

Canadian Maple Products Situation and Trends 2006-2007



September 2007

Table of Contents

Overview	4
World Production	4
Situation in Canada	4
Provincial Production	6
Organic Production	7
Average Farm Prices	8
Distribution	8
Canadian Consumption	8
Situation in the United States	8
Trade	9
Regulatory Requirements	12
Voluntary Measures	13
Organic Certification	14
Maple Syrup Production Methods	14
Maple Products Flavour Wheel	16
Factors Affecting the Future of Maple Industry	16
Climate Change	16
Soaring Production Costs	17
Dietary Trends	17
Opportunities and Challenges	18
Imbalance between Supply and Demand	18
Competition and Promotion	18
Miscellaneous	19
Research	20
Nutritional Value	20
Nutrition Labelling	21
Functional Claims	21
Branding Canada	21
Appendix	23
Methodologies	23
References	24
Useful Links	24
Contact	25

List of Tables

Table 1 – Maple Farms and Taps in Canada, 1981-2006	5
Table 2 – Production, Value and Price of Maple Products, 1997-2006	6
Table 3 – Producing Regions by Province, 1996-2006	7
Table 4 – Canadian Maple Product Exports by Province, 1997-2006	10
Table 5 – Canadian Maple Product Exports by Country, 2002-2006	11
Table 6 – Canadian Maple Product Exports by Region, 1997-2006	12
Table 7 – Canadian Maple Syrup Classification	13
Table 8 – Nutritional Value of maple syrup and various sweeteners	21

List of Figures

Figure 1 – Maple Production in North America, Canada and United States, 1997-2006	4
Figure 2 – Maple Syrup Production in Canada by Province in 2006	4
Figure 3 – Maple Syrup Production in the United States by State, 2006	9
Figure 4 – Value of Canadian Maple Product Exports, 1997-2006	9
Figure 5 – Colour Class	13
Figure 6 – Sugar Maple Tree Area	15
Figure 7 – Changes in Production and Exports, 1997-2006	18
Figure 8 – Maple Leaf of Branding Canada	22

Arboreal emblem of Canada

The maple tree was officially proclaimed national arboreal emblem of Canada on April 25, 1996. The maple leaf symbolizes Canada and is depicted on its flag. Since 1965, the maple leaf has been the centrepiece of the National Flag of Canada and the maple tree bears the leaves that have become the most prominent Canadian symbol, nationally and internationally. The maple leaf is also the most important branding element of the [Canada brand](#).



The National Flag of Canada

OVERVIEW

World Production

Canada and the United States are the only two maple syrup producing countries in the world. In 2006, worldwide production of maple syrup was estimated at 40,990 metric tonnes (MT), with Canada accounting for 82% of that production, and the United States the remainder. Canada is therefore the largest maple syrup producer with production of 33,745 MT in 2006, valued at CAN\$177.9 million, while the United States produced 7,245 MT, valued at US\$45.3 million ([Table 2](#)).

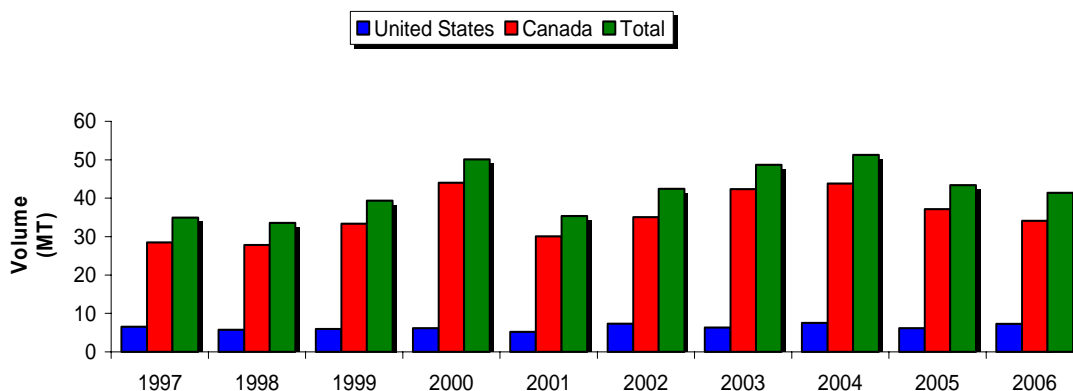


Figure 1 – Maple Production in North America, Canada and United States, 1997-2006

Over the last five years, Canada has accounted for 85% of the world's production, while the United States has accounted for 15%. The percentages fluctuate slightly from year to year because of variations in yields associated with specific weather conditions each spring in the two countries.

Because of low domestic consumption in Canada, the maple industry is a major export sector. ([See Canadian Consumption](#)). Between 2002 and 2006, Canada exported on average 83% of its production.

SITUATION IN CANADA

The Canadian maple syrup producing provinces are Quebec, with 91.1% of domestic production in 2006, followed by New Brunswick (4.5%), Ontario (3.9%), and Nova Scotia (0.5%). There is also maple production on Prince Edward Island, though in small volumes.

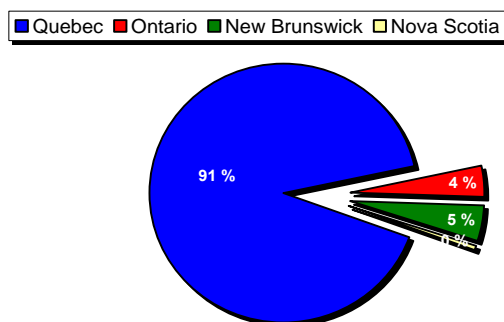


Figure 2 – Maple Syrup Production in Canada by Province in 2006

According to the 2006 Census of Agriculture from Statistics Canada, about 9,731 farms (4.2% of all farms in Canada) produced maple syrup commercially, down 6% from 2001. Between 2001 and 2006, the average per-farm tap number increased by 20% from 3,268 to 3,913.

Table 1 – Maple Farms and Taps in Canada, 1981-2006

Province	1981	1986	1991	1996	2001	2006	% Δ
Number of Taps (' 000)							
Canada	16 945	15 699	18 297	23 027	33 680	38 076	13 %
Quebec	X	14 411	X	20 676	30 695	34 676	13 %
New Brunswick	X	252	X	922	1 319	1 703	29 %
Ontario	X	877	X	1 127	1 305	1 312	1 %
Nova Scotia	X	X	X	X	331	346	5 %
Prince Edward Island	X	X	X	X	12	12	1 %
Number of Farms							
Canada	12 079	9 276	8 765	9 546	10 305	9 731	-6 %
Quebec	X	7 419	X	6 997	7 254	7 054	-3 %
New Brunswick	X	118	X	174	206	189	-8 %
Ontario	X	1 649	X	2 240	2 588	2 240	-13 %
Nova Scotia	X	X	X	X	128	113	-12 %
Prince Edward Island	X	X	X	X	10	9	-10 %
Number of Taps per Farm							
Canada	1 404	1 692	2 088	2 412	3 268	3 913	20 %
Quebec	X	1 554	X	2 955	4 232	4 916	16 %
New Brunswick	X	2 136	X	5 300	6 402	9 008	41 %
Ontario	X	532	X	503	504	586	16 %
Nova Scotia	X	X	X	X	2 582	3 063	19 %
Prince Edward Island	X	X	X	X	1 151	1 291	12 %

% Δ from 2001 to 2006

Statistics Canada (Census of Agriculture)

In Canada, maple syrup production has doubled in the two last decades, from 18,466 MT in 1990 to 37,157 MT in 2005 ([Table 2](#)) after a record high of nearly 44,000 MT in 2000. Production from new taps on public and private lands, improved farm productivity as a result of equipment modernization (tubing, vacuum pump, reverse osmosis) and better technical knowledge on the part of producers have resulted in a significant expansion in production. In addition, there is still a vast potential from unused taps. For example, Quebec operates only approximately 38 million of the 110 million taps inventoried in the province by Quebec's Ministry of Natural Resources in 1998.

However, production has had to grow at a slower pace because the maple industry was no longer able to sell all its production and accumulated large year-over-year inventory surpluses in recent past years. In order to manage this surplus situation, the [Fédération des producteurs acéricoles du Québec](#) (FPAQ) introduced a production quota system in the spring of 2004. This initiative limits current production sold in bulk as well as the entry into production of new sugar bushes. According to the FPAQ, the volume of bulk inventories in Quebec at the end of the 2006 marketing year crop is 16,809 MT (37.048 million pounds), the equivalent of 50% of all 2006 Canadian production. However, this volume includes a strategic inventory of 13,612 MT (30 million pounds) in order to ensure continuous market supply. New maple syrup processing plants manufacturing added-value products and export increase contributed to reduce surpluses. The low maple syrup harvest of 2007 put an end to the surplus situation. In this new context, the FPAQ has been planning new quota allocations for 2008 and the entry of new producers to meet demand.

Canadian maple syrup production in 2006 represents a 9% drop in volume compared to 2005 and a 10% decrease compared to the previous five year average. The 2006 decline in production versus the 2005 decline is mainly attributable to temperatures less favourable for sap flow as well as to the self-discipline of Quebec's maple farms that kept to their production quotas and to higher fuel costs. Quebec's production, which accounts for the largest portion of Canadian production, reported a 11% decline. Ontario's production was relatively unchanged from the previous year. Nova Scotia's production increased by 24% compared to 2005 due to favourable weather conditions. New Brunswick recorded a

23% increase in production compared to 2005. This province has reported continuous increases every year since 2000.

Provincial Production

In 2006, **Quebec** produced 30752 MT, with a farm gate value estimated at \$154.7 million. Quebec is by far the largest maple syrup producer in Canada and the world, with 75% of worldwide production. ([Table 2](#)). Most of the production is concentrated in the central and eastern part of the province. The Chaudière-Appalaches area represents about 39% of Quebec production, Bas-Saint-Laurent 19%, and Estrie 15% ([Table 3](#))

It is estimated that 44% of Quebec sugar bush operations reported 3,000 taps or less, 15% have 10,000 taps or more, while only 2% have more than 30,000 taps.

According to data from the Table Filière Acéricole, the number of taps in Quebec stood at 38.033 million in 2005. The Bas-Saint-Laurent area reports the highest number of taps per farm (12,481), whereas the Chaudière-Appalaches area, the leading syrup producing area in Quebec, averages 5,204 per farm.

Table 2 – Production, Value and Price of Maple Products, 1997-2006

Province Country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	% Δ
Volume (MT)											
Quebec ¹	26,332	25,844	31,185	41,310	28,267	32,813	39,927	41,283	34,483	30,752	-11 %
Ontario	1,370	1,054	1,395	2,230	1,334	1,376	1,310	1,310	1,310	1,310	0 %
New Brunswick	625	775	607	451	475	884	956	1,052	1,238	1,527	23 %
Nova Scotia	138	132	192				180	132	126	156	24 %
Canada	28,465	27,805	33,379	43,991	30,076	35,073	42,373	43,777	37,157	33,745	-9 %
United States	6,490	5,795	5,940	6,155	5,245	7,375	6,300	7,535	6,210	7,245	17 %
Canada-US	34,955	33,600	39,319	50,146	35,321	42,448	48,673	51,312	43,367	40,990	-5 %
Value (Cdn \$ ' 000)											
Quebec	123,145	136,130	140,566	156,117	136,037	156,731	188,096	204,115	173,477	154,700	-11 %
Ontario	10,274	8,285	10,719	17,696	10,825	11,063	10,750	10,928	10,988	11,195	2 %
New Brunswick	4,214	5,768	4,109	3,231	3,396	5,849	6,845	8,044	8,934	10,878	22 %
Nova Scotia	900	918	1,333				1,395	1,068	1,054	1,171	11 %
Canada	138,533	151,101	156,727	177,044	150,258	173,643	207,086	224,155	194,453	177,944	-8 %
United States ²	35,216	32,213	32,809	33,924	32,387	40,500	35,601	42,795	37,149	45,313	22 %
Value (Cdn \$/kg)											
Quebec	4.68	5.27	4.51	3.78	4.81	4.78	4.71	4.94	5.03	5.03	0 %
Ontario	7.50	7.86	7.68	7.94	8.11	8.04	8.21	8.34	8.39	8.55	2 %
New Brunswick	6.74	7.44	6.77	7.16	7.15	6.62	7.16	7.65	7.22	7.12	-1 %
Nova Scotia	6.52	6.95	6.94				7.75	8.09	8.37	7.51	-10 %
Canada	4.87	5.43	4.70	4.02	5.00	4.95	4.89	5.12	5.23	5.27	1 %
United States ³	5.43	5.56	5.52	5.51	6.17	5.49	5.65	5.68	5.98	6.25	5 %

¹ Quebec data between 1997 and 2005 come from la Table filière acéricole du Québec and 2006 data from Statistics Canada

² Value for the United States is in US \$ ' 000

³ Price for the United States is in US \$/kg

% Δ from 2005 to 2006

Statistics Canada and USDA-NASS

New Brunswick is the second largest producing province in Canada with 1,527 MT, valued at \$10.9 million. The syrup is mainly produced in Restigouche, York, Madawaska, Carleton and Albert counties.

Ontario is the third largest maple producing province with production of 1,310 MT, valued at \$11.2 million and concentrated in the southwest region areas, mainly in Waterloo County. Lanark County in eastern Ontario is the second major area of production in the province.

In **Nova Scotia**, Cumberland County is the main syrup producing area, with more than 67% of the province's taps.

Prince Edward Island has a total of 9 maple farms with production concentrated in Queen and Prince Counties.

Table 3 – Producing Regions by Province, 1996-2006

Regions	1996			2001			2006		
	Taps (' 000)	Farms	Taps % province	Taps ('000)	Farms	Taps % province	Taps (' 000)	Farms	Taps % province
Quebec									
Abitibi-Témiscamingue	34	0	0 %	87	20	0 %	157	36	0.5%
Bas-St-Laurent	2,426	415	12 %	5,475	602	18 %	6,419	571	19 %
Centre-du-Québec	2,159	796	10 %	2,887	823	9 %	3,153	777	9 %
Chaudière-Appalaches	9,085	3,018	44 %	12,074	2,942	39 %	13,689	2,918	39 %
Estrie	3,064	865	15 %	4,708	892	15 %	5,067	859	15 %
Gaspésie Îles-de-la-Mad	43	21	0 %	105	18	0 %	158	30	0.5%
Lanaudière	588	270	3 %	746	265	2 %	686	244	2 %
Laurentides	563	243	3 %	1,047	263	3 %	1,032	232	3 %
Mauricie	219	129	1 %	401	155	1 %	427	137	1 %
Montréal-Laval	12	7	0 %	14	8	0 %	81	17	0.2%
Montréal	1,642	764	8 %	2,023	818	7 %	2,245	804	6 %
Outaouais	160	122	1 %	189	120	1 %	273	97	1 %
Québec	663	309	3 %	906	307	3 %	1,255	309	4 %
Saguenay Lac-Saint-Jean	20	23	0 %	31	21	0 %	34	23	0.1%
Total	20,678	6,997	100 %	30,695	7,254	100 %	34,676	7,054	100 %
Ontario									
Central	197	481	17 %	270	519	21 %	277	437	21 %
Eastern	302	522	27 %	340	572	26 %	303	481	23 %
Northern	85	91	8 %	95	96	7 %	108	100	8 %
Southern	116	248	10 %	136	327	10 %	125	205	10 %
Western	429	898	38 %	464	1,074	36 %	498	1,017	38 %
Total	1,129	2,240	100 %	1,305	2,588	100 %	1,312	2,240	100 %
New Brunswick									
Region 1	181	59	20 %	316	89	24 %	420	70	25 %
Region 2	12	25	1 %	7	29	1 %	13	32	1 %
Region 3	94	42	10 %	84	41	6 %	91	34	5 %
Region 4	634	48	69 %	912	47	69 %	1,179	53	69 %
Total	922	174	100 %	1,319	206	100 %	1,703	189	100 %
Nova Scotia									
Region 1	X	15	X	X	21	X	2	11	1 %
Region 2	15	27	5 %	23	25	7 %	17	25	5 %
Region 3	254	60	87 %	251	64	76 %	288	53	83 %
Region 4	4	7	1 %	11	10	3 %	17	12	5 %
Region 5	X	9	X	X	8	X	23	12	7 %
Total	292	118	100 %	331	128	100 %	346	113	100 %
Prince Edward Island									
Region 1	0	0	X	X	1	X	X	2	X
Region 2	0.1	3	X	10	5	88 %	11	6	96 %
Region 3	X	2	X	X	4	X	X	1	X
Total	X	5	X	12	10	100 %	12	9	100 %

Statistics Canada (Census of Agriculture)

Organic Production

The transition of the maple syrup production from the conventional to the organic mode is relatively easy to achieve on the technological side. However the main organic production challenge is the implementation of an efficient marketing system to maintain existing markets and access new ones. After a soaring increase, organic maple syrup production has been experiencing difficult years. During the period 2001-2003, maple syrup buyers paid premium and organic certification costs to producers to alleviate the additional investment costs related to the organic maple syrup production. Buyers stopped paying these premium and certification costs in the period 2004-2006. The introduction of stricter organic



standards requiring additional investment, the ban on air injectors and accumulated production surpluses have resulted in a decline in volume and number of organic maple syrup producers in the last 2 years.

The number of Quebec producers dropped from 414 in 2004 to 249 in 2006, a 40% decrease. During the same period, the organic maple syrup production sold in bulk dropped from 12.3 to about 7 million pounds per year. In 2007, buyers recommenced paying premium and certification costs to avoid an organic maple syrup shortage. Most organic maple syrup sold goes to export markets. Producers receive an average premium of \$0.15/lb for organic maple syrup delivered in bulk through the selling agency.

According to the last Census of Agriculture, Quebec had 279 certified organic maple syrup farms in 2005, Ontario and New Brunswick each have eight respectively, and Nova Scotia had 3 farms. For more information on organic production, see [Organic production](#) and the section [Organic Certification](#). A new tool (in French only) "[Trousse de transition vers l'agriculture biologique –Production acéricole](#)" is available on the web.

Average Farm Prices

For the 2006 season, the average price paid ([Table 2](#)) to Quebec maple producers was \$5.03 per kg (\$2.28 per pound), similar to the 2005 season. Prices paid to Ontario maple producers averaged \$8.55 per kg (\$3.88 per pound) compared to \$8.39 (\$3.81 per pound) in 2005. Prices paid to maple producers in New Brunswick decreased to \$7.12 per kg (\$3.23 per pound) compared to \$7.22 (\$3.28 per pound) in 2005. In Nova Scotia, the price dropped to \$7.51 per kg (\$3.41 per pound), 10% down from \$8.37 (\$3.80 per pound) the previous year.

Distribution

In the maple industry, products are sold through two distribution networks:

Sales in small retail containers

(5 litres or less or 5 kilograms or less). Producers can sell maple products in small containers directly to the consumer at the farm, roadside stands, commercial sugar shacks, farmers markets, food stores and gift shops.

Bulk sales in large containers

(greater than 5 litres or greater than 5 kilograms). In Quebec, about 85% of production is sold in bulk to packers or bulk buyers and exporters who redistribute bulk or pre-packaged maple products. These products can be sold to food stores, supermarkets, gift shops in both domestic and international markets.

Canadian Consumption

Per capita consumption of maple products is fairly low throughout Canada. In 2005, Canada's consumption of maple products expressed on a maple syrup basis stood at 0.26 kg per person, down 10% from 0.29 kg in 2004. The Canadian population estimated around 32.3 million in 2005 consumed approximately 8,400 MT of maple products on a maple syrup basis. This consumed volume represents approximately 23% of Canadian production in 2005. During the same year, per capita consumption of refined white sugar was 32.70 kg, or 126 times more.

SITUATION IN THE UNITED STATES

The US maple syrup producing states are Vermont with 32% of US production in 2006, followed by Maine (21%), New York State (17%), Wisconsin (7%), New Hampshire (4%), Michigan (5%), Ohio (5%), Pennsylvania (5%), Massachusetts (3%) and Connecticut (0.7%).

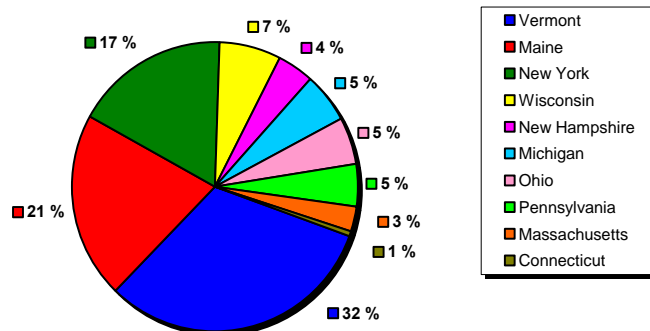


Figure 3 – Maple Syrup Production in the United States by State, 2006

Total volume of maple syrup production fluctuates significantly from year to year as a result of temperature. In 2006, temperatures in the maple producing states varied across the country. Producers in Maine, Michigan, Ohio, Vermont and Wisconsin reported favourable conditions, but producers in the other five States experienced weather that was either too warm or too cold for favourable sap flow. This resulted in an increase in production over the previous year in all producing states except Massachusetts and Connecticut. US production in 2006 was estimated at 7,245 MT (1,449,000 US gallons), up 17% from 2005, but 4% less than production in 2004. The number of taps was estimated at 7.26 million, an increase of 2% compared to the total of 7.10 million reported in 2005. Yield per tap was estimated at 2.2 pounds, up 14% from the previous year.

Vermont dominated production with 2,300 MT (460,000 US gallons), an increase of 12% from the previous year. Production in Maine increased to 1,500 MT (300,000 US gallons) up 13% from the previous year. New York State was next, with production of 1,265 MT (253,000 US gallons), a 14% increase from 2005. [Figure 3](#) shows the breakdown of US production by producing state.

The 2006 average gallon equivalent price¹ was US\$31.30 (US\$6.23 per kg), which is 5% higher than in 2005. Average gallon equivalent prices varied widely across New England, ranging from US\$24.30 (US\$4.86 per kg) in Maine to US\$58.20 (US\$11.63 per kg) in Connecticut. For more details, consult [NASS](#).

TRADE

Canada is the world leader in exports of maple products, ahead of the United States, with sales in 42 countries in 2006. The year 2006 was a record year in terms of volume and value of Canadian maple

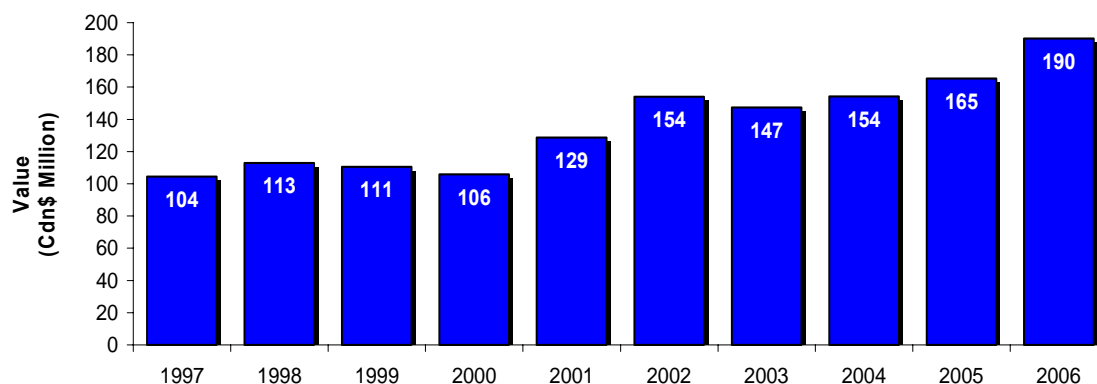


Figure 4 – Value of Canadian Maple Product Exports, 1997-2006

¹ Average gallon equivalent price is a weighted average across retail, wholesale and bulk selling prices.

product exports. The volume of exports totalled 35,964 MT, 11% more than the previous year and 19% higher than the previous five year average. The total value of exports reached \$190.2 million. This was a 15% increase from 2005 and 27% higher than the previous five year average. ([Table 4](#)).

Between 1997 and 2006, the volume of Canadian exports rose from 22,813 to 35,984 MT, with an average annual increase of 5.2%. For the same period, the value of exports increased from \$104 million to \$190 million, with an average annual increase of 7.3%.

Quebec remains the largest exporter of maple products, with 96% (\$183.3 million) of total Canadian export sales in 2006, followed by Ontario with 1.9% (\$3.7 million) and New Brunswick with 1.1% (\$2 million).

The nine main maple syrup purchasing countries in 2006 ([Table 5](#)) were the United States, followed by Japan, Germany, France, Australia, the United Kingdom, Denmark, Switzerland and the Netherlands. These nine countries accounted for 98% of the value of Canadian exports over the last year.

Table 4 – Canadian Maple Product Exports by Province, 1997-2006

Province	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	% Δ
Value (Cdn \$ ' 000)											
Canada	104,496	113,003	110,507	105,906	128,604	153,962	147,221	154,100	165,270	190,243	15 %
Quebec	93,230	101,869	100,807	93,933	104,311	126,407	124,883	143,247	155,728	183,317	18 %
Ontario	8,476	7,952	6,544	8,815	16,776	20,617	15,957	7,519	5,639	3,699	-34 %
New Brunswick	1,258	2,077	1,757	1,141	4,927	2,392	1,078	2,194	2,000	2,027	1 %
Volume (MT)											
Canada	22,813	23,295	23,952	25,463	27,711	30,250	29,920	31,097	32,537	35,964	11 %
Quebec	20,248	20,919	21,758	22,453	22,359	24,816	25,334	28,789	30,532	34,458	13 %
Ontario	2,012	1,796	1,617	2,313	3,612	4,018	3,244	1,607	1,225	846	-31 %
New Brunswick	278	404	346	267	1,176	518	269	545	482	467	-3 %
Average Price (Cdn \$/kg)											
Canada	4.58	4.85	4.61	4.16	4.64	5.09	4.92	4.96	5.08	5.29	4 %
Quebec	4.60	4.87	4.63	4.18	4.67	5.09	4.93	4.98	5.10	5.32	4 %
Ontario	4.21	4.43	4.05	3.81	4.64	5.13	4.92	4.68	4.60	4.37	-5 %
New Brunswick	4.53	5.14	5.08	4.27	4.19	4.62	4.01	4.03	4.15	4.34	5 %

* Per calendar year.

Δ from 2005 to 2006

Statistics Canada

The United States is the main market for Canadian maple products. Shipments to the United States stood at CAN\$137.1 million in 2006, 72% of the total Canadian export value. The volume and value of products shipped to that country during the past year increased despite the rise in value of the Canadian dollar. Canada exported to 32 states. Vermont, California, New Hampshire, New Jersey and Washington were the main buyers.

Japan is the second largest importer of Canadian maple products. This country represents a market with significant growth potential as attested by the rapid increase in exports to Japan between 2001 and 2006. During this period, the value of Canadian maple product exports rose from \$6.8 million to \$19 million. The Canadian maple industry is benefiting from the economic spin-offs from its recent promotion and marketing efforts in the Japanese market.

Canadian maple product exports have been growing significantly in a number of European countries. Total exports to Germany, the United Kingdom, France, the Netherlands, Denmark, Switzerland and Belgium rose from \$18.1 million in 2002 to \$26.1 million in 2006. These seven countries account for 14% of the value of Canadian exports. Exports of maple products to Australia have also increased considerably over the last five years.

Table 5 – Canadian Maple Product Exports by Country, 2002-2006

Country	VALUE (\$ Cdn ' 000)						QUANTITY (MT)					
	2002	2003	2004	2005	2006	%	2002	2003	2004	2005	2006	%
TOTAL:	153,962	147,221	154,100	165,270	190,243	100%	30,250	29,920	31,097	32,537	35,964	100%
United States	117,592	113,520	112,658	119,330	137,133	72%	23,336	23,350	23,558	24,643	27,769	77%
Japan	15,295	10,072	12,967	18,414	19,026	10%	2,130	1,535	1,969	2,730	2,576	7%
Germany	7,408	7,326	9,618	8,951	11,011	6%	1,724	1,862	1,961	1,634	1,936	5%
France	2,396	3,694	3,860	3,692	5,153	3%	544	642	721	697	890	2%
United Kingdom	3,534	2,384	3,888	3,544	3,604	2%	743	460	686	649	543	2%
Australia	1,302	2,520	2,334	3,110	3,781	2%	273	443	401	552	521	1%
Denmark	1,511	1,440	1,552	1,724	2,160	1%	316	365	390	372	390	1%
Netherlands	1,508	1,977	1,926	1,251	1,663	1%	322	328	330	180	230	1%
Switzerland	1,358	1,391	1,284	1,510	1,994	1%	403	434	430	494	425	1%
Belgium	417	658	804	566	544	0%	93	88	93	70	82	0%
Korea, South	93	374	724	408	700	0%	17	80	107	74	97	0%
New Zealand	154	371	383	522	672	0%	38	84	82	98	109	0%
Taiwan	202	141	297	413	181	0%	60	25	73	67	27	0%
Sweden	205	103	201	307	410	0%	29	10	19	47	41	0%
Italy	203	244	234	191	257	0%	51	29	25	20	30	0%
Neth. Antilles	2	2	3	385	452	0%	0	0	0	56	68	0%
Austria	250	119	168	99	158	0%	63	18	26	15	23	0%
Spain	0	84	111	93	143	0%	0	14	17	15	22	0%
Ireland	134	183	126	49	19	0%	25	32	22	7	2	0%
Czech Republic	0	38	84	76	135	0%	0	6	16	14	21	0%
Israel	0	38	114	58	121	0%	0	8	22	11	26	0%
Singapore	28	27	59	122	100	0%	5	2	11	21	12	0%
Norway	72	66	75	70	84	0%	15	14	14	6	14	0%
Poland	57	36	88	53	69	0%	12	6	14	10	6	0%
Brazil	0	41	34	41	66	0%	0	6	8	9	12	0%
Hong Kong	6	24	61	35	61	0%	1	3	6	4	6	0%
Thailand	0	3	0	12	134	0%	0	0	0	1	11	0%
Iceland	0	0	38	46	47	0%	0	0	16	13	19	0%
Portugal	0	0	16	47	64	0%	0	0	2	5	7	0%
Korea, North	0	57	0	0	60	0%	0	29	0	0	10	0%
Greece	0	80	0	0	26	0%	0	13	0	0	4	0%
Cuba	8	30	55	17	3	0%	1	4	8	2	0	0%
South Africa	17	21	28	19	31	0%	4	4	5	4	5	0%
Indonesia	10	19	37	5	26	0%	1	3	6	0	4	0%
United Arab Emir.	0	20	15	17	30	0%	0	2	2	5	7	0%
Turkey	11	24	22	8	27	0%	2	6	5	2	7	0%
China, P. Rep.	14	0	18	36	24	0%	2	0	1	3	2	0%
Kuwait	19	41	6	7	22	0%	3	6	1	1	2	0%
Macedonia	0	0	43	0	32	0%	0	0	7	0	4	0%
Russia	81	0	0	0	10	0%	18	0	0	0	1	0%
Swaziland	0	0	0	0	7	0%	0	0	0	0	1	0%
Ukraine	0	0	73	0	0	0%	0	0	20	0	0	0%
Finland	41	0	43	0	0	0%	10	0	10	0	0	0%
Jamaica	0	17	22	0	0	0%	0	4	4	0	0	0%
Saudi Arabia	18	0	0	0	0	0%	5	0	0	0	0	0%
Total 45 countries	153,946	147,183	154,068	165,228	190,242	100%	30,248	29,916	31,091	32,531	35,964	100%
Other countries	15	38	32	41	1	0%	2	5	6	6	0	0%

% represents the percentage of the total Canadian exports by country in 2006

Statistics Canada

[Table 6](#) shows the breakdown of Canadian maple product exports by the major regions of the world. In 2006, exports to North America (essentially the United States) still ranked first, with a value of \$137.1 million. Europe ranked second at \$27.6 million and was followed by Asia at \$20.5 million and Oceania at \$4.5 million. Exports to Africa, Central America, the Caribbean and South America have increased lightly.

The increase in the value of Canadian exports of maple products in 2006 compared to 2005 is primarily attributable to North America (+15%) and Europe (+24%). Japan, South Korea, Taiwan, Thailand, Israel and Singapore are the main buyers in Asia and the Middle East.

Table 6 – Canadian Maple Product Exports by Region, 1997-2006

Region	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	% ^{Δ1}	% ^{Δ2}
Value (Cdn \$ ' 000)												
Total	104,496	113,003	110,507	105,906	128,604	153,962	147,221	154,100	165,270	190,243	15 %	100 %
North America	81,131	88,046	88,957	82,785	106,096	117,592	113,520	112,659	119,342	137,133	15 %	72 %
Europe	14,874	17,413	15,067	16,904	13,273	19,191	19,829	24,253	22,270	27,584	24 %	14 %
Asia / Middle East	6,632	6,091	4,852	4,325	7,216	15,695	10,856	14,335	19,534	20,513	5 %	11 %
Oceania	1,847	1,341	1,513	1,775	1,876	1,456	2,891	2,717	3,632	4,454	23 %	2 %
Africa	12	112	118	20	28	17	21	28	20	38	90 %	0.02 %
Cen. Amer. / Carib.	0	0	0	0	0	9	52	80	410	455	11 %	0.24 %
South America	0	0	0	0	116	0	52	34	61	66	8 %	0.03 %
Volume (MT)												
Total	22,813	23,295	23,952	25,463	27,711	30,250	29,920	31,097	32,537	35,964	11 %	100 %
North America	18,249	18,626	19,786	20,516	23,100	23,336	23,350	23,558	24,644	27,769	13 %	77 %
Europe	3,102	3,546	3,170	3,923	3,152	4,371	4,321	4,825	4,248	4,690	10 %	13 %
Asia / Middle East	1,240	922	728	695	1,082	2,226	1,702	2,207	2,921	2,787	-5 %	8 %
Oceania	220	178	245	306	350	311	527	483	650	631	-3 %	2 %
Africa	3	22	23	4	6	4	4	5	4	6	50 %	0.02 %
Cen. Amer. / Carib.	0	0	0	0	0	1	9	12	60	68	13 %	0.19 %
South America	0	0	0	0	21	0	7	8	12	12	0 %	0.03 %
Average price (Cdn \$/kg)												
Total	4.58	4.85	4.61	4.16	4.64	5.09	4.92	4.96	5.08	5.29	4 %	
North America	4.45	4.73	4.50	4.04	4.59	5.04	4.86	4.78	4.84	4.94	2 %	
Europe	4.79	4.91	4.75	4.31	4.21	4.39	4.59	5.03	5.24	5.88	12 %	
Asia / Middle East	5.35	6.61	6.66	6.22	6.67	7.05	6.38	6.50	6.69	7.36	10 %	
Oceania	8.40	7.53	6.18	5.80	5.36	4.68	5.49	5.63	5.59	7.06	26 %	
Africa	4.00	5.09	5.13	5.00	4.67	4.25	5.25	5.60	5.00	6.33	27 %	
Cen. Amer. / Carib.	X	X	X	X	X	9.00	5.78	6.67	6.83	6.69	-2 %	
South America	X	X	X	X	5.52	X	7.43	4.25	5.08	5.50	8 %	

% ^{Δ1} from 2005 to 2006

% ^{Δ2} represents the breakdown of exports by region for 2006

Statistics Canada

In 2006, the **United States** exported 3,563 MT of maple products to 48 countries, valued at US\$11.874 million compared to 4,597 MT (\$9,627 million) the previous year. The United States' main customers were Canada (39% of the volume of US exports), Japan (12%), the United Arab Emirates (8%), Saudi Arabia (6%) and Mexico (5%). The volume of exports to Canada increased from 1,157 MT in 2005 to 1,372 MT in 2006, a increase of 19%. The decrease in the volume of total exports in 2006 over 2005 is mainly due to the decline of exports to the United Arab Emirates, which dropped from 1,157 MT to 287 MT. The U.S. imported 27,769 MT from Canada in 2006 compared to 24, 643 MT in 2005.

Regulatory Requirements

All foods sold in Canada are subject to the applicable legislative requirements set out in the [Food and Drugs Act and Regulations](#) and the [Consumer Packaging and Labelling Act](#) as well as regulations related to some specific products under the [Canada Agricultural Products Act](#). The *Consumer Packaging and Labelling Act* applies only to pre-packaged products sold at retail.

These acts and regulations contain provisions prohibiting misleading food labelling. Chapter 13 of the [Guide to Food Labelling and Advertising](#) of the Canadian Food Inspection Agency (CFIA) deals more specifically with maple products.

In addition to meeting provincial regulatory requirements, maple products must comply with the food quality and safety standards and the inspection, grading, packaging and trademark requirements set out in the [Maple Products Regulations](#) of the *Canada Agricultural Products Act*.

The *Maple Products Regulations* require maple products to be obtained exclusively by the concentration of maple sap or maple syrup, excluding substitutes. Maple syrup must be obtained exclusively by the concentration of maple sap or by the dilution or solution of a maple product in potable water. Maple substitutes and maple flavoured products must be appropriately labelled to avoid confusion with pure maple products. Canadian maple syrup is graded and marketed as Canada No. 1 (Extra Light, Light and Medium), Canada No. 2 (Amber) or Canada No. 3 (Dark).

Table 7 – Canadian Maple Syrup Classification

Grade	Colour Class	Percentage of Light Transmission
Canada No. 1	Extra Light	75% or more
Canada No. 1	Light	60.5% to 74.9%
Canada No. 1	Medium	44% to 60.4%
Canada No. 2	Amber	27% to 43.9%
Canada No. 3*	Dark	Less than 27%

*All colours indicated above may be assigned to "Canada No 3" maple syrup if it meets only the requirements of this grade.

REF: *Maple Products Regulations of the Canada Agricultural Products Act*



Figure 5 – Colour Class

To sell maple products internationally or interprovincially, producers must comply with the requirements of the *Canada Agricultural Products Act* and the *Maple Products Regulations*. These regulations govern the marketing (whether interprovincial or import/export related) of agricultural products including maple syrup and provides for the establishment of national maple syrup standards, grade names, and for the inspection, classification and registration of establishments and standards for them. Producers wishing to export or market maple products covered by the *Maple Products Regulations* across provinces must comply with the marketing requirements for their products, including those related to registrations. See the following web site: [Canadian Food Inspection Agency](http://www.cfs.fda.gov/food/inspection/inspection.html). The list of registered establishments can be obtained by phone at 514-283-8888 or by faxing a request to 514-283-3143 or in Ottawa at 613-221-7166, fax 613-221-7294. Since January 1, 1999, export certificates for maple syrup for international trade are no longer mandatory.

There are differences between Canada and the United States in terms of the grades used and regulated by each country and their respective provinces and states. The use of different terminologies creates confusion among many foreign consumers and merchants. Therefore, the [International Maple Syrup Institute \(IMSI\)](http://www.imsi.org/) established a working group to consult the entire North American maple industry and explore possibilities for harmonizing the designations of the various grades of maple syrup in Canada and the United States. Grade harmonization is currently one of the IMSI priorities.

Voluntary Measures

Processing establishments registered with the CFIA can voluntarily participate in the CFIA's [Food Safety Enhancement Program \(FSEP\)](http://www.cfs.fda.gov/food/inspection/inspection.html), which is based on Hazard Analysis Critical Control Point (HACCP)

principles. This internationally recognized system consists of a set of simple, yet effective, principles designed to control food safety in processing establishments, from receiving of raw materials to shipping the final product. The HACCP system is one approach to managing chemical, biological and physical hazards in food production. Canada is a world leader in the development of prerequisite programs, generic models and HACCP systems and their implementation in food establishments. In order to be granted HACCP/FSEP recognition by the CFIA, registered maple product establishments must develop procedures and implement suitable control measures. As part of a regulatory audit process, CFIA inspectors periodically verify the compliance and effectiveness of the HACCP system and the associated control measures. At present, there are no compliance mark requirements, such as a package logo, that would enable maple product exporters to officially promote the HACCP/FSEP recognition that their establishments have received from the CFIA. A policy is being developed on this matter and should be approved in the near future.

Under another voluntary initiative, maple product exporters can ask the [Bureau de normalisation du Québec \(BNQ\)](#), which is accredited by the [Standards Council of Canada \(SCC\)](#), to certify the compliance of their maple syrup with standard [NQ-8280-005](#). To obtain BNQ recognition, processing establishments must implement measures to ensure food safety monitoring and compliance with the quality requirements set out in this standard. BNQ inspectors are required to check the compliance of these measures on a regular basis. Once recognized by the BNQ, establishments are allowed to affix this agency's compliance mark on the packaging for certified products.

Organic Certification

The majority of certified organic maple syrup is exported to international markets. Then the international recognition of the Canadian organic certification is very important for the Canadian maple industry. The Government of Canada recognizes the importance of the organic food production sector.

A voluntary national standard for organic agriculture was published in June 1999 and was revised under the auspices of the Canadian General Standards Board (CGSB). In 2006, the new national standards for organic agriculture ([CAN/CGSB-32.310-2006](#) and [CAN/CGSB-32.311-2006](#)) were published. A mandatory national system was announced in December 2006. These regulations will protect consumers against false organic claims and will govern the use of a new Canada Organic logo. The [Organic Products Regulations](#) will strengthen the organic industry's capacity to respond to international and domestic market opportunities. Phased in over the next two years, the Canada Organic logo will be permitted for use only on those food products certified as meeting the revised Canadian standard for organic production and that contain at least 95 percent organic ingredients. Following this phase-in period, it will be mandatory that all organic products be certified for interprovincial and international trade. In the production of organic maple syrup, organic standards must be respected during all stages of production, from the maintenance and development of the sugar bush, to the collection and storage of the maple sap, to the processing of the sap into syrup and derived products. This also applies to the sanitation of equipment and storage of the finished products.

In Quebec, the *Reserved Designations Act* has governed organic designation since February 2000. The Conseil des appellations agroalimentaires du Québec ([CAAQ](#)), mandated to control the use of the organic designation, adopted the Quebec Organic Reference Standard. This standard is at least equivalent to those adopted by the Codex Alimentarius Commission. The CAAQ is responsible for accreditation of certification bodies, based on this reference standard and on standard ISO/CEI 17011, which deals with the requirements regarding product certification. The Quebec Organic Reference Standard for maple syrup production can be found on the CAAQ web site ([Section 3.7](#)).

MAPLE SYRUP PRODUCTION METHODS

There are three major species of maple trees used for syrup production in Canada. The main species is the Sugar Maple (*Acer saccharum*). Other types, namely the Red Maple (*Acer rubrum*) and the Black

Maple (*Acer nigrum Michx.f*) are also used. The Silver Maple (*Acer saccharinum*) is rarely used because, like the Red Maple, its sap contains less sugar. While these trees grow in several areas of the world, these species need the proper climate for maple sugaring, (Figure 5) which can be found mainly in the eastern part of North America (See [Canadian Forest Service](#)).

Under ideal conditions, a maple tree reaches tapping size in about 40 years. A carefully tapped tree will yield, drop by drop, about two to five litres of sap on a warm spring day, and could continue to provide sap for a century. During the sugaring season, which lasts approximately six weeks, an average maple tree will yield between 35 and 50 litres of sap, which will produce between one and 1.5 litres of maple syrup.

A healthy maple tree can be tapped when its trunk reaches 20 cm in diameter at 1.3 metres above ground level. The number of taps per tree is determined by the tree's diameter. Between two and four taps per tree is common.

Maple sap is clear, slightly sweet, and has the consistency of spring water. The distinctive maple taste develops only through careful boiling. The sugar in the sap results from the starch produced during the months of May through August and stored in the tree roots. With the melting of snow, the starch turns into sugar (sucrose), which is then circulated through the tree in preparation for the growing season. As a result, sap runs intermittently from early March to mid-April as the ground thaws in spring, but before the buds open on the maple trees. Good maple sap production requires warm days and cold nights below the freezing point. Maple sap normally doesn't flow during the night. According to experts, sap that is collected represents only 5% of total reserves in the roots and removing it does not damage the tree.

In some maple sugaring operations, the production process has remained the same over time, with only the equipment changing. Modern maple farms have equipment to use reverse osmosis to concentrate the sap's sugar content three or four times; this saves on heating costs and produces a lighter coloured syrup. Plastic tubing and vacuum systems have become increasingly popular for collecting maple sap.

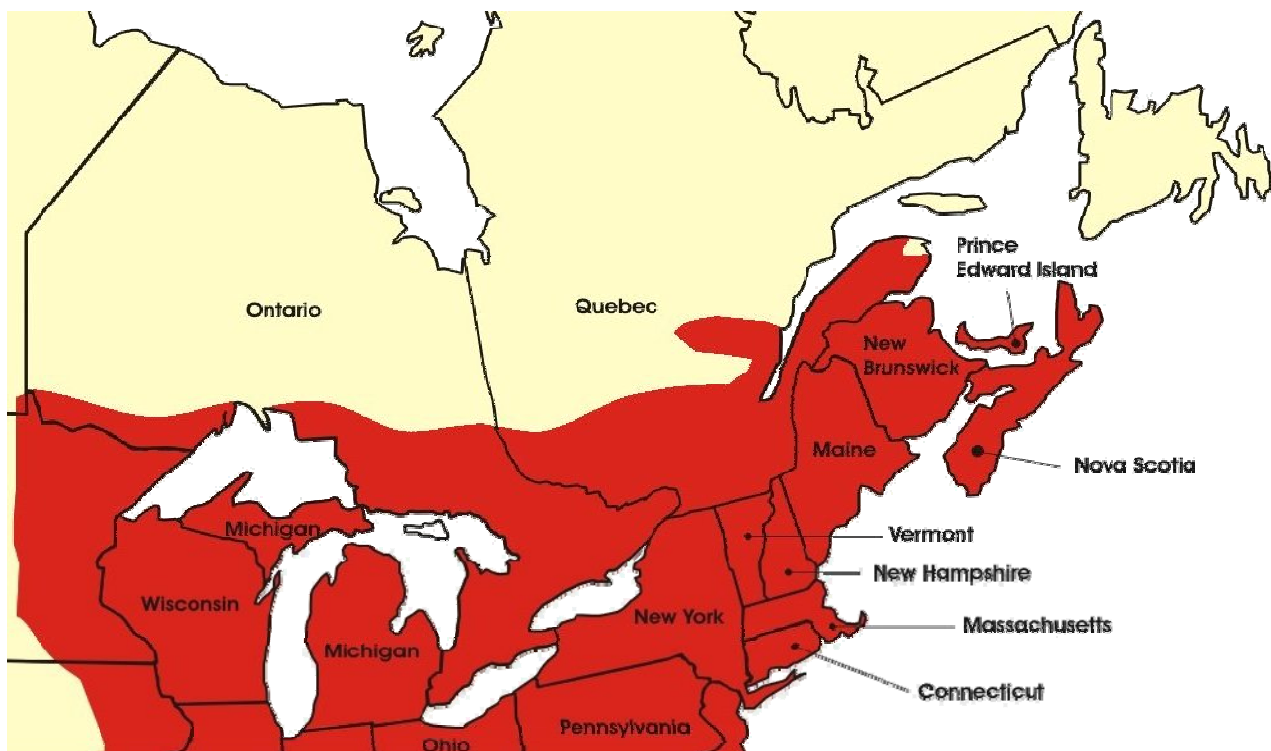


Figure 6 – Sugar Maple Tree Area

Maple syrup must be produced exclusively by the concentration of maple sap or by the dilution or solution of a maple product in potable water. The syrup is “ready” when it reaches a temperature of 104°C (at sea level) in direct relation to the amount of sugar necessary (66 degrees Brix) and the colour. Degrees Brix is the gram weight of dry matter in 100 grams of a distilled water solution. To measure these parameters, the producer uses a densimeter or refractometer to determine sugar content and a colorimeter or a spectrophotometer to determine colour for grading.

If the evaporation process continues, the syrup becomes supersaturated. When supersaturated syrup is cooled to normal room temperature, the excess sugar, above that of the normal stable concentration, precipitates or crystallizes out of the solution. It is this ability to increase the sugar concentration above the stable level that enables the production of other maple products, such as maple taffy, maple butter, soft maple sugar and hard maple sugar. All derived products, obtained exclusively by the concentration of maple sap or maple syrup, excluding substitutes, are obtained by producing a supersaturated syrup solution through additional evaporation and controlling the crystallization or precipitation process by regulating the rate and extent of cooling and the degree of agitation or stirring to influence crystal size and rapidity of formation.

Maple specialists recommend sanitizing maple equipment with Canadian Food Inspection Agency (CFIA) accepted cleaners, sanitizers and/or disinfectants, some of which are subject to mandatory registration with the Pest Management Regulatory Agency (PMRA) under the *Pest Control Products Act* and *Regulations*. For more details, consult the [Guide for acceptance and/or registration of products and equipment intended for maple syrup production](#).

The Centre ACER produced the [Cahier de transfert technologique en acériculture](#) (CTTA) (French only). This guide helps maple producers improve the productivity of their sugar bushes and the quality of the syrups produced on the farm through transfer of technical knowledge and adoption of improved operations management.

The [North American Maple Syrup Producers Manual](#) second edition, 2006, has just been released by the Ohio State University. The manual was written by an expert team of 20 researchers, producers and educators from across the maple sector.

With the participation of various industry stakeholders, maple equipment manufacturers have developed a document entitled [Standards on maple equipment intended for the production of maple syrup](#). These standards are voluntary and are approved by the International Maple Syrup Institute (IMSI).

Maple Products Flavour Wheel

A research team has developed the [Flavour Wheel for Maple Products](#). This new reference tool helps maple syrup producers express the many flavours of this product. The Wheel is a circular reference guide that provides a common language for accurately describing both the quality and variety of flavours of maple products. This tool uses a terminology common to maple industry stakeholders and consumers which facilitates the promotion of products and the education of consumers.

FACTORS AFFECTING THE FUTURE OF MAPLE INDUSTRY

Climate Change

Climate observation data show an upward trend in temperatures over the past century. Using dynamic atmosphere models, the scientific community predicts that global warming will continue into the next few centuries and will be more noticeable in winter and spring. Higher temperatures during the maple sugaring season could seriously impact the North American maple industry. Maple producers are already experiencing changes: increasingly earlier tapping dates, ever shorter seasons and radical changes in regional production, which may be directly linked to warmer weather. The more northerly producing regions could benefit from more days of optimal temperatures, namely -5°C at night and +5°C during the



day, for the sap flow. However, the opposite could occur in warmer regions. In addition, the thinner snow cover associated with climate change could be the most significant climate factor affecting maple production. Late accumulations in December and mid-winter thaws could freeze the ground and reduce sap flow. Climate data are already showing fewer days with snowfall over the past few decades. It also seems evident that freezing and thawing cycles are more significant than in the past. Later dry weather in summer and major periods of precipitation in spring are also worrisome for maple producers. Although the Sugar Maple has greater ozone tolerance, it is very vulnerable to acid rain, fire and flooding. With the effect of climate change, extreme conditions could become more severe and frequent, which highlights the need for lightening and adapting maple industry practices². In warmer regions, maple trees could be more susceptible to pests and disease. Climate change would have far-reaching impact on biological diversity, with new growing conditions favouring certain species while jeopardizing others. There could be changes to the composition and geographic distribution of maple sugar bushes.

Soaring Production Costs

Over the last decades, the soaring price of oil has led to a constant increase in the costs of energy necessary to the maple syrup production. Indeed, the production of maple syrup requires a large volume of heating oil which has become a major operating cost for the majority of large maple farms. Moreover, the use of heating oil involves greenhouse gas emissions and other pollutants. The maple industry is therefore looking for alternatives to stabilize its energy costs and to reduce its dependence on oil. That's why it is currently working on the development of technologies allowing a greater use of the [forest biomass](#) in the maple industry in order to stabilize energy costs while contributing to the protection of the environment. See [CANBIO](#).

Dietary Trends

In the past few years, demographic changes and health concerns such as obesity and cardio-vascular diseases have played a major role in consumers' food decisions and in dietary trends.

From a demographic standpoint, we have a growing and ageing population, a slowing population growth rate, household size is decreasing (smaller families, more single-parent families), rising immigration, ethnic groups are more diversified and eating patterns such as more convenience foods are changing. These various factors are influencing the choice of foods, preferred sizes and buying habits. See [Canadian Food Trends to 2020](#)

The population is ageing and is aware of rising health care costs. Consumers are increasingly looking for foods not only for their basic nutritional value, but also for their health benefits. Consumers have a better understanding of the relationship between diet and disease. The food technology and nutrition fields are rapidly expanding. These factors are leading to very fast-paced development of the international nutraceutical and functional food market.

In reaction to the many obesity-related health problems, people are reducing their consumption of fats and sugars and are choosing foods based on low fat and sugar content. Consumers are increasingly concerned about the authenticity, purity and safety of their foods. They also consider taste quality, the environmental aspect, and production and preparation methods in their selection criteria. Rising demand for organic products clearly demonstrate the consumer desire for healthy foods produced in an environmentally sustainable manner at all stages of production.

The various dietary trends must therefore be taken into consideration in order to position maple products to take advantage of positive trends while minimizing the impact of negative trends. Maple products can benefit from the three current strong consumer interests: natural healthy food, tasting and discovering gourmet products, and easy-to-prepare food. In fact, maple products are considered a natural source of

² Climate change: Creeping Environmental Impacts on the Sugar Maple Industry. Don C. Maciver- Environment Canada-Conference held during the Annual General Meeting of the North American Maple Syrup Council - October 24, 2005, Trois-Rivières, Quebec.

sugar and are perceived as pure, authentic, healthy and tasty foods with a unique flavour and easy to use. Although worldwide sugar consumption is trending downward, consumption of confectionery remains high. Maple syrup based products must therefore compete with other high-quality products in consumers' shopping carts. Over the past few years, the maple industry has already benefited from increased demand for organic maple syrup, and this market is continuing to expand. Organic maple syrup can meet a safety need for consumers who perceive organic foods as healthier, and more environmentally friendly than those produced with conventional farming methods.

OPPORTUNITIES AND CHALLENGES

Imbalance between Supply and Demand

In the past decade, production volume has increased much more quickly than domestic sales and exports, creating an imbalance between supply and demand of maple products. The industry therefore accumulated year-over-year inventory surpluses. However the situation of surplus is currently under control. For the first time since many years, the volume of exports in 2006 was higher than the volume of production thanks to previous year surpluses.

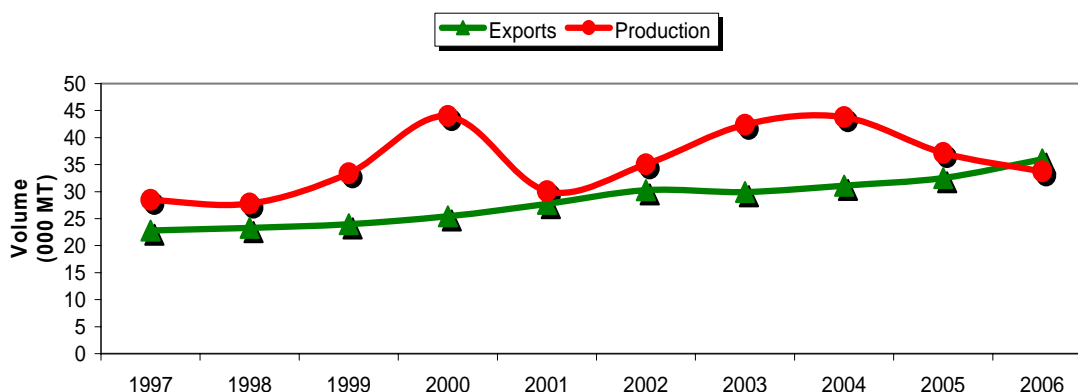


Figure 7 – Changes in Production and Exports, 1997-2006

Competition and Promotion

Although maple products have a unique status for many consumers, they must compete with other cheaper types of sweeteners such as honey, sugar cane, table syrup, corn syrup, etc. Over the past several years, growing maple syrup inventories, inadequate product, insufficient market development efforts as well as competition from other products have forced the industry to focus more on promotion and to invest more human and financial resources in this area. Promotion has become essential in order to inform or simply remind consumers of the existence of maple syrup and educate them about the authenticity, health benefits and value of maple syrup as a natural sweetener.

Maple syrup is a seasonal product. Although maple syrup can now be found year-round on supermarket shelves, the other derived products are not as readily available. Uninterrupted availability of these derived products in stores could encourage their consumption.

Consumers lack information on the many uses for maple syrup and how to preserve it. The industry must undertake a sustained effort to inform and educate consumers in Canada and abroad about how to preserve, use and incorporate maple syrup and derived products into their diet. The education of the various ethnic groups for the gradual integration of maple syrup to their menu represents a potential of development of our domestic market.

Per capita maple syrup consumption in Canada remains fairly low. The domestic market could absorb a larger proportion of production, thereby reducing the industry's dependence on outside markets. The ingredient market and the hotel, restaurant and institutional (HRI) sector represent potential markets for increased use of maple syrup and value-added products in the development of their recipes and as accompaniments to various dishes. The maple industry must maintain its promotional effort aimed at these establishments, which are well placed to help both local customers and tourists discover maple products.

The industry has set itself ever higher quality standards in order to assist in promoting its products abroad. First of all, there needs to be a generic promotion effort of maple syrup by the entire industry. This generic promotion must subsequently be complemented by the individual efforts of exporters.

Cooperation within the industry is also essential to protect the quality of the product. In addition, effective collaboration among the main industry stakeholders is essential to the success of efforts to promote the product to foreign buyers. Well-planned promotion should help consolidate and expand existing markets while encouraging the search for new product niches.

To increase the impact of promotional efforts, studies must be conducted in order to learn more about the characteristics, habits and needs of target customers. It is very important to choose appropriate communication methods and to adapt the messages to target customers. It is essential to look at the product from the customer's perspective and meet their needs, under competitive conditions, while emphasizing the additional benefits and unique qualities of maple syrup.

Sustained generic and non-generic promotion efforts by the industry aimed at foreign buyers are essential. Effective collaboration and cooperation among the main industry stakeholders are indispensable to the success of promotional activities. The health and vitality of the Canadian maple industry are heavily dependent on development of export markets for its products. The industry must increase its sales in traditional markets while developing new markets in order to pursue further expansion.

Agriculture and Agri-Food Canada (AAFC) helps the Canadian maple industry in its strategies to expand international markets. In 2004 and 2005, AAFC contributed \$276,625 to the Fédération des producteurs acéricoles du Québec (FPAQ) under the Canadian Agriculture and Food International (CAFI) Program. These funds went toward short-term relaunch of the generic promotion of Canadian maple products and, in cooperation with all industry partners, toward planning a long-term international strategy to address export market trends.

Maple products must be positioned in a way that takes advantage of strong dietary trends favourable to their consumption while minimizing the impact of trends that tend to reduce consumption. The industry must promote to potential customers the authenticity of maple products as well as their dietary, nutritional and functional value.

Miscellaneous

Maintaining quality control measures at all stages in the process, from production and processing to packaging and delivery, are essential to protect and develop markets around the world.

Canadian industry must more and more process its maple syrup in Canada in order to profit from the added value of the products and employment spin-offs.

Exports of maple products are very sensitive to fluctuations in the value of the Canadian dollar relative to the US dollar. For a long time, the declining value of the Canadian dollar promoted exports, but the current appreciation in the value of our currency could have the opposite effect.

In the maple sector, Canada has the advantage of the expertise and a unique climate.

The number of still-untapped maples in Canada represents a significant potential resource for the future development of the Canadian maple industry.

The decline in the world supply of sugar and increasing sugar prices could help facilitate the marketing and industrial use of a high-quality sweetener such as maple syrup.

Trees have played a meaningful role in the historical development of Canada and continue to be of commercial, environmental and aesthetic importance to all Canadians. Maples contribute valuable wood products, sustain the maple sugar industry and help to beautify the landscape. Maple wood, which varies in hardness, toughness and other properties, is in demand for flooring, furniture, interior woodwork, veneer, small woodenware, and supports several flourishing industries in eastern Canada. Maple is also highly prized in furniture building and cabinet-making.

RESEARCH

Research contributes to the future of the Canadian maple industry. The industry must devote human and financial resources to research and innovation in order to develop new products and new uses. Better knowledge of the composition of maple sap and maple syrup could lead to the development of new value-added industrial uses.

AAFC supports national initiatives to accelerate the development of a wide range of new industrial, health and nutritional products obtained from plants, animals and microorganisms. In 2005, AAFC contributed \$532,565 to the Canadian maple industry through the Fédération des producteurs acéricoles du Québec under the [Agri-Innovation Program](#) in order to support implementation of the Canadian maple industry innovation strategy over the next three years.

The North American Maple Syrup Council ([NAMSC](#)) established a Research Fund in 1987. The program was developed to generate funds for universities and institutions that perform research benefiting the entire maple industry. Funds are designated and distributed to qualified institutions in the U.S. and Canada for select research projects.

[Centre Acer inc](#) is a research center financed and driven by the main stakeholders of the maple industry in Quebec. Centre Acer inc is well-known for its scientific and technology transfer expertises in maple industry. Its five key areas of research are technology transfer, the development of value-added maple products, the strengthening of the competitive position of maple products by increasing the efficiency of production systems and the ensuring of a sustainable resource and environment.

In March 2007, [CBC News](#) reported that the National Research Council (NRC) scientist Jalal Hawari recently discovered a new potential use for the maple sap which can serve as a base for a natural biodegradable polymers or plastics called [polyhydroxyalkanoates](#) (PHA). Bacteria called *Alcaligenes latus* transform the sucrose in the sap, by fermentation, into a type of polyester which is biologically inert. The newly created plastic can be used for medical applications like drug delivery systems and surgical sutures.

NUTRITIONAL VALUE

Carbohydrates are mostly composed of simple sugars and are broken down quickly in the body to provide its energy. Glucose and fructose are the most familiar components of simple sugars. In pure maple syrup, glucose and fructose are found together as sucrose, also called saccharose. Maple syrup contains approximately 65% sucrose and 1% to 2% glucose and fructose. It also contains potassium, calcium, iron, zinc, magnesium, manganese and riboflavin. It also has the distinction of being fat free. ([Table 8](#))

The [Glycemic Index \(G.I.\)](#) is a scale from 0 to 100 that ranks carbohydrate-rich foods by how much they raise blood glucose levels compared to glucose or white bread after eating.

In 2006, a clinical study on the maple syrup glycemic index was conducted by Dr. Huot, M.D., Mr. SC, pediatrician, endocrinologist, at the Sainte-Justine Hospital in Montreal. This study advantageously positions maple syrup compared to four other natural sweetening products. Due to the variability of the glycemic index for food in general, the FPAQ presented the results of index glycemic in the form of Spectrum of Glycemic Index Value instead of absolute value. More information, see [Glycemic index](#) on the FPAQ's web site.

Table 8 – Nutritional Value of maple syrup and various sweeteners

Elements	Maple syrup	Honey	Sugar	Brown sugar
Percentage of Daily Value (DV) ¹ per 60 ml serving				
Manganese	100%	3%	0%	9%
Riboflavine	37%	2%	1%	0%
Zinc	18%	2%	0%	1%
Magnesium	7%	1%	0%	7%
Calcium	5%	0%	0%	5%
Potassium	5%	1%	0%	6%
Calories	217	261	196	211

¹ DV: Daily value is the intake of a given nutrient deemed to fulfill the daily nutritional needs of most individuals.

Sources : Fédération des producteurs acéricoles du Québec.
and The Canadian Nutrient file - Health Canada

Nutrition Labelling

As of December 2005, amendments to the *Food and Drug Regulations* made nutrition labelling mandatory for most pre-packaged foods including maple products. Producers, processors, importers and retailers of maple products with sales over \$1,000,000 must comply with the new nutrition labelling regulations administered by the Canadian Food Inspection Agency (CFIA). The new regulations will apply to all maple producers and processors as of December 12, 2007. Further details on nutrition labelling requirements can be found in the CFIA's "*Guide to Food Labelling and Advertising*", [Chapter 5](#) and [Chapter 6](#).

Functional Claims

Functional claims are not permitted on the labels of products sold as food. This type of claim is allowed only on natural health products and is governed by Health Canada under the *Food and Drug Regulations*. See the [Natural Health Products Regulations](#).

BRANDING CANADA

Branding Canada for the food and agriculture sector - Branding Canada for short - was developed in close partnership with industry and provincial governments and is based on solid research. This initiative is designed to help take Canada's strong international image and leverage it to increase the sales and profile of Canadian food and agriculture products.

So if you're involved in the export trade - whether you're from industry or government, you'll want to know more about the consumer and buyer market research we have from our key export markets, our tools and templates, the Canada brand graphics, our brand promise and much more. They're all available on the website of [Branding Canada](#).

The [maple leaf](#) is the most important branding element of the Canada brand.

The [Agri-Food Trade Service](#) (AFTS) provides centralized access to market information, trade counselling and export support activities, which will take the exporter from initial enquiry to foreign market.



Figure 8 – Maple Leaf of Branding Canada

APPENDIX

Methodologies

“X” indicates unavailable data due to either confidentiality requirements, or missing information.

All dollar amounts are unadjusted nominal figures.

Farm cash receipts (FCR) = total revenue to farmers from agricultural products and program payments.

Farm gate value (FGV) = total revenue to farmers (estimated revenue).

UNITS OF MEASURE

MT	=	metric tonne
kg	=	kilogram
g	=	gram
mg	=	milligram
ha	=	hectare
lb	=	pound
L	=	litre

CONVERSION FACTORS

1 lb	=	0.454 kg
1 MT	=	1,000 kg
1 ha	=	2.47 acres
1 Imperial gallon	=	4.546 L
	=	6.023 kg
	=	13.248 lb of syrup
	=	9.2 lb of maple sugar
	=	10.4 lb of maple taffy
1 L	=	0.220 gallon
	=	1.325 kg
	=	2.92 lb
1 lb	=	0.34 L
1 MT	=	2,204 lb
1 US gallon	=	3.785 L
	=	11.03 lb

References

- Agriculture and Agri-Food Canada (AAC)
<http://www.agr.gc.ca/>
- Canadian Food Inspection Agency (CFIA)
<http://www.inspection.gc.ca/>
- Statistics Canada, Production and Value of Honey and Maple, Catalogue No. 23-221-XIE – November 2006
<http://www.statcan.ca/bsolc/english/bsolc?catno=23-221-X&CHROPG=1>
- New England Agricultural Statistics Service (NASS) – Maple Syrup 2007
<http://www.nass.usda.gov/nh/0607mpl.pdf>
- Maple Products Regulations,
<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.289/index.html>

Useful Links

- Agri-Food Trade Service (AFTS)
<http://www.ats.agr.gc.ca/access/mkaccess-e.htm>
- Fédération des producteurs acéricoles du Québec
<http://www.siroperable.ca/Afficher.aspx?langue=fr>
- Ontario Maple Syrup Producers' Association (OMSPA)
www.ontariomaple.com
- The Maple syrup industry in Ontario
<http://www.omafr.gov.on.ca/english/crops/facts/maple.htm>
- New Brunswick Maple Syrup Association Inc. (NBMSA)
www.infor.ca
- Maple Producers' Association of Nova Scotia
www.novascotiamaplesyrup.com
- Table Filière Acéricole
www.mapaq.gouv.qc.ca/Fr/md/filieres/acericole/ (French only)
- Agri-Réseau Érable
<http://www.agrireseau.qc.ca/erable/> (French only)
- Centre Acer
www.centreacer.qc.ca (French only)
- Cahier de transfert technologique en acériculture (CTTA)
<http://www.craaq.qc.ca/index.cfm?p=32&l=fr&ldoc=1544> (French only)
- Guide for acceptance and/or registration of products and equipment intended for maple syrup production.
<http://www.mapaq.gouv.qc.ca/NR/rdonlyres/5B55D6C9-9DF8-4FCB-88E7-194C5A14AA48/0/guideregistration.pdf>
- North American Maple Syrup Producers Manual, Second Edition 2006
<http://extension.unh.edu/forestry/Docs/Maple1.pdf>
- International Maple Syrup Institute (IMSI)
<http://www.internationalmaplesyrupinstitute.com/index.html>
- North American Maple Syrup Council (NAMSC)
www.northamericanmaple.org/index.htm
- Pest Management Regulatory Agency (PMRA)
<http://www.pmra-arla.gc.ca/english/index-e.html>

Contact

For further information, please contact:

REMI GAGNON

TELEPHONE: (613) 759-6245
FAX: (613) 759-6312
EMAIL: gagnonr@agr.gc.ca

STEPHEN PAGE

TELEPHONE: (613) 759-6237
FAX: (613) 759-6312
EMAIL: pages@agr.gc.ca

HORTICULTURE AND SPECIAL CROPS DIVISION
MARKETS AND TRADE TEAM
AGRICULTURE AND AGRI-FOOD CANADA

Although every effort has been made to ensure that the information contained within this report is correct, Agriculture and Agri-Food Canada assumes no responsibility for its accuracy, reliability or for any decisions arising from the information contained herein. Information in this document may be reproduced without consent from AAFC. The legislative elements mentioned in this document are not exhaustive; other provincial and federal regulations may also apply. This document has no legal value. For further information, please contact an official representative for each of the regulatory documents.



Maple sugar

Revised September 2007

Ce rapport est aussi disponible en français.