

Maple Syrup Digest



VOL. 26A, NO. 2

JUNE 2014



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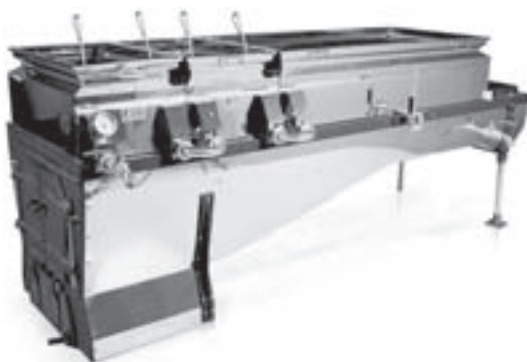
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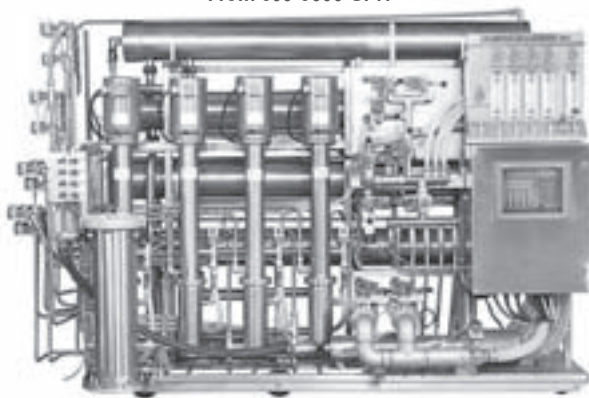
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MAPLE SYRUP DIGEST

Official publication of the

North American Maple Syrup Council www.northamericanmaple.org

Published and Edited by:

ROY S. HUTCHINSON • P.O. BOX 240, CANTERBURY, NH 03224

Phone: 603-783-4468 • Email: editor@maplesyrupdigest.org

Published four times a year (Feb., June, Oct., Dec.)

Postage paid at: Canterbury, NH 03224

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COVER: Don & Betty Ann Lockhart and Jacques Couteau

GREETINGS FROM YOUR PRESIDENT



It appears that much of the maple region suffered through a brutal winter season which caused many sugar makers to tap later than usual. Here in east central Indiana we missed almost one month of a normal sugaring season. Even so, many producers had an average or better year and I had the fourth best season in over 100 years at our camp. Let's hope that you had a good year also.

This issue of the Maple Digest is the last one that will list Roy Hutchinson as Editor. He has held this position for nearly a quarter of a century and with the capable help of Mary Ellen they have sent nearly 100 issues to the printers. It is has been

my pleasure to enjoy Roy's company and his stories (mostly about Alaska) at the annual meetings each fall. Job well done Roy & Mary Ellen!

The next issue of the Maple Digest will be under the direction of Winton Pitcoff. Winton demonstrates a great enthusiasm and a vast knowledge of the maple industry and his talents show up in many areas of NAMSC. He has big footsteps to follow as Editor, but I am confident that he will do a fine job, perhaps for another quarter of a century.

Now that the sugaring season has ended, we can turn our attention to cleaning up, making repairs, improving our sugar camps and purchasing new equipment. I hope the off season is as good to you as the sugaring season has been to me.

With Best Regards,
Dave Hamilton

FROM THE EDITOR

It is with mixed emotions that I cease being the editor of the Digest. I know it is time for a change, but I resist change as much as possible. In the last 24 years there have been a lot of changes in technology and I have not kept up with the changing technology. Thankfully, my wife has kept up with the changing times. If not for her expertise, I would have quit long ago. In the beginning it was all hard copy and phone conversations - now most copy and ads and correspondence are done by e-mail.

There have been many changes in personnal as well. Along the way, we have made many friends and as the years went by, we have also lost friends. It is reassuring to see young people coming into the organizations and filling the shoes of some of us older folks. Organizations can not survive without new members and new ideas. So, it is time for me to move over and let new ideas take place.

This venture would not have been possible without my lovely wife Mary Ellen by my side.

The best of luck to you Winton.

Roy

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IMSI NEWS

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

At the time of preparing this report in early May, some very preliminary reports on the 2014 Maple Crop are being received from members by the International Maple Syrup Institute. What appears to be common across the industry is that the production season got off to a late start with syrup production not starting in many areas in both the United States and Canada until near the end of March. This late start was unprecedented in some areas. However, once production was underway there were very good sap runs in a more compressed time frame, particularly in modern operations, where sap runs were assisted by vacuum. Sap runs were well below normal where buckets were used. Yields are expected to be higher in northerly and higher elevation areas since warmer weather tends to be delayed there. While 2014 will not register as a bumper year, it is anticipated that there will be a sufficient supply of syrup to meet market demand in North America and overseas.

The IMSI is active in studying the relationship between supply and demand for maple syrup. To this end, an IMSI Market Study Group was established in 2013 with maple industry representatives from Canada and the United States. This group will meet in Burlington, VT for a day in early May to discuss the longer term relationship between supply and demand for maple syrup and marketing strategies needed to ensure a prosperous industry over the next

decade. This meeting will be followed by the IMSI's quarterly Board of Directors meeting, which will be held on May 8th.

Many IMSI members and others have commented that they find the IMSI maple nutrition rackcard and poster to be very helpful in their consumer awareness and education programming efforts. The comparative nutrition advantages and potential health benefits of maple syrup will hopefully help maple stand apart from the controversy of health risks currently being associated with common sweeteners used extensively by most consumers. The subject of over consumption of sugars in general, particularly those hidden in common food products, has received a lot of press coverage over the past few months.

The IMSI continues to monitor the status of government progress to amend maple grade regulations in accordance with the IMSI Maple Grades Proposal. Progress has been slow in gaining government approvals overall. However, Vermont implemented the maple grade amendments for the 2014 maple production season and it is expected the amended regulations will be adopted by federal governments in both Canada and the United States in 2014. This will position the maple industry for broader implementation of the changes for 2015. Approval at the Federal level will undoubtedly provide impetus for other state/provincial governments with their own maple regulations as well as other states which fall directly under the federal regulations to adopt the new maple syrup classification and grade standard.

MAPLE HALL OF FAME

On May 17th, 2014, the Maple Hall of Fame in Croghan, New York, inducted two new members.

JACQUES COUTURE

Jacques Couture and his wife, Pauline, own and operate a diversified agricultural enterprise in Westfield, VT which is situated on the banks of the Mississquoi River about 5 miles from the Canadian border. They have been farming here since 1970 and raised 6 children who are all married and moved on to other careers outside of agriculture except for one daughter who along with her husband and 2 sons are maple producers in Jay, VT. Pauline and Jacques have 9 beautiful grandchildren. The 450 acre farming operation includes 130 head of Holstein dairy cattle, a few head of beef cattle, hay and forage crops, a 7500 tap maple sugaring operation, sustainable timberland management, and a Bed & Breakfast. Their farm and dairy herd is certified organic. They sell frozen grass-fed beef along with their maple syrup and maple products at their farm store. Most maple products are sold through a mail-order business that they have developed over the last 43 years. Milk from the dairy herd is sold through a farm Cooperative and picked up at the farm by a bulk milk truck. Since becoming certified organic, most of the milk is sold to Organic Valley Cooperative and goes to the Stoneyfield yogurt facility in South Londonderry, New Hampshire. They are also farmer owners of Agri-Mark Cooperative, home of Cabot Creamery which makes world

famous Cheddar cheese and butter along with several other high quality dairy products.

Jacques is immediate Past Chairman of the board of the Vermont Maple Sugar Makers' Association, Past President of the VT Maple Foundation, and the International Maple Syrup Institute. He also serves on other boards including the Westfield Selectboard, Community National Bank, and Cooperative Insurance Company based in Middlebury, VT. Past appointments include serving as one of the Vermont representatives on the Northeast Dairy Compact Commission and the Vermont State Committee of the USDA Farm Service Agency.

Jacques' involvement in maple organizations began in the late 70's as a charter member of the Orleans County Maple Producers' Association where he still serves as a director.

Sometime in the early 80s he was elected to the board of directors of the VMSMA and has served in that position for about 30 years.

- In 1992 appointed to be IMSI delegate from VMSMA.

- In 1995 the VT Maple Promotion Board elected him to chair their committee.

- 1996 to 1998 served as President of IMSI

- 2001 to 2006 elected President of VMSMA

- 2112 elected as Chair of VMSMA at the merger of VMSMA, Vermont Maple Foundation, and Vermont Maple Industry Council into one organization retaining the VMSMA name.

- Serves on the North American Maple Syrup Council Research Committee.

During all of those years he served on many other industry committees, and traveled in and out of State promoting Vermont maple products. He has always been a promoter of industry groups working together and encouraging opportunities for all to work for common goals using their individual strengths to benefit the larger maple community.

DON AND BETTY ANN LOCKHART

As graduates of the State University of New York, with careers in public school and private school teaching and administration in Bay Shore, Long Island, Don and Betty Ann early on realized the value of using maple as a teaching tool. They recognized the industry's application for the teaching of basic skills in reading, writing, math and science, as well as in many areas of subject content including geography, climate, temperature, consumer skills, and much more. Weekend trips to their camp in Wallingford, Vermont put them in contact with local sugarmakers who produced the great maple syrup that they needed to bring back to their schools to provide maple experiences for their classes. Spring time brought the fragrance of maple boiling for sugar-on- snow from school kitchens, as learning experiences were cemented by the flavor of real maple syrup.

In 1974, the lure of living in the state they had come to love brought the family - Don, Betty Ann, and their children Skip, then age 9, and Beth age 7 - to live permanently in Vermont. One criteria for the home they eventually purchased in Charlotte was that there needed to be

at least one maple tree to tap so their children could have the experience of making maple syrup. There were actually six maples! Long wooden sap spouts that were found behind a crumbling wall gave evidence that there had been a maple orchard at the 200 year old homestead before many of the maple trees had disappeared, and prior to the advent of the convenience of "hanging buckets."

Don became principal of a South Burlington elementary school, and Betty Ann worked in the College of Education at the University of Vermont; both shared their philosophy of learning attached to some real life "units" of experience with their colleagues. In 1981 the couple decided to continue their teaching by producing videos, having made award winning films about education on a part time basis; they began full time video production, purchasing the camera and editing equipment necessary for their new company, Perceptions, Inc.

More than one excellent film about Vermont maple had been made over the years. Those films had become worn and difficult to project; the Promotion Board and Department of Agriculture decided that the relatively new media of video would be more convenient for sugarmakers, retailers and schools to use. The Lockharts were hired to produce the video. Dave Marvin, as chair of the Promotion Board, provided the contacts with industry leaders who could guide the project, and help Don and Betty Ann with necessary information: Wilson (Bill) Clark, president of the Vermont Maple Sugarmakers' Association; Sam Cutting, Sr., presi-

dent of the Vermont Maple Industry Council; and Everett Willard, Maple Specialist for the Vermont Department of Agriculture. They in turn recommended the sugarmakers, scientists and other knowledgeable maple people who shared the essential facts and lore of maple, many of whom are inductees to the Maple Hall of Fame in Croghan. Proud Tradition: Pure Vermont Maple was produced over a two year period, with interviews and scenes of sugaring from all areas of the state. At the time, Vermont had an Ad Club, which presented Proud Tradition with a coveted Pegasus award. At the ceremony, there were grins from Vermonters as Everett Willard's voice boomed out over the audience, "When anybody says Maple. . ." while the state's signature product emerged on a huge theater screen, in a bean pot of football sized baked beans, with syrup streaming into the pot!

Not long thereafter, David Marvin broached the subject of a video that would be appropriate for sugarmakers and school children in all states and provinces. Internationally noted folk singer and Marlboro, Vermont sugarmaker Margaret MacArthur provided the historical background, and sugarmaker Frank Dodge related the specifics of the modern day maple industry. The Maple Sugaring Story was, and still is, widely used throughout the United States and Canada. The video was awarded the Council on International Non-theatrical Events Golden Eagle which was presented at a "black tie" ceremony in Washington, D.C. The production represented the United States at several international film festivals. Clips

from the video were incorporated into national shows - Reading Rainbow, the Bert Woolf show, the Weather Channel, and many others. In addition to video production, the Lockharts have built a large collection of high resolution still images depicting all aspects of maple production. The images have been used frequently in magazines, newspapers, and on websites - cost-free marketing for the entire North American maple industry.

Along with a committee consisting of Proctor research scientist Sumner Williams, David Marvin, and forester Paul Cate, the original maple curriculum guide written by the Vermont Maple Promotion Board was expanded to include information for all the states and provinces, becoming an accompaniment to The Maple Sugaring Story video. Puzzles and games with the rights to copy for educational use were incorporated. Widely distributed, the Guide to Teaching and Learning about the Maple Industry is currently under a sixth revision, with an aim toward reprinting.

More recently in the realm of video, Proud Tradition: Pure Vermont Maple was updated to reflect new technologies in the maple industry, becoming Proud Tradition: Pure Vermont Maple - Voices from the Sugarwoods.

Thereafter, Betty Ann wrote a book, published by The History Press - Maple Sugarin' in Vermont: A Sweet History. The book, which is liberally illustrated with Don's photos, was motivated largely by knowledge gained from the couple's participation on the Vermont Maple History

Committee of the Vermont Maple Industry Council, housed at the University of Vermont.

Recognizing a gap in productions for the youngest learners, Don and Betty Ann created a maple video for pre-school and early grade children: The Magical Maple Tree, in both English and French language versions, with the intent of helping early learners to understand REAL maple syrup, and differentiate between Pure Maple and the artificially made imposters.

In addition to the Vermont Maple History Committee, the Lockharts have served voluntarily on the Vermont Maple Promotion Board, the Maple Foundation, and the Marketing Committee, working on such projects as the Governor's Tree Tapping, delivering the mobile sugarhouse to ski areas and events, writing and illustrating maple cookbooks and pamphlets with others. Currently Betty Ann is on the Board of Trustees of the Vermont Maple Festival, helping to coordinate some of the publicity and advertising, and Don is the photographer who provides images for Festival publicity. They have produced television commercials used for advertising the Vermont Maple Festival.

Don and Betty Ann are members of the International Maple Syrup Institute, the Vermont Maple Sugarmakers' Association, Addison County, Rutland County and Chittenden County Sugarmakers Associations, and the Center for Research on Vermont. In 2012 they were recipients of the Sumner Hill Williams Lifetime Achievement Award Cup.

The Lockharts have produced a large number of videos since the beginning of Perceptions, both in Vermont and out-of-state - encompassing a wide variety of topics, but they freely admit that maple is their all-time favorite!

About their video business, and especially their maple productions, Don and Betty Ann comment "Early on we learned that we should not say 'we were educators.' We strongly believe that the maple promotion and marketing, with which we have been associated is simply educating - telling the story - It has been our challenge and our pleasure to do that, and to tell the story as often as possible - a story that continues to evolve! The maple acquaintances we have made along the way during our years of association with the industry have provided us with an extended family - a benefit for which we can only say Thank You - we could not have better teachers and friends!"

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INTRODUCING THE NEW EDITOR

By: Winton Pitcoff

Thank you, members of NAMSC, for entrusting me with stewardship of the Maple Digest. It's a bit daunting, taking over a publication that has had only two editors in more than 50 years. I know you all count on this resource, and I will try to continue the great work that Roy and Mary Ellen have been doing for so long.

I've been sugaring on a small scale for about 10 years and have been coordinator of the Massachusetts Maple Producers Association for five. I've worked for and run a variety of trade associations and nonprofits, and have been a reporter and editor for more than 25 years.

I've thoroughly enjoyed getting involved with NAMSC over the past few years, serving as a delegate and as chair of the policy and research committees. This is a great organization that truly has the best interest of its members in mind, always working to strengthen the maple industry and promote the excellent work you all do.

The Digest plays an important role in carrying out that mission, keeping you informed about research and issues in the maple industry that affect your work. I look forward to keeping that tradition going, and to hearing from you about what you most want to see in the Digest.

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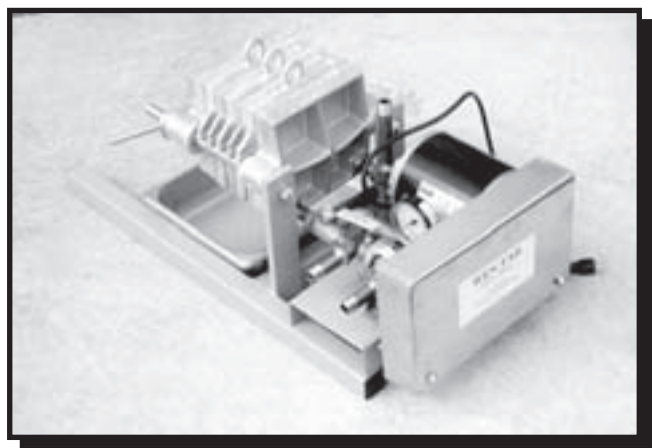
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MICROBIAL CONTAMINATION IN MAPLE SYRUP

By: K.M. Hopkins¹, S.L. Annis²,
B.L. Calder³, , R. Garcia², B.
Perkins³

INTRODUCTION

Occasionally, maple syrup becomes contaminated with floating masses or surface mold. **See Figure 1.** The University of Maine Co-operative Extension has been sent samples that have originated from many locations in North America. Conventional practices have been to discard obvious mold growths, re-boil and then consume the syrup. This practice may be risky, especially with the increasing number of food borne illness outbreaks with other food products and the resulting negative publicity surrounding these outbreaks.

Some mold species are known to produce toxins, called mycotoxins, which are compounds produced by fungi that are potential toxins or carcinogens to humans. Some mycotoxins are heat stable, such as patulin, and cannot be destroyed by cider pasteurization temperatures.

¹University of Maine Cooperative Extension, Somerset County Office, 7 County Drive, Skowhegan, ME. 04976

²University of Maine School of Biology and Ecology, 5735 Hitchner Hall, Orono, ME 04469

³University of Maine, School of Food and Agriculture, 5735 Hitchner Hall, Orono, ME 04469



Figure 1. Contaminated syrup samples with floating masses.

The objectives of our research were:

1. To determine if floating masses from contaminated syrup samples are fungal in origin.
2. To determine if any fungal species identified in the samples presented a risk to human health.
3. To recommend safety practices to reduce any potential risk.

METHODS

Potential fungal samples were submitted to the University of Maine Cooperative Extension - Somerset County Office and then transported to the University of Maine for analyses. The floating masses were sampled and streaked onto Sabouraud and Malt Extract Agar plates. Plates were then incubated at 20°C. Isolated colonies were then grown further on the same agar. Colonies were then observed under a microscope and identified to genus and then to species using DNA analysis. Syrup samples were also analyzed for pH, water activity and degrees Brix.

RESULTS & DISCUSSION

A variety of fungal species were isolated from the majority of the bottle

samples. These species included fungi that are common air contaminants, and some that are known to be able to survive high temperatures and produce mycotoxins. Some of the same species we isolated were also identified in Whalen and Morselli's work in 1984.⁴

The pH, water activity and Brix levels of the contaminated maple syrup samples were within normal boundaries of maple syrup production. The Brix levels typically found in maple syrup did not prevent fungal growth, which was not previously thought to be possible. The pH levels found in the syrup were well within ranges of typical fungal growth. The fungi varied from fast to slow growing on typical nutrient medium and also appeared to vary in how fast they grew in maple syrup. Some of the fungal species are known xerophiles in nature meaning that they can persist in high sugar or high salt concentrations.

We also found that many of the fungi can survive short periods of time at typical bottling temperatures of 82° Celsius (180° Fahrenheit). Further research is being conducted to identify the fungi, determine their ability to survive high temperatures and determine whether they produce mycotoxins. Preliminary work indicates one fungal species is able to produce a mycotoxin under optimal conditions in maple syrup. Whether any other of the isolated fungal

species also produce mycotoxins is being investigated.

The maple industry should be aware that food safety is of crucial importance when producing any food products. For example, researchers found that beef consumers want to know how modern production practices affect their family's long-term health⁵. This article also noted that negative messages can spread quickly and that consumers want to know that producers protect the environment while producing safe, healthy food. These concerns of beef consumers may reflect the concerns of other food consumers as well.

To protect the pure and natural image of maple syrup, producers should take steps to preserve the quality and food safety of their products. Ensuring food safety by documenting food production processes may soon become routine with various certification or licensing processes becoming the norm. Producers should be evaluating the biological, chemical and physical hazards of their production systems and looking for and correcting possible sources of contamination of their products. Many public and private jurisdictions have prepared best management practice manuals and certifications. Following these guidelines will help avoid potential problems that could result in food safety issues for the maple industry. Using clean, food grade

⁴Fungi Associated with Pure Maple Syrup Packed at the Minimum Recommended Reheating Temperature. Whalen, Mary Lynn and Morselli, Maria Franca. Journal of Food Protection. Vol. 47. No. 9. 1984. p. 688-689.

⁵What a Consumer Wants. John Maday, Managing Editor, Drovers CattleNetwork. <http://www.cattlenetwork.com/e-newsletters/drovers-daily/What-a-consumer-wants-187801931.html?page=2> accessed June 13, 2013.

equipment, checking processing times and ensuring adequate bottling temperatures will help avoid microbial contamination.

Preliminary canning studies suggest that syrup packed in smaller than quart size containers may not have enough mass of hot syrup to maintain high enough heat, above 82° Celsius (180° Fahrenheit), for a sufficient period of time to destroy all microbes.

CONCLUSIONS

These results found that maple syrup contamination can be fungal in origin. A variety of fungal species were isolated from contaminated maple syrup samples submitted to the University of Maine Cooperative Extension. Some of the identified fungi have the potential to produce toxic compounds such as mycotoxins that have the potential to harm human health.

The previous assumption that boiling syrup to a minimum of 66 degrees Brix prevents microbial growth is in question. According to our findings, we recommend that contaminated syrup or syrup with questionable floating masses should not be consumed or sold to consumers since there may be a risk of fungal contamination and possibly the presence of mycotoxins.

Based on our preliminary results, we recommend that as maple producers order new plastic containers, they revise their labeling to delete the recommendation that if mold forms, it can be scraped off, syrup can be re-boiled and consumed safely. Evidence of fungal growth occurring in syrup and the potential for myco-

toxin production lead to serious questions about the safety of this practice.

FUTURE WORK

Further research is being conducted to identify these fungi and determine if they produce mycotoxins in maple syrup. Canning studies and recommendations are being finalized and will be shared in another article. The North American Maple Syrup Council has helped in funding these research projects including the DNA sequencing and mycotoxin detection and identification.

ACKNOWLEDGEMENTS

This research was funded in part by the Renewable Resources Extension Act, Maine Agricultural Center, Maine Agricultural and Forest Experiment Station and the North American Maple Syrup Council.

OOPS - We Stumbled

When we listed the Contributors to the North American Maple Council Research Fund in the February 2014 Digest, we left out a contributor.

That contributor was the Maple Producers Association of Nova Scotia. Although, Robert Frame the President of the Association said we did not need to take any corrective action - we feel that each and every contributor should be recognized.

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CROWN RELEASE EQUALS MORE AND SWEETER SAP

By: Keith Ruble

Have you ever wondered why open grown trees produce more and sweeter sap than the ones growing close to each other? To answer these questions, I would like to share with you from my 37 years of experience in forest management.

Most of my work has been focused on managing trees to create quality timber for recreation and for harvest. To do this, over the years I've been involved with activities diverse as planting trees, weed control in forests, Timber Stand Improvement (TSI), pruning, timber appraisals, inventorying timber and marking timber for closed bid sales. Of these, TSI has been my primary concentration. The purpose of TSI is to thin the woodland by killing undesirable trees whose crowns interfere with those of the desirable species of crop trees. Cutting or girdling with a chain saw is a useful way to remove such undesirable "weed" trees.

In timber tracts grown primarily for timber production, 1-2 sides of the crop tree's crown are released from the crowns of competing trees.

Management of maple trees for sap production begins by thinning out competing trees that interfere with the maple tree's crown. Thinning exposes the crowns to more sunlight. However, maple trees over 16" in diameter at breast height (DBH), will show little response to thinning.

Thinning for sap production should

be done in all four compass directions and should be done gradually over several years. Ignore trees that are below the canopy or are not competing with the crowns of the trees you wish to release from competition. This is called cosmetic thinning. Once a competing tree's branch touches or over tops the crown of the crop tree, the weed tree should be girdled or cut down.

If the woods is too young to tap, you can cut or double girdle the weed trees. Cut a complete girdle at least 1" in depth around the complete circumference and a second 6-8" above or below the first cut. The second girdle is for insurance if one fails to kill the tree. If the woods is being tapped, do not girdle since girdled trees could fall and damage you or your tubing and other equipment. Spraying herbicide on girdled or cut trees should only be done when the woods is young and not ready to tap. I recommend using a 50/50 mix of water and concentrated glyphosate (*Round-Up*) to which a marker dye is added to treat stumps and girdles just inside the bark area. This should be done right after they are cut. *Round-up* is a very safe herbicide and has no soil activity. Over a few years all competitive trees will be dead. If there are grape or other vines growing in your sugar bush, cut and treat them. They will break the tops out of your trees. It is important not to create overly large openings in the woods as this will result in the growth of unwanted wild berry bushes, vines, etc.

Sprouting from dormant buds under the bark (epicormic sprouting) occurs when the maple tree is exposed to additional light. More limbs from these sprouts means more leaves to

produce additional food reserves. A good maple sap tree should have a short log or “bole” and a wide, well-formed crown. Maple trees that are managed to produce large crowns produce and accumulate more food energy reserves in the summer months. During the sugaring season, these large crowns will produce much more sap. The amount of direct sunlight received to the tree crown also influences sap sweetness. Trees that grow in an open environment have a higher sap-to-sugar content than similar trees in a dense forest.

Also, it is important to not create a monoculture of only maple trees. The law of ecology states that tree and plant diversity somehow keeps the forest community healthy. It is good to let better quality hardwood species, like walnut, cherry and oak, coexist with your maple trees.

During planning and development of a maple sugar bush, potential crop trees can be selected from smaller pole size trees. If available, a sap refractometer should be used to test the sugar content of potential crop trees. If a tree’s sap is sweet or sweeter than other maple trees around it, make it a crop tree. If you do not have a refractometer, select the tallest maple trees with the widest crowns. Choose the trees with the fewest crown or stem injuries or other deformities. Do not select trees with forked tree crowns as they may be genetically inferior and the weaker forks will eventually break out.

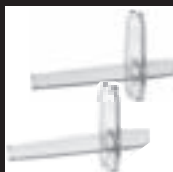
I have noticed in most maple bushes being tapped that there are a substantial number of trees that should be cut because they are competing with the crowns of trees being tapped.

Likewise, in many maple bushes, trees with small, spindly tops are being tapped. Such trees should be removed to allow more sunlight to adjacent trees that have greater potential as crop trees. I have found that many owners of maple sugar bushes are like owners of walnut plantations. They cannot bear to cut a maple or walnut even when the trees are overcrowded.

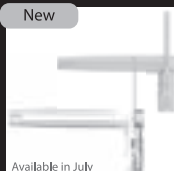
The next time you walk in your sugar bush, look up. Take notice of the crowns of all your trees. If you see maple or other tree species with thin, narrow or poorly formed crowns competing with the crowns of the trees you are presently taping or plan to tap in the future, you should consider removing them to improve the health of the remaining crop trees. These “weed” trees will never improve due to the stressed condition in which they grow, and they will prevent the crop trees from receiving adequate sunlight for crown expansion.

Additional sunlight to the crowns and moisture to the roots are important. The ultimate goal of sugar bush management is to enable maple trees to produce large crowns. This, in turn, will provide good yields of sugar-rich sap for many years. Use a spray can with orange or a brightly colored paint to put a dot on two sides to the trees that need to be cut.

When you do go out to cut, be sure at least one other person is with you as a safety partner, and always wear a hard hat, chainsaw chaps and other safety equipment. As you consistently thin each year, the crowns of your maple trees will enlarge and you will enjoy a greater abundance of sweeter sap.



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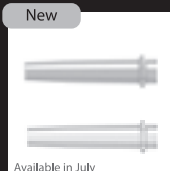


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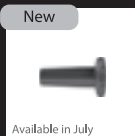
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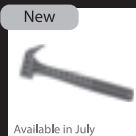
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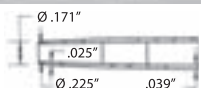
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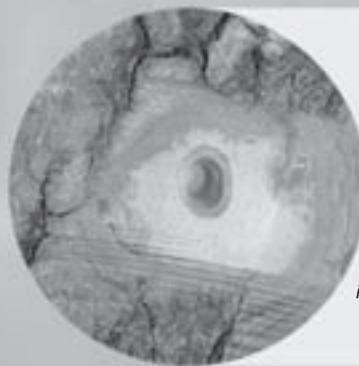
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CROP REPORTS FOR 2014

CONNECTICUT

By: J. Mark Harran

Connecticut had a very unusual year. The season looked like it could be a complete "bust," up through mid-March. The season usually runs from February 1st, some start in January, into the first week of April. Persistent cold weather kept sap flows to a minimum until the middle of March, as we basically missed the entire month of February, and two weeks into March optimism was fading fast. Then it started to flow, better yet "gush," from the trees and thereafter ran well into the first week of April. A survey indicates that the strong flows in the last two weeks of the season pushed overall output for the entire season up to a generally good crop range for most Connecticut maple producers.

We had two great meetings this past year. At our November 2013 Membership Meeting presentations by Henry Marckres, Vermont Agency of Agriculture and Bruce Gillilan, Leader Evaporator, were very well received and Kathy Hopkins, University of Maine, delivered a great talk at our January 2014 Pre-season Meeting. At the upcoming 2014 Membership Meeting on November 1st our featured speaker will be Michael Farrell, Cornell University, and at our January 10, 2015 Pre-season Meeting we will have Tim Wilmot, University of Vermont.

Several of us attended the IMSI/NAMSC meeting in New Brunswick and congratulate the NB Maple Association for a great event.

We now look forward to visiting Nova Scotia this coming October.

INDIANA

By: Keith Ruble

Indiana, like other states in the maple belt had a long cold winter. According to weather experts, Indiana had one of the coldest winters in the last 30 years. The following is a preliminary crop report. The Indiana Division of Forestry in Indiana is conducting a survey on all maple producers who provide crop information on the 2014 harvest.

In southern Indiana, tapping normally starts around the last two weeks of January. This year tapping began around the middle of February. The season was over the 1st week of March. Producers I talked with reported an average production year.

In central Indiana, producers were three to four weeks late tapping due to cold weather. They boiled two to three weeks longer than normal. Sap sugar content was between 2-2.5%. Producers stated that the harvest was average with a large producer stating that it was his 2nd best year. One producer used the new tubing guards on all his tubing and reported that he maintained consistent high vacuum due to no leaks from animal bites. In northern Indiana, similar cold weather postponed the normal sap season and as a result, warm weather shortened the season about a week or so. Producers reported a fair to normal season with sap sugar content being from 2.5-2.8%.

Most syrup produced in Indiana was either medium to dark amber. Very little light amber was produced during the maple season.

MAINE

By: Lyle Merrifield

Maine saw a very cold 2013-2014 winter. In many places, cold and snow moved in by mid November and hung on. The long cold winter made many believe that we would be in for a great sugaring season. Many producers in the Southern part of the State were tapped and ready to go in January, and some syrup was made by the end of January. That proved to be just a tease, for sap flow did not begin again until well into March for Southern and Northern producers. Southern producers wrapped up there season by mid April with 60-85% of an average crop. The Northern producers had a later start than normal, but still were able to have an ok season by the weather

allowing them to produce syrup into early May. Most Northern producers report a slightly below average crop. Overall the States production of the four table grades of syrup were good, making slightly less Golden Delicate than normal.

MASSACHUSETTS

By: Winton Pitcoff

Still exhausted from producing a near-record crop in 2013, Massachusetts producers had plenty of time to breathe in 2014, as they waited for sap that some believed would never start flowing. Many producers set taps in February, some catching one or two runs late that month, but then a deep freeze settled in that lasted for most of March. Additional snow left some sugarmak-

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ers wondering if this would be the year we would make syrup in May.

When it finally warmed up in late March the trees were so frozen and the frost so deep that it took several days of above-freezing temperatures for the sap to start running. When it did, though, it came steadily for two weeks in most places, with some producers reporting boiling for more than 14 consecutive days. Many said that they made more than three-quarters of their season's crop in the last week of March and first week of April, with totals ranging from about half of an average crop to a few sugarmakers who said they made as much as they did in 2013. Sugar content was about average, and many producers reported making lots of light syrup.

Those using vacuum systems did far better than those relying on gravity, since they were better able to take advantage of days when the temperature was barely above freezing. Using the new check-valve spouts extended the season for many as well.

More than 40 producers participated in the state's first-ever Maple Weekend event, and many reported lots of new customers and increased sales. About 30 restaurants around the state took part as well, featuring menu items from cocktails to deserts to salad dressings to marinades, all made with Massachusetts maple syrup. All agreed that it's an event worth continuing in future years.

MICHIGAN

By: Larry Haigh

Greetings from Michigan and from
the Michigan Maple Syrup

Association. What a year and what a season it has been. The most often heard comment was, "This winter was more like the winters we had when I was a kid." We had some very cold temperatures going more than thirty days without getting above freezing and nineteen days when it did not get above zero. We also had more snow here in south central Michigan than we have had in many a year. All of this followed a sever wind storm in November and an ice storm a few days before Christmas. Many folks could not get to their woods until March and even then it was extremely difficult conditions to tap. The below average temperatures continued right up to syrup season. Sap flow did not really start until mid-march which was at least 2 weeks later than normal.

Here in our area the first boil as after March 15th. We had a few days of moderate sap flow, but never had any exceptional days. Sap flow came to an abrupt end by the first week of April. There were a couple of producers who taped wood lots that first week of April and had some very nice runs. These woods were ones they had previously skipped due to weather conditions. All in all most producers said they made less than a quart per tape. Many have said that they produced less than half a crop.

In the northern Lower Peninsula producers were still boiling in mid-April. It would appear that they fared somewhat better in that part of the state. In the Upper Peninsula they are still getting snow as I write this report. They have broken many records both in total snow fall and some daily snow fall records. Sap flow did not start

until about April 1st. Because of their late start I do not have any reports of production levels for the U.P.

As for MMSA activities, Governor Rick Snyder issued a proclamation making March "Pure Michigan Maple Syrup Month". We also conducted a "Ceremonial First Tapping" with Gordon Wenk, Deputy Director of the Michigan Department of Agriculture and Rural Development doing the honors. We would like to thank the MSU Department of Forestry and the MSU Forestry Club for hosting this event. We also conducted our 2nd "Michigan Maple Syrup Weekend" where producers welcomed folks to visit their Sugar House. Due to the different weather conditions from the bottom of Michigan through the Upper

Peninsula this was done over three weekends.

We are also doing other things to promote "Pure Michigan Maple Syrup" and maple products here in Michigan and the surrounding area

NEW BRUNSWICK

By: David Briggs

This year Mother Nature was not as kind to New Brunswick Maple Syrup Producers. A very long hard winter delayed this years maple syrup season by at least 2 to 3 weeks. The season started with 4 to 5 feet of snow in the woods with little to no frost in the ground. March this year seemed more like mid January with many producers tapping in late. Some of this winters storms seemed



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to be the worst in March. Some producers had already made syrup late in March then were hit with severe cold and snow for a couple weeks.

Some producers saw a few trickles of sap late in March but it was not until early April before the sap started to flow.

The southern parts of the province saw mostly less than 1 lb. per tap with a few exceptions. Those that have vacuum didn't do as bad giving between 1 to 2 lbs. per tap. The sap did not seem to flow as good on most running days and vacuum systems seemed to help.

The northern part of the province is still producing as I write this. They experienced a lot more snow and therefore leaving many producers having to shovel lines. They also started a bit later than those in the south. Many not seeing much sap until April 5th or 6th. The runs were not great but most are seeing close to an average year producing over 3 lbs. per tap.

A bumper crop was not to be made this year but is turning out to be not that bad in the end. The color of this years syrup varies across the province with a lot more of the lighter grades being made in the north.

The province is closing in on close to 4 million lbs. of pure maple syrup.

NEW HAMPSHIRE

By Robyn Pearl

A survey of members of the New Hampshire Maple Producers Association indicated a 90% crop produced for the 2014 season. Non vacuum producers experienced a 30-50% decrease in production while vacuum producers averaged an 80-

100% crop. The trend among larger producers was an increase in taps set while many smaller producers maintained or decreased taps in the 2014 season as compared to the 2013 season.

Cold weather conditions extending deeply into the prime sugaring time for New Hampshire caused many producers to remain frozen out much later than other years. This year, start times were fragmented into three time frames. In the southern part of the state, temperatures followed the average starting time for boiling, starting in around February 23, with February 18 as the earliest reported date. A break from a persistent frigid weather pattern created sap flow for producers using gravity fed vacuum or buckets, allowing an average start date of March 12. The northern part of the state reported an average start date of March 29, with the latest start date of April 6.

The season ended for most producers around April 12, with some sugar makers experiencing their last boil as early as April 6, and others as late as April 22.

All grades of syrup were made this year with Grade A Dark Amber creating the majority of the syrup, followed closely by Grade A Medium Amber, with Grade B and Grade A Light reported in lesser proportions. A minor amount of Commercial grade syrup was reported.

Overall, the season's production was nearly a full crop. The persistence of cold weather was instrumental in creating some of the deficit experienced by shortening the season for some producers by 30-50%, but more evidently by limiting sap

flow for producers who do not implement vacuum systems in their sugar bush.

NEW YORK

By: Eric Randall

To say that New York's maple producers experienced a challenging season would be, at best, an understatement. At this writing, near the end of April, there remains over 700 sq. miles of ice in the eastern basin of Lake Erie making the fruit growers breathe easy, but also serving as a reminder of our atypically harsh winter. Most producers across the State were tapped by early February but most still lacked a "good run" by the last week of March. Historically, many of our producers will have 30-40% of their crop completed by late February and many are pulled up by the end of March. But nothing was typical about this season and even a few smaller producers simply did not tap. Our four Maple Weekend festival days ranged from any combination of rain, snow, abnormal cold to over a foot of heavy wet snow on the morning of the March 30th. Visitations were reported as excellent which helps to explain that the folks who venture out to watch sugarmakers do their thing might be crazier than the sugarmakers themselves! End of March and early April helped to reclaim the season for many producers. Those with good vacuum systems and extreme patience, moved toward average seasons. Across the State, crop totals ranged from near average in western, 60% from central, eastern and the Catskills and anywhere from 20-50% in the north.

In closing, we in New York State

wish to thank Roy and Mary Ellen for all they have done for Maple Producers everywhere. We offer them all the best as they complete this phase of sugar season reporting and editing of the Digest. Remember that regardless of the weather - sugaring is always a good season!

NOVA SCOTIA

By: Arvard Bentley

Nova Scotia appears to be no different than the rest of the maple belt.

It was a very difficult winter compared to the last few years. Winter started early and lasted late (an old fashion winter) which most of us have forgotten about.

Some producers tapped a little early hoping for an early run, this did not happen. Most producers did not boil until close to the middle of March, then a small boil. In most cases Nova Scotia only had two good runs. In some cases the season was disheartening, extra effort and expense was put into their operation only not to reap any benefit in 2014.

In some cases a third to half an average season was reported and other cases a fairly good year was experienced. Some producers reported that a darker product was made as compared to some years.

Those of us who are serious about what we are doing, claim they will be back again next year, health permitting. One bad year will not deter them from carrying on.

OHIO

By: Less Ober

If you were to take a poll of Ohio Maple Producers on Saint Patrick's Day, I believe the majority would have told you, that the chances for an aver-

age season in Ohio would be slim. Up until the point, tapping had been delayed and there had been only a few short runs with minimal production. Lake Erie was 100% frozen and Old man winter held his icy grip on the buckeye state until March 18th. However, things were about to change. In the period of two weeks, producers went from what appeared to be a very dismal below average season, to almost record production. The weather from the 18th of March to the 9th of April changed everything. It literally turned the frown upside down. For the most part, production ended up good across the state but not everywhere.

Tapping dates ranged from early February in the South to late February and early March in the North. Most

southern Ohio producers were done by the 29th of March. In the North, the season lasted almost 10 more days, ending around April 9th. Many Southern Ohio producers, especially those on buckets, had marginal seasons. Across central Ohio, production was variable. In Western Ohio production ranged from average to above average. The northern one third of Ohio remained very cold right through the 18th of March. This was really the start of the season in the north. In the next two weeks production literally went from below average, to above average overnight. Two things helped Ohio Producers this year. The cold weather that slowed production in the beginning kept it going in the end. The other factor has been the increased use of vacuum tubing systems across the state



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along with the adoption of some of the new tap hole sanitation practices.

I firmly believe that using technology like new spout and drops, and using check valves, kept production going well into April. The payoff was an extended season for many Central Ohio producers and near record production for some of the producers in the north.

Ohio syrup quality like production was variable. The lower two thirds of Ohio produced a lot of 'Dark Amber' syrup. It was dark in color but it had a very good flavor. Leader Dealer Mark Erlsten in Morrow County attributes that to a late start followed by a lot of sunny days mixed with brief warm ups. One of the amazing things in the northern part of the state was how the quality stayed good right up to the end. A lot of producers were still making Medium Amber syrup into April. Overall most producers reported good sugar content in the sap ranging from 2.0 to 2.5 %.

Once again we will all have to wait until June for the 2014 NASS Maple Syrup Crop Report for the final figures. Producers are encouraged to fill out this report so an accurate account of production can be made.

PENNSYLVANIA

By: Wayne Clark

The season was different this year. One person describes it as slow, another as crazy. Along with being 3 to 4 weeks late in starting in some areas, there was a definite trend toward darker grades of syrup. Very little light syrup was made and in some areas little or no medium grade. It appears production will be in

the 2/3 crop to average production of last several years.

This is not to say there weren't any bright spots. One producer from Hyndman, PA, Somerset Association in the southwest part of the state, reported making slightly over two quarts per tap on 3,600 taps with 300-400 gallons of light and a good amount of medium and lower grades. He said anyone with a well maintained vacuum system did well, others on gravity or buckets, not as well. He said the area should be 1/2 to 2/3 of average crop. Sugar content of the sap was also down.

A producer from Waymart, PA, northeast Pennsylvania, reported making more syrup than last year. A note from a 2,000+ operation at Cranesville, PA, northwest near Erie, stated making only about 30 gallons of medium and the rest A dark and lower.

Endless Mountains Association, Bradford County, reported several producers doing fairly well with average or above production. Another person from this area was down 15% from last year even though he had added 300 more taps this year. Additional comment from Endless Mountains, people with vacuum did quite well but the overall color mix was down.

From Mainesburg, PA, a producer in the Potter Tioga Association, said his production was about the average of the total 30 years he has been sugaring, but no light syrup this year. Last year he produced 500 gallons.

A Wellsboro producer reports having an average year. A large operation near Sabinville, PA, in western Tioga County, reports about 2/3 of a

crop-no light or medium syrup, all dark. Sap was cloudy all year and hard to filter. Sap sugar content was low all year.

A Potter County producer near Genesee, PA, said his production was about 2/3 of last year, very little light, some medium and on down. Also poor quality sap was reported. His first boil was March 22.

A Ulysses, PA producer in the same area had no problem with sap quality until late in the season. He made some light, lots of high quality medium and on down the grade scale. His total production was also above last year.

In closing, total production would have been a good bit higher had sugar content averaged higher. I heard reports as low as 1.2%.

WISCONSIN

By: Jim Adamski

The winter of 2014 will be remembered the most brutal winter that most of producers had ever seen. Just about every region of the state broke records for the cold weather and the amount of snow that had fallen. For some of us in the northern half of the state it was the worst winter since they started keeping records on the late 1800's. With that being said the season got off to a slow start.

The season started for the southern third of the state by the second week of March with the warmer weather and the snow cover much less than the northern part of the state. The season for the southern producers was average for the producers that had vacuum tubing to below average for the producers with the bag holders and buckets.

The season in Central Wisconsin was also a slow start with 30 plus inch of snow in the woods and temperatures that would rarely get above freezing. The season for most started the third to fourth week of March. The sugar content of the sap was considerably lower than the previous year with the test on the tubing sap in the 1.8 to 2.5% range. The syrup that was produced was great in flavor however most producers made darker colored syrup than they normally do. The yields in Central Wisconsin were average for the producers on vacuum tubing and well below average for the producers on the bag holders and buckets.

The season for Northern Wisconsin also is running later than normal. The snow cover for the northern areas in Wisconsin was 35 to 40 plus inches in the woods. The season for most of the northern producers started the first week of April. The trend of the lower sugar and the darker syrups followed for producers in the North. Yields in the northern part of the state were average to slightly below on the vacuum tubing and below for the bag holders and buckets. It is 4-29-2014 and we have several sugar makers in the northern third of the state still making syrup.

RHODE ISLAND

By: Thomas E. Buck

As far as I know, this will be the first ever crop report for the state of Rhode Island. Although we are still in our infancy as an organization, we are getting continued interest from backyard sugar makers.

Some sugarhouses using tubing tapped in mid-January and caught

early runs, making medium grade syrup. The rest of us started tapping around February 1st.

Then came the deep freeze, which lasted about 2 ½ weeks. With more than an inch of ice remaining on the ground, the temperature started to warm finally around the end of February, early March. You never regain what you've lost, but fortunately March seemed to help with good runs right to the end of March, first of April.

Very little light syrup was made in RI this year. Early runs produced grade A medium and dark syrups, while March produced most all darker syrups.

We have 11 sugarhouses currently in the association, using 7,100 taps, producing 1,000 gallons of pure RI

maple syrup. We may be a small association and a small state, but we sure know how to make some great tasting maple syrup.

VERMONT

By: Paul Palmer

The 2014 sugaring season in Vermont can be summed up in two words: fast and furious, once it got going. It was a late start to the season with most producers starting to boil in April, just like the good 'ole days. When it finally did warm up, many sugar makers reported boiling for nearly 21 consecutive days. Some producers even posted record days for the most syrup made in one day. With that said, it wasn't a banner year like 2013, but it could have turned out a whole lot worse. The many produc-

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ers I spoke with made about two-thirds to three-quarters of an average crop. As always, there were outliers, some did better, some did worse, but the general feeling is VT will make three-quarters of a normal crop.

One thing that brought lots of smiles to producers was the higher sugar content in the sap. Most producers were reporting sap between 2.6% and 3% at the beginning of the season. Though the sugar content was higher, the color and flavor of syrup varied depending on location. The lightest classification, Golden Delicate, was hit or miss. Some producers failed to make any, while others made a good amount. The next classification, Amber, was fairly common, with a multitude of it being made. After the warmer days arrived, with 80 degree readings on April 14 and another warm day on April 15, the sap turned fairly quickly. This warm-up prevented producers from making very much good tasting darker syrups as most producers were shut down a week later.

ARCHIE SURFACES ONE MORE TIME

(Taken from Maple Syrup Digest
Vol. 19, No. 4, December 1979)

Dear Mr. Editor,

My wife, she sez, "Honest Archie, sometimes she calls me truthful Archie, why don't you tell that nice Mr. Editor Man how we cut wood for the sugarhouse in the year of 97.

Well, ya see, it was like this. Pappy was gettin up in years and couldn't

swing the #16 splittin maul too good, so that work fell on my shoulders. I figgered to get the job done right, a feller should do it scientifically, so I goes to the University and takes me a course in energy. Ya see, energy is expended in lifting and swinging and hitting where ya wanna hit. Pappy taught me how to use both hands.

After learning all there is to learn about energy, I came home to make the sugarwood. I hired me 3 Vo-Ag students, 6'6" tall and taller to set the wood on end. I got those #16 mauls a swinging one in each hand, like a windmill. Those boys worked like beavers, real teamwork, stacking the wood as fast as it was split and placing more pieces on end for me to split.

Those mauls got so hot from splitting that the cutting edges turned blue, then they started to chip, and things got pretty hot around there. Those blue metal chips started flying off and sparks flew but the boys dug in and stuck with me as long as the mauls were a swinging.

To capture some of the heat I put a 48" fan down wind from me and directed the hot air to the pre-heater; raised the temperature of the sap 62 1/2 degrees.

After I split eleven hundred cords in one afternoon, enough to burn for making the usual 60,000 gallons of syrup, I quit. Those mauls was ruined. From then on I used those mauls only for busting rocks. If someone knows where I can get come new mauls I'd be obliged to em.

Your Friend, Archie



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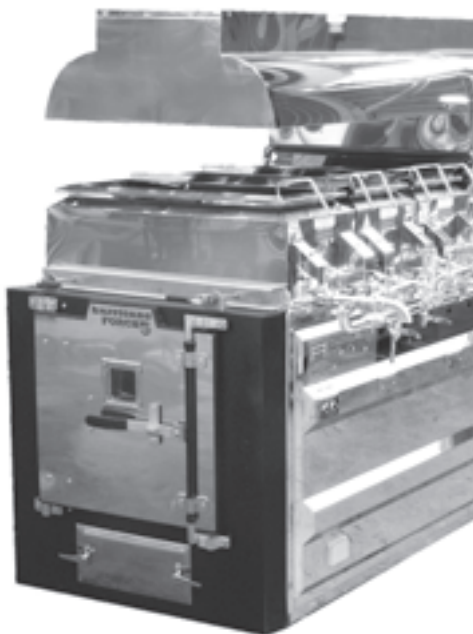
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Vernon grew up learning the art of sugar making on his family's farm before venturing out to make syrup on his own with his wife Judy near McDonalds Corners. Maple flows in the veins of Vernon and out of his respect and admiration for the innovators of maple sugaring, from the First Peoples to the present, he began collecting items relating to maple syrup production. Vernon wanted to preserve the history represented by the artifacts and display them for people to enjoy and learn from. Wheelers Maple Heritage Museum, housed in a log building Vernon built himself, was opened to the public to display his vast collection. Visitors to the collection can experience the rich history of maple

sugaring and the importance of the maple industry itself.

On January 17th, 2014 Vernon Wheeler's collection gained world-wide recognition by achieving the Guinness World Record for "Largest collection of maple syrup production artifacts". Many of the 5,228 unique items are on display at the Maple Heritage Museum.

Some unique pieces of interest are a Raithby sap economizer, a Grimm travelling salesman model evaporator, a bucket separator, Shaker buckets, a metal tubing system for 400 taps, sugar devils, dummy buckets, birch bark containers, and early spouts ranging from primitive carved wooden spouts to rare metal spouts. Vernon is also always on the hunt for unique maple related pieces.

The Government of Canada designated Maple Products as a "Culturally Significant Heritage Event in Canada" in 2009. One of three National Historic Plaques recognizing this designation was placed at Wheelers Maple Heritage Museum. The others are in Plessisville and Saint-Hilaire, Quebec.

Wheelers Pancake House and Maple Sugar Camp, including the Maple Heritage Museum, is located near McDonalds Corners, Ontario and is open to the public 7 days a week all year from 9am - 3pm. Admission to the collection is by donation.

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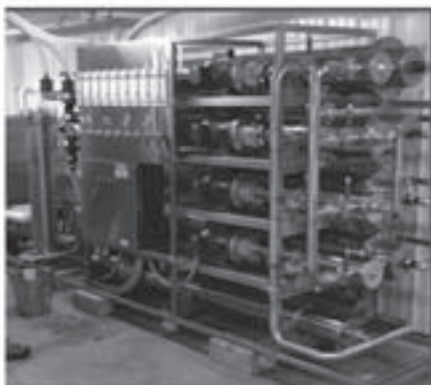
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