Inside This Issue

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A Message From Our President

Dear Members,

It's hard to believe that another year has come and gone and we are on the verge of another syrup season. For some of us, 2018 will be a year that we want to forget for many different reasons. There were wild temperature swings during the 2018 syrup season that left many, yours truly included, scratching their heads and wondering ... what's next? The seemingly endless rain that resulted in one of the wettest years in history that turned many tasks in our woodlots and around the sugarhouses into a complete muddy mess. As well as the countless obstacles in our day to day lives that we each encounter. As I reflect (those who know me well, know I'm not one to sit down very often) I'm not thinking about those perceived negatives. But rather, I am thinking about the progress we have made and continue to make as an association. I am thinking of all the wonderful people I've met in this industry with vastly different backgrounds that have come together over the common bond of producing maple syrup. I'm excited and looking forward to what 2019 will bring. As always, should you need anything please do not hesitate to call, text, or email me. I hope your tanks overflow with 4% sap and wish everyone a safe and fruitful 2019 syrup season. I can't wait to hear about it at our annual meeting at Jacksons Mill on May 4, 2019.

Sincerely,

Rich Flanigan

Rich Flanigan
President, WV Maple Syrup Producers Association
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304-972-3129

Southern Syrup Research Symposium a Sweet Success

(Also published in The Maple News)

Vermont accents mingled with a little southern twang at the **Southern Syrup Research Symposium** held this past September 28th and 29th in Summersville West Virginia. The Symposium, hosted by the West Virginia Department of Agriculture and funded through a USDA Specialty Crop Block Grant, was designed to bring a focus on sap and syrup production possibilities in the Central Appalachian region. It brought together maple experts and research scientists with syrup producers to look at specific problems and opportunities related to sap and syrup production in this region of the country. Syrup producers from West Virginia, Virginia, Maryland, Pennsylvania, Ohio and Kentucky came to learn and to share their experiences.

Vendors at the Southern Maple Syrup Symposiuim

The symposium began on Friday with a series of presentations by prominent maple scientists and maple experts. Topics ranged from *"Keys to High Yield Sap Production"* by Dr. Tim Perkins (Director of the Proctor Maple Research Center) to *"Southern Possibility--adding value to Virginia tree syrup production*" by Dr. Tom Hammett (Virginia Tech) and Matt Cabral, (Virginia syrup producer). Saturday was given over to a series of panel discussions that engaged scientists and maple experts with producers. Panel topics included: "Sanitation" (a topic on everyone's mind), "Agroforestry", "Alternative tree syrups", "Sweet Sorghum", "Technological Innovations", and "Entrepreneurship and Marketing." These were active, engaged discussions. As John Munsell (Virginia Tech and project Director for the Appalachian Beginning Forest Farmers Network) commented, "We got the topic going, and the panel members, which were everyone in the room, took it from there."

Saturday also included a plenary session where producers Brandon Daniels, Matt Carbal, Mark Bowers, and Todd Palivec, took center stage to talk about syrup production issues and opportunities especially relevant to the Central Appalachians. That was followed by a presentation titled "The Elephant in the Room," something we would rather not talk about but are always concerned about: climate change. Dr. Stephen Matthews from Ohio State provided an update on climate change models and how they might impact the maple industry. The good news is that we don't have to pack up our evaporators and move up north. The bad news is, not YET.

The Symposium discussions were not limited to maple. The Central Appalachian region's forests contain abundant walnut and black birch, both of which produce sap that can be made into syrups with a high market demand. Sycamore is another abundant sap producing species. Then there's sweet sorghum, providing a potential second crop for anyone with an acre of farmland and an evaporator. All these alternative syrups expand the sap and syrup potential of the Central Appalachians. They also all need further research, as well as production and market development to reach that potential.

Maple Syrup Real

The Southern Syrup Research Symposium also featured a vendor's fair, where equipment manufacturers, government agencies and not-for-profit organizations showed their wares or the ways that they can assist in the expansion of the industry. It included a poster session where high school, to college, to extension programs featured their maple programs and maple research. And, a college roundtable, where representatives from West Virginia University, Ohio State, The University of Virginia, The University of Vermont, Cornell, Future Generations University, and Dabney-Lancaster Community College shared what they are doing to promote sap and syrup production.

Other highlights of the Symposium included: A little West Virginia indigenous knowledge, when Nichols County producer Jimmy Tucker explained how he learned from his granddad about clarifying sorghum juice using white clay he digs up on his property. It eliminates the green froth, lightens the color, and takes the bitter edge off the taste.

And, at the Friday night mixer, everyone joined in, took hands, circled to the left, and danced the world premiere performance of the: USDA approved….No sugar added…. *"Maple Syrup Real"*!

A Preliminary Study of Temperature Regimes at Five West Virginia Locations

By Jeff DeBellis

If you don't like the weather, wait five minutes. So the saying goes in the mountains. Winters in the mountains can be especially fickle. A hard freeze at night might follow a 70°* day. Unpredictable weather is a challenging dance partner for any syrup producer. Whatever syrup producers can do to understand the weather's next step will help them get the most out of their trees. A place to start in preparing for future weather is to analyze past weather patterns. We did just this, conducting a study of temperature patterns (freeze/thaw cycles, extended thaws, temperature spikes, and growing degree days) in West Virginia during the tapping season. We first presented the results of this study at the Southern

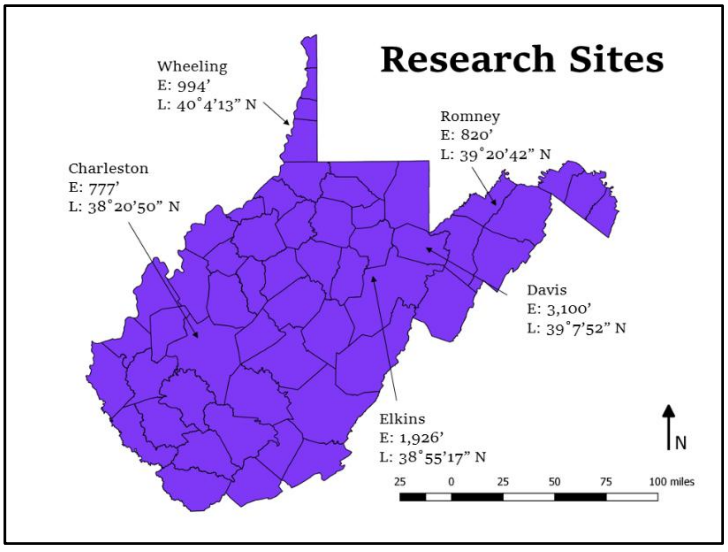


Figure 1

Syrup Research Symposium this past September.

In West Virginia's hills, weather and climate vary dramatically with latitude, altitude, aspect, and slope. The mountains around Upper Tract (Pendleton County), for example, act as a rain shadow that creates one of the driest places in the Eastern US. Devil's tongue cactus (Opuntia humifusa) grows alongside maple trees. A syrup producer on one side of Pendleton County may have their best year ever, while one on the other side of the county suffers their worst. For this study, we chose five locations within the state to study historic weather patterns: Charleston, Davis, Elkins, Romney, and Wheeling. Figure 1 shows the latitude and elevation for each of these locations.

At each location, we analyzed the four temperature patterns, defined below, for the 2009 through 2018 sap flow seasons (January 1-April 30).

Freeze/thaw cycles. Defined as any time overnight temperatures drop to 25° or lower, followed by a daytime high that reaches 40° or higher. Low overnight temperatures create a vacuum that allows the tree to draw water in through its roots. Warm daytime temperatures build pressure in the vessels causing sap to flow.

Extended thaws. Defined as any time the temperature remains above 32°, increasing microbial action, for four or more consecutive days.

Temperature spikes. Daytime high temperatures that reach 70° or higher, dramatically increasing microbial action, and

Growing degree days (GDD). A heat index traditionally used to predict when a crop would reach maturity. We hypothesized that GDD are a good metric for accumulating microbial growth, and the tree's response over time, leading to tap holes drying up.

Results of this analysis:

Freeze/thaw cycles (2009 – 2018): Charleston had the lowest number of freeze/thaw cycles. This is not surprising, since Charleston is the southernmost location and at the lowest elevation of the five sites. This site averaged 12.2 freeze/thaw cycles per sap season during the study period. Romney averaged the most freeze/thaw cycles each season with 27.3. Although one might have thought that the higher elevation site of Davis would have had more freeze/thaw cycles, this turned out not to be the case because of the occurrence of extended freeze-up periods. The 2018 freeze/thaw cycles for all sites are shown as green dots in Figure 2.

Extended thaws (2009-2018): In 2018, all sites had an unusually early extended thaw during the third week of February. At Charleston, this thaw stretched on for nine days. At the four more northern locations, it lasted six to seven days. There were unusually early extended thaws during the 2017 season as well. That year, most locations had two extended thaws – one in January and one in February. The temperature at Elkins did not get below freezing from January 12th to January 23rd, 2017. Figure 2 shows that extended thaws (shown as orange lines), are often associated with temperature spikes (shown as red dots). These temperature spikes may be even more detrimental to sap flow than thaws because metabolic activity increases rapidly with temperature.

Temperature spikes (2009-2018): Romney and Elkins had the highest number of mid-season temperature spikes, with an average of seven per season. Wheeling had the least, with 1.6. Of the past ten seasons, the earliest date for a 70° day at every site happened in either 2017 or 2018.

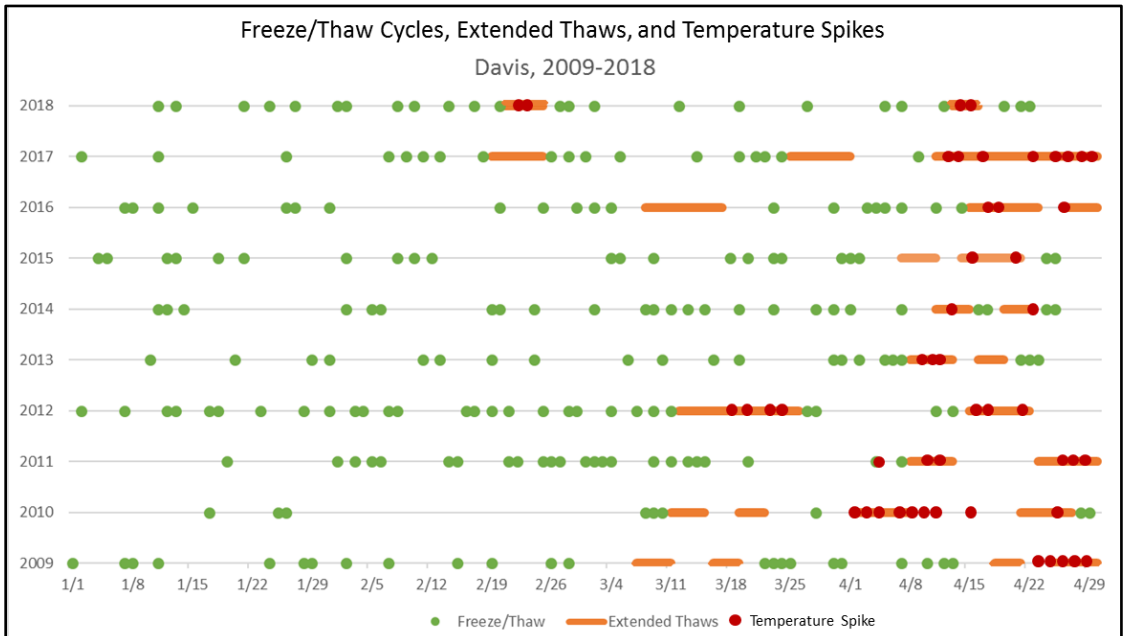


Figure 2

Growing degree days 2009-2018: To calculate GDD, we used 40˚ as the base temperature for microbial growth. Anytime the average daily temperature was above 40˚, we subtracted 40° from that average to obtain GDD. For example, if the average temperature on a given day was 56˚, we accumulated 16 GDD. If the next day's average was 42°, there would be two more GDD for a cumulative total of 18. From tracking conditions at Dry Fork Maple Works near Whitmer over the past several years, we know that tap holes dry out and the season ends, on average, at the end of the first week in April. Climatically, Whitmer is similar to Davis. By matching observations in Whitmer with GDD calculations for Davis, we estimated that the end of the first week in April corresponds to about 200 cumulative GDD for this location.

In our analysis, we presumed that by the time any given site reaches 200 GDD, the microbes have grown to the point where the tree's response to invasion has been sufficient to end the sap flow season. On average, Charleston hits 200 GDD during the second week of March. The past two seasons (2017 and 2018), Charleston hit 200 in February. Figure 3 shows the 200 GDD mark for the 2018 season at Davis (mid-April) and Figure 4 shows the mark at Charleston (mid-February).

Tracking daily high and low temperatures in a sugarbush is a worthwhile task for any syrup producer. That's all the information needed to calculate freeze/thaw cycles, extended thaws, temperature spikes, and GDD for a specific location. Historic data is also available for download from NOAA's Applied Climate Information System (ACIS). This is the source that we

used for our climate data. Tracking this information will help you to recognize patterns over the years and better predict when to start tapping, when to pull your taps, and when it might be worthwhile to re-drill tap holes mid-season.

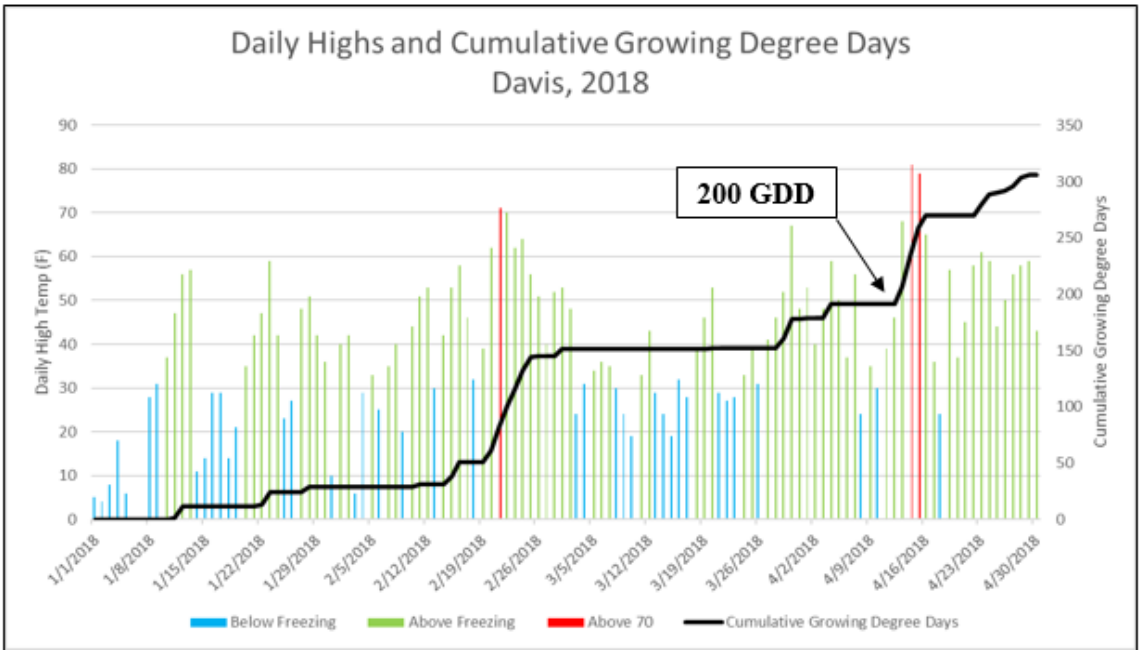


Figure 3

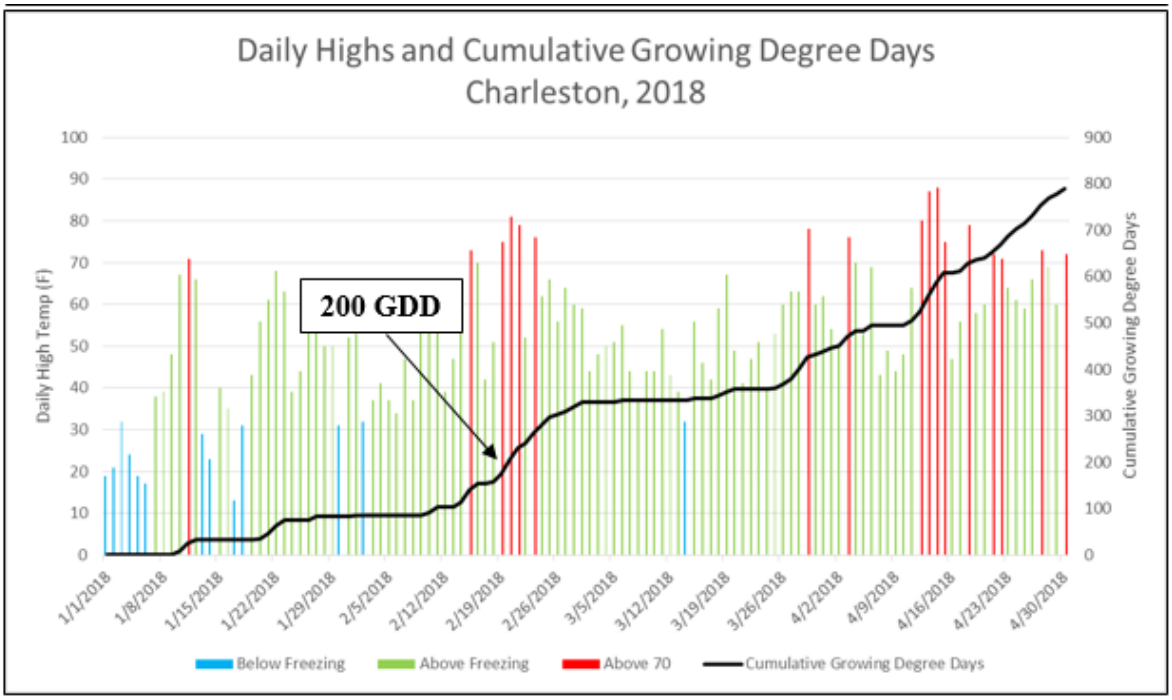


Figure 4

For more information, contact Jeff DeBellis at jeff.debellis@future.edu.

*All temperatures in Fahrenheit.

Future Generations University Maple Syrup Production Seminars

Mike Rechlin (Instructor), Paul Ronk (Host), John Kovach, Dyana Lambert, Mark Lambert, Orion Batista, Joash Batista, Lynn Oliver, Stephanie Flanigan, Kate Fotos.

Future Generations University rolled a series of public seminars on maple syrup production in partnership with the West Virginia Department of Agriculture and local producers across the state. Following directly on the public information sessions, Future Generations University launched its second annual certificate program in *Maple Sap Collection & Syrup Processing*: equipping landowners with how to evaluate, set-up, and run a successful Maple Sugaring operation.

Starting with woodlot evaluation, participants then learned to set up a sap collection system, and produce syrup. Instructed by Professor Mike Rechlin, the program began with a 3-day residential program. Classroom instruction and lodging was hosted at the Saint John's Pastoral Center outside Charleston with afternoon field sessions at Ronk Family Farm in Lincoln county. Eleven people attended and are currently completing their online coursework in January and February. They have also been paired with local WVMSPA members to complete 16 hours on supervised practice to learn the ins and outs of sugaring. The majority of the students plan to start or expand sugaring operations and each will become WVMSPA members upon completing the certificate program.

NAMSC/IMSI - 2018

By Mike Rechlin

Now that title is just about as clear as the purpose of the two organizations that it represents. NAMSC stands for the North American Maple Syrup Council and IMSI stands for the International Maple Syrup Institute. This year these two organizations held their joint meeting,

October 26 through the 29, in Concord New Hampshire. The West Virginia Maple Syrup Producers Association is a member of the NAMSC. I went to the meeting as the WV delegate along with Jamie Schuler as the alternate and Cindy Martel representing WVDA as a recipient of a 2017 ACER grant.

So, what are these two organizations and what do they do? The NAMSC is an international organization made up of 18 state maple syrup producers associations, businesses and affiliated groups. Their mission is to "share common interests, experiences and knowledge for the advancement and improvement of the maple syrup industry." Fair enough, but in practical terms what does that mean? For starters it means that the NAMSC publishes the Maple Syrup Digest. Our association, as a member of the Council, and we all, as WVMSPA members, receive copies of that publication. The Council also plays a role in updating the Maple Syrup Producers Manual. The Manual is once again being revised to keep up with technological advances in our industry. The NAMSC also administers a research fund supported by member dues and industrial partners. This fund supports research responsible for advances in the quality and quantity of syrup produced. This year a Proctor Maple Research Center project, with support from the NAMSC Research Fund, will be looking into effective defoamers suitable for organically certified maple syrup.

Most importantly the Council represents the maple industry when regulatory issues arise that impact our industry. When the FDA starts looking at maple compliance with the Food Safety Modernization Act it is the NAMSC that helps to steer them in the right direction. When the FDA proposed requiring the words "added sugar" be on all maple syrup labels, it was the Council that had to explain to them how that requirement would confuse customers. Consuming maple syrup certainly adds sugar to a person's diet, but the bottle they poured it from did not have sugar added to it. We will never escape regulations, but the Council helps make sure that the regulations we are subjected to protects the consumer without overly burdening maple syrup producers.

The International Maple Syrup Institute (IMSI), founded in 1975, is a newer organization and although "joined at the hip" with the NAMSC, the IMSI has a different purpose. The IMSI was founded to promote and protect pure maple products. This is the organization that was responsible for developing the new grading system that provides consistency to product grading, replacing separate state and provincial systems. IMSI also is the organization behind the International Maple Grading School that came to WV last May, and that has developed the off-flavor tasting kits. IMSI is a membership driven organization, and although all WVMSPA members are also members of the NAMSC they would have to individually join the IMSI. The ISMI grew out of a need to address cross boarder syrup issues, and was initially made up of 5 commissioners from Canada and 5 from the USA. It is as much a French-speaking organization as an English-speaking organization. Over the past year the ISMI has worked on issues of maple supply, demand, and pricing. This is made more interesting with variations in the US-Canadian currency exchange rate, and a recently imposed, and NAFTA renegotiation related, 15% retaliatory tariff on USA syrup imported to Canada. The IMSI also has worked on maple nutritional labeling and with the FDA and Health Canada on the added sugar issue.

Although producers in the Central Appalachians are serving primarily a local market for maple products, we are nonetheless part of the larger maple industry. Both the NAMSC and the IMSI deserve our support. Without these organizations taking the "big picture" view of the

maple industry, we could see ourselves saddled with a regulatory and a macro-economic environment that none of us would prefer to live in.

Research Update

The Southern Syrup Research Symposium generated great discussions on what we need to know to move the tree sap and syrup industry forward in the Central Appalachians. Out of those discussions, and under the auspices of the Southern Syrup Research Institute (SSRI) at WVU several studies are being initiated this sap season by SSRI collaborators.

Forest Management Demonstration area at the Laurel Fork Sap Suckers. With WVDA ACER grant funding which is now supplemented by a 2018 Virginia SCBG, and in conjunction with Virginia Tech, data on sap yield and sweetness was gathered during the 2018 sap season from managed and unmanaged maple stands. This showed that thinning and proper management increases the sugar content of the sap. Information on tree growth has been added to that, and this season a second season of sap flow data will be gathered. With the Virginia SCBG funding the forest management, work will be expanded over the next two years to include plantings and demonstration plots of other non-timber forest products as ways of increasing income from a sugarbush. Last August Tim Wilmot conducted a 3/16 tubing workshop at the demonstration area, and this coming year a workshop is planned that will focus on forest management for sap production featuring the results of this research, and previous studies done at the Dry Fork Maple Works.

Sanitation and 3/16 tubing. With the expanded use of 3/16 inch tubing, and especially with its applicability in West Virginia with its high degree of slope, concerns have risen (Cornell research 2018) about the drawback of contaminated sap into the tree during the freeze/thaw cycles, and during extended warm spells. WVU in conjunction with Ohio State Extension is initiating a study to look at the use of small, inexpensive, diaphragm vacuum pumps to maintain enough vacuum to overcome the negative pressure of the tree, keeping contaminated sap from entering the tree and maintaining sap flow.

Walnut sap and syrup. There is a lot of interest in the potential for tapping walnut in the central Appalachians, but little known about its sap flow characteristics, processing issues or the marketability of the product. Future Generations University is initiating a study with 100 walnut trees on tap to answer some of these questions. This will be a case study that other producers thinking about walnut syrup can refer to in deciding whether or not to move into walnut syrup production.

Sycamore sap and Syrup. Even less is known about sycamore sap flow. Last year, with 6 trees tapped, we learned that sycamore trees do have a sap flow season and that the sap can be boiled down to make syrup. Future Generations University and WVU have parallel studies planned to learn more about the sap flow and syrup characteristics of Sycamore. Get ready for a sycamore syrup tasting at the May WVMSPA meeting.

Birch sap and Syrup. Not to leave any tree untapped, Future Generations University in conjunction with Experience Learning is running a Black Birch tapping trial at ES's Sweetwater farm. The plan is to have 200 birch trees on tap to learn the characteristics of sap flow and the

marketability of birch syrup in West Virginia. With these 3 trials we will be in a good position to advise producers of the opportunities provided by alternative tree syrups.

Cluster Networking. The maple industry is about more than just making maple syrup; it's also about selling it. Last season a preliminary study was conducted by WVU Extension on the benefits of clustering maple producers and associated businesses to market a comprehensive maple experience. This marketing research is being expanded with 4 identified producer clusters around the State. The results could lead to new marketing strategies that could benefit all maple syrup producers.

Rocket Evaporator. Based out of Experience Learning's Sweetwater farm last sap season we built a high efficiency evaporator, using rocket stove technology, specifically for small backyard producers with less than 20 taps. The "rocket evaporator" was tested and compared to other styles of "backyarder" evaporators by students at Virginia Tech. A second generation of this prototype will be built this year, after which we plan on working with the Robert C. Byrd Ag Innovations Institute at Marshall University on its further development.

Timing of Tapping. WVU is in the second year of duplicating a study initiated by the Proctor Maple Research Center as part of their 2017 ACER access grant. This work is looking at the effects of the timing of tapping and re-drilling, or as we say: "bumping the taps," on sap yield.

The Importance of Tapping Properly

By Mike Rechlin

Anyone who has been in this business for any period-of-time will tell you that in a sugaring operation money is made in the woods. You can buy the fanciest evaporator on the market, get yourself an RO, an automatic draw-off and a filter press, but if you don't have sap to boil you're not going to make maple syrup. There are plenty of things to attend to in the woods, from vacuum leaks to sanitation, but the first thing you do to get the sap to flow could very well be the most important. That is tapping your trees.

But tapping is easy you might say. Maybe you have been doing it for years. Why on a good day you might even get more than 250 trees tapped. If any of that sounds familiar it might be a good time to get back to the basics. For starters, tapping is not easy. It starts with examining the tree and trying to figure out what is going on under the bark, which of course you can't see. And if you are putting in a large number of taps per day you are probably not taking the time you need to get to know your trees. It's time to slow down and do it right.

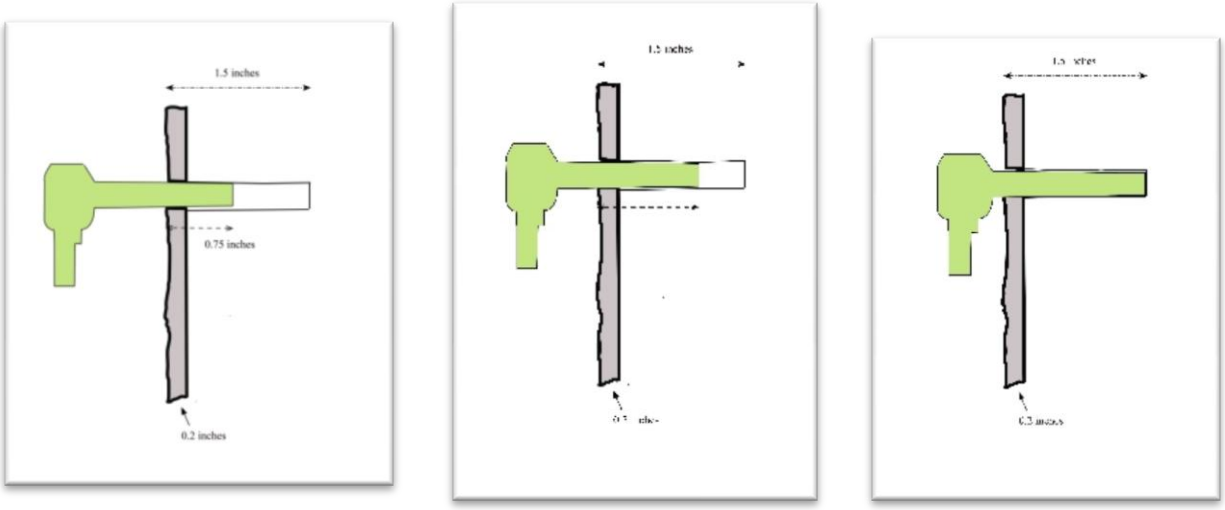
A review of the basics:

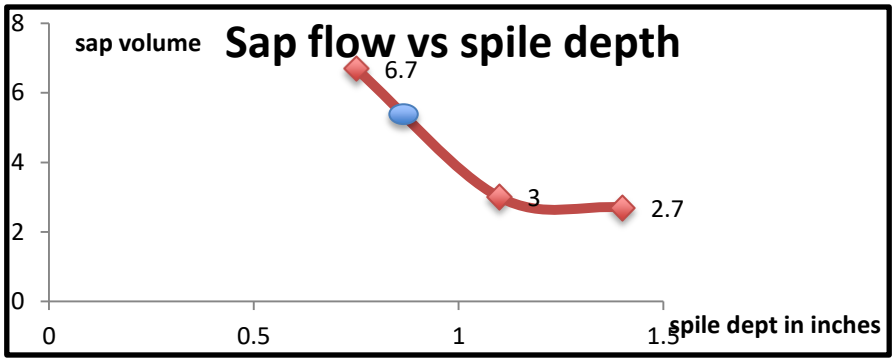
1. Only live light-colored wood gives sap, so if you drill into dark wood stop.
2. Today's spouts have very little taper. To avoid leaks don't wobble the drill.
3. Rough or disfigured bark is an indication of dead wood underneath.

4. Look for past tap holes (they can be hard to find) and stay 2 inches away on the sides and at least 18 inches away vertically to avoid discolored, dead, wood.
5. Tap, don't hammer. The temptation is to tap in the spout too far. You want it in just far enough to stick. And how far is that?
    - When the light hammer you are using bounces off the spout, and
    - When the pitch of the sound the tapping makes rises.

Why is this important you might ask? It's important because the further you drive the spout in the hole, the less light-colored sapwood is exposed to feed in sap; furthermore the less sapwood is exposed, the sooner microbial action will dry up the tap hole. The temptation is to give your spouts one more tap after the pitch rises, just to be sure they don't come out. Don't be tempted. To determine the impact of that one more tap, I did an end of the season study on 6 trees in my back yard.

The left-hand graphic below shows a properly tapped tree; just far enough to stick. The distance in from the outside of the bark will depend on bark thickness. The middle graphic shows a spout driven half way in the hole, and the right-hand graphic shows a spout hammered in all the way. The graph below plots the sap yield from this study. The properly driven spout yielded 6.7 gallons of sap over 4 runs. The half way driven spout yielded 3.0 gallons and the spout driven in all the way only gave 2.7 gallons. This tells us that driving the spout in too far reduces sap yield. But how about just one more tap just to make sure the spouts don't fall out. The blue ball on the graph shows the impact of that extra hit on your yield. Depending on how hard you whack it, that extra tap can result in a 15 – 20% decrease in sap flow. So, unless your problem is too much sap, and I have yet to meet a sugar maker with that problem, slow down, make good decisions on where to drill your hole, and most importantly, tap in your spouts just until they stick.

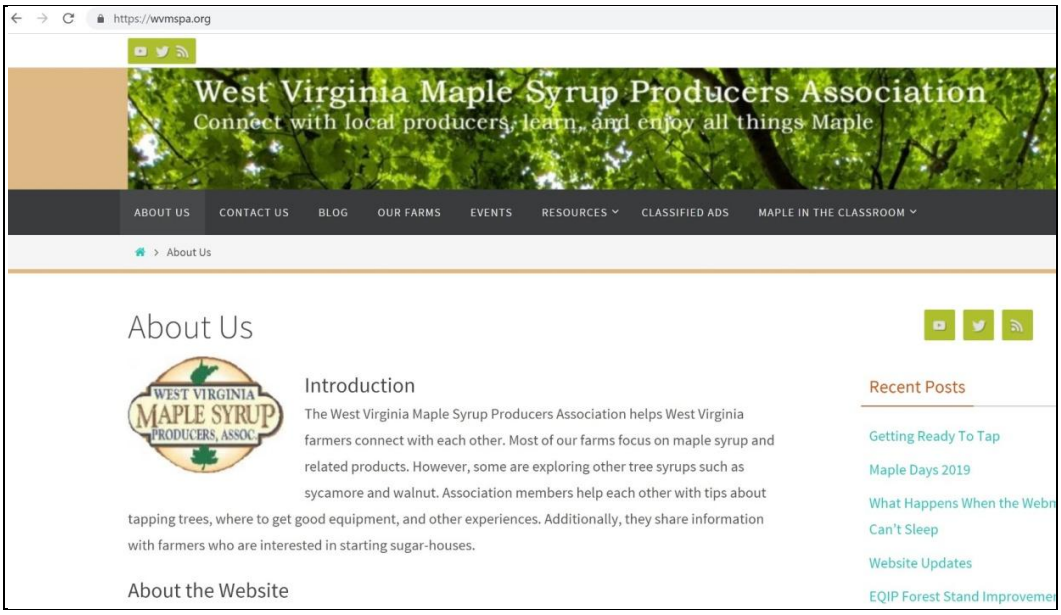




West Virginia Maple Syrup Producers join the World Wide Web

(also submitted for publication in the Maple News)

Thanks to one of our newest, and smallest maple syrup producers, Tina Barton, the WVMSPA has a new presence on the web. With one year of tapping under her belt, and a total production of a little less than a quart, Tina decided she had more to learn about syrup making and joined the Association. Soon thereafter she volunteered to share that learning with the world by developing a WVMSPA website. That site, www.wvmspa.org now joins the association's Facebook page https://www.facebook.com/wvmaplesyrup/ to share news and views of the West Virginia maple world.



In addition to the usual "Contact Us" page, the website has a blog that posts useful information, from announcements about the website, grants and other opportunities, to stories

from our members. Also, on our website you can find maple syrup producers in West Virginia via the interactive map found at the "Our Farms" tab. The website provides an Events page for syrup-related offerings, such as West Virginia State Maple Days, conferences, workshops, etc. We try to share the important maple events for all of North America. We also envision the website as a central hub for assistance and grant opportunities for West Virginia syrup producers, as well as useful links and research. The "Resources" menu is for all these things. A classified page provides a place for producers to buy and sell used maple equipment.

The newest addition is a tab for our West Virginia "Maple in the Classroom" initiative, funded through the USDA-AMS-Acer Access grant. This year we expect to have 15 schools tapping trees, with students from kindergarten to college learning math, science, and technology through maple. On the webpage teachers will be able to share lesson plans and class experiences, uploading training documents and photographs.

If you have any questions or suggestions for the website, please contact Tina Barton at webmaster@wvmspa.org.

Maple Education on the Rise

Maple Syrup is not just a sweet treat; it is an educational tool that can be used to help children integrate chemistry and biology into forestry and exploration of the world around them. Experience Learning, an educational non-profit based in Pendleton County, West Virginia, is taking on Maple in the Classroom in its second year. Started by Mike Rechlin last year, Maple in the Classroom connects classrooms with nearby producers to create engaging learning opportunities in the STEM field. Classes in the program are provided with tapping, storage, and processing equipment. After their producer partner helps tap trees around their school the class continues to collect the sap and run a part of it through the evaporation process. Once the class has collected all of their sap, they trade it with their producer partner and for the equivalent amount of syrup, which they can enjoy as a class.

Experience Learning works to create beyond-the-classroom, outdoor learning opportunities throughout the year, to develop students into effective community members by imparting confidence and competence. Maple in the Classroom fits nicely into their course catalogue, which includes programs ranging from overnight expedition trips to stream studies and after-school projects in WV public schools.

Spruce Knob Mountain Center in fall.

Beyond their work with schools, Experience Learning offers a wide range of summer camps that encourage kids to become nature lovers, stewards, and contributing community members. All their camps are now open for registration. These summer camps and many of the school courses are based at Experience Learning's Spruce Knob Mountain Center, which sits on the shoulder of Spruce Knob, the highest mountain in West Virginia (pictured left).

If you are interested in visiting, they offer vacation rentals through AirBnB.com and have a wide range of all-ages events throughout the year. For more information visit experience-learning.org.

Experience Learning is excited to become more involved in the maple community. Along with running Maple in the Classroom, Experience Learning is working in partnership with the West Virginia Department of Agriculture, Future Generations University, and the Little Kanawha Resource Conservation and Development to make maple education year-round through the creation of a mobile sugar shack, like the one pictured. This building will hold a working evaporator and will be brought to festivals and fairs across the state to give on-site demonstrations of syrup production. Its first appearance is scheduled to be at the Mountain State Arts and Crafts Fair in Ripley on the 4th of July.

Lake Placid Mobile Evaporator.

The Maple in the Classroom is being implemented by Experience Learning in collaboration with the West Virginia Department of Agriculture and funded through the USDA-AMS-Acer Access grant.

Sugar maples are for the birds!

By Jessie Reese, WVDNR/NRCS Partner Avian Biologist


A male Cerulean Warbler. Photo by Steve Shaluta.

West Virginia's maple syrup producers often know the birds in their forest – after all, they share the same "habitat". From the twitters of flocks of chickadees that seem immune to the cold days of tapping season, to the rap-rap-rap of woodpeckers creeping up tree trunks, to the lonely call of hoot owls in the night, birds are all around your sugarbush. Folks who spend time walking their woods are also familiar with that magical time in spring, when one day the comparative solitude of winter breaks open with the return of the song of migratory birds.

One such long distance traveler, the Cerulean Warbler, has been on the minds of forest managers and biologists here in West Virginia. This tiny, bright blue songbird makes the journey from the Andes Mountains of South America to return home to the forested slopes of eastern North America each spring. One third of the total population will

Top panel: mixed hardwoods dominated by sugar maples were thinned to create gaps for warblers; middle pannel: sugar maple regeneration in a thinned stand; bottom panel: a thinned sugar maple stand. Photos by Kyle Aldinger.

spend the spring and summer building a nest and raising their young here in the mountain state. Unfortunately, their population has declined by 70% since biologists began tracking their numbers in the 1960s, which is among the steepest declines documented in migratory birds.

However, there's good news for the warblers. Research by West Virginia University and other institutions has allowed us to understand precisely what type of habitat these birds need to survive and raise their young. Cerulean Warblers prefer large tracts of mature forest dominated by white and chestnut oak, hickory, sugar maple, and cucumber magnolia trees. They tend to build their nest next to a canopy gap – a place where large trees have fallen, perhaps due to wind, ice storms, or even human activities. These gaps give the understory vegetation a chance to grow up because of the influx of light reaching the forest floor, which provides cover for the fledglings and other wildlife. Studies have shown that large sugar maple trees adjacent to gaps are important for both nesting and foraging for Cerulean Warblers.

That's where you come in. As a maple syrup producer, your forest may have the tree species needed to support Cerulean Warblers and other forest wildlife. With a little help, you can actively manage your woodlot to enhance wildlife habitat and support maple syrup production. Thinning the forest to remove poorly formed, unmerchantable, and undesirable tree species not only creates the canopy gaps needed by the warblers, but also can promote the growth of large diameter sugar maples by reducing competition with neighboring trees. Financial and technical assistance is available for private landowners through the USDA Natural Resources Conservation Service, who has partnered with the West Virginia Division of Natural Resources, the Appalachian Mountains Joint Venture, and the West Virginia Division of Forestry to promote the Cerulean Warbler Forest Enhancement Project.

Longtime readers of the WVMSPA newsletter will remember the July 2017 article by Mike Rechlin, who shared the story of one WV syrup producer who decided to try out forest management to increase their sap production.

If you too are interested in managing your sugarbush to promote maple syrup production and create habitat for wildlife like warblers, turkeys, and grouse, contact Jessie Reese at 304-618-6127 or jessica.reese@wv.usda.gov, or visit your local USDA service center.

Applications are accepted at any time, but must be received by January 18th, 2019 to be considered for funding in late winter, and by May 3rd, 2019 to be considered for funding this summer. USDA is an equal opportunity provider, employer, and lender.

Dry Fork Maple Works under new Management

In the fall of 2013, recognizing the potential the maple industry held for West Virginia, John and Mel Dalen began milling lumber and running tubing in what was to become the Dry Fork Maple Works. Over the next five years, the Dry Fork Maple Works produced West Virginia maple syrup for local markets. In addition to the maple syrup, the Dry Fork served as a location for educational programs and maple research. Most importantly, the 20,000 taps John added to the state's total tap count was an important factor in getting West Virginia added to the annual NASS (National Agricultural Statistical Survey) maple syrup survey.

Spruce Knob Maple

This coming year maple syrup will be made on the Dry Fork by Josh Swartzenturber and his brothers under the new name of *Spruce Knob Maple*. They plan on running the operation as a family affair and are interested in hearing from anyone wishing to purchase bulk syrup. They can be contacted at: spruceknobmaple@gmail.com, 285 Jasper Riley Road, Oakland, MD. 21550 or by calling 240-488-6059.

When not out helping the Swartzentrubers learn the ropes at the Dry Fork, John is looking forward to spending more time on his skis, with backcountry trips planned for the mountains of Montana.

In Memoriam

In remembrance of our fellow maple producers Eddie Hartman and Bert Carlson whom we lost last year: Their dedication and support of our association will be greatly missed.

Eddie Hartman

Bert Carlson

West Virginia Maple Syrup Producers Association

Membership Application 2019 (revised10/2018)

Purpose:

"The purpose of the West Virginia Maple Syrup Producers Association is to promote, educate, and research the maple and other tree syrup as well as value-added syrup products throughout West Virginia."

Membership:

"Membership is open to persons interested in maple or firms engaged in any phase of producing, processing and/or marketing maple syrup, and/or tree syrups and value-added products of maple syrup and other tree syrups."

We invite you to join with us as we learn and promote our industry.

Name: _____

Farm/sugarhouse name: _____

Membership category (check one):

_____ West Virginia members. (With full voting rights).

_____ Associate and Honorary members. This category is for friends from other states who want to join our organization. (Without voting rights)

_____I give permission for my contact information to be shared with paid members.

_____ I do not give my permission to share my contact information with paid members

Address:

Phone number: cell:

Email address:

Annual dues: $25 includes

- Maple Syrup Digest Subscription
- Biannual Newsletter
- Workshops on relevant sugaring topics
- Participation in WV annual maple weekend

Complete application and submit with your annual dues of $25 by January 31, 2019 (make checks payable to WVMSPA)

TO: Cathy Hervey 100 Fernwood Drive, Wellsburg, WV 26070

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