

# Sugar Maple

*Acer saccharum* Marsh

Érable à sucre



***Maple products are growing in popularity in Canada. Exports of this excellent non-timber forest product totalled \$116 million in Quebec in 2002.***

## Properties and Uses

### *Culinary*

Maple water, a well-known product, is used in a variety of ways in the Gaspé Peninsula and other parts of Quebec. It is used to make syrup, taffy, sugar, maple butter, liqueur, jelly, candy, wine, vinegar and more! The only limit to its numerous uses is the producer's imagination.

Young leaves can be eaten in salads in the spring, while the keys can be nibbled on in the fall.

### *Medicinal*

Maple water is a well-known laxative.

### *Ornamental*

Maples leaves are appreciated as decorative items because of their distinctive shape and vivid fall colours. Being Canada's emblem, they are also found in many promotional and tourist items.

The elegant and ornamental look of maple trees is also highly appreciated in horticulture.

### *Other Uses*

Native people were known to use maple ash as a potassium fertilizer.

## Habitat

The sugar maple is mainly found in moist, rich habitats. It flourishes in rocky or sandy soils with good to moderate drainage. The maple is quite shade-tolerant and regenerates easily under its own canopy. In the Gaspé Peninsula, pure maple stands are common, although there are several yellow birch–maple groves, mainly located on the Peninsula's periphery.

## Market

### *Industrial Demand*

Maple syrup production in Quebec has increased by 50% over the past 10 years. This increase is closely related to technological progress, which makes the sugar maker's work considerably less tedious. Quebec produces 75% of the world's maple syrup. In 2002, a total of 24,577,000 litres of syrup were produced. In Quebec, maple products are the second largest source of income generated on private woodlands, after timber production. In the Gaspé Peninsula, the commercial yield on private woodlands is estimated to be over 1.3 million tapholes.

The maple industry exports 80% of its production to international markets, accounting for 90% of Canadian maple product exports. Over the last four years, their value has nearly doubled, and in 2002, they represented \$117 million. Maple products are exported to more than 32 countries and are Quebec's fourth largest farm produce export.

There are currently some 10,000 maple producers in Quebec, generating 12.6% of the province's total plant production-related income.

The bulk (large container) syrup product market is now controlled through a joint management plan, i.e. syrup sold in bulk is subject to a marketing agreement between the Fédération des producteurs acéricoles du Québec (FPAQ) and buyers. Since October 2003, quotas have been put in place to limit bulk sale production. Anyone wanting to market maple syrup in large containers of more than five litres must have a production quota.

Quebec also produces organic syrup, most of which is exported to European or U.S. markets. Organic syrup is slightly more lucrative, i.e. 15 to 42 additional cents per pound. Producers wishing to make organic maple syrup must first be recognized by an independent certifying organization and comply with production standards in accordance with the criteria of the organic maple production specifications. The Conseil d'accréditation du Québec (CAQ) can provide you with further information on organic certification.

In addition to syrup, there are also value-added products available on the market: taffy, sugar, maple butter, jelly, cookies, pastries, cereal, yoghurt, pies, etc. This market has developed significantly over the past few years, both within and outside Quebec. However, secondary and tertiary products are not very well known yet, and further development is required.

### ***Harvesting Methods***

There are many ways to collect maple water, ranging from the traditional pail and spout to a more complex system of piping and pumps. The general principle consists in making a round taphole, about 3 cm to 6 cm deep, with a diameter of 11 mm, into the trunk. However, better spouts now exist, with a slightly inferior diameter, for better tree healing and a higher long-term yield. To keep maple stands healthy, tapholes should only be made in trees with a diameter of 25 cm or more.<sup>1</sup> Tapholes should never be made in a stressed maple, i.e. a tree that is ill, injured, defoliated or other. The spout is inserted in the taphole and the maple water is allowed to flow before it is collected. Some maple producers still collect maple water from tree to tree, but 93% now use a piping system. Maple water then goes from the tree to storage tanks placed near the evaporator, by means of a connected network of small plastic tubes. A suction system maintains a partial vacuum inside the pipes, which approximately doubles the maple water yield per taphole.

<sup>1</sup> Standards vary from 20 cm to 30 cm, depending on the sources.

Other processes that improve maple grove yields include reverse osmosis, which causes sugar concentration in maple water.

As maple production is an extremely important economic activity in Quebec, it is easy to obtain a great deal of specific, comprehensive information from various organizations, such as the Quebec Department of Agriculture, Fisheries and Food (MAPAQ) and others, mentioned below under Useful References.

### ***Product Quality***

Maple syrup quality and flavour vary according to sap composition, which changes throughout the season, and the heat treatment that it goes through during the evaporation process. The best syrup is generally produced around the middle of the harvesting season.

Syrup is currently graded according to colour. The clearest syrup is considered to be the highest quality syrup. However, there is an attempt to develop a grading system based on syrup flavour instead of its shade. An explanation of the current syrup grading method is available by contacting MAPAQ or by visiting the following Web site: <http://www.siroperable.ca>

The FPAQ has established extremely strict standards and criteria, which must be taken into consideration before starting a maple production.

Further information is available from MAPAQ or the FPAQ.

### ***Contacts and Buyers***

As previously mentioned, the bulk syrup market is controlled by the FPAQ. Some 50 businesses purchase and process syrup before reselling it. *Citadelle* is currently the largest group of producers marketing and selling bulk syrup. It is a co-operative of 2,700 producers and carries out secondary and tertiary processing. *Citadelle* targets international retailers, and institutional and industrial markets.

For small container sales (taffy, maple butter, sugar, etc.), producers sell their products themselves in various local and regional markets.

An increasing number of products must be accredited before being placed on supermarket shelves. However, a few independent grocery stores deal directly with small producers.

The Groupement Agro-Forestier de la Ristigouche has developed expertise in maple production and is able to help anyone wanting to develop a maple grove, from stand management to product marketing. In addition, the Groupement forestier Baie-des-Chaleurs has assessed the sugar maple potential on private woodlands in the Gaspé.

There are research centres focusing exclusively on maple production in Quebec. First, there is the Centre de recherche, de développement et de transfert technologique en acériculture (Centre Acer) <http://www.centreacer.qc.ca/>. There is also the Centre d'expérimentation et de transfert technologique en acériculture du Témiscouata (CETTA), an applied research centre (CETTA had no Web site at the time this fact sheet was prepared).

## Domestication

Depending on the type of stand and desired results, there are several ways to develop a maple stand. Some trees must be cut to favour the healthiest maple trees, but a certain percentage of associated species must be left to ensure the health of the stand. The Syndicat des producteurs de bois de la Beauce has written a handbook on the subject, entitled *Guide d'aménagement des érablières*.

Sugar makers also have to make sure that their trees are healthy, so it is important to be able to recognize problems in order to avoid or control them. A document produced by the Canadian Forest Service, entitled *Sugarbush Management: A Guide to Maintaining Tree Health*, can answer many such questions. The complete reference is provided below.

## Useful References

ALLARD, G.B. 2000. *Cours en acériculture*, FOR-21547. Chapitre relatif à l'ingénierie, la transformation et la mise en marché, Partie 1 : mise en situation. Course taught at Laval University, Sainte-Foy by the Centre de recherche, de développement et de transfert technologique en acériculture.

DUMONT, J. 1995. *Variation de la qualité et du goût du sirop d'érable au cours de la saison de coulée*. Centre de recherche, de développement et de transfert technologique en acériculture, Saint-Hyacinthe, Publication<sup>no</sup> 300-HPG-0195.

HOUSTON, D. R., D. C. ALLEN and D. LACHANCE. 1998. *Sugarbush Management: A Guide to Maintaining Tree Health*. Canadian Forest Service. Information Report LAU-X-92E, 1990 (reprinted in 1998), 55 p. (An electronic version of the French version is available at: <http://www.agrireseau.qc.ca/references/erable/ErableASucre/FEDTEXTE.htm>).

LABRECQUE, J. et al. 2002. *Monographie de l'industrie acéricole au Québec*. Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, 43 p.

LABRECQUE, J. and J. LAPOINTE. 1999. *Portrait de l'industrie acéricole du Québec*. Ministère de l'Agriculture, des Pêcheries et de l'Alimentation, direction de la recherche économique et scientifique, 92 p.

LANGLAIS, G. 2003. *Pratiques actuelles et perspectives d'avenir de l'agroforesterie dans les érablières du Canada*. Institut de technologies agroalimentaires de La Pocatière, 53 p. Unpublished document.

MALENFANT, A. 2001. *Évaluation du potentiel acéricole – forêts privées de la Gaspésie*. Rapport final. Groupement forestier Baie-des-Chaleurs, 55 pages.

MARIE-VICTORIN, Frère. 1995. *Flore laurentienne*, 3e édition revue par E. Rouleau et mise à jour par L. Brouillet, S. G. Hay et I. Goulet (en collaboration avec M. Blondeau, J. Cayouette et J. Labrecque pour l'impression de 1997). Les Presses de l'Université de Montréal, Montreal, 1,083 p.

RESSOURCES NATURELLES CANADA, Service canadien des forêts et le Gouvernement du Québec, Ministère des Ressources naturelles, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation. 1995. *L'érable à sucre – caractéristiques, écologie et aménagement*. 394 p.

RODRIGUE, S. and S. GUAY. 1998. *Guide d'aménagement des érablières*. Syndicat des producteurs de bois de la Beauce, 35 p.

SCHNEIDER, A. 2002. *Arbres et arbustes thérapeutiques - les connaître, les protéger, les utiliser*. Les Éditions de l'Homme, Québec, 379 p.

### ***Personal Communications***

BABIN, Germain. Agronomist – Maple Producer, New Richmond, September 2003.

BELLEGARDE, Jean-Pierre. Research and communications officer – Fédération des producteurs acéricoles du Québec, Longueuil, June 2004.

BIGAOUETTE, Louis. MAPAQ, Caplan, September 2003.

MALENFANT, Annie. Professional Forester, Groupement forestier Baie-des-Chaleurs, New Richmond, August 2003.

### ***Web Sites***

ACER – Centre de recherche, de développement et de transfert technologique en acériculture:  
<http://www.centreacer.qc.ca/>

ACER – Cours en acériculture donné par le Centre de recherche, de développement et de transfert technologique en acériculture [Maple Production Course], Gaston B. Allard, Agr. Eng., February 2000 – CoursUL2000/CoursUL2000.pdf:  
[www.centreacer.qc.ca/publications/transfert/](http://www.centreacer.qc.ca/publications/transfert/)

AGRI-RÉSEAU. *Section érable*:  
<http://www.agrireseau.qc.ca/erable/>

CONSEIL D'ACCRÉDITATION DU QUÉBEC (CAQ):  
<http://www.caqbio.org/>

ÉQUITERRE – Commerce biologique. *Les différences entre l'acériculture bio et la conventionnelle*:  
<http://www.equiterre.qc.ca/agri/comparatifs.html>

FÉDÉRATION DES PRODUCTEURS ACÉRIQUES DU QUÉBEC:

<http://www.siropperable.qc.ca/en>

INSTITUT DE LA STATISTIQUE DU GOUVERNEMENT DU QUÉBEC. *Volume et valeur de la production acéricole en grands contenants, des ventes à la ferme et de l'autoconsommation*, Québec, 2000, 2001 and 2002:

[http://www.stat.gouv.qc.ca/donstat/econm\\_finnc/filr\\_bio\\_al/culture/erable/an110002.htm](http://www.stat.gouv.qc.ca/donstat/econm_finnc/filr_bio_al/culture/erable/an110002.htm)

INSTITUT QUÉBÉCOIS DE L'ÉRABLE:  
<http://www.erable.org>

MINISTÈRE DE L'AGRICULTURE, DES PÊCHERIES ET DE L'ALIMENTATION. *Filière acéricole*:

<http://www.agr.gouv.qc.ca/ae/filieres/acericol/default.htm>

PORTAIL AGRICOLE DU QUÉBEC. Site visited October 3, 2003:

<http://www.laterre.ca/?action=detailNouvelle&menu=&section=manchette&idArticle=790>

REGROUPEMENT POUR LA COMMERCIALISATION DES PRODUITS DE L'ÉRABLE DU QUÉBEC (RCPEQ) – [Quebec Maple Product Marketing Group] -- Telephone: (418) 386-2888 or 1 800 261-2881: [mrcpeq@quebectel.com](mailto:mrcpeq@quebectel.com)

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