Maple Syrup Digest

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2021 International Meetings
Taphole Longevity
Season Reports

The Newsletter of the North American Maple Syrup Council

MAPLE SYRUP DIGEST

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Greetings from your President

I should be in Croghan, NY for the Maple Hall of Fame Induction, but for the second-year the in-person meeting has been cancelled. I have yet to make it to Croghan – seems like something comes up to prevent it every year. There was a virtual ceremony on May 15 which I hope many of you were able to log in to. I'd like to congratulate Tim Perkins and Mark Harran as 2021 inductees along 2020 inductees Joe Polak and Ray Bonenberg. *(A video of the event is available at https://www.youtube.com/watch?v=W2pS_RpXo24. Abbreviated profiles of the inductees are on pages 44-45 of this issue.)*

Your executive board and delegates held their mid-year meeting on May 5. Our meeting opened with consultant Bill Corwin giving us an update on the strategic planning committee activities. Bill has conducted many phone interviews along with email surveys. If you responded to Bill in any way in this process, I thank you for taking the time to do so. The information he collects will invaluable for Bill and our working committee in putting together our updated strategic plan. I am looking forward to our next report from Bill.

That was followed with delegates reporting on their state or provence's season. No one had a full crop – most reported anywhere from 50-80% of a normal year. Many delegates reported low sugar content and short seasons. Some said it was too cold, some too warm. Overall Mother Nature was not very kind to maple producers in 2021.

Plans are moving along for our Annual convention this October in Niagara Falls, NY. They have a great program for us and I'm looking forward to attending. The dates are October 18-20. Registration is open now. There is also a two-day grading school following the convention. I hope to see many of you there.

Maple weekends and open houses were held, although not as many as in 2019. The few I talked to said it was great to welcome visitors to their sugarbushes again and all had a great turnout. People were anxious to get outdoors and found visiting a sugarbush to be a fun-filled educational day.

Winton has been sending e-newsletters out occasionally. Each one is packed with information. If you haven't received one, it means Winton does not have your email address. His list is generated from the lists some associations have shared with him, while others relay the messages to their members themselves.

Remember that our Education Committee is looking for proposals from state and provincial associations. In past years, Minnesota and Ontario used grants to put together great educational programs. We look forward to seeing ideas from other associations this year.

Take care everyone.

Debbi Thomas
NAMSC President

In this issue...

Seeking Photos

We're alwats looking for good maple photos for the *Digest*. Send to mapledigest@gmail.com.

Cover: The sugarhouse at Laurel Fork Sapsuckers, in Hightown, VA.

Register Now for International Maple Meetings, October 17-20, Niagara Falls, NY

The New York State Maple Producers' Association is proud to host the annual meetings of the North American Syrup Council (NAMSC) and the International Maple Syrup Institute (IMSI) this year in Niagara Falls, NY, October 17-21.

Monday's events will feature NAMSC and IMSI board meetings, the "Taste of New York" Banquet in the evening, and a live auction to benefit the NAMSC Research Fund.

Tuesday's schedule includes speakers and a gourmet banquet.

Wednesday's events center around technical presentations from maple reseachers and extension specialists.

The conference will be followed by a two-day grading school.

The full schedule and registration materials are available online, at: **https://nysmaple.com/2021-international-maple-conference/**

Donate Items to Support Maple Research

The New York State Maple Producers Association (NYSMPA) is putting the final touches on the arrangements for the joint convention for the North American Maple Syrup Council and the International Maple Syrup Institute to be held in Niagara Falls, NY in October. For decades, a highlight feature of the conference has been the auction of donated items in support of NAMSC's Research Fund. Items ranging from huge handmade quilts, to an elusive Burr sap spile, to an intricate collectable belt buckle, to a one-off 100-year-old wooden sap vessel have all gone on the auction block in past years, with lucky bidders going home with new swell items, along with the knowledge that every dime they spent went to support maple research.

Individuals, maple organizations, and businesses are all welcome to support the Research Fund with donations of items for the auction. The auction routinely includes new equipment and regional items of interest. Antiques and artifacts of the maple industry also generate interest and attract bidders. Locally significant hand-made items like quilts, wood carvings, paintings, weavings, table runners, original photographs (especially those with maple themes) also have a significant following and do well during the bidding process.

We have a live auctioneer for the evening, and the event will include the typical 'silent' sheet-bidding process as well as a traditional live auction featuring several of the big-ticket items.

If you'd like to donate an item, a photo of the item(s) and a statement of the estimated value would help us organize the auction and give the auctioneer a chance to preview his task. If you send your contribution prior to the convention, we will acknowledge receipt and make sure that the items are moved to the convention for display. We will provide a statement of successful bid for your item for your taxes. You may also bring items with you to the conference, but we encourage you to provide the specifics to us prior to the meeting so that we can advertise both the item and your contribution. If you are sending items, please ship to: Randall's Maple LLC, 10307 Smithley Rd. Alexander, NY 14005. Information regarding the auction may be found by calling or emailing Helen Thomas, Executive Director, NYSMPA, 315-877-5795 or 315-488-0459 (fax), hthomas@NYSMaple.com or: Eric Randall, 585-356-1420 or randall-maple@msn.com.

Wound Response to Taphole Rejuvenation Practices

Abby K. van den Berg, Timothy D. Perkins, Wade T. Bosley, and Brendan M. Haynes, University of Vermont Proctor Maple Research Center; and Mark L. Isselhardt, University of Vermont Extension

In response to injury from wounds such as tapholes, trees initiate processes to compartmentalize the affected area in order to prevent the spread of infection by disease- and decay-causing microorganisms beyond the wound, and to preserve the remaining sap conducting system (Shigo 1984). This results in the formation of a column of visibly stained wood above and below the wound, and the affected zone is rendered permanently nonconductive to water and nonproductive for sap collection. These processes, along with effects from microbial activity, are responsible for the gradual reduction in sap flow from tapholes over the course of the production season.

There has been recent renewed interest in strategies which attempt to extend the standard sapflow season or increase overall yields through the "rejuvenation" of tapholes. These strategies include reaming existing tapholes – made either early or during the standard spring sapflow season – to be slightly wider, deeper, or both. It is thought that by exposing new vessels these strategies might increase sapflow and yields by overcoming the tree's response to the taphole wound and microbial effects (Childs 2019).

There are numerous economic questions with respect to these taphole "longevity" strategies, including whether they actually result in an increase in yield relative to a standard spring taphole, or whether any resulting increase is sufficient to overcome the additional costs in labor and materials necessary to implement the practices. There are also numerous questions related to the sustainability of such strategies, including whether the amount of nonconductive wood (NCW) generated in response to longevity treatments is proportional to that from a single taphole, or whether they render the wound more susceptible to disease and decay. Ultimately, the net economic outcomes of these strategies are driven by their effects on both yields and NCW development – the accumulation of NCW within a tree's tapping zone over time will determine the likelihood of drilling into productive sapwood in the future. Thus, as part of a multi-year experiment to investigate the yields and net economic outcomes of several taphole longevity strategies, we conducted an experiment to investigate the volume of NCW generated in response to two of these strategies.

Materials and Methods

Twenty sugar maple trees (mean diameter at breast height = 11.0″ ± 0.25) located in the Forest Genetics Plantation at the University of Vermont Proctor Maple Research Center were selected. Each received a "Control" taphole

– 5/16″-diameter, 1.5″-depth – during the standard spring sapflow period in 2018. Each tree also received one or both of the following taphole longevity treatments:

- Reamed Wider and Deeper (RWD) – For this treatment, ¼″-diameter, 1.5″-depth tapholes were drilled in early November 2017. On the same date Control tapholes were drilled in spring, these tapholes were reamed to 5/16″-diameter and 2.5″-depth.

- Second Taphole (ST) – For this treatment, 5/16″-diameter, 1.5″-depth tapholes were drilled in early November 2017. A second, 5/16″-diameter, 1.5″-depth taphole was drilled 2″ directly above the first taphole on the same date as spring Control tapholes were drilled. This treatment was selected for investigation because it was hypothesized that by drilling a second taphole within the column of NCW that would develop from the first taphole, the total amount of NCW generated by both tapholes might be minimized (while also potentially maximizing the additional sap yield by creating an entirely fresh taphole instead of enlarging an existing one).

Taphole depth was controlled using a plastic drill stop over the bit. Care was taken to place all treatment tapholes in locations not proximate to one another, old tapholes, or stem defects.

Trees were felled the following fall (October 2018), and portions of the stem that contained each taphole and associated NCW were cut and removed. Each stem portion was subsequently cut with a circular saw into 2″-wide segments beginning at the center of the taphole and moving up and down the stem until stain from the taphole was no longer visible. Each of these segments was then photographed with a scale using a digital camera. Tapholes for which the NCW intersected or interacted with existing wounds or the central column of discolored wood (and thus generated much larger amounts of new NCW) were not included in analyses. The resulting overall sample sizes were 16 Control, 12 RWD, and 11 ST treatment tapholes.

ImageJ image analysis software (https://imagej.nih.gov/ij/) was used to measure the area of NCW in the image of each segment of each tree. These data were then used with the segment widths to calculate the total volume of NCW generated in response to each taphole in each tree. To reduce the effect of the variation in NCW development between trees, the volume of NCW generated in response to longevity treatment tapholes were expressed as a percentage of the NCW volume of the Control tapholes in the same tree. In addition, the ratio of the volume of NCW generated to the final taphole volume was calculated for each taphole.

Statistical analyses were performed using JMP Pro 15.0 (SAS Institute, Cary NC). Normality of distributions was assessed with Andersson-Darling tests. Paired analyses with Wilcoxon Signed Rank tests were used to test the following hypotheses:

1) that the volume of NCW gen-

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Tapping : continued from page 11

erated in response to each longevity treatment was equal to the volume generated in response to Control tapholes within the same tree; and

2) that the ratio of the final taphole to NCW volume for each longevity treatment was equal to that of Control tapholes within the same tree.

For paired analyses (within the same tree), sample size was 10 for each treatment, because within the overall dataset only 10 trees had both Control and Reamed Wider and Deeper treatment tapholes, and both Control and Second Taphole treatment tapholes.

Results and Discussion

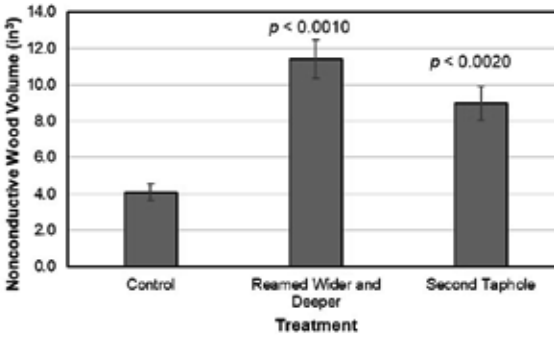

Figure 1. Overall mean (± standard error) volume of NCW generated in response to Control and longevity treatment tapholes (Control n = 16, Reamed Wider and Deeper n = 12, Second Taphole n = 11). p-values are for paired comparisons made with Wilcoxon Signed Rank tests to test the hypotheses that the volume of NCW generated in response to each longevity treatment was equal to that generated in response to Control tapholes within the same tree (n = 10 for paired comparisons).

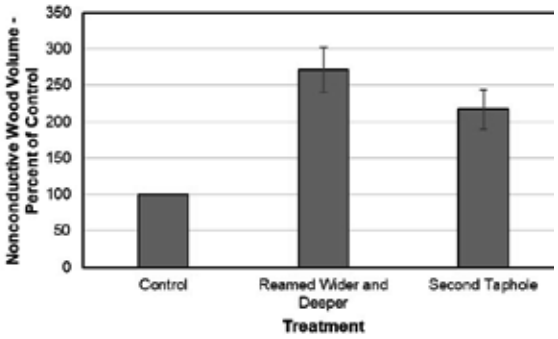

Figure 2. Overall mean (± standard error) volume of NCW generated in response to longevity treatment tapholes as a percentage of the Control taphole NCW volume within the same tree. n = 10 for each treatment.

Both longevity treatments resulted in significantly more nonconductive wood than Control tapholes within the same tree (Figure 1). The average volume of NCW generated by Reamed Wider and Deeper tapholes was 271% (2.7 times) the volume of NCW from Control tapholes in the same tree (Figures 2 and 3). The average volume of NCW generated by the Second Taphole treatment was 217% the volume of NCW from Control tapholes in the same tree, or slightly more than double (Figures 2 and 4). This is not surprising, as the final taphole volumes for both longevity treatments were larger than that of the Control, and the general relationship between wound size and NCW volume is well established (Renaud 1998, Wilmot et al. 2007).

The relative amount of NCW generated in response to the different treatments can be compared more directly by examining the volume of NCW generated relative to that of the final taphole

wound. The overall average volume of NCW from Control tapholes was 36 times the volume of the taphole (Figure 5). For the ST treatment, the overall average NCW volume was 39 times the size of the two tapholes (Figure 5). This indicates that the amount of NCW generated was proportionally more than 2 individual tapholes, although within the same trees the difference was not statistically significant. For the RWD Treatment, the overall volume of NCW averaged 59 times the size of the taphole, demonstrating that this treatment resulted in disproportionately more NCW relative to the size of the taphole than in Control tapholes. These results suggest that tapholes which are re-injured with a longevity treatment result in significantly more NCW than single, undisturbed tapholes of the same size.

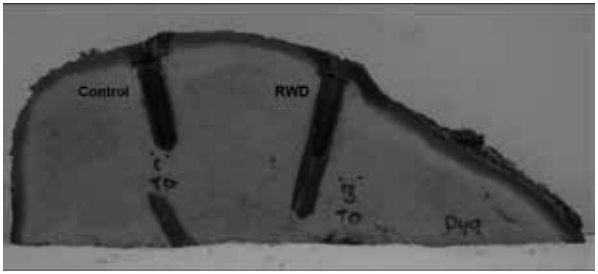

Figure 3. Stem segment with both Control and Reamed Wider and Deeper treatments; the cross-sectional cut was made through the center of each taphole.

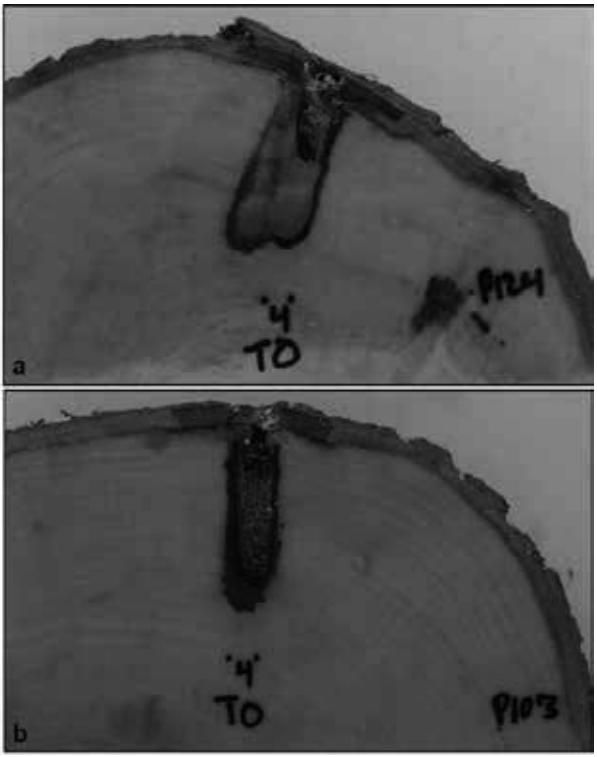

Figure 4. Two examples of stem segments cut through the center of Second Taphole treatments. If the two tapholes were not perfectly horizontally aligned (a), it is easier to see two more distinct areas of NCW development. However even when the two tapholes were well-aligned (b), the volume of NCW generated was still more than double that from a single Control taphole of the same size.

Longevity treatments like those studied in the experiment involve drilling into areas in which the tree has already initiated a response to the original taphole wound. It is well established that tapholes drilled into pre-existing NCW from a previous taphole, branch scar, or the

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central column of discolored wood, result in the generation of much more NCW than a wound made in clear, conductive sapwood (Shigo and Marx 1977, Shigo 1984). This is likely due in part to the cells in the pre-existing area of NCW being less capable of signaling or mounting a defense response to the new wound. Compartmentalization of that new, additional injury is thus likely to be less rapid, robust, or complete. The results of this study suggest a similar outcome occurs when a longevity treatment is used within the same sapflow season. The tree's response to the initial taphole wound has already begun (Figure 6). Reaming, re-drilling the same hole, or making a new taphole within or nearby the initial wound response column creates an injury in tissue already less able to respond, resulting in less complete compartmentalization of both wounds, and, ultimately more NCW than a single taphole.

The accumulation of NCW in the tapping zone of a tree is directly linked to future, long-term yields (van den Berg and Perkins 2014, Isselhardt 2019). The greater the amount of NCW in the tapping zone, the higher the chances of drilling into it when tapping, resulting in much lower yields than a taphole drilled into clear, conductive sapwood. Thus, any tapping practice which increases the amount of NCW, particularly by large amounts like those observed from the longevity treatments in this study, increases the likelihood of diminished yields and economic returns in the future. Moreover, excessive accumulation

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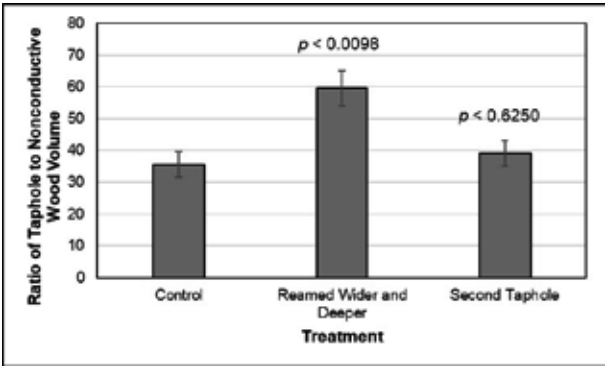

Figure 5. Overall mean (± standard error) ratio of taphole to NCW volume in Control and longevity treatment tapholes (Control n = 16, Reamed Wider and Deeper n = 12, Second Taphole n = 11). p-values are for paired comparisons made with Wilcoxon Signed Rank tests to test the hypotheses that the ratio of taphole to NCW volume for each longevity treatment was equal to that of Control tapholes within the same tree (n = 10 for paired comparisons).

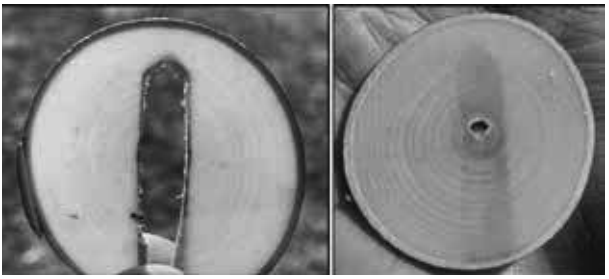

Figure 6. The tree's response to the taphole wound begins immediately. In these stem segments made through (left) and 0.5" above the taphole (right), substantial discoloration from the wound response is already visible 2 weeks after the taphole was drilled.

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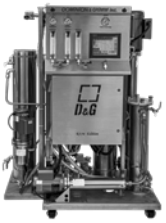

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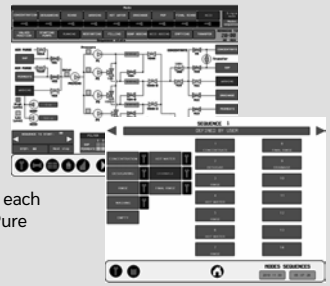

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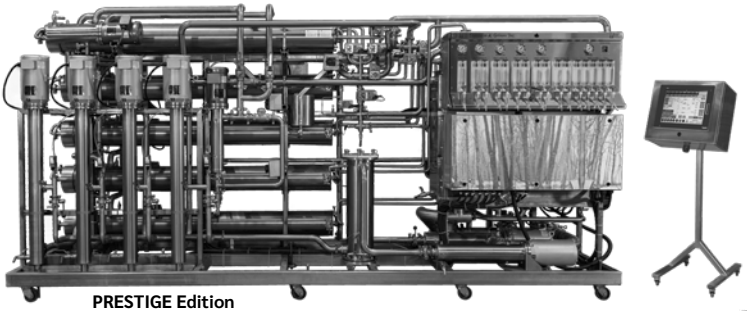

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of NCW can increase the risk of disease and decay.

The results of this study indicate that longevity treatments not only result in more NCW due to the larger size of the final tapholes, but also due to an increased development of NCW from the re-injury of the initial wound in proportions far exceeding a single, undisturbed taphole. In our corresponding study of yields from longevity treatments, neither of the treatments examined in this study resulted in a gain in yield relative to a single standard spring taphole (these data will be reported in a forthcoming article). However, regardless of any potential gain in yield, based on the significant impacts of these treatments on the amount of NCW generated - both the total amount and the disproportionate increase relative to a single taphole – we strongly advise against the use of these practices in any circumstances. The costs in terms of increased NCW, potential harm to tree health, and impacts on future sap yields, are simply too great to offset any short-term gains.

Acknowledgements

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Literature Cited

Childs, S. 2019. 2018 Maple Season Replicated Re-Tap Study. *Maple Syrup Digest* 58(1):10-11.

Isselhardt, M.L. 2019. Reduced sap yields from tapping into stained wood. Proceedings of the 2019 Vermont Maple Conferences: https://youtu.be/en0mZ5mm61A.

Renaud, J.P. 1998. Étude de l'effet du diamètre et de la profondeur de l'entaille sur le volume et la longueur de la zone de bois coloré. Essais sur des gaulis. Centre ACER Publication no. 282-FIN-0998, 7 pp.

Shigo, A.L. 1984. Compartmentalization: A conceptual framework for understanding how trees grow and defend themselves. *Annual Review of Phytopathology* 22:189-214.

Shigo, A.L. and Marx, H.G. 1977. Compartmentalization of decay in trees. USDA Forest Service Information Bulletin No. 405, 73 pp.

van den Berg, A.K. and Perkins, T.D. 2014. A model of the tapping zone. *Maple Syrup Digest* 26A(1):18-27.

Wilmot, T.R., Perkins, T.D., Stowe, B., and van den Berg, A.K. 2007. Comparison of the 'small' spout with the traditional 7/16" spout. *Maple Syrup Digest* 19:20-26.

Sugarbush Management and Chainsaw Safety

Mark Isselhardt, University of Vermont Extension

Maple production requires sugarmakers possess a diverse set of skills in order to tend the forest resource and maintain a productive sap collection system. Maintaining a healthy, diverse sugarbush that maximizes its growth potential requires periodic vegetation management activity. Also known as thinning, vegetation management is the process of reducing competition for light, water and nutrients of crop trees. Felling trees is the key activity in vegetation management and may be done by logging professionals in support of formal forest management plan objectives or by the sugarmaker or landowner on an as needed basis and including response to extreme weather events.

All these situations present a high degree of risk to the chainsaw operator and those around them. Ensuring the safety of those working in the sugarbush revolve around a few areas: equipment maintenance, use of personal protective equipment (PPE) that is in good repair, proper chainsaw training and operation, hazard identification, and communication. Chainsaw PPE does not simply mean a pair of chaps or helmet. The following is a comprehensive list of PPE that must be inspected and determined to be in good working order before using a chainsaw:

- Head protection
- Hearing protection
- Eye/face protection
- Leg protection
- Foot protection
- Hand protection

Chainsaws are extremely efficient, powerful tools that are an essential part most maple operations. The same qualities that make chainsaws such effective tools simultaneously mean they expose operators to potentially lethal injuries. There are several important risks that anyone working with or around chainsaws must pay attention to. Make sure to follow the chainsaw manufacturers recommendations for service and if parts of the saw become damaged stop use until they can be repaired or replaced. Never work alone in the woods with a chainsaw. According to a 2011 OSHA chainsaw safety training guide, additional risks associated with chainsaw operation include:

- The blades can cut you.
- Trees you cut can hit you or others around you.
- Chainsaws are heavy and can cause a back injury.
- Noise from the chainsaws can cause hearing loss.
- Chainsaws can kick back and cause an injury.
- Vibration from the chainsaw can cause numbness and injuries to your muscles, nerves, or tendons (sometimes called “ergonomic” injuries).
- Debris flying from saw can cause an eye injury.

Kickback is a significant concern for those using chainsaws and can result in serious and life-threatening injuries. Kickback is most often caused when the

chainsaw tip hits a solid object and produces rapid, upward movement of the chainsaw. Injuries from kickback can be reduced if appropriate PPE is used.

Training is available related to chainsaw safety and the safe felling of trees. Modern techniques such as those described in the immersive, multi-level Game of Logging training ensure the tree being felled lands where it is intended with as little risk as possible. The length and cost of such training, while significant, reflects the quality, professionalism and comprehensiveness needed to cover all risks associated with this dangerous activity. These trainings can be viewed as a modest investment in safety and profitability if the loss of time associated with injuries are considered. Like most training, keeping skills sharp requires continuous learning. It is important that the information is reviewed regularly and when needed a refresher course taken.

Cutting trees that are lodged on adjacent trees is an extremely dangerous task. In fact, the Game of Logging (http://www.gameoflogging.com/) includes specific daylong training associated with responding to the forces and pressures associated with wind-felled trees and limbs. A 1995 National Institute for Occupational Safety and Health and Occupational Safety and Health (NIOSH) include the recommendation to "remove it before work begins in the area by using mechanical means or other techniques that minimize worker exposures." Given the risks involved, if mechanical means are not available the safest course of action is to leave the tree where it stands, identify the hazard with flagging so others do not wander under the tree and wait for it to come down on its own.

Another extremely dangerous situation that sugarmakers encounter with some frequency are spring poles or bent limbs that contain significant stored energy. These must be approached with a great deal of caution and the forces in trees under stress must be respected. Like with felling trees, keeping others from within two tree lengths of the spring pole will help ensure everyone associated with the operation remains safe. It is important that anyone attempting to cut spring poles have the specific skills needed to safely release these trees.

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Chainsaw: continued from page 19

Perhaps the most common use of chainsaws in a maple operation is related to clearing the tubing system of broken limbs and blowdowns. While these tasks are common in sugarbush management they are dangerous and require additional training to remain safe. These situations can range from simple to extremely complex and are often made more complex when the items being removed are covered in snow. If mainlines are involved, there is the added risk of high tensile wire and pipe hitting the chainsaw operator when released. Identifying the risks before starting the saw is critical first step. The Game of Logging works by developing effective plans in type of situations. Effective plans include steps for identifying the following:

- Overhead hazards
- Hazards on the ground
- Assess lean weight and pressure
- Cutting technique and plan
- Escape route

Sugarmakers understand the importance of keeping the sugarbush healthy, having sufficient firewood on hand for the next season, and keeping a tubing system in good repair. Meeting these goals often requires the use of chainsaws. Make sure that anyone using these powerful pieces of equipment have the necessary training to carry out these tasks safely and effectively.

The early History of the Plastic Maple Syrup Jug: Part One – The 1960s

Matthew M. Thomas

Packaging maple syrup in plastic jugs is now commonplace and jugs are the primary container for retail sales. However, sixty years ago there were no plastic jugs and syrup was packaged in either metal or glass containers. This is the first of a three-part article that traces the early history, development, and manufacturing of plastic containers for the maple syrup industry. Each part will cover a decade of history with the first scanning the 1960s.

When first introduced to the maple industry, plastic was modern and novel, but it was also an untried and unproven material. In time, the industry found what types of plastic worked best and settled on the familiar shape of a jug with a handle for its plastic containers. In getting to that point there were a few earlier, less well-known attempts at bottling syrup in plastic containers. Prior to the introduction of the jug shape there were a few other examples of plastic maple syrup containers.

Plastic squeeze bottle for maple syrup introduced by Harry Chapman in 1962 (From the Collections of Matthew M. Thomas)

Harry Chapman

The earliest example of bottling with plastic containers was the efforts of sugarmaker Harry Chapman of South Wallingford, Vermont. In 1959, while still an engineering student at the University of Vermont, Harry began experimenting with different available plastic containers and settled on a polypropylene tubular squeeze bottle used for condiments and by the honey industry. In an interview with Harry, he shared that starting in 1962 he purchased bottles from an Albany, NY wholesaler in half pint, full pint, and quart sizes, and added a yellow and dark green label on the clear containers using a silkscreen set-up he built himself. Beside bottling syrup from the Chapman family sugarbush in the squeeze bottles, for a couple of years Harry drove around Vermont selling the bottles to other syrup makers with roadside syrup stands and made numerous presentations promoting the use of this new technology and container.

Vermont Maple Orchards – Frank Rees

Beginning in the spring of 1962, Vermont Maple Orchards of Essex Junction, Vermont began selling syrup packaged in a miniature plastic sugarhouse. This container was about a half pint in size and made from clear plastic with a pour spout fashioned to look like the smoke-

History: continued on page 23

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stack of the sugarhouse. The company promoted the benefits of plastic as being unbreakable and free from the threat of rusting. Frank Rees, General Manager of Vermont Maple Orchards at that time, was a chemist by training and was a part of the research in the 1930s to identify the sources of lead in maple syrup. As a result, he was sensitive to potential risks of solder leaching from metal cans into syrup and quickly embraced the potential of plastic as a packaging material. Tom Rees, Frank's son, recalls that the plastic sugarhouse was not a successful item and only sold for a couple of years, in part because the plastic used at that time, probably polypropylene, was not suited to the hot packing of syrup and became brittle and hard.

Little is known about these plastic sugarhouses, such as where and how they were manufactured or who designed them. Their novelty at the time and short lifespan has made them a rarity and essentially unknown among collectors of vintage maple syrup containers.

Pint sized plastic container for maple syrup introduced by Robert Bramhall in 1965 (From the Collections of Tom McCrumm).

Robert Bramhall and Robert M. Lamb

A third early plastic container was introduced in 1965 by Robert "Bob" Bramhall, Sr., the woodlands manager for the J.P. Lewis Company (JPL) in Beaver Falls, NY. Bramhall, who supervised JPL's maple sugaring operation began experimenting in 1963 with the idea of bottling in plastic before settling on a square-shaped container with a maple leaf design embossed on the side. Bramhall worked with the American Plastics Corporation in nearby Bainbridge, NY to manufacture the opaque cream- and peach-colored containers. In the first year he had 50,000 pint-sized containers made with a quart size added the following year. According to Butch Bramhall, Bob Bramhall's son, one of the reasons Bob looked at plastic was the shortage in the availability of metal syrup cans in the early 1960s. Bob's daughter-in-law Pat Bramhall added that Bob wanted to have a container that was smaller and easier for housewives to handle and use than the large half and full gallon tins that were most common at that time. After offering the containers for sale for about one year, in 1966 Bramhall transferred the sales of the containers to Robert M. Lamb's growing plastic tubing and sugaring supplies company in Baldwinsville, NY. Lamb continued to advertise the container for sale through the end of 1969 when they were replaced by the new plastic syrup jugs coming out on the market.

Part Two of this article will focus on the first plastic jugs introduced in the 1970s by Elmer Kress, Charlie Bacon, Bob Lamb, and S. Allen Soule.

2021 Season Reports from NAMSC Members

Connecticut

This year Connecticut's season started later than normal due to cold temperatures in early February. Most producers did not see sap runs until February 18 or 19, and the season ended in late March because of unseasonably warm weather. A few producers tapped early in January and saw some good runs, however the February temperatures cut their season short. Many reported their last boils around the 21st. Most producers reported between 70-75% of a normal season. Many reported good sap flows but were plagued by low sugar, with reports of as low as 1.2% by some.

On a positive note, like many we saw a significant increase in people interested in making syrup and retail sales have remained very strong. This year the Connecticut Department of Agriculture and Department of Tourism were very active in promoting CT Maple Syrup and the Maple weekend the third weekend in March. Those that were able to open sugar houses said they were busy and sales were strong. We are looking forward to returning to our normal meetings this year as COVID restrictions are lifted and we return to a sense of normal.

Indiana

As the season approached in Indiana the forecast was looking very promising and a good harvest was expected. Despite very wet conditions in early 2020 and drought conditions for the second half of 2020 across the state, overall annual rainfall was normal.

Sap harvest typically runs mid-January through late March in Indiana. Producers in the southern and central regions of the state began tapping in early to mid-January. Those that tapped early managed a few boils before a prolonged February freeze and snowy conditions set in. Many completed their tapping during this freeze. The thaw came in the last days of February with a sudden and dramatic rise in temperatures. First boils began around the 22nd. A heavy snowpack melted quickly and, with little rain, there was insufficient soil moisture for good sap production. Steady warm temperatures brought the season to an end by the 2nd week of March. Although the season was shortened, sugar content was 2.0-2.4%. Syrups ran on the dark side with moderate flavor. Producers reported yields from average to about 20-30% below average.

Producers in northern Indiana completed setup and tapping during February's freeze. First runs came around the 25th of the month. Early runs were light as the thaw started. Sugar content was average, running around 2.0-2.4%. Once the ground thawed, runs became very heavy. Conditions here were also dry. By the third week of March the season was over. Indiana's northern region reported light syrups with low maple flavor.

Overall Indiana had a short season that came late. Production appears to be at approximately 80% of our annual crop.

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Maine

Maine, like most other states, had a lower-than-normal production season. Most producers reported between 50-70% of an average crop. A cold February followed by a very warm March along with low sugar content proved to be a less than optimal combination. The snowpack, even in the northern parts of the state, was low to bare ground for most of the sugaring season, allowing the ground and the woods to warm up quickly. While it was nice to spend less time in snowshoes it was less than ideal for production. Producers reported making more dark syrup than in a typical year.

Maine Maple Sunday was the bright spot for maple producers in Maine. Producers that were open reported pre-COVID size crowds, along with very strong sales. Customers were excited to get out and enjoy a Maine tradition that supports our producers, even with a weather front passing through. Thank you to Jason at the University of Maine Extension for creating COVID safety guidance that assisted our producers in providing a safe event for their staff and customers. Sales have remained high for all producers since the start of COVID. Since the shutdown began, customers have been cooking more at home and finding new uses for syrup. This has certainly held true in Maine as many producers reported selling out of syrup.

Plans are underway for our second

annual fall maple event. Maine has chosen Columbus Day Weekend for "Maine Maple Fall Fest." Similar to last year's fall event, producers are going to be setting up Maine Maple Sunday-like sales and activities, inviting the public to come, learn about maple and enjoy our great products. We have reduced our promotion days down to one weekend, as Maine producers reported that the two-week event was too much of a commitment during a busy time of year.

Plans for Maple Mania 2022, to be held June 9-11, are underway as of this writing, with our capital city of Augusta as our central location. Sugar house tours, technical sessions, a banquet, good food, and most importantly networking opportunities are planned as always.

Massachusetts

Massachusetts had a couple of great runs of near-perfect sugaring weather. Unfortunately, they came in January, when the ground was still frozen solid, and then in April and May, well after the season was over.

February and March, however, were tremendously inconsistent and incompatible with ideal sugaring weather, with temperatures often rising just above freezing but not enough to thaw out the ground or the trees. And then we had a few 70-degree days in the second and fourth weeks of March, with some nights not even dropping below freezing.

For most producers, the season began and ended in March, with about three weeks of decent runs. Sugar content was low, very little Golden syrup was made, and no off-flavors were reported. Overall, production in Massachusetts was 60-70% of an average crop.

Our annual meeting was held online, with a presentation from Dr. Tim Perkins "Keys to High Yield Maple Production." Out of an abundance of caution due to the ongoing COVID-19 pandemic, there was no collective Maple Weekend event, though some sugarmakers took the initiative and had outdoor events or scheduled tours that attracted many customers. Sugarhouse restaurants were open at reduced capacity and also had many customers. Our annual season kickoff was the only in-person event, hosted by Tom and Debra LeRay at their sugarhouse in Royalston.

While local fairs and the annual Big E – which the Association relies upon for income each year – were cancelled in 2020, Massachusetts producers found that they had no problem finding customers for syrup. Online and curbside sales were brisk.

"No two seasons are the same," says Mass Maple president Howard Boyden, "and there's none we'd want to repeat." 2021 certainly proved that to be true.

Michigan

The 2021 syrup season was all over the board in Michigan. Many who responded to our survey reported low sugar content, mostly below 1.8%. However, two reported sugar content

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at 2.5% or above. The same inconsistencies held true for crop percentage for the season. Usually, the various areas of Michigan have comparable seasons. This year some producers in mid-Michigan reported 70-80% of a normal crop, while 30 miles north some felt lucky to end up with 25-35% of their normal crop.

It was too warm for nearly all of Michigan during the season, with a week or so of sub-zero weather right in the middle. Many in the lower Peninsula reported three to four weeks of sap flow, but a few reported a two-week season. As we all know the work is the same no matter how long the season.

The majority of the syrup made throughout lower Michigan was medium amber. Several reported light the first few boils, and then quickly moving to amber. We had two producers report making very little amber and mostly dark, and they are not in the same area.

Minnesota

This year's sugaring season in Minnesota was a bit shorter than normal, with most producers' seasons starting in early March and ending by the end of March, or early April further north. There was not much snow for anyone to deal with. Most people reported lower than normal sugar content but lots of sap, contributing to most having a normal to a bit lower than normal yields. Those in the central and northwest central parts of the state reported normal to better than normal yields. Most syrup was amber rich, with no off flavors. Overall, a good year!

Because of COVID, the Association has not been able to gather for an in-person meeting since to the Duluth Convention in in October 2019. Like most associations, we quickly learned how to hold board meetings by Zoom. In order to stay connected with members, we have supplemented our quarterly MN Maple NEWS newsletter with numerous random email blasts which we call "Tid-Bits." Tid-Bits reports on board actions and promotes other industry Zoom maple programs that might be of interest to members. As COVID came down upon all of us in early 2020 and masks were in short supply, the board ordered and distributed custom Minnesota Maple Syrup Producers' Association "neck gaiters" to all members. Again, something a little different to keep the Association front and center with members.

After canceling both our spring and fall meetings in 2020, we held our 2021 spring annual membership meeting by Zoom. Thanks to his ACER grant Jesse Randall of Michigan State organized the event and we were able to hold elections, report financials and related business items. Of note, long-time board member and former NAMSC delegate Butch Fideldy chose not to run for another term on the Minnesota board. Following the business meeting, Jesse arranged for four maple-related presentations and a final Q&A involving all members. The presentations were recorded and have since been added to the Association web site.

Plans are now being set for an in-person "reunion" fall membership meeting. We are working on ways to make it special and expect strong turnout.

New Brunswick

New Brunswick's season started earlier in some areas and around the normal time it usually does on others. There were starts and stops throughout the season as it got very warm and then cold again. In the south the first week of the season it got very warm and many producers only produced amber, dark and very dark syrup, with very little to no golden. In the north, the season finished a bit earlier than usual, and the south finished about a week early. Most reported that sugar content was low to very low.

Our members' survey showed that the province produced the same amount of syrup as last year (7.5 M lbs), with less golden, and yield around 3.1-3.3 lbs per tap.

Bulk prices have gone up and it is expected that New Brunswick's bulk maple syrup will be all sold by mid-July, compared to other years when supplies have lasted into October.

The Association (NBMSA) hosted the annual Maplelicious Festival. COVID-19 made it a bit harder, as restaurants could not participate because many were closed. This said, we decided to focus on a social media campaign including influencers from all over the Province. It proved very successful as we were able to cover the Province without too much traveling. With the launch of a new website, MapleliciousNB.com, we were able to bring new and exciting content to subscribers and viewers, most notably a "meet the

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producer" section with videos, recipes, and cocktails, stories, and coverage of maple events. Combined with a social media buy, the Festival was very successful and reached a great number of people while promoting "Buy local - Buy NB Maple Syrup."

The New Brunswick Maple Syrup Association has developed a partnership with a NB community college (CCNB) to develop a virtual reality training course for new producers. The 3D curriculum is currently being developed and the goal is to offer the online course with certification in 2022. This will be the only course of its kind and our intention is to fill the shortage of skilled workers in the maple syrup industry.

New Hampshire

The maple season seldom fails to surprise and often manages to disappoint. The 2021 season in New Hampshire managed to achieve both. Early tapping offered little or no advantage. When daytime temperatures in January were warm enough for the sap to run, the temperatures had been so cold the night before that the run only lasted for an hour or so. February proved scarcely better with no major runs until the last week in the month.

Northern producers reported the first boil of the year March, 11 and the last boil April 8. Southern producers reported first boil February 26 with no syrup made in April at all. Most producers reported making an excellently flavored crop with amber and dark colors predominating, but only 2/3 of the

desired amount. No producer reported any great amount of golden syrup produced. The low sugar content and darker grades of syrup produced was widely blamed on stressed trees due to the ongoing New England drought.

Some producers reported "The lowest sugar content we have seen in years," with another stating that "the season varied from .8% to no more than 1.9%." Conversely, one of our producers reported one of the best years ever with a 53% increase over last year. Sometimes surprises don't disappoint!

Nova Scotia

The maple season in Nova Scotia for some started early, when a few who tapped early had some substantial runs during the first week of February due to unseasonably warm temperatures.

Most were tapped and prepared for the March runs. The weather was not cooperative, with a week long stretch of no frost and very warm temperatures reaching near 20 degrees Celsius. Overall reports suggest much darker and stronger syrup was made. There was a bumper crop of sap but the sugar content was extremely low for the whole season, with many runs under 1.5%. For most the season ended around April 10, much earlier than normal.

Crop reports range from under 50% to average with a few reporting above average.

Local syrup sales seem to be strong with producers having to be creative with their marketing due to the ongoing COVID situation. Let's hope for better in 2022!

New York

The 2021 New York maple production season can best be summarized as mediocre and full of challenges. For the second year pandemic protocol, inclement weather, deep fluffy snow, as well as changed consumer and marketing practices all weighed heavily on producers who fully understand that Acer species are not influenced by COVID-19. More than a few consumers thought that the pandemic actually created a shortage of syrup and either binge bought or didn't show up at all!

Historically, those producers who set taps early were positioned to harvest crops where five or six pounds per tap had become customary. Not so this season, where we found producers struggling to extract half to three-quarters of that of a normal or average season. New York has three or four distinct maple regions based on its diverse geography and elevation, which typically provides for a very long season, statistically. It is not uncommon for sugarbushes in the southwestern counties to commence sap flow in early January while the High Peaks in northern and the Catskill regions may not start until mid-March. 2021 found all areas with about a three-week production season ending around the beginning of April due to continued 60-70 degree temperatures. Summarily, the state is expected to report 60-80% of a normal crop. Demand remains high, quality is excellent and there seems to be an adequate supply of all grades and of bulk syrup in the field.

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For the second year, the New York State Maple Producers Association cancelled their sponsored NYS Maple Weekend programming. Where facilities were able to accommodate social distancing and meet local jurisdiction requirements, a few sugarhouses allowed gatherings and opened during the traditional two weekends following St. Patrick's Day.

After two years of COVID-related restriction, nearly every segment of the maple world has developed innovative ways of marketing their product. Mail order, curbside pickup, home delivery, online market expansion, and other innovations have replaced the sales opportunities created after a quarter century of the four-day Maple Weekend activities. As of this writing it appears that many of New York's county fairs will open this summer and that the New York State Fair is anticipating an expanded 18-day run in late August/early September. These events coupled with enhanced farmers market reopenings should bolster direct maple product sales.

State Association events and news currently revolves around the frenetic activity associated with the New York Maple Producers Association hosting the joint convention "Maple in the Falls" for the North American Maple Syrup Producers Council and the International Maple Syrup Institute, October 18-20, 2021, in Niagara Falls, New York.

New York sugarmakers extend their warmest welcome to their colleagues across the maple realm to come and participate in these important meetings set only a few hundred feet from one of the world's most spectacular wonders!

Ohio

Looking back on Ohio's 2021 maple syrup season, production was lower than 2020, but it could have been a lot worse. For most Ohio producers the season was short, lasting 30 days or less. Overall, Ohio's crop came in around 75-80% of normal. Because of the warm weather, syrup generally graded in the amber to dark range. However, there was still a fair amount of golden made in the northern part of the state. If you look at the markets and what customers seem to prefer, this is right in line with the increasing demand for the darker grades of syrup.

The earliest start dates were in the last week of January, but a massive cold air invasion that lasted until the 20 of February delayed tapping across the state. In most cases the first boil happened before February 28. For most producers, the end of the season came around March 25. It is not often that you see seasons this short without a total collapse in production.

Over the last several years there seems to be a drop in the percentage of maple sap sugar. Percentages of sap sugar were low again this year, with sap averaging around 1.7% sugar.

To have a season end because of a combination of too cold, too hot, and too dry conditions is very unusual but that is exactly what happened in Ohio. Extreme weather once again was the dominant factor in 2021. The end of 2020 and the beginning of 2021 saw a strong La Nina weather pattern take control of the weather across the region. This resulted in one of the warmest Decembers and Januarys on record. Cold and snow dominated the month of February setting up a chance for a good season even though the start was delayed. When you consider what happened in February you knew this season was going to be different from the last several years. February saw a massive Arctic air mass (Polar Vortex) driving deep into the heartland of America. Ohio avoided the brunt of the cold weather, but its influence hung around for three weeks. This delayed tapping and it also set up some outstanding sap runs. But the ideal sugar making weather would be short-lived.

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Producers found it hard to believe that the La Nina could reemerge and take control, but soon realized that the dominant warm weather experienced in December and January was not gone. The return of warm weather did kick off a record sap flow that lasted about a week. For ten days Mother Nature teased local maple producers with a very fickle freeze/thaw cycle that showed no signs of sustaining a sap run going into the end of March. The final blow came on March 20, the last freeze, followed by four days of 70-degree weather.

Most of the producers lamented the shortness of the season but also realized that, considering the variety of weather conditions they had to deal with, this year could have been a lot worse. We had an excellent season in 2020 and the demand for syrup was outstanding despite the pandemic. The 2021 season was good enough to take care of the demand until the 2022 season arrives in eight to ten months.

Ontario

Many Ontario syrup producers are glad to see the 2021 syrup season behind us. It was a short and tumultuous season where the weather oscillated between being too warm for trees to maintain vacuum and so cold that trees remained frozen.

In Southern Ontario, the season started at the tail end of February and into the first week of March. By the first week of April, winter seemed to be gone for good for most of the province, apart from a few lucky producers up north. While buddy syrup stopped production in some areas, others still had clear sap running when production was halted by the warm weather. Some producers had less than two weeks of maple weather.

As a result, the majority of producers had reduced yields, producing only 60-80% of the crop of an average year. Yields were even smaller in comparison to the bumper crop of 2020.

Syrup colour started out average (some golden and mostly amber) to darker than average. As temperatures quickly warmed in mid-March, many started making darker syrup much earlier than usual, and a number of producers reported the darkest syrup they had ever made. However, a few outliers found that they made the lightest syrup in their history. Colder weather in the following weeks caused the syrup colour to turn lighter for many, before darkening again in some areas with the end of the season.

Sap sweetness was generally lower than average across the province. However, flavour was consistently excellent all season long.

Producers are experiencing different challenges when it comes to sales. Many small- to medium-sized producers were sold out of syrup in April. Some are trying unsuccessfully to purchase syrup to fulfill the needs of their regular customer base. Bulk buyers are only receiving 20-30% of a normal year. However, others have lost their main venues for sales due to COVID cancelling in-person festivals and tours.

Cleaning out lines from where they were buried under a few feet of snow. Tapping in many areas was done with snowshoes.

Hauling sap in the snow. *(Both photos: John Williams)*

One exception was the Elmira Maple Syrup Festival, which went virtual and featured a virtual sugar bush tour, a taffy demonstration, and delivered pancake boxes among other fun activities.

I should take a moment to introduce myself. My name is Jenny and I'm Ontario's new Maple, Tree Nut, and Agroforestry Specialist. Many of you will know my predecessor Todd Leuty. He was in this role for over two decades until his retirement last September. His contribution to Ontario's maple syrup sector can't be understated, and he left some enormous shoes to fill. I'm really looking forward to learning from all members of this warm and welcoming community. Here's hoping for a better 2022. stay safe and well!

Pennsylvania

The six associations that make up the Council have reported that most had about a 50-70% crop, but some reported nearly a normal crop. Our season started late in February and ended for most of the state in the middle of March. We had a dry and very warm March after a very cold February.

We have added a new association to our council, the River Valley Maple Producers Association. It is located north of Harrisburg, PA. They are a small group but very active as they start their group.

Our state Maple Ambassador, Landis Crawford, has done a super job in

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the promotion of the maple industry. She has done much work on social media and has hosted presentations for cooking different dishes.

We are looking forward to the PA Farm Show in January.

Quebec

Quebec's season started later than usual in the central and western parts of the province and exceptionally early in the eastern regions. The eastern sugarbushes had excellent production while the central and western regions were below their average. We estimate the crop to be around 60% to 70% of last year.

Sap was abundant but not very sweet, there were some record runs that were challenging to manage for a few sugarmakers. The heat set in quickly which caused the buds to pop out earlier this year.

The presence of private inventories as well as the strategic reserve will allow Quebec to maintain its capacity to adequately supply market needs.

At press time Quebec Maple Syrup Producers reported that the province's maple syrup production this year is estimated at roughly 133 million pounds. 2020's harvest was 175 million pounds. - Editor

Rhode Island

(The Maple Syrup Producers of Rhode Island composed their crop report in verse!)

Rhode Island maple syrup,
What a sweet and tasty treat.
We all think ours is the best,
But Rhode Island's can't be beat.

In the woods in February,
This was later than years past.
We averaged four weeks of collecting,
Which was better than our last.

Some of our members have retired,
Some have other issues.
Those of us who tapped our trees
Had to wipe our brows with lots of tissues.

Besides amber rich and very dark,
Dark robust was the champion grade.
Smiles abounded after every drawoff.
The jubilant sugarmakers collected every drop made.

Sugarhouses had to open
At reduced capacity.
The masks worn were fashionable,
Patriotic and pretty.

Friends came to visit,
The children were back.
We all had a sense
That life was back on track.

So, stay healthy and safe,
Our wish is for you!
We hope that your season
Was as good as ours too!

Wisconsin

The 2021 Wisconsin maple syrup season started in late February and early March for most producers. Early winter gave us above average temperatures with very little snow cover across the state. The cold temperatures came for only two to three weeks across most of the region in late January and early February. Temperatures remained warm for most of March, with the majority of producers completing harvest by the last week of March.

The southwest corner of the state had a slightly below average crop and sugar contents that were below average. Very warm weather conditions thawed the ground quickly and started the season off very quickly. Production in this area of the state was very fast paced in mid-March, with most of the crop being made in only a few weeks. Syrup quality was excellent with most of the syrup being in the amber grade. Production in the southwest corner of the state concluded for most producers by the last week of March.

The central part of the state had about 85% of a crop with production starting in the last week of February. Sugar content for the majority of the season was well below average with the peak sugar reaching 2.2 Brix and the end of season sugar down to 1.3 Brix. Syrup quality was good, with most of the syrup being made in the amber grade. The snow cover was gone by the second week of March and the warm temperatures slowed the season for most producers in central Wisconsin

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with temperatures well above average. The region also experienced some large runs of sap for a few days during the season, with as much as 30% of the crop being made in three days. The season concluded for most producers the last week of March.

The northern 1/3 of the state started just a few days after central Wisconsin. The snow cover disappeared in the north about the third week of March. Very little snow with no frost jumpstarted the northern 1/3 of the state's production year with a few producers starting the last day of February. This area of the state had very warm temperatures and the majority of their syrup was made the last week of March. It was an unusual season with the producers in the area concluding just a few days after central Wisconsin. The warm temperatures across the region lead to the majority of the syrup being made in this area in the Amber grade. The northern 1/3 of the region produced between 85-90% of a crop.

Overall, the production in the state of Wisconsin was slightly below average. With the season starting early and the extremely low sugar content, most syrup produced was in the amber grade with very little golden syrup made.

The Wisconsin Maple Syrup Producers Association had a very busy year with activities throughout the calendar year. The Wisconsin Maple Syrup Producers Winter Institute and Trade Show was held January 8-9 in Marshfield. The event was held as a virtual event and had clinics and speakers Friday evening and Saturday.

The Association attended the Phelps Maple Festival April 10. The Association provided a Maple Syrup 101 class and a grading class at the event.

The Association had its annual first tree tapping March 13 at Marvin's Sugar Bush in Antigo, Wisconsin. Great weather in the height of the production season made for a very successful event.

The Association was at the Farm Discovery Center in Manitowoc, Wisconsin March 26-27. This was a hands-on event for children to learn about maple syrup and how it is made. Along with the workshop families could tour two local sugarhouses.

The Wisconsin Association will have its annual meeting May 9 at Hotel Marshfield. This will be a hybrid event that will be in person and virtual. This event will be the annual business meeting and syrup judging for the Wisconsin Association.

With everything starting to reopen the Wisconsin Association will be at the Wisconsin State Fair August 5-15 selling Wisconsin maple products and promoting the maple industry at the State Fair. The Wisconsin Association will be at the Marshfield Maple Festival September 18-19. The 2022 Winter Institute and Trade Show will be held January 14-15, 2022, at Hotel Marshfield.

The Wisconsin Association would also like to remind everyone of the 2022 International Maple Conference October 26-29, 2022, in La Crosse, Wisconsin.

West Virginia

To say the 2021 maple season was difficult would be an understatement for most producers. A few producers started tapping around the middle of January and were immediately rewarded with a good run for a few days. The forecast looked good for the next several weeks, but someone forgot to tell Mother Nature. The last half of January and nearly all of February looked promising, but in most areas of the state, it stayed just a touch too cold for the sap to run regardless of what type of tubing or bucket system producers had.

After the short run in the middle of January, nearly all the state stayed frozen until the last week of February. Over the next 2.5 weeks, with nearly perfect conditions, the sap still did not want to run. This was not just a problem in West Virginia, but this seemed to be an issue for the entire US and may have been the result of the La Niña weather pattern that started in October.

The statewide average was less than 2 lbs. per tap and about 60-70% of a normal crop. The sugar content stayed between .8-1.4% with the season average for the state approximately 1.2%. A handful of producers in the warmest and lowest elevations were at an average crop. These producers normally struggle with temperatures being too warm many days during the season, but in the 2021 season they had a significant number of days where the temperature was just warm enough for good runs. Once again, nearly all the state saw an early and abrupt end to the season around March 10, when temperatures warmed up. Very little off-flavored syrup was produced.

The 2021 season will leave many scratching their heads trying to figure out what happened. Most never experienced a single large sap run even when conditions were "ideal," and it was one of the strangest phenomenon I can remember in over 30 years of producing maple syrup. Most producers produced some of all three grades of syrup with a few of the producers that kept producing into the extended warm up in March making some very dark. The colder temperatures during most of the season produced lighter syrup than normal. A few producers in the southwestern part of the state were devastated with an ice storm at the end of February. The ice was so bad in some areas it ended their season. If the ice storm wasn't bad enough, within less than two weeks, there was bad flooding in the same areas that had received the ice.

Sugaring = Trendy?

In April the *New York Times* ran a lengthy article about how sugaring had become a new hobby for many people during the pandemic, and we've heard the same from many equipment dealers as well. If you know of folks getting started with sugaring, be sure to encourage them to join your state or provincial association!

U.S. Crop Production Report

Released June 10, 2021, 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: 2019-2021

State	Number of taps			Yield per tap			Production		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
	(1,000 taps)	(1,000 taps)	(1,000 taps)	(gallons)	(gallons)	(gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)
Maine	1,950	1,970	1,890	0.267	0.299	0.262	520	590	495
Michigan	620	570	550	0.315	0.298	0.273	195	170	150
New Hampshire	540	530	530	0.274	0.291	0.240	148	154	127
New York	2,800	2,800	2,900	0.293	0.287	0.223	820	804	647
Pennsylvania	680	740	715	0.231	0.241	0.231	157	178	165
Vermont	6,000	5,700	5,900	0.345	0.342	0.261	2,070	1,950	1,540
Wisconsin	800	780	850	0.338	0.340	0.353	270	265	300
United States	13,390	13,090	13,335	0.312	0.314	0.257	4,180	4,111	3,424

Maple Syrup Price and Value – States and United States: 2019-2021

[Blank data cells indicate estimation period has not yet begun]

State	Average price per gallon			Value of production		
	2019	2020	2021 [1]	2019	2020	2021 [1]
	(dollars)	(dollars)	(dollars)	(1,000 dollars)	(1,000 dollars)	(1,000 dollars)
Maine	28.20	34.90		14,664	20,591	
Michigan	48.60	48.60		9,477	8,262	
New Hampshire	45.30	52.10		6,704	8,023	
New York	32.20	34.40		26,404	27,658	
Pennsylvania	35.00	38.40		5,495	6,835	
Vermont	28.00	27.00		57,960	52,650	
Wisconsin	32.50	29.10		8,775	7,712	
United States	31.00	32.00		129,479	131,731	

[1] Price and value for 2021 will be published in *Crop Production* released June 2022.

For more data see https://release.nass.usda.gov/reports/crop0621.pdf.

Wisconsin Association Working to Change Hauling Laws

Theresa Baroun, Executive Director, Wisconsin Maple Syrup Producers Association

Hauling sap in Wisconsin can be a challenge, in part due to local town and county road bans. Some townships and counties have put their law enforcement on high alert during sap season to enforce road bans and weight limits during the spring, which makes it nearly impossible for those who need to move sap to do so legally. The Wisconsin Maple Syrup Producers Association (WMSPA) is trying to help.

The Association has been working with the Legislature to get the Department of Transportation to consider maple sap an agricultural product since 2016, trying to have the transportation of sap subject to the same guidelines as a milk. The bill is currently being considered by the legislature for the third time.

The current bill (262) raises highway weight limits for vehicles transporting maple sap or syrup. Under current law, no person may operate on a highway any vehicle or combination of vehicles that exceeds certain statutory weight limits unless that person obtains a permit issued by the Department of Transportation or a local highway authority.

In general, the maximum weight that may be imposed on the highway by one axle is 20,000 pounds and the maximum weight that may be imposed on the highway by two axles that are eight or fewer feet apart is 35,000 pounds. Currently, special higher weight limits are provided for certain vehicles transporting milk or other dairy supplies and products. This bill would apply those higher weight allowances to maple sap and syrup as well.

WMSPA has also contacted the Department of Transportation on the issue. Their response was based on the definition the Implements of Husbandry (IOH) law, which does not include sap as an agricultural product. This definition was taken from the Internal Revenue definition of farming.

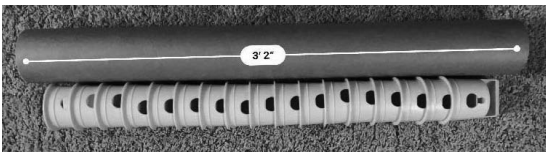
Including maple syrup in the legislation may be hurting the chances of the bill's passage, since some definitions consider it to be a processed product rather than an agricultural commodity, so if the bill doesn't pass this session future efforts will only propose including maple sap in the changes.

WMSPA has reached out to the IMSI and NAMSC on the issue and are looking at different avenues to work toward updating the husbandry definition. Each state treats maple sap differently, but this work has the potential to benefit the entire maple industry and make future policies regarding sap hauling more favorable for producers. If producers from other states have worked to address this issue and have suggestions on how to best approach it, contact the Association at info@wismaple.org.

Amadorable Tote-Em Sap Sack Holders

You've seen our new food grade, polypropylene, sap sack holders. We will now show you one of the best features of this new product! Storage!

A Sugarbush often needs great organization to be successful. Previous designs were flawed in the area of convenient storage and organization. Metal 2 piece sap sack holders or homemade PVC designs are difficult to organize and store.



The Amadorable Tote-Em Sap Sack Holder will help solve these problems. They are stackable, allowing you to fit many units in one nice, compact storage container of your choice.

3'x4" tubing (PVC or cardboard for example) would allow for 17 Tote-Ems. When expanding to accommodate the larger operation, 5'x4'' PVC tubing would allow about 32 Tote-Ems, and 10' would accommodate about 67 Tote-Ems. PVC is tough and is able to be stored from almost any direction- vertical, horizontal, at an angle, the possibilities are almost endless!

If you like 27 Gal. plastic totes, you can fit roughly 176 Tote-Ems. A 2' cubed box (2'x2'x2') will store 396 Tote-Ems easily.

When the season is over, there is no worry if there is any extra moisture in storage, The Amadorable Tote-Em Sap Sack Holder won't rust!!

Amadorable Tote-Ems
John Sandberg
JWSandberg.LTD@gmail.com
651-307-2784

New FDA Dietary Guidelines

Jean Lamontagne, Executive Director, International Maple Syrup Institute

In late December 2020, the FDA released its Dietary Guidelines for Americans 2020-2025 that kept the recommended daily maximum calories from added sugars at 10% of total daily calories. Earlier drafts by the Dietary Guidelines Advisory Committee had recommended to lower that number to 6% of the total recommend daily calories. This would have had unfavorable consequences for maple syrup labeling, but the agencies stated that there was insufficient scientific information to justify the lower quantitative limit.

The new dietary guidelines and statistics point to interesting facts about added sugars in the diet. The major sources of added sugars in typical U.S. diets are sugar-sweetened beverages, desserts and sweet snacks, sweetened coffee and tea, and candy. Together, these food categories make up more than half of the intake of all added sugars. And much of the focus and advice on controlling added sugar intake relates to these foods. On average, only a small quantity of maple syrup is consumed in the typical U.S. diet.

Moderate consumption of maple syrup contributes to a healthy diet. Maple syrup is a natural fuel preferred over other sweeteners by many people with active lifestyles because it provides simple carbohydrates that easily break down into glucose. In energy metabolism, glucose is the most important source of energy in all organisms. Moreover, maple syrup is natural, unrefined, sterile, gluten-free, vegan, with no artificial colorants, flavorings, or preservatives. It contains 100 essential nutritional compounds including vitamins, minerals, amino acids, phytohormones, and 67 polyphenols. So go ahead and tell the world, maple syrup is the smarter sweetener!

See more information at: https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf

2020 Maple Hall of Fame Inductees

Joe Polak

Joe Polak has made maple syrup his entire life and operates Maple Hollow, a maple syrup and equipment sales business with his wife Barbara.

Joe graduated from the University of Wisconsin-Madison in 1975 with a Bachelor's of Science degree in Elementary Education. Joe purchased the business from his father in 1985 and added maple equipment sales at that time. Maple Hollow continues to sell pure maple products and maple equipment.

He is a member of the Wisconsin Maple Syrup Producers Association and has been President, Vice President, Director and Editor of the newsletter, the Wisconsin Maple News. He has held the position of Secretary-Treasurer of the North American Maple Syrup Council since 2003.

For Joe, being outdoors is still preferable to being at a desk. Using his chainsaw and splitting maul is his recreation and therapy.

Ray Bonenberg

Like most maple producers, Ray had his first taste of making maple syrup on his family's large dairy farm in Southern Quebec with his brothers in the late 60's. After Ray left home, vacations were spent back at the maple operation of his brother during sugaring time until Ray and his wife Carol Anne, started their own 1500 tap operation near Pembroke, Ontario, in 1998.

From 2011 to 2015 Ray was the President of Ontario Maple Syrup Producers' Association (OMSPA). In early 2010, Ray was appointed as OMSPA's representative to the International Maple Syrup Institute (IMSI) and then served as IMSI's president for three years, beginning in 2017. In 2011, Ray was appointed as the representative to the Canadian Maple Advisory Committee (Canadian Round Table), as Ontario's representative.

Ray continues to work providing educational opportunities and resources for all levels of maple producers.

2021 Maple Hall of Fame Inductees

Dr. Tim Perkins

"Dr. Tim" Perkins grew up in the Northeast Kingdom of Vermont where he helped on his grandfather's farm and sugaring operation. He w became Director of the UVM Proctor Maple Research Center in Underhill, Vermont, in 1996. His work centered on understanding sap flow in maple stems and tubing systems and the effects of a variety of tapping practices on yield, as well as the effects of tapping and sap collection practices on sustainability.

Dr. Perkins holds several patents for various maple devices and practices. He has authored or co-authored over 40 scientific journal papers, written numerous articles in maple industry literature, and has done hundreds of presentations throughout the maple producing region.

Dr. Perkins received, the Golden Maple Leaf Award in 2008 from the IMSI, and the Distinguished Service Award from the North American Maple Syrup Council in 2009.

Mark Harran

After a successful career in the food industry, Mark Harran and his wife, Kay Carroll, purchased a small farm in Litchfield, CT, and began making hay and maple syrup in 2000. After joining the Maple Syrup Producers Association of Connecticut (MSPAC), he went on to become its president for 10 years. During this time, he became very active in both NAMSC and IMSI, serving in a number of roles, and was elected president of the IMSI in 2012.

In his leadership role in IMSI, Mark contributed to bringing a number of very important initiatives to successful outcomes. These included the worldwide standardization of maple grades, resolving California Proposition 65, the "added sugar" labeling issue, a thorough review of IMSI programs and priorities, the transition to a new Executive Director and a number of IMSI maple marketing initiatives, which helped create a more balanced focus between increasing production and marketing maple products to consumers.

In Memoriam

Lawrence 'Larry' Myott

Larry (Lawrence B.) Myott, age 77, of Franklin, Vermont and Zephyrhills, Florida passed away on Thursday, March 18, 2021.

Larry was involved in the maple industry throughout his lifetime. He started sugaring as a child and continued his fascination and passion for the industry throughout his long career as a faculty member at the University of Vermont.

In 1975, he became Chittenden County Agricultural Agent for the University of Vermont Extension Service. He became a Regional Maple Specialist in 1988 and Vermont Extension Maple Specialist in 1992. He lectured in twelve states and Canadian provinces on marketing, production, and technology.

In later years, he was named Associate Professor Emeritus. At the January 2004 Vermont Farm Show Annual Meeting of the VT Maple Sugar Makers Association, he was presented the organization's highest honor, the Sumner Hill Williams Memorial Cup, for outstanding leadership in the Vermont maple industry. In 2004, Larry was inducted into the American Maple Museum International Hall of Fame for outstanding service to the maple industry. He served as Executive Secretary of the IMSI for more than ten years. He served on the Board of Directors of the Vermont Maple Festival for twelve years including two years as chair. He was the founder of the Vermont Maple Open House weekend.

Wilson "Bill" Clark

On Tuesday, May 18, 2021, Wilson S. "Bill" Clark, loving husband and father of four children, passed away at the age of 89.

Bill began maple sugaring when he was six years old. He had a selfless passion for the Vermont maple syrup industry and was a mentor, friend and teacher to countless people all over the state. He supported the entire industry, promoting maple at every opportunity. He believed a rising tide lifts all boats and in doing the right things for the right reasons.

Bill served as president of the Rutland County Maple Producers for eight years, the Vermont Maple Industry Council, the board of directors of the Vermont Maple Sugar Makers Association (VMSMA) and then president of VMSMA for 32 years from 1969 to 2001. He was president of the North American Maple Syrup Council for eight years, and organized the first Vermont Maplerama. In 1974 he helped create the International Maple Syrup Institute and served as its president for a two-year term.

Bill won numerous awards and recognition for his leadership in the maple industry and agriculture, including the Sumner Hill Williams Award for Lifetime Service to the Vermont Maple Industry and the Lynn Reynolds International Leadership Award. He was inducted into the American Maple Museum Hall of Fame and Vermont Agricultural Hall of Fame.

Norman D McKenney

Norman D. McKenney, 92, passed away on February 27, 2021. Norman was born on April 13, 1928 at the family dairy farm on Murch Road in North Baldwin, Maine.

When Norman's grandson Ben came home from school one day with a science project idea of making maple syrup, Norman was all in. In 1993 Norman, Ben, and Norman's son Steven and grandson Ben, founded Grandpa Joe's Sugar House, purchasing 2x6 Leader evaporator, and building a sugarhouse the following year. Norman became a valued member of the business serving in positions as Official Greeter, Foreman, Sap Hauler and Chairman of the Board. Norman was also an original member of the Southern Maine Maple Sugarmakers Association.

In 2021 Norman received the Lifetime Achievement Award from the Maine Maple Producers Association.

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