (area, investment, expenditures, sales, etc.), which makes them very reliable. We obtained CVs around 10% for the different sales sectors. Less commonly reported variables are associated with higher, but still acceptable CVs, usually under 25%. Some variables on plant, flower and tree varieties have CVs greater than 25%. The coefficients of variation are available upon request.

To improve data qualification, the symbols E and F have been introduced into the publication. An E means that the data are widely dispersed and that the estimate should be used with caution. An F replaces the estimate where the data are too unreliable for publication.