

Maple Syrup Digest

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June 2015

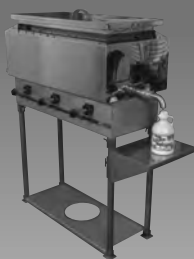


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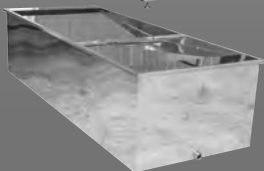
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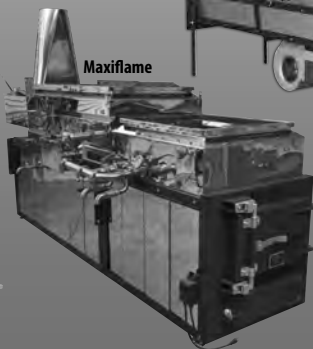


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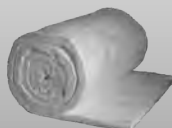


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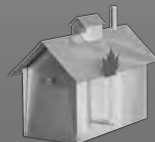
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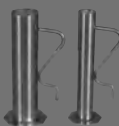
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Greetings from your President



Spring has arrived with its mild weather and the promise of approaching summer. Attention has turned from the first harvest of the season (maple) to other farm and vegetable crops. It will be interesting to hear how maple production was in various parts of the maple belt. Here in Indiana I have heard reports of a poor season from some sugarmakers, as well as some who had a record year.

At my sugar camp we had an average season. Like last year, the usually very busy month of February saw

very little in the way of syrup production and, unlike last year, March was not as favorable for most producers. Vacuum saved my season. I have two woods with the same number of taps and both on tubing. The woods on vacuum produced four times as much sap as the woods on gravity. We also benefited from having squirrel guard as there were not many repairs that had to be made on tubing during the season.

Like most producers I have made my to-do list for the off-season. Most of these projects are geared toward making repairs or making things easier. At my age making things easier in the production of maple syrup is very important in my way of thinking.

With Best Regards,
Dave Hamilton, NAMSC President

Another volume adjustment

We got the volume number wrong in our re-set last issue. As this issue's cover reflects, this is the second issue of the Digest in its 54th year of production. Thanks to Bill Clark for setting us straight.



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Digest electronically?

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Cover photo: Past and present honorees of the Maple Hall of Fame gathered on May 15 at the American Maple Museum for the annual induction ceremony. Pictured are (L to R) Roy Hutchison, Avard Bentley, Dave Chapeskie, Cecile Pichette, Debbie Richards, Paul Richards, Richard Norman, Warren Wells, Betty Anne Lockhart, Don Lockhart, and Dale McIsaac. *Credit: Don Moser.*



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June 2015

7



“PA Maple: Pour it On!” • 2015 North International Maple Syrup Institute

Full details and registration

**Somerset County is honored to host the NAMSC & IMSI Annual Meetings.
Please join us for this year's meetings and sessions.**

Informative Technical Sessions • Workshop Sessions
Antique Sugaring Equipment Display

Tour Stops: Flight 93 Memorial • Local Sugar Camps

Pennsylvania was home to the first NAMSC meeting held in Philadelphia in 1959. Look at the maple industry 56 years later; Wow, what a change!

Where do we go from here? For the past three years a great, hard working group of people from around Pennsylvania have been working to put together this year's annual meetings. Along with the technical presentations, we have added workshops as well. Most of these workshops will deal with marketing.

This year we have tried to include something for everyone. An antique maple display made up of many unique and interesting items will be in one room. A hospitality room is being planned for those who would like to just sit, relax and chat with other attendees. The workshops and technical presentations should have something for everyone.

Both tours will visit The Flight 93 National Memorial. One tour will then visit sugarhouses and the other will visit Oak Lodge, a beautiful colonial village situated on 700 acres with a maple sugar camp.

Plan to attend and learn something to take home with you to help improve your operation.

Matthew Emerick, 2015 Conference Chair

Schedule Overview

October 19

IMSI Board of Directors Meeting
NAMSC Board of Directors Meeting
Welcome Reception

October 20

NAMSC Annual Meeting
Companion Tour
IMSI – Annual General Meeting
IMSI Information Transfer Session
Dinner Reception, “Taste of Pennsylvania” (entertainment)
Silent Auction

October 21

NAMSC Annual Meeting
Technical Presentations & Workshops
Reception
Awards Banquet

October 22

Optional Tours

**More details and registration
info at www.namsc.org**

American Maple Syrup Council and Annual Meetings • October 19-22, 2015

info at www.namsc.org



Technical presentations

- Cornell University Update on current research – Mike Farrell
- Cornell University Update on current research – Steve Childs
- Proctor Maple Research Center Activities – Tim Perkins
- Centre Acer: Update on Current Research – Luc Lagacé
- Proctor Maple Research: Tap Hole Injury in Red Maple - Tim Wilmot
- University of Maine Cooperative Research/Extension - Mold Study Wrap Up & Developing Processing Guidelines for Maple Sap as a Seasonal Beverage – Kathryn Hopkins
- Centre Acer: Evaluation of safety aspects regarding the use of Isopropyl alcohol as a sanitizer of the maple sap collection system – Luc Lagacé
- University of Vermont: Exotic, Invasive Earthworms: A Clear and Present Danger to Regeneration in Our Northeastern Sugarbushes - Dr. Josef Gorres
- Proctor Maple Research: "Is Tapping Below the Lateral Line An Effective Tool To Increase the Size of the Tapping Band?" - Tim Perkins

Workshops

- Supply & Demand - The State of Maple Syrup in 2015 : Syrup Packers Panel featuring: Bruce Bascom, Dave Marvin, and Steve Anderson, moderated by Nate Bissell.
- Modern Marketing Strategies for the Maple Industry - Brad Gillian
- Maple Syrup: Moving from Hobby to

Profitable - Nate Bissell

- Making and marketing Birch & Walnut Syrup - Mike Ferrell
- Making Value Added Products Part of Your Business - Glenn & Ruth Goodrich
- STIHL Chain Saw Safety - Keith Bender
- Some New and Old Ideas with Making Soft Maple Sugar Candy - Steve Childs

Contests

We will hold the annual contests for syrup, candy, cream and sugar, as well as for photographs. If shipping, entries must be received by Monday, October 12, 2015. If bringing entries to the event, they must be submitted by October 20 at 9:00 a.m.

Grading School

The International Maple Syrup Institute Maple Grading School will be held at the same site as the meetings, October 17-18. This course is for maple producers, bulk syrup buyers, state inspectors, and others needing to accurately grade maple syrup or judge maple product entries at fairs and contests. Quality control issues are also addressed. This school provides a strong scientific base combined with intensive hands-on exercises. This approach enables participants to learn how to grade or judge maple products with confidence. More information and registration forms are available at <http://umaine.edu/maple-grading-school/>

Research Grants Available from NAMSC

The North American Maple Syrup Council, Inc. Research Fund (NAMSC-RF) is pleased to announce a Request for Maple Research Proposals (RFP). Qualified research institutions, state/provincial governmental research professionals and privately held research and development organizations are encouraged to apply for funding consideration. Preference will be given to collaborative projects and those applicants documenting leveraged support from sources outside the NAMSC-RF. The NAMSC-RF will consider proposals which address one or more of these industry related issues:

a. Sap & syrup production efficiency, alternative energy / sustainability / energy cost reduction for maple syrup production.

b. Sap, syrup and /or sugar production quality.

c. Methods for eradication of and/or management of invasive insects or plants, including short/long term effects of chemical or other treatment of sugar maples in response to invasive species.

For more information, see <http://namsc.org/index.php/en/namsc-research-fund/proposal-submission-guidelines> or contact NAMSC Research Committee Chair, Winton Pitcoff, at winton@massmaple.org.



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When to Stop: Some Factors Affecting The Economics of Processing Grade Syrup

Mark L. Isselhardt and Timothy D. Perkins

University of Vermont, Proctor Maple Research Center

Pure maple syrup graded and sold for the retail market must meet minimum standards in four key characteristics; density, clarity, color and flavor. Flavor is the one component that is uniquely maple. The maple production season generally ends when syrup develops off-flavors in late spring. These naturally occurring off-flavors can range from mild to strong. Syrup with detectible off-flavors cannot be sold in a retail container, and commands a lower price on the bulk market. Off-flavored syrup regardless of color falls under the "Processing Grade" in the newly adopted grading standards (see inset) and may not be sold in the retail market. The amount of Processing Grade syrup produced varies widely from year-to-year as well as regionally.

Several prominent industry leaders have suggested that the amount of Processing Grade syrup being produced has increased in recent years. By some estimates 10% to as much as 40% of the crop was off-flavored over the last five years. Is this a necessarily bad thing for the industry? Will low quality syrup undercut sales of Grade A or is there a growing

market for such "ingredient class" maple syrup that demands a pure, sustainably harvested sweetener?

Near the end of each sugaring season, producers must make a decision when to stop making maple syrup. Sometimes the decision is an easy call, such as when the onset of bud break and cessation of sap flow coincide. There are also sugarmakers who stop boiling when they hit a certain (largely self-imposed) color grade they deem unacceptable. Other times the decision

Processing Grade: continued on page 12

Definition of Processing Grade Syrup

Maple syrup for processing (Processing Grade) means any maple syrup that does not meet Grade A requirements, but meets the requirement of Processing Grade for use in the manufacturing of other products. Maple syrup for processing must be packed in containers of 5 gallons or 20 liters or larger. Processing Grade maple syrup cannot be packaged in consumer size containers for retail sales (containers of less than 5 gallons).

- (1) May be any color class and any light transmittance; and not more than 68.9 percent solids content by weight (Brix);
- (2) May contain off flavors; and odors;
- (3) May have a very strong taste.

Substandard is the quality of maple syrup that fails to meet the requirements of Processing Grade maple syrup.

*United States Department of Agriculture
United States Grades of Maple Syrup
Effective March 2, 2015*

Processing Grade: continued from page 11

to halt production can be the result of fatigue. The decision to stop production can also be the result of careful economic analysis of the cost of production versus value of the product.

The variable costs (fuel, labor, filters, etc.) of any maple operation are a key component to this sort of analysis. The fixed costs (sugarhouse, evaporator or RO for example) remain the same regardless of the amount of syrup produced. The variable costs, on the other hand, increase in proportion to the amount of syrup produced. Part of the decision to end production may lie in how much of a producers income is derived from maple. An operation that contributes a relatively small amount

to the individual's total income may be more inclined to stop earlier than a larger producer who sells most or all of their crop in bulk. Another possibility is that the sap or syrup may be too difficult to process due to high microbial content, making filtering of sap, processing sap through an RO, or filtering of syrup too problematic or costly.

The 2014 Maple Business Benchmark, produced by University of Vermont Extension provides the most recent information related to what it costs to produce a gallon of syrup in Vermont. The study focused on ten operations ranging in size from 2,600-20,000 taps. All used vacuum and RO. Half of the operations used oil to fuel the evaporator and half used wood. The median

variable cost of production was \$13.34 per gallon of syrup. According to Mark Cannella, Farm Business Management Specialist with the University of Vermont Extension and author of the report, that variable cost estimate would likely be considerably lower (perhaps half or less) if another survey focused on the larger, bulk producers who contribute the greatest share of syrup to market. Cost of labor remains the largest single variable that a producer can control. "The value of selling (Processing Grade) syrup for smaller operations will depend (largely) on how the owners value their own time versus cash." Cannella wrote.

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In the early part of this century the price of Processing Grade syrup was very low (Figure 1) at only CAN\$1.00/lb, which was probably lower than the cost of production for many operations. The price more than doubled to CAN\$2.22/lb between 2005 and 2009, likely due to several factors, but primarily due to syrup shortages during this time period. The bulk price for off-flavored syrup remained fairly steady until 2012, but has since receded somewhat, and remained steady at CAN\$1.80/lb for the past three years. The recent high value could explain many producers' motivation to continue production of Processing Grade syrup late into the season.

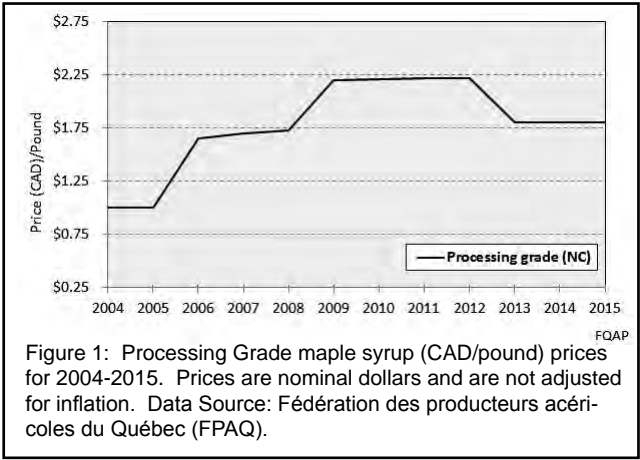
Wide-spread use of RO may also have contributed to the increase by significantly reducing the fuel costs to run evaporators and, in so doing, one of the largest costs of production. In addition, improved spout and tubing sanitation practices have permitted high sap flows to continue late into the season. Whether the sap produced at this time was off-flavor or not was dependent upon the particular season. Finally, the costs of expansion of production for producers in the U.S. resulted in expenses that needed to be repaid, so syrup production continued as long as was possible in several operations.

Several packers of pure maple syrup

indicated that Processing Grade is being further divided into two classes: The first class being off flavored but otherwise acceptable syrup. The second class, often unfiltered and/or ropy syrup brings the lowest price to the producer due to its limited market. The world's largest seller of bulk maple syrup, Fédération des producteurs acéricoles du Québec (FPAQ) was recently selling Processing Grade syrup at a discount to help spur the development of new markets. Developing new markets for Processing Grade syrup as an ingredient in other foods will be the key to ensuring that

overall demand for pure maple syrup increases rather than the same sized pie being cut into smaller pieces. Many consumers are drawn to the pure,

wild and simple story of maple syrup. However, significant growth in the ingredient market for Processing Grade syrup would likely only occur when uniform definitions and rules governing the use of the term "maple" are established and enforced.



Research: Trees and sap

Does Masting Really Lead to Lower Sap Sugar Concentrations?

Michael Farrell, Director, The Uihlein Forest, Cornell University

Timothy D. Perkins, Research Professor and Director, Proctor Maple Research Center, The University of Vermont

Maple producers often wonder about how the weather and various stresses affect the health and productivity of maple trees. In a recent issue of the *Maple Digest*, (February 2015) an article by Joshua Rapp showed a link between masting (heavy seed production) in the fall of one year and significantly reduced maple syrup production in the following spring season. Rapp describes research previously published in the journal *Forest Ecology & Management* with his co-author Elizabeth Crone. In both pa-

pers, they hypothesize that since sugar maples rely on stored nonstructural carbohydrates (NSC) to produce seed during a masting year, there would be less NSC available in sap the following year. Thus, in sugaring seasons following a seed year, the sap sugar concentration (SSC) from trees would be lower than normal, and thus syrup production should be correspondingly lower in that year. While this is an interesting theory that certainly has some merit for further investigation, the methods by which the theory was tested have seri-



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ous flaws that lead to significant doubt in the conclusion. The rest of this article outlines some of the key problems with this study and offers suggestions on how this theory could be tested with more relevant data.

A serious flaw in this logic of this study is the author's use of syrup production totals to calculate SSC. If the authors wanted to test a theory that seed production results in lower SSC the following year, then they should have simply looked at SSC instead of syrup production totals. Limitations in their data sources likely caused them to take the route they did, but that doesn't excuse this faulty logic. As the authors note, it is common knowledge that syrup production is based on both SSC and total sap volume. You could have a situation where SSC was very high but production was low simply because sap volume was down (or vice versa). To illustrate this point, consider the most recent example during a mast-ing year for sugar maples at the Cornell Uihlein Maple Research Station in Lake Placid, NY. During the year 2013 there was a heavy seed year for sugar maples in our sugarbush. Therefore according to the author's theory, syrup production should have been down in 2014. Indeed, 2014 was a worse year in terms of total syrup production than was 2013, so on the surface their theory proves correct.

Looking deeper however, we find that this simple link doesn't offer a good explanation. Regional syrup production was down in 2014 for many producers not because of low SSC, but rather due to low sap volumes resulting from a severe winter with extremely cold temperatures in March extending into April. The length of the 2014 season was therefore very short in

many locations. In fact, SSC was actually higher than average in 2014 season, hovering around 3% for most of the season (based on personal observations), which allowed syrup production totals to only be slightly down even though sap volumes were significantly lower due to the shortened season. According to the authors' theory, SSC should have been significantly lower than average in 2014 due to the investment in seeds the trees made in 2013. Although 2014 turned out to have lower production than 2013, it was entirely weather dependent and had nothing to do with lower SSC. In fact, a somewhat elevated 2014 season SSC resulted in syrup production higher than it would have been otherwise. This is only one example to disprove this hypothesis, however the bottom line is that using syrup production totals as a proxy for SSC has obvious limitations.

Second, the reliance on USDA National Agricultural Statistics Service (NASS) data for syrup production totals presents serious problems. First, the authors attempted to factor in the fact that the industry is growing by fitting a trendline to the data and looking at the difference in the overall trends. However a much simpler and better solution would have been to look at yields per tap. Even this approach fails to take in to account the fact that yields per tap have also been rising, especially over the last decade as producers employ better practices to achieve higher vacuum and improve sanitation practices, and as large, very technologically advanced operations were added. Yields per tap in Vermont have risen significantly over the past decade, even more so than in New York and Maine. This has nothing to do with seed pro-

Sap: continued on page 16

Sap: continued from page 15

duction, but instead reflects a greater adoption of the latest technologies in sap collection.

However, this minor critique is dwarfed by the fact that the NASS data suffers from a serious lack of underreporting by maple producers. Furthermore, the NASS data may be becoming less representative of the maple industry as a whole as new producers enter the market, but are not (yet) represented in their databases. Consider the fact that Bascom Maple Farms reports that they bought more bulk syrup out of New York two years ago than NASS reported was produced in the entire state. We know the NASS data underestimates actual produc-

tion, but we don't know by how much in each state, nor do we know how much it underestimates it now versus in the past. Until we can get a much higher proportion of producers to report their syrup crop numbers, utilizing NASS data to test scientific hypotheses can be problematic at best. It is certainly in our best interests as an industry to have every producer fully report their data to NASS each year. Having accurate data that we can rely on would help in many ways, including in the scientific research being described here.

Finally, what is perhaps most troubling about this study is that it only spans a short time period and the actual data don't really conform to the hypothesis upon deeper inspection. This study spanned over 17 years, during which there were three years identified as having a large seed crop: 2000, 2006, and 2011. Although these data were not

shown in the *Maple Digest* article, they were clearly shown and described in the paper published in *Forest Ecology & Management*. Some highlights from the written descriptions of the sugaring season following these mast years from the NASS reports for 2001, 2007, and 2012 offer other information, though:

2001: *In the five New England states, the 2001 maple season was rated too cold for optimum production. Output from all states, except Connecticut, fell below the previous year. Temperatures were reported to be 58 percent too cold, 31 percent favorable, and 22 percent too warm, reducing yields in Maine, New Hampshire and Vermont. Most reports indicated that*

It is common knowledge that syrup production is based on both SSC and total sap volume... Using syrup production totals as a proxy for SSC has obvious limitations.

there was too much snow to gather sap. The sugar content of the sap was slightly above average, requiring approximately 39 gallons of sap to produce a gallon of syrup.

2007: *Vermont led all states in production with 450,000 gallons, a decrease of two percent from 2006. Sugar content of the sap for 2007 was down from the previous year. On average, approximately 45 gallons of sap were required to produce one gallon of syrup. This compares with 44 gallons in 2006 and 40 gallons in 2005.*

2012: *The 2012 maple syrup season in New England was considered too warm. A series of heat waves in March ended the season for many, and resulted in a significant drop in maple syrup production.*

To recap, syrup production was down in 2001 because it was too cold and snowy, even though sugar concen-

tration of the sap was up. Syrup production was a mere 2% lower in 2007 and sap sugar concentrations were reported to be only very slightly less (2%) than the previous year, requiring 45 instead of 44 gallons to produce a gallon of syrup. In 2012, SSC wasn't reported because it wasn't even worth mentioning given the summer-like temperatures experienced in the middle of March that cut the season short by several weeks. The 2012 data point in Figure 1 of the Rapp article had the lowest "Relative Syrup Production" of all. Removing that single data point would very likely render the model results insignificant as the years 2001 and 2007 are very similar to all other years in "Relative Syrup Production" despite their following masting years. This more detailed examination of the data is extremely troubling for the authors' theory. Having only one of the data points actually report a decrease in SSC (of only 2%) is far from scientifically defensible.

Fluctuations in sap sugar concentrations, as with many aspects of sap flow, remain a mystery to some extent. Although seed production undoubtedly can impact SSC levels, there are many other factors that could have a greater impact. We simply don't know

everything that causes differences in SSC between various trees, locations, or seasons. However, to suggest that a previous year's seed production has a greater impact on total syrup output than the weather during the current sugaring season, which is known to strongly influence sap flow, just doesn't make any sense.

The anatomy and physiology of maple trees and the process of sap collection places limits on the influence that any one sink (demand for sugar, such as seed production) can have on SSC. A tree ring in a maple stem acts as a single unit in some cases, but as a collection of units in others. Since maple trees generally have a number of rings that conduct sap and store carbohydrate (sapwood), and tapholes access sap within a broad zone around the taphole, the sap collected by maple producers originates from a fair number of annual rings within the tree. Given this fact, the contribution of any one ring having low carbohydrate storage in one year (due to heavy seed production) to the overall SSC found in the sap is likely to be heavily muted. This argument is strongly supported and demonstrated by several studies conducted after the 1998 ice storm in northern New Eng-

Sap: continued on page 19



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Sap: continued from page 17

land and New York. Studies in Ontario, New York and Maine all found that trees with 50-75% crown loss in the ice storm produced as much sap and had wood carbohydrate levels over the next several years similar to trees that had little or no crown damage. It is hard to imagine that heavy seeding resulting in a reduction in carbohydrates in one annual ring could produce a greater impact on SSC than the loss of half or more of the crown of a tree.

Despite the problems with this study, the authors' theory does hold some merit, and is worthy of being tested, although there are certainly better approaches to answering this question. If enough Vermont sugar-makers have good records of SSC dating back over the past 17 years and are willing to share their data, we may be able to predict if SSC was indeed lower than average following a seed year. This would only include three masting years and would not be considered a definitive report, but it would certainly be an improvement over the current study. To properly test this hypothesis, a broad and detailed database of records on masting, sap sugar concentration, and other environmental variables is required that can be combined with climatic records to construct a model of various factors influencing sap sweetness. If you know of such a database, I encourage you to contact us at mlf36@cornell.edu or (518) 523-9337.

Along those lines, the UVM Proctor

Maple Research Center (PMRC) does have records of SSC measured as part of its operation from 1988-2015. While a detailed analysis is still being conducted, the average SSC over that time for the entire sugarbush is 2.1°Brix, and 2001, 2007, and 2012 (also heavy seed years at PMRC) are 2.6, 1.6 and 2.1° Brix respectively (one higher than normal, one lower than normal, and one normal SSC), which does not support the hypothesis that heavy seed years consistently produce low SSC. What is clear from these data is what all maple producers already recognize, and numerous studies (in both peer-reviewed and maple industry literature) have repeatedly demonstrated since research on sap flow began: that temperature and precipitation have the strongest influence on syrup yields during the season through their effects on sap flow, and that variations in SSC, while present, are generally fairly modest from year-to-year.

In the meantime, it's never too late to start keeping more detailed records to help understand what is happening in your own sugaring operation. The more data that is made available to NASS and to researchers for analysis, the better we can understand what factors influence tree health and syrup production, for the betterment of the entire maple industry.

Reports from the States and Provinces on the 2015 Sugaring Season

Connecticut

Mark Harran

The 2015 Connecticut maple season looked grim through the first five weeks, but turned out okay. After a very late start and the relatively short season that followed, post-season reports from across the State indicate that the season was a fairly good one for most producers. When the sap started to flow it “gushed” from the trees in huge quantities and generally had high sugar content throughout the season. In fact, a few producers, surprisingly, reported their best crop in a long time. Other producers said it fell short of ongoing exceptions primarily due to the season’s shortness and, in some cases, the inability to tap some trees due to extreme snow depths. A number of producers using 3/16 inch tubing reported great results, especially with vacuum.

Indiana

Keith Ruble and Dave Hamilton

For those who tapped early in February the season showed promise. However, after the first weekend very cold weather moved in and there was no activity until the first weekend in March. For most producers the season ended the third week of March, so the season was only about four weeks long. There was a month delay between the first and second run for many producers.

Most sugar camps in the southern part of the state had a below average to average season while those in the northern sections reported average to better than average results. At least one producer in the north had a record year. Vacuum saved the day for many pro-

ducers as it brought in much more sap than gravity tubing systems or buckets. In one sugar camp with two sugarbushes of the same size, the vacuum sugarbush produced four times as much sap as the sugarbush with a gravity tubing system. One producer used 3/16” tubing and reported good natural vacuum. One reason for the poor sap yield in gravity tubing systems and buckets may be the deep freeze we had this winter. Warmer weather did not occur until March, but the ground thawed gradually and did not thaw through until the season was nearly over.

Most of the maples that are tapped in Indiana are black or sugar maples and this year’s sap had a sugar content of 2.4% to 3.0%. Some sugar makers reported some runs of over 3.0% sugar content. Most of the syrup produced in Indiana was dark with good flavor.

Maine

Lyle Merrifield

On March 10, 2015 Maine had its annual Governor’s Tree tapping at the Blaine House in Augusta, Maine. Many maple producers were there displaying their products, along with the general public and media. This was a great kick off to the maple season.

Maine’s 32nd annual Maine Maple Sunday, March 22, 2015, was a great success. The hardy people of Maine braved the 20 degree temperatures and blowing wind to visit the 100-plus sugarhouses that were open. Nearly all producers reported great crowds, and maple product sales were excellent. Many producers are now open both Saturday and Sunday to spread

out their busy weekend. Maine Maple Sunday is always the fourth Sunday in March.

In, 2015, Maine saw another challenging syrup season. Most sugarmakers in the state were all tapped by the end of February, but then came the waiting game. Little syrup had been made in the State prior to the open house weekend. By the end of March Southern and Central Maine started showing good sap flow. For the most part the State reported good sugar content in sap through most of the season. Sap ran daily for about two weeks straight, giving Southern and Central Maine a good season. Northern Maine, where the largest amount of Maine syrup is made, certainly showed the same late start, but most made syrup into early May. Nearly all of Maine's largest producers made an average crop, or better. Unlike last year, many producers across the State reported making plenty of golden delicate syrup and certainly ample amounts of the other table grades, all with great flavor. Pounds per tap varied across the State from 2.5 to 4.5. All in all not a bad season, just three weeks late.

Maine also recently signed a bill into Law, making Pure Maine Maple Syrup the State's official sweetener. This should prove to be a great marketing phrase.

Massachusetts

Winton Pitcoff

Massachusetts kicked off its season with the annual ceremonial tapping of the first tree. Governor Charlie Baker proved himself quite capable with a brace and bit, but the 20-degree weather in early March didn't allow any sap to flow that day. Or the next. Or through most of March, in fact. Much like last year, Massachusetts producers waited a

long time to get started.

Once the sap did begin to flow in late March, however, it came fast and furious. Some producers reported their best production days ever, and some had record years overall.

Our second annual maple weekend was a great success, with dozens of sugarhouses holding demonstrations and open house events, and more than 40 Massachusetts restaurants featuring menu items made with Massachusetts maple syrup.

Michigan

Debbi Thomas

Southern Mid Michigan: 2015 season started late for us in southern MI, but not as late as last year. We averaged about .35 gallons per tap. We had great sap flow, but terrible sugar content. Started at 1.5% and never saw above 2.5%. Last boil was on April 8. We made no Golden, just Amber and Dark Amber. Another observation for us was very little sugar sand the whole season. Other sugarmakers in southern MI stated same low sugar content in trees in woods and higher sugar content on the roadside trees.

Northwest Michigan: The 2015 syrup season was average in Charlevoix. We produced .33 gallons per tap. The season started quickly on March 7 with 50 degree weather. The previous Thursday it was 28 degrees below zero. First few runs were less than 1% sugar and the syrup was dark amber with good medium to light amber flavor. Production was slow until the last week in March and then we had many good runs.

The syrup lightened up to fancy on March 31. The syrup turned dark on

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April 10th and quit on April 13th. The buds on the trees were still tight but with no freeze for five days the season was over. Boyne Falls producers reported less than average with 900 gallons – they usually make 1200.

Northeast Michigan: We first tapped on March 7. Started the year out with sugar content of 1.1% and after four days it was up to 1.7% where it stayed pretty much for rest of year. Our last boil was on April 12. Possibly could have made more dark syrup as the trees hadn't budded yet but the crew was done.

We didn't get any Golden syrup this year – one or two boils were in the light end of Amber but most right in the middle of the Amber. Only last boil would be considered Dark and even then it had a good flavor.

Flavor was great all season. Toward the middle of season we had some that was at the top for flavor – very smooth and full-flavored.

Michigan's Thumb: We tapped on March 7 and 8 (the kids put in their 151 taps on March 9). March 9-13 had days in the mid to upper 40's, and freezing nights, but flow was slow as snow still covered the ground, and the roots stayed cold. March 14, 15 and 16 didn't freeze, but were followed by another five days of mid to upper 40's in the day, and freezing nights. That was our first big run. March 23 and 24 froze hard, and everything came to a standstill. March 25 and 26 saw low 40s during the day, and very cold at night. March 27 and 28 were below freezing all day both days. March 28, 29, 30, 31 and April 1 had good alternating freeze thaw cycles, and tremendous sap volume. April 3 and 4 was the last good

run, and the taps were all dried up on April 6 and 7.

Central Mid-Michigan: We had quite a good year in Shepherd. The season started on March 12, just in time for Maple Weekend, and ended on April 6. Averaged .35 gallon per tap on the trees with buckets. Sugar content stayed between 2% and 2.75% all season. Those of us that have collected for several years kept saying that couldn't remember when we ever had so many days of collection where there were many, many four-gallon buckets that got full in a one day period. It was plink, plink, and plink in the buckets often. We dump our buckets into a small 80 gallon tank that is pumped up into a 500 gallon tank. We also fill up many pails that we leave on the trailer so we can do 650 to 700 every load. On a few days we did five or six loads in a day. This old tractor driver was getting a kink in his neck from turning around to look where everyone was and how the tank was filling.

It is interesting to contrast our town trees with woods at the Morbark wood chipper factory that they let us tap with tubing and vacuum. The volume is very high but sugar content was generally between 1.5% to 2% all season.

Upper Peninsula: Weather was not favorable for most of the UP with the majority reporting an average of 75% of normal crop.

Minnesota

Ralph Fideldy

The Minnesota Maple Syrup Producers Association had its spring meeting on Saturday, May 16. A record number attended, approximately 90 people.

During the meeting sugarmakers reported a total of 36,043 taps and 8,992

gallons produced this year.

There were some other producers that did not attend that were quite big so we called them. We estimate there are at least 70,000 more taps and 25,000 gallons scattered around Minnesota that we know of. Of course there are many small hobbyists that we are not aware of. This gives a grand estimated total of about 106,000 taps and 34,200 gallons.

Most reported higher sugar content in the sap, usually above 3%, and lighter syrup. Generally an average crop, with some people on buckets saying it was a great year. At least tapping conditions were much easier with less snow in the woods than in 2013 and 2014.

New Brunswick

David Briggs

The season is just finishing up here in New Brunswick as I write this report. This year New Brunswick Maple Syrup Producers had very long hard winter. In mid-January it was beginning to look like we would not have much snow or very little to start the season with. By the first part of February it started to snow and then it never seemed to stop. The southern part of the province was hit the hardest with near-record snowfall amounts. I believe we had close to 500 cms, or 16 feet of snow during the winter. A lot melted in November and December, but after mid-January it started to accumulate. Many in the south experienced so much snow that shovelling lines got to be very tiresome. The north did not see as much snow as the southern part of the Province, so

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Crop Reports: continued from page 23

they did much better. The season usually starts by mid or late March but this year it started about three to four weeks late. It wasn't until about the second week of April that the sap started to flow.

In the south we never saw much above 1 lb. per tap, and as you went further north the amounts per tap increased. In the middle of the Province they saw around 2 lbs. per tap and in the north, where 80% of our production is, they saw close to an average year with 3-4 lbs. per tap. The color varied tremendously all across the Province with very little golden being made in the south, and a lot of golden to amber made in the north. Talking to some in the north, they say that the sun never came out much for a couple of weeks which seemed to save the season for them, because if it had of come out they think it would have ruined it or made

much darker product. The Province produced close to 4 million lbs. of pure maple syrup in 2015, close to an average year for New Brunswick.

New Hampshire

Robyn Pearl

A survey of members of the New Hampshire Maple Producers Association indicated a 90% crop produced for the 2015 season.

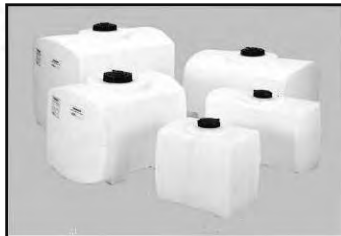
For the second year in a row, cold weather conditions extended deep into what has become the prime sugaring time for New Hampshire, causing many producers to remain frozen out much later than in the recent past. First boiling dates have gradually moved into the end of February for the southern half of the state. This year, sugar-makers noted that the starting and ending dates were more aligned with those recorded in the past by their fathers and grandfathers. In the southern

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part of the state, temperatures followed the historical starting time for boiling, around March 12, with February 20 as the earliest reported date. The northern half of the state began boiling around March 27, with the latest starting date of April 11 reported. The season ended for most producers around April 14, with some sugarmakers experiencing their last boil as early as March 31, and others as late as April 27.

All grades of syrup were made this year, with Grade A Amber Rich Taste creating over 50% of the crop, followed closely by Grade A Dark Robust Taste. Grade A Golden Delicate Taste and Grade A Very Dark Strong were made in much smaller quantities.

The persistence of cold late winter weather created frustration, but once the season was underway strong sap flow made up for the delay and most sugarmakers had great results. High sugar content was reported. Survey responses showed that 41% of producers use vacuum systems and 37% use RO. This seems to indicate that regardless of whatever technology is used, it was a successful season for the vast majority of sugarmakers in New Hampshire.

New York

Debra Welch

The winter of 2014/2015 brought constant, very cold temperatures, and deep snow for most in New York State. A common complaint was that the snow was so fine and fluffy that snowshoes didn't work well, and would actually not work at all in some spots. Snowmobiles bogged down as well. This slowed down the tapping schedule and required adjustments to tapping height due to the depth of the snow. The late cold temperatures also contributed to worries about the season's production.

The season seemed to start slowly in March, later than the February starts of the last decade, and boiling hit peak in early April. Reports are that sap quality varied, and early gathering saw some off-flavored product in certain areas. This quickly cleared up and quality syrup was produced for most of the season.

Our best information is that state-wide production was about the same as last year, maybe even up a little. We don't see it as a record year. Western and Central NY production reports are the same or better than last year. The Hudson Valley did better than last year. Other areas reports are uneven – some higher elevations with heavy snow cover had less than expected, but others in the same area did meet expectations. It seems that the difficulty in getting out to tap did mean some trees didn't get tapped this year. Northeast NY was still making syrup late in April, again with several reporting a good crop.


Nova Scotia

Kevin McCormick

This season was likely the worst ever recorded as far as production and preparation goes in Nova Scotia. Some larger producers started tapping approximately February 10 and then it snowed twice per week for several weeks, leaving Nova Scotia with the largest snow cover most have ever seen. Most collection systems in the province are set up at 4 to 5 feet above ground. The winter's heavy snow fall left areas with over 7 feet of very heavy dense snow in the woods which buried and pulled down tubing systems. Producers attempted to dig and some did so several times only to have another snow storm completely bury the lines again. There were storms that dumped over 4.5 feet in one

Crop reports continued on page 27

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Crop Reports: continued from page 25

week after lines had been dug out from the previous storms. Production didn't start for many producers who were able to dig out lines until the first week of April. Very little syrup was made in March in NS. The digging and shoveling proved just too much for most and once the warmer weather came it was too late for most to recover. The heavy deep snow settling was devastating to the tubing systems and repairs will take months to get things back in shape. Overall, production averaged 30 to 35% of normal. There were a couple of reports of 80% crop but many others reported only 10 to 20%. Approximately 40% of the taps were not even drilled in the 2015 season. It has set the Nova Scotia industry back years and the costs to recover and rebuild collection systems will be very high.

Ohio

Les Ober

It was the first day of March, the trees were frozen and there was up to 30 inches of snow in some local sugar bushes. We had just come through the 4th coldest February on record with some temperatures going as low as 30 degrees below zero in the northern counties. This was not a normal start to the maple season and some producers were starting to wonder if there was even going to be a maple season. However, by the 20th of the month tapping was completed and the sap started to flow. What started out as an almost certain disaster of a year began to show some promise. The runs were slow and steady at first. The peak was reached on the last week of March when traditionally the season would be wrapping up. It continued with good production into the first week of April and then it was over. When the steam cleared most

producers were well under what they produced in 2013 and 14 but were very grateful to receive an average crop.

The breakdown went as follows; SE and SW Ohio had a much later than normal start. They were backed up into March tapping, almost a month late for Southern Ohio. The result was a lower than average yield, with a good portion of the syrup being graded into the dark category. In Central Ohio the tapping was 10 days earlier than in Northern Ohio. They caught a few extra runs with an earlier start and production was average to above average. The producers on vacuum tubing really saw the benefits of that technology. Overall the syrup tended to be on the dark side with a lot of Amber and Robust being produced. Across the northern half of Ohio tapping was late. Most were tapped around the 15th of March. The persistent cold weather at the end of March kept most producers in the game, producing good quantities of syrup right into April. Syrup color and grade was all over the place with good amounts of lighter syrup and darker grades being produced.

This was a very unusual season in that Southern and Northern Ohio producers started and ended at almost the same time. For most Ohio producers the average tapping date was the first week of March and the last boil came around the 6th of April. That is very unusual given the variability of climatic conditions from the Ohio River to Lake Erie. The sugar content was excellent for many producers and miserable for others, ranging from 1.2 to 2.5% sap. The super cold weather in February may have contributed to lower than normal sugar contents in some locations. Most producers finished with close to an av-

Crop reports continued on page 31



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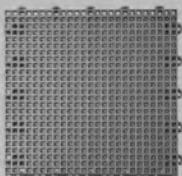
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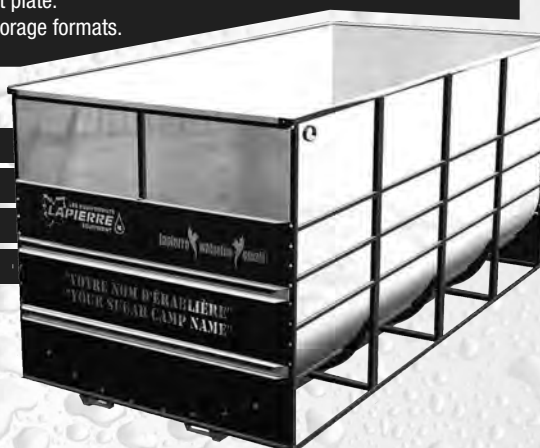
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Crop Reports: continued from page 27

erage year. You can partially attribute this to expansion and more taps coming on line. However, if you ask producers using vacuum tubing systems instead of gravity tubing or buckets, they will tell you it is the new technology that keeps production steady. Technology has acted as a buffer against the year-to-year production variability that was often experienced in the past. Even though there is a good possibility that production will fall off in 2015 due to the late start, Ohio and other states will still produce good volumes of syrup and will be able to meet the growing demand for pure maple syrup.

Ontario

Ray Bonenberg

Ontario experienced another unusually cold winter, especially February, with no winter melt to compact the snow. The ground was frozen deep in all areas and tapping in March was tough due to non-compacted snow.

Despite a warm second week of March, where some southern producers made some Golden syrup (with very low sugar percentage sap!), serious runs were not experienced until the end of March. As a result of very frozen trees and cool winds off frozen Great Lakes, the sap flow was not robust, but in some areas was steady. Sugar content gradually increased in April, and the runs were steady until the third week of April.

The more southwestern areas had an above-average year with some reporting up to five pounds per tap. Even some bucket operators reported three pounds a tap (1 litre per tap) in that area. As we move to the east and north side of the Province, yield was less due to the constant cold weather and no real major

“run.” Producers on high vacuum did well, lower vacuum and gravity/bucket systems had much lower yields, some as low as less than one pound per tap.

Overall, it was an average to above average yield in most areas. Producers with north- and east-facing sugar bushes struggled due to the cold and the lack of ability of the trees to thaw. Quality was exceptional with most making Golden to Amber syrup (IMSI standards) with few making Dark to Very Dark. Even the Very Dark did not have the typical strong taste normally associated with later season syrup.

Pennsylvania

Wayne Clark

The season started during the middle of February in Somerset County, south-west PA, allowing them to have a good year. One producer averaged well over two quarts per tap on 3,600 taps.

The northern counties didn't start until the second week of March. Most reported having good production with a quart or better per tap. Reports from the northwest indicated that anyone that was ready when it broke had good to excellent production. Some were not ready because of having to tap in hip-deep snow. One producer said he boiled every day.

Most producers in Tioga County had average to very good production. Some didn't do as well for various reasons.

Potter County, just west of Tioga in the north-central mountains, didn't do as well. One producer only had 1,200 gallons on 9,000 taps. Another didn't do well either, only boiling twice in March. Second hand reports point to Bradford County having a very good year. There were no reports from this northeast-

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ern section, but I would assume they should have had a good year.

Quebec

Federation of Quebec Maple Syrup Producers

Like the previous two years, 2015 was another outstanding harvest season for Quebec's maple syrup producers, who, with 42.3 million taps in operation, produced 107.2 million pounds of maple syrup, for an average yield of 2.53 pounds per tap.

A season marked by a very late start

This spring, unusual weather conditions delayed the beginning of the sugaring season. The southernmost regions, Saint-Jean-Valleyfield and Saint-Hyacinthe, had small flows by mid-March. However, the persistent cold slowed the thaw, which resulted in all

of Quebec's first major flows occurring only in mid-April. Three-quarters of production took place during the last three weeks of April. Some more easterly regions harvested until early May.

"Many feared that the long, cold winter would affect production. However, in the maple syrup industry, you should never count your chickens before they're hatched. Predicting production results is practically impossible. Mother Nature always has the final say," said Federation of Quebec Maple Syrup Producers president Serge Beaulieu. "Again this year, the cold spring was good for maple syrup production in general. The Bas-Saint-Laurent/Gaspésie region benefitted the most from the ideal weather and had the best yields—2.96 pounds per tap."

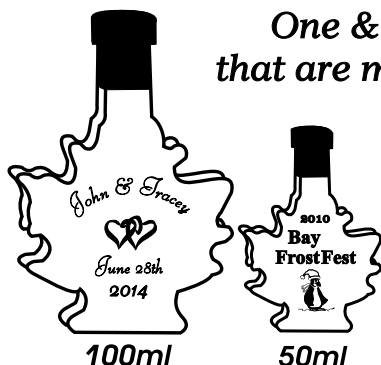
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The 2015 harvest did not surpass the 2013 record of 120.3 million pounds or last year's tally of 113.7 million pounds. However it does rank as the fourth best harvest on record, just below the 2009 harvest of 109.4 million pounds. Furthermore, nearly 73% of the maple syrup already inspected has been classified in the top three categories, Extra Light, Light and Medium. This excellent harvest represents nearly 217,000 barrels of maple syrup for quality inspectors to classify and inspect.

A record year for sales

The sales agency set a sales record for the second year in a row—a total of 97 million pounds of maple syrup—relegating 2014's high of 92.7 million pounds to second place. The new record is partly explained by the sugaring season's late start like last year. During the regular marketing year set out in the marketing agreement, from February 28 to February 27 of the following year, the Federation sold 88.7 million pounds. Because of the late season, it then agreed with buyers to allow sales of maple syrup produced in 2014 and preceding years until May 12, 2015.

With the extended marketing year, an additional 8.3 million pounds were sold to achieve 97 million pounds overall. These sales also dropped the strategic reserve level to 60.7 million pounds. Since 2010, the agency's sales have increased 10.5% annually from 58.9 to 97 million pounds this year.

Rhode Island

Thomas Buck

Waiting for the season to begin this year was an exercise in patience. While last year had members tapping in January, this year had about all members tapping around March 6th. Keep in mind, on average we tap in the be-

ginning of February. With a couple of feet of snow in January, February and into March, this is the first time that I know of where RI members needed snowshoes to get into the woods to tap. I know there are other states that are saying that 'that's nothing new, we do it all the time.' So, it looks like snowshoes may be a part of our maple equipment from now on.

When the sap did run in March, it came in gushes, probably because the temperatures were in the 40s and 50s during the day and 20s at night. With tap holes fresh, the trees ran well in RI. Our taps increased more than 5.7%, from 7,100 taps to 7,531 taps. Syrup Production increased 13.5% to 1,134 gallons, even with a short season, and with one member not tapping this year. Just about all members used the new grading system this year, and it was received well from the public. Grades produced were of all four grades of syrup with most graded as dark strong taste and dark robust taste.

Most of our members ended their season between April 6 and 10, which appears to be the latest from memory in RI. New equipment was installed, from more tubing lines, and larger evaporators, to R/O machines. The Vice President of the RI Maple Syrup Producers about tripled the size of his evaporator this year with a new 2 ½ X 10 La Pierre evaporator.

Therefore, Rhode Island was ready, as we had extra time to prepare for large and small additions. Worries were quelled, as the syrup was produced. Thankfully, 2015 was sweet.

Crop reports continued on page 34

Vermont

Paul Palmer

By and large, the 2015 maple season won't go down in the record books for being one of the best or one of the worst. It is still a bit early to have total production numbers for the state but most producers were happy to make 75 to 80% of a crop, considering how late it began.

As usual, geography played an important role in the overall production numbers. Those in the warmer areas, the southern part of the state or in the valley locations, were mostly blessed with good sap runs that resulted in full production totals. The producers in the colder spots and those in areas of elevation tended to struggle a bit more for the syrup they made. Anyone with bucket operations really felt the sting of the cold spring weather and lower production totals.

The quality of syrup for this year's crop is excellent. There are reports of mostly Golden/Delicate syrup being made for many throughout the state. There were a few producers that only made darker syrup, but these are more the exception than the rule. The reports coming in also indicate there was very low production of off-flavored syrup. The color and quality were good right up until the end.

Although it wasn't a banner year for individual producers, Vermont continues to add taps as our maple industry continues to grow. With these additional taps, Vermont may see overall production numbers increasing over previous years.

Wisconsin

Jim Adamski

The 2015 Wisconsin maple syrup season for most producers started in early March. Snow cover this year in Wisconsin was at a minimum, with the southern half of the state seeing bare ground for a good portion of the winter and the northern half of the state also seeing below average snowfall.

The southern half of the State was average to slightly below average. The weather conditions made it challenging for the southern half of the State, with limited sap flow until the frost came out of the ground. Production in the southern half of the State started for most around the first week of March. The syrup quality was good with most of the syrup being produced in the medium amber color. Production in the southern half of the State concluded around the first week of April.

The northern half of the State had an average to above average crop. The weather conditions were very favorable for syrup production with most producers starting around March 7. Syrup quality was very good in the northern half of the State with the majority of the crop in light amber to a very light medium amber color. Some producers reported sap yields on vacuum tubing of 28 gallons per tap and above. Production in the northern half of the State concluded between April 8 and 15.

Overall the production year in Wisconsin was good. The entire state reported very low sugar content with the first runs on the tubing systems being 1 brix. This is a very unusual situation in Wisconsin to have very weak sugar for the majority of the season.

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Committee & Information:

Dan Tassier (906) 630-0238, **Todd Petersen** (231) 342-6842,

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New Members Welcome!

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The NAMSC Research Fund funds research that supports and advances the maple industry. In recent years we have given tens of thousands of dollars to projects that have developed innovative practices and technologies, helped deepen our understanding of the science of sugarmaking, and promoted the products we all make.

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The NAMSC Research Fund is a non-profit, volunteer committee of the North American Maple Syrup Council, Inc.

U.S. Crop Production Report

Released June 10, 2015, by the National Agricultural Statistics Service (NASS),
Agricultural Statistics Board, United States Department of Agriculture (USDA).

Maple Syrup Taps, Yield, and Production – States and United States: 2013-2015

State	Number of taps			Yield per tap			Production		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
	(1,000 taps)	(1,000 taps)	(1,000 taps)	(gallons)	(gallons)	(gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)
Connecticut	78	83	85	0.256	0.193	0.224	20	16	19
Maine	1,880	1,850	1,850	0.298	0.295	0.299	560	545	553
Massachusetts	280	290	310	0.225	0.210	0.242	63	61	75
Michigan	490	430	470	0.302	0.244	0.270	148	105	127
New Hampshire	470	490	560	0.264	0.229	0.275	124	112	154
New York	2,200	2,200	2,310	0.261	0.248	0.260	574	546	601
Ohio	440	450	440	0.352	0.289	0.261	155	130	115
Pennsylvania	583	588	620	0.230	0.248	0.266	134	146	165
Vermont	4,200	4,350	4,490	0.352	0.310	0.310	1,480	1,350	1,390
Wisconsin	740	700	760	0.358	0.286	0.283	265	200	215
United States	11,361	11,431	11,895	0.310	0.281	0.287	3,523	3,211	3,414

Maple Syrup Season – States and United States: 2013-2015

State	Date season opened ¹			Date season closed ²			Average season length ³		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
	(date)	(date)	(date)	(date)	(date)	(date)	(days)	(days)	(days)
Connecticut	Jan 2	Jan 14	Feb 1	Apr 28	Apr 22	Apr 20	41	35	27
Maine	Jan 13	Jan 14	Feb 9	Apr 30	May 11	May 8	39	29	27
Massachusetts	Jan 8	Feb 5	Mar 14	Apr 15	Apr 26	Apr 11	36	31	28
Michigan	Jan 30	Feb 19	Mar 1	Apr 29	May 6	Apr 27	32	24	26
New Hampshire	Jan 1	Jan 10	Mar 18	Apr 26	May 1	Apr 13	38	30	26
New York	Jan 4	Jan 13	Jan 12	May 1	May 3	May 16	40	32	26
Ohio	Jan 10	Jan 13	Jan 19	Apr 18	May 3	Apr 23	37	30	27
Pennsylvania	Jan 10	Feb 5	Jan 15	Apr 30	Apr 30	Apr 30	39	32	28
Vermont	Jan 8	Jan 10	Jan 1	May 1	May 23	May 5	41	28	26
Wisconsin	Feb 15	Mar 8	Feb 28	May 28	May 4	Apr 15	29	23	23
United States	(X)	(X)	(X)	(X)	(X)	(X)	37	29	26

(X) Not applicable.
¹ Approximately the first day that sap was collected.
² Approximately the last day that sap was collected.
³ The average number of days that sap was collected.

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International Maple Syrup Institute News

The most recent International Maple Syrup Institute Board of Directors and Committee meetings were held in Croghan, New York, May 14-15, 2015. Some highlights from the meetings were:

- State and provincial IMSI delegates shared preliminary information on the 2015 maple crop. There was not a lot of the darker color classes of syrup made. Syrup quality was reported as very good across all color classes with very little off-flavored syrup. The Quebec Federation sold 8 million pounds from the quota leading up to the 2015 harvest. The strategic reserve may dip below 60 million lbs. The Federation may release some quota in 2015/16. It is expected that there will be sufficient syrup overall to meet market demand in 2015.

- The IMSI has produced an informational brochure to explain its work and values. Copies can be obtained upon request from Dave Chapeskie, Executive Director, IMSI

- For over a year now, the IMSI has had a committee working on a Market Study to develop a more global approach to marketing maple syrup, especially in the U.S. The draft strategy was approved in principle at this meeting with unanimous support of all Board members. The goal is to grow maple syrup consumption by 10% per year for the next seven years, effectively doubling the maple market size from about 1% to a 2%

share of the total sweetener market, currently dominated by corn syrup (55%) and cane/beet sugar (44%). This will be accomplished by:

- 1) emphasizing good forest management and production practices across the maple industry and
- 2) by working across maple's political, geographical, size and functional role (producers, packers, etc.) boundaries which have historically constrained cooperation in the marketing arena.

Accomplishing the many objectives and tactics will take time, but

it is seen as a huge step in the right direction. Important next steps will be setting priorities for implementation of the plan and securing financing to support implementation.

- The North American Good Management Practices (GMP) for eliminating lead in maple syrup production and packing equipment developed by the IMSI have been well received by producers and packers of maple syrup in Canada and the United States.
- A study group has been working on a standard of identity for maple sap and or maple water. A workshop-style committee meeting was held where some representatives from the maple water/sap industry were brought in to provide feedback. Work will continue on this initiative, with emphasis on developing recommen-

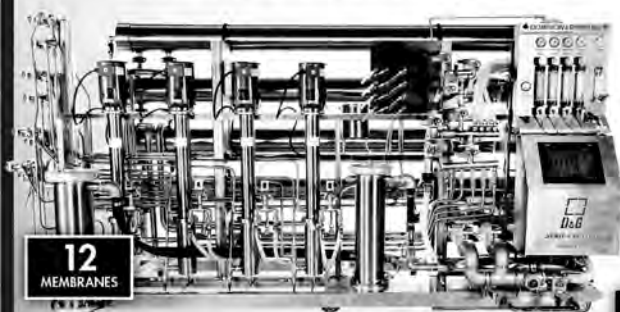


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dations regarding labelling of these products, including RO water.

- A detailed Environmental Impact Statement was produced by the U.S. government on options to manage the Asian Longhorned Beetle. A letter was submitted by the IMSI suggesting a total containment and eradication option. A copy of that letter is available from the IMSI Executive Director upon request.
- Most maple jurisdictions, with the support of the North American Maple Syrup Council (NAMSC) and IMSI, are requesting that government agencies declare March "Maple Month." This is a good opportunity to showcase maple and to get politicians involved and supporting the maple industry.

IMSI Board of Directors meetings scheduled in 2015 will be held in Longueuil, Quebec (near Montreal) on Tuesday, August 11, and in Seven Springs, Pennsylvania on Monday, October 19. The IMSI Annual meeting will be held in Seven Springs, Pennsylvania on Tuesday, October 20.

This IMSI meeting summary does not cover all important information discussed at the IMSI's recent meetings. More detailed information will be available in the IMSI Board of Directors and Committee Meeting Minutes when these are finalized in early June. You may contact the IMSI's Director, if you are seeking additional information.

*Dave Chapeskie R.P.F.
Executive Director, IMSI*

Maple Syrup Now the Official State Sweetener of Maine

In Maine, legislation designating maple syrup as the official state sweetener was sponsored by Representative Russell Black of Wilton and co-sponsored by eight other representatives and one senator. Support for the bill was bipartisan and nearly universal. The bill received extensive positive written and verbal testimony from producers, the Maine Forest Products Council, Maine Farm Bureau, fellow legislators and outdoor writers. A few people objected to the bill, calling it frivolous, but supporters convinced legislators that the bill would cost Maine taxpayers nothing and offer maple producers an opportunity to enhance their marketing, create new promotional opportunities and build on Maine's and maple syrup's quality reputation. The bill was signed by Senate President Michael Thibodeau and sent to Governor LePage and became law in May.

NAMSC Communications Committee News

The NAMSC Communications Committee has organized two conference calls this year among delegates, alternates, and other state and provincial industry leaders. These calls are an opportunity to discuss industry issues and to share ideas and resources among the local associations. If you're interested in participating in these calls, contact your NAMSC delegate for more information.

2015 Inductees to the Maple Hall of Fame

Cécile Pichette

Cécile was born on April 26, 1947 in Montreal. She grew up and studied in St-Lin-Laurentides, then in St-Jérôme in Québec.

In 1967, she earned her Bachelor of Education degree, and she began teaching in 1967. She was a devoted teacher for 35 years and highly committed to her elementary school students.

On December 28, 1968 she married Jean-Robert Pichette. The couple had three children of their own and adopted a fourth.

Mr. Pichette's family ran a maple farm. He loved sugar making, while Cécile didn't know a thing about the business. Unfortunately, he was nev-

er to own the family sugar bush and dreamed one day of acquiring his own. It was 1980 before the opportunity presented itself and his dream finally came true. At that time, he was working for a Cooperative so he suggested (strongly) to Cécile to become his sugar bush co-owner so he wouldn't find himself in a conflict of interest. Despite her lack of knowledge of syrup making, she accepted and never regretted it.

With the purchase in 1981 they became members of the Citadelle Maple Syrup Producers' Cooperative.

In 1990, Cécile started working for Citadelle as a regional representative. In 2002, as she neared retirement from her teaching career, she was offered the position of administrator. She decided

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to take up the challenge. She has also been involved with the Cooperative's education committee, of which she has been president for several years.

In 2005, she was named President of the organizing committee for the North American Maple Syrup Council congress held in Trois-Rivières in Québec.

In 2007, she was named Vice President of the Citadelle Board of Directors and member of the executive committee. She represents Citadelle on the North American Maple Syrup Council (NAMSC). Cécile was Vice President (2010-2011) and then President of NAMSC (2012-2013).

Cécile's motto is: "Together, we must produce a good product, whether we are in the U.S. or in Canada."

Debbie Richards

Debbie Richards was born into a maple family and knew at an early age she wanted to run the family business. Debbie's Grandparents began Richards Maple Products in 1910. Her parents, Paul & Clara Jean Richards, were the next Richards to run it. And then Deb and her husband took over.

She became involved with the Geau-

ga County Maple Festival, like her father, eventually becoming president of the festival for two years. Like her parents, Deb was inducted into the Geauga County Maple Hall of Fame. This had been a secret desire and goal of hers since her parents were inducted. Her grandparents had been among the first inductees.

Deb also had another secret goal, to become involved with the IMSI, and waited patiently for her father to step down as the delegate from Ohio. She had been attending the October conferences on and off since the mid 90's and reading the minutes of the meetings that were mailed to Paul. She became involved with the Ohio Maple Producers Association and was eventually nominated to be the IMSI delegate, and then became president for two years.

A few years later, the Ohio Maple Producers presented her their highest award – the Charles Keiter Award – for her contributions to the maple industry. This was another award that she shared with her father. And now the highest award (and another she gets to share with her father, as the first father-daughter pair), induction in to the Maple Hall of Fame!

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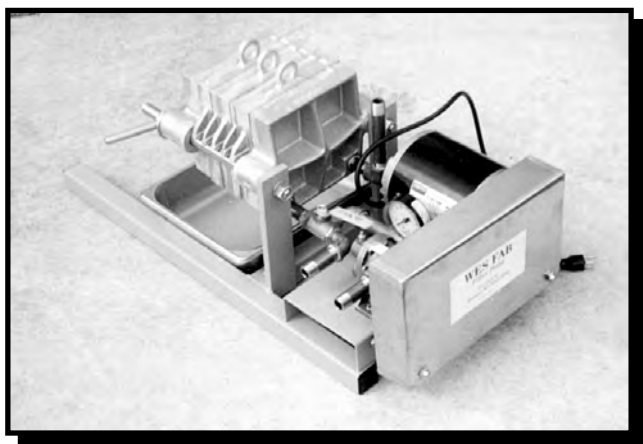
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Research: Tubing

2015 3/16" Maple Tubing Cooperator Trial

Stephen Childs, NYS Maple Specialist

During the 2015 maple sap season the Cornell Maple Program conducted a small trial, testing sap yield from 5/16" tubing vs. 3/16" tubing. This trial was not conducted at the Arnot Research forest but with a small maple operation cooperator. The tubing system consisted of six lateral lines, three 5/16" and three 3/16" alternating between the two treatments across the hillside. The lines were set up on a previously untapped forest with a north facing slope with tapped trees ranging from 10" to 19" in diameter. Each line had between eight and 11 taps per line and averaged about 220 feet in length. The slope of the woods was very consistent with a drop of about 23' from the tops of the lines to the collection tanks. The three 3/16" lines had a total of 32 taps and the 5/16" lines had a total of 26 taps. The spouts were all new black 5/16" plastic with 3/16" fittings for the 3/16" tubing and 5/16" fittings for the 5/16" tubing. Trees were tapped on March 11 in deep snow.

The total yield per tap with the 5/16" was 11.25 gallons of sap per tap and the yield from the 3/16" tubing was 18.2 gallons of sap per tap. On several occasions the tanks collecting from the 3/16" were running over when the co-operators arrived to collect the sap. The 5/16" tanks did not have this problem. Sap collection was finished on April 9. The installation time for setting up the 3/16" lines verses the 5/16" lines was identical. The yield difference between the 3/16" setup and the 5/16" set up is at least 6.95 more gallons of sap per tap or an increase of 62%. That would represent a little more than an increase of one pint of syrup per tap or a total increase of four gallons of syrup from the 32 taps. The Cornell Maple Program also looked at vacuum levels at a variety of elevation drops on taps. That study was conducted at the Arnot Forest and will be written up for a future article.

Massachusetts to Host Maple Dessert Contest

The Massachusetts Maple Producers Association is sponsoring the first annual Massachusetts Maple Syrup Dessert Contest at the 2015 Big E. The contest will be held on September 29 in Springfield, MA, and is open to anyone 18 years old or older. Participants will enter original dessert recipes made with maple syrup, and will be judged based on flavor and appearance. More details are available at <http://goo.gl/M0p5MS>.

North American Maple Month is Coming

NAMSC and IMSI are collaborating to organize North American Maple Month, in an effort to highlight the pure, natural, and nutritious product that is maple syrup and the unique North American maple syrup industry that produces it. A website will be launched later this year, and extensive press outreach will be conducted. Contact your state or provincial NAMSC or IMSI representative for more information on how to participate.



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Could Maple Syrup Help Cut Use of Antibiotics?

Syrup extract found to make antibiotics more effective against bacteria

McGill University Media Relations

Recent findings, published in the journal *Applied and Environmental Microbiology*, suggest that combining maple syrup extract with common antibiotics could increase the microbes' susceptibility, leading to lower antibiotic usage. Overuse of antibiotics fuels the emergence of drug-resistant bacteria, which has become a major public-health concern worldwide.

Prof. Nathalie Tufenkji's research team in McGill's Department of Chemical Engineering prepared a concentrated extract of maple syrup that consists mainly of phenolic compounds. Maple syrup, made by concentrating the sap from North American maple trees, is a rich source of phenolic compounds.

The researchers tested the extract's effect in the laboratory on infection-causing strains of certain bacteria, including *E. coli* and *Proteus mirabilis* (a common cause of urinary tract infection). By itself, the extract was mildly effective in combating bacteria. But the maple syrup extract was particularly effective when applied in combination with antibiotics. The extract also acted synergistically with antibiotics in destroying resistant communities of bacteria known as biofilms, which are common in difficult-to-treat infections, such as catheter-associated urinary tract infections.

"We would have to do in vivo tests, and eventually clinical trials, before we can say what the effect would be in humans," Tufenkji says. "But the findings suggest a potentially simple and effective approach for reducing antibiotic

usage. I could see maple syrup extract being incorporated eventually, for example, into the capsules of antibiotics."

The scientists also found that the extract affects the gene expression of the bacteria, by repressing a number of genes linked with antibiotic resistance and virulence.

All maple syrup samples used in the study were purchased at local markets in Montreal, then frozen until the beginning of each experiment, which involved a series of steps to produce the phenolic-rich extract.

Tufenkji, who holds the Canada Research Chair in Biocolloids and Surfaces, has also studied the potential for cranberry derivatives to fight infection-causing bacteria. The new study is co-authored by postdoctoral fellows Vimal Maisuria and Zeinab Hosseinidoust.

Funding for the research was provided by the Natural Sciences and Engineering Research Council of Canada and the Canada Research Chairs program.



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Status of Adoption of New Maple Syrup Grading Regulations

International Maple Syrup Institute

Canada

The approved final Maple Grading Amendments and requirements were published in Gazette 2 on December 31st, 2014. Gazette 2 can be accessed at <http://canadagazette.gc.ca/rp-pr/p2/2014/2014-12-31/html/sor-dors297-eng.php>. CFIA registered establishments and maple syrup imports and exports in all provinces are subject to the MPR grading requirements. Maple syrup sold within the different provinces is subject to any applicable provincial regulatory requirement. Only Ontario and Quebec currently have provincial-level maple grading regulations in place. The approved regulations allow for a two-year transition period to accommodate the new Canadian maple grading requirement.

Ontario

Following a sustained and active lobbying effort by the Ontario Maple Syrup Producers Association (OMSPA) and its membership, the Ontario government has made a commitment to both OMSPA and IMSI officials to open Ontario Maple Regulation 119/11 and, after public consultation to be scheduled in the late spring and/or summer, consider adopting the maple grades regulatory amendments proposed by the IMSI with a commitment to have amendments in place for the 2016 maple syrup production season.

Quebec

Senior officials of the Quebec government have recently indicated that they support the maple grades amendments and would be moving to amend the provincial regulations. It is anticipated that the regulatory amendments will be in place at the provincial level in Quebec by January 1, 2016.

The Federation of Quebec Maple Syrup Producers is committed to aligning their grading and classification system with the IMSI Proposal. This is separate from maple grading regulations administered by the Quebec government.

United States

The final notice for the revision of the voluntary USDA Standards for Grades of Maple Syrup were published in the Federal Register on January 29, 2015 and were effective March 2, 2015. USDA did not allow for a transition period.

Vermont

The Vermont Agency of Agriculture and the Vermont Maple Sugarmakers Association are assisting implementation of the new grading rules that went into effect on January 1, 2014. There was a one-year grandfather period to use existing grade labeling, and a three-year period for sales of Vermont syrup within the State of Vermont to use both the old and the new grading systems.

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Grades: continued from page 49

Maine

A bill passed in the Maine Legislature replaces the existing maple syrup grading system for the State with the new grading system proposed by the International Maple Syrup Institute. The bill was to take affect only upon adoption of the new grading system by the United States Department of Agriculture and the Canadian federal government. Since both the Canadian and US Federal governments have announced the final maple amendments, Maine will be implementing the new standard in 2015 with a one-year transition period.

New York

New York State government officials developed Maple Grades Regulations, incorporating the IMSI's Maple Grades proposal. Public hearings on the IMSI Grades proposal were held in 2013. The grade changes proposed by the IMSI took effect New York State effective January 1, 2015.

Ohio

It is expected that Ohio will adopt the USDA standards.

New Hampshire

The new grade rules were approved on December 16, 2014 and must be complied with by January 1, 2016 at the latest.



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Fadden Family Honored by Legislators and Governor

James Fadden, Jr., along with his father, James, Sr. and his son James, were honored Thursday, February 19, with proclamations from the New Hampshire Senate and House of Representatives in recognition of their unprecedented 7th win of the Lawrence A. Carlisle Memorial Trophy awarded by the New Hampshire Maple Producers Association (NHMPA).

Governor Hassan also gave her congratulations to the Faddens in a private gathering in the Executive Council chambers.

The Lawrence A. Carlisle Memorial Trophy is awarded annually by the New Hampshire Maple Producers Association for excellence in production of maple syrup. The Fadden family, of



North Woodstock, NH, has won the award seven times for the finest quality maple syrup produced in NH. This award is made in recognition of the outstanding service and devotion

of Lawrence A. Carlisle to the welfare and development of the maple industry of New Hampshire. More information on the contest is available at www.nhmapleproducers.com.

Goodrich's Wins Big at VT Farm Show

Goodrich's Maple Farm of Cabot, VT, won several blue ribbons at the 2015 VT Farm Show:

- Best of Class for Amber Rich maple syrup
- Best of Class for Dark Robust maple syrup
- Best of Class for Maple Sugar & Best of Show for all Maple Products with the sugar.
- Glenn Goodrich was awarded Outstanding Sugarmaker award for his many contributions to the maple industry.



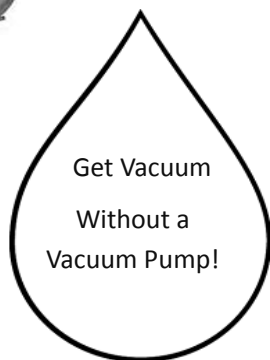


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Upcoming Maple Events

The 2015 **Cornell Maple Camp** will be held **July 22-25** at Cornell University's Arnot Teaching and Research Forest in Van Etten, NY. The session is designed for anyone who wishes to become a maple producer or those with some experience who are seeking to expand their production, products and marketing through focused and hands-on intensive training that helps them produce maple products with greater efficiency and profitability. Details and registration information are at <http://goo.gl/t7PFmX>.

The Caledonia County Maple Association will host the 2015 **Vermont Maplerama** on **July 23-25**. Activities will begin with the trade show on the 23 at the Caledonia County Fairgrounds in Lyndonville. There will be a full day tour in coach buses to a variety of maple operations in the county, ranging in size from 2,000 taps to 6,000 taps. Saturday, there will be travel to adjoining Essex County, to visit the new Sweet Tree facility, one of the largest maple operations in the US, as well as other large and diversified operations in the county. Details are available at <http://goo.gl/n9eeFH>.

Adirondack Maple School at Paul Smith's College in Paul Smiths, NY, will offer a number of courses this summer, including Developing a Profitable Sugaring Operation (**August 1-4**), and Sweet & Savory: The Art & Science of Cooking with Maple (**August 5-8**). Details are available at <http://www.paulsmiths.edu/summer/mapleschool>.

The **Onondaga County Maple School** will be held on **October 3**. Contact: Kristina Ferrare, Cornell Cooperative Extension of Onondaga County. 315-

424-9485 ext 231. www.ExtendOnondaga.org

The 2015 **Pennsylvania Maple Tour** will be held on October 17. The tour will visit four sugarhouses and will be based out of the New Centerville Fire Company Banquet hall in New Centerville, PA. Details are available at www.somersetcountymaple.org, or contact Matthew or Stephanie Emerick at 814-324-4345.

The Federation of Quebec Maple Syrup Producers will hold an **International Maple Symposium and Sugar Bush Downtown Show** at the Centre des Congrès de Québec, from **November 19-21**. This event will target the public at large as well as maple growers and collaborators in the maple industry. It is meant to embody an exceptional platform for presenting and broadcasting information on the maple and all its facets. For further information, contact ga@agccom.com.

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