

Maple Syrup Digest



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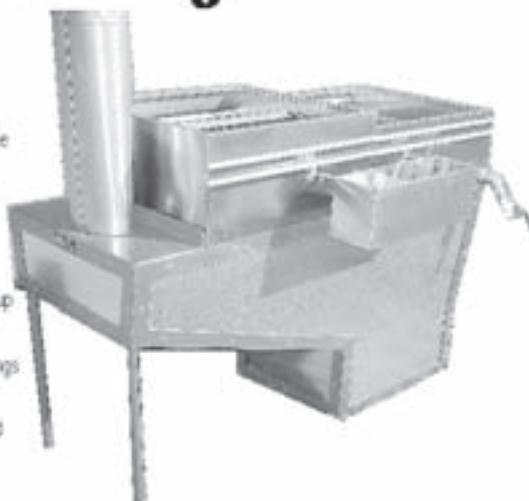


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COVER: Bruce Bascom and
Bruce Martel

GREETINGS FROM YOUR PRESIDENT



Another maple season has now come and gone but unfortunately it wasn't as good a one as last year for many of us. As I write this message I think back over the past six months or so and remember hearing producers, industry leaders and yes even myself say, "what's going to happen to this industry with all the syrup now being produced with even more new operations starting and devices being developed that we're being told if used could more than double your current production. Well, once again we were taught by good ole Mother Nature that she still has the upper hand when it comes to producing maple syrup. With all the hard work sugarmakers usually have to go through getting ready for the season and then all the cleaning at the end it can be very discouraging when you don't make much syrup but I can say for the most part maple producers are a very optimistic group because we're always looking forward to next year.

Preliminary crop reports coming from the maple producing regions looks like there was about enough syrup produced to fill this year's market demand. On one hand that means prices should stay strong for at least the next couple of years but on the other hand it doesn't allow us to build much of a strategic reserve that's very much needed should we not be able to produce enough syrup to fill yearly demands in the future. The size of this year's crop also buys us a little more time for the world to come out of the current recession

and allow the demand for maple syrup to continue to grow. Hopefully our maple industry will continue to grow and be even more profitable in the future because many of our agricultural and rural communities are now depending on it.

On May 15th the American Maple Museum in Crogan, New York will hold their opening ceremonies which include the NY state Maple Queen contest and the inducting of new members into the "Maple Hall of Fame". This year's new inductees will be Bruce Martell of Vermont and Bruce Bascom of New Hampshire. Bruce Martell has worked for the VT Agency of Agriculture for over 30 years and has been a dedicated "watch-dog" for our international maple industry for many of those years. When you hear the name Bruce Bascom you think "big", Bruce is currently the largest producer in N.H. and has one of the largest selections of new & used maple equipment in the industry he is also one of the largest handlers of maple syrup in the US. Congratulations to both of these well known maple icons!

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IMSI NEWS

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

The much anticipated 2010 maple syrup production season is now behind us. Preliminary reports from both Canada and the United States suggest that overall the 2010 maple crop is somewhat below what would be considered a normal crop in most regions and very substantially lower than the unprecedented crop of 2009. Very preliminary estimates from some sources in Quebec suggest that the crop may fall in the range of from 85-100 million pounds in that province. If these estimates hold true, there will likely be sufficient syrup to satisfy international market demand in 2010 since buyers of bulk syrup probably have a significant residual of syrup remaining from 2009. Some packers and producers in the other producing provinces and the United States are expected to purchase significant syrup in an attempt to meet their market requirements to offset shortfalls in circumstances where production was below normal. It will be interesting to hear the various crop reports from the different producing provinces and states at IMSI's upcoming Board of Directors meeting to be held in Croghan, New York.

I wish to thank IMSI members for renewing their membership in 2010 and also welcome new members to the Institute.

In 2009, a review was conducted of IMSI's strategic plan, including mission, objectives and by-laws. The main purpose of this review was to ensure that aspects of the strategic plan are relevant to current programs

and priorities of the institute. Following IMSI's Annual meeting in Bar Harbor, Maine in October 2009, the Executive Director has been working with Strategic Planning Committee lead, Richard Norman, to revise the Use of Logo Policy and to develop a new Code of Ethics for the Institute. These documents are currently under review by the membership. On recommendation of the Executive Director, IMSI's Executive Committee will soon be recommending to IMSI's Board of Directors that a duties and responsibilities of IMSI's Executive Committee be documented as part of the ongoing strategic plan review.

A very high priority of IMSI is moving forward on implementation of standardized maple grades for the international maple syrup industry. IMSI's Board of Directors endorsed the standard maple grades and nomenclature proposal developed under the leadership of the Executive Director at their Board of Directors' meeting in Bar Harbor, Maine and reaffirmed support for implementation of the proposal at their most recent Board meeting held in Burlington, Vermont this February. Emphasis has now shifted from development and refinement of the proposal to moving forward on a plan for implementation. It is very important to know that the implementation of standardized grades is proposed to be phased in over several years to allow for as easy a transition as possible. Important features of the implementation plan are developing a communications package for IMSI members (Summary of Proposal, Poster Mock-Up for Consumers, Commonly Asked

Questions and Answers, Powerpoint Presentation/CD, etc.), continue to raise awareness among maple producers, packers, equipment manufacturers and consumer groups regarding the proposal, and develop a submission to regulatory agencies in Canada and the United States supporting the proposal. We are currently projecting that the standardized grading system would be implemented for the 2013 season so as to allow for a smooth transition from the existing grading systems. This timeline is dependent on the time of receipt of regulatory approvals in Canada and the United States. Regardless, the new standard grading system would not be implemented prior to the 2013 production so that there is some certainty and stability regarding timelines for change. This may seem like a long way off for some but one needs to keep in mind that the standardized grading system is intended to have a very long life, perhaps extending to 2050 or even beyond.

Monitoring of maple syrup in the international marketplace for potential adulteration remains a very high priority. Since October 2009, IMSI has supported laboratory analysis of 28 syrup/sugar samples suspected of adulteration by IMSI members. This work was facilitated by Proctor Maple Research Centre in Vermont. All 28 samples were assessed for the potential presence of corn or cane sugars and no adulterant sugars were found. One subset of the samples was used to assess for other potential adulterant sugars such as beet sugar. Again, the results from the laboratory work were negative meaning no adulterated samples were found. IMSI is committed to

continuation of their support for adulteration testing in the international marketplace. IMSI members should contact Dave Chapeskie to obtain information regarding sampling procedures, shipping instructions and other details.

IMSI continues to sponsor two awards to recognize excellence in the international maple syrup industry. The Lynn Reynolds Award recognizes outstanding leadership as well as significant contributions to the international maple syrup industry. The Golden Maple Leaf Award recognizes innovation and advancements contributing to the growth and vitality of the international maple syrup industry. This Award is open to individuals, firms or groups. Nominations may be submitted by any IMSI member. The deadline for receiving nominations for these two awards this year is August 15th, 2010. Further details are available from Dave Chapeskie upon request at 613-658-2329 or agrofor@ripnet.com. Planning arrangements for the 2010 NAMSC-IMSI Conference are moving along well. A copy of the full registration will be available by May 15th from Dave Chapeskie at 613-658-2329 or agrofor@ripnet.com or Bill Robinson at 519-529-7857 or robinmap@huron-tel.on.ca. Watch for other information regarding the Annual NAMSC-IMSI Conference in this current issue of the Maple Digest.

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MAPLE HALL OF FAME

On May 15, 2010, the Maple Hall of Fame in Croghan, New York inducted two new members.

BRUCE BASCOM

Like all good sugarmakers, Bruce Bascom has faced his fair share of challenges. What makes Bruce different is the entrepreneurial ways that he has confronted these challenges.

The fifth generation of Bascom's, Bruce, and his new wife, Liz, returned to the home farm immediately after graduation in 1972 from the University of New Hampshire, Whittemore School of Business, working side by side in partnership with his dad. Not content with a 5,000 bucket sugaring operation, selling 35,000 bales of hay and selling 250 cords of firewood per year, expansion became Bruce's watchword. Investing in some vacuum technology in 1973 and then in 1975 the Reverse Osmosis machine (the industry's first) became a major benefit to the boiling operation. The farm now includes a rented 350 dairy cow operation along with 12 additional farms totaling 2300 acres owned and 65,000 taps. An additional 2,000 acres are rented from other land owners. 24,000 gallons of syrup were produced in 2009 making it a showcase of the industry. An extensive silviculture forestry plan of sustainable yearly sugarbush thinning is maintained.

Over the years he has owned multiple maple companies, namely US Maple Tubing, Vermont Sugarhouse, and Saltash Mountain Sugarhouse. In time, Bruce became a dealer of sugaring equipment and now is the foremost supplier in the US. In the Bascom Maple Farm showroom, a

sugarmaker can see the latest in sugaring equipment and also a display of antique, 200 year old spouts. As part owner of Leader Evaporator, Bruce has sat on the board of the country's largest equipment manufacturer.

With equipment sales often comes bulk syrup dealing and Bruce again saw an opportunity for expansion. What began as a few drums here and there has grown to tens of thousands of drums on an annual basis with syrup coming from every maple producing state. From the lightest of the light to the darkest of the dark, Bruce is able to find a customer for all syrup. Granulated maple sugar and maple candy produced make up a substantial portion of the sales.

Bruce studies the market from farm to consumer and has a thorough knowledge of intricacies that make up the maple industry which he has used to build an extensive production and sales company. With five packing lines, his 52 employee team fills thousands of syrup containers a day in a plant that is a leader in efficiency and quality control. Over the years, he has developed a solid sales company and acquisitions: Coombs Family Farms, Brown Family Farms, VT Gold; so that their products can be found in every state and in foreign countries. A national sales office is maintained in Brattleboro, VT.

It is said that when Bruce announced his decision to join the family's small maple sugaring business after college graduation, his mother Ruth cried, feeling he could do better in some large corporation. Little did she know that he would take that business and turn it into one of the pre-eminent maple companies in the industry.

BRUCE MARTEL

Bruce Martel of the Vermont Agency of Agriculture has been a friend of agriculture all his life, having been born into Vermont agriculture, trained in Vermont agriculture and worked for the Vermont Agency of Agriculture for more than 36 years. More importantly, he has been a friend of the international maple syrup industry for all those years.

Bruce has been on the staff of the Vt. Agency of Agriculture since 1973 and worked directly with the Vermont maple industry since 1979. In that year, after spending six years as a markets division inspector, Bruce was promoted to the position of Agricultural Development Specialist, leading to his direct involvement with maple marketing and development. This led to several subsequent titles that all led to his increased involvement and dedication to the people of the maple industry. He has served as a supervisor at the Department, now Agency, of several sections, including Consumer Assurance, Agricultural Marketing and currently, Agricultural Development Coordinator.

Martel is not a "native" sugarmaker, but he is a farmer. You couldn't find anyone more dedicated to agricultural industries. He was presented the Sumner Hill Williams Memorial Cup, the highest award of the Vermont maple industry, at the Vermont Farm Show in 2007. In presenting this life time achievement award, the then president of the Vermont Maple Industry Council, Sam Cutting IV, said "this recipient has become one of the maple industries biggest supporters. He truly does have maple syrup in his veins."

Bruce graduated from a small high school in northwestern Vermont in 1968 and went off to Vermont Technical College to obtain his Associates Degree in Agriculture two years later. He then enrolled at the University of Vermont, where he earned a Bachelor of Science Degree in Agriculture. About 6 months later he went to work as the new kid on the block with the Vermont Department of Agriculture. Since that time Bruce Martell has become the watch dog of the pure maple syrup industry. He is an internationally known authority on the laws of pure maple syrup. Bill Clark, past president of the Vermont Maple Sugar Maker's Association, remembers Bruce traveling to Mississippi in the early 1990's, tracking the manufacturers of "pure" Vermont maple syrup with a Mississippi syrup factory heritage. About the same time, he was like a bloodhound on track of adulterated maple syrup across the country, traveling to west coast states and purchasing syrup up and down the California coast. His dedication put people in jail for breaking the pure maple syrup laws, he was the maple cop on the corner.

His work has taken him to many parts of the maple world to teach various aspects of maple production and marketing. He always made sure educational information was available to producers, packers, the media, and consumers that would tell the pure maple syrup story. He has been a very important player in maple marketing: local county fairs, state fairs, Vermont Maplerama presentations and maple schools in many states. He has been a frequent presenter in many states.

When he couldn't take Agency time

to do a maple promotion, Bruce often volunteered his own personal or vacation time to see that promotion opportunities were utilized. He spent many days in New York City promoting pure maple syrup in Central Park and fancy department stores. He spent about ten days in south Florida presenting Vermont Maple products to attendees of one of the largest Florida fairs. He has spent many freezing days at Vermont ski areas promoting maple syrup to out-of-state skiers that "need to taste pure maple syrup."

Bruce Martell has become a very well known maple products judge. Sam Cutting III, when endorsing Bruce as a candidate for the induction into the Hall of Fame, said "Bruce has been judging maple forever, there is no one better." He has judged maple for nearly every maple event that exists in the maple world, at least in the U.S. He has become a fixture at the Vermont Maple Festival, the Vermont Farm Show and many international contests for the IMSI, North American Maple Syrup Institute and numerous farm shows and events.

For several years now, Bruce has served the State of Vermont well as the manager of the Vermont Building at Eastern States Exposition in West Springfield, Massachusetts. This fair attracts more than 1.2 million visitors each year; it is estimated more than 600,000 of those go to the Vermont Building in the heart of the fair. More than one million dollars of Vermont products are marketed with this effort, including more than \$150,000 in pure Vermont maple products during the 17 day event.

Bruce Martell has received every honor and award the Vermont maple industry has created. His dedication

to pure maple syrup production, promotion and marketing is well known. In 1998 he was presented the "Maple Person of the Year Award" by the Vermont Maple Industry Council. One of the most successful producer education events that Bruce Martell helped to lead has been Vermont Maplerama. This program has successfully attracted about 200 sugar-makers from across the maple world for more than 50 years.

Bruce was one of the founders of the Vermont Maple Open House Weekend in 2001. That event has grown each year and attracted attention across the country. Those marketing efforts have been multiplied by partnering with the Vermont Ski Areas Association. Their joint map, of winter sports and sugaring, has created a great synergy in Vermont tourism.

In the summer of 2009, Bruce was offered a nice bonus for early retirement from the Vermont Agency of Agriculture, after 36 years. After a lot of soul searching and reflection about his unfinished work with the maple industry, he declined. Bruce Martell will continue to be a force in the Vermont and international maple industries.

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Boiling Clean with Air

By Vernon Wheeler

I have been running a maple syrup operation over the past 30 years with my wife and children but started out making maple syrup with my father as a young boy 55 years ago.

Maple sugaring when I was a boy was a little different than it is now. Quite a few things were accepted back then that wouldn't be now. There was an abundance of lead in the tin buckets, spouts, sap tanks and tin evaporator pans. A creek provided the running water and the sugar camp floors were made of dirt. Packing syrup cold, a hunk of pork fat for defoamer, bird nests in the rafters, and horses shedding hair into the sap tank were also common. I remember it all very clearly but what I remember best of all was how good the syrup tasted. You would wonder how that could be possible with the way things were.

I believe that one important thing that allowed such nice tasting syrup to be made was removing all the scum and foam that formed on the boiling syrup. A skimmer was one of our most important tools and was used regularly. We knew back then that if the scum was boiled over and over in the pan it would cause darker and poorer tasting syrup.

With advancements in equipment, came hoods for the evaporators, closing everything in. This doesn't allow the syrup to be skimmed so the foam and scum forms a goop that keeps mixing with the fresh sap as it comes into the pan. With faster boiling evaporators, defoamers were also more necessary to keep the sap in the pans. The heat and steam of the boiling pans cause defoamer to go rancid very quickly, whether it is a dairy product, oil, or any kosher product. The result of rancid defoamer and scum being boiled over and over in the pan is dirty boiling, and off-flavoured syrup. Most of the scummy goop residue clings to the sides of the pans (and on any braces and preheaters) and will remain there from one boil to the next. I have found that the only way to fix this problem is to completely wash the pans at least every 12 hours or install an air bubbler.

I have been using the bubbler now for six years. It is installed in two 6'x16' evaporators and a 3'x8' finisher. I would say it is best described as a bubbler rather than an air injection because there is nothing being 'injected' into the product. It is just regular filtered air that we breathe every day being pumped into the bottom of the pan and bubbling through the sap. I have found that the bubbler allows me to boil as hard as I want without using any defoamer. Pumping natural clean air into the pans is better than adding defoamer of any kind to make a good tasting and pure product. I understand that a Canadian producer wants to be certified organic they are not permitted to use a bubbler but a producer in the United States can. I don't understand why the air you breathe in the U.S. would be considered organic but the air in Canada is not.

The bubbler helps to move the sap through the pans, partly because of no foam. The small amount of scum and foam that is normal with the boil is carried out with the syrup to the syrup filter rather than remaining in the pans. Years ago a wise maple man in Quebec spoke to me about how you can boil much

faster if you get rid of the foam in the pans. He explained that the bubble leaves from the bottom of the pan and the sooner the bubble is broken the faster you can boil. He was explaining how defoamer allows this to happen but the bubbler allows us to have the best of both worlds - no defoamer and a fast boil. You may expect that the bubbler bringing room temperature air into the pans would cool the sap and decrease the rate of boil but this is not the case. The bubbling action and lack of foam seems to compensate, allowing for the same rate of boil, only cleaner. The sap very quickly boils over the pans if the bubbler is turned off while the evaporators are running, proving that defoamer is required without the bubbler.

Adulteration is a major issue in the maple industry. Anything added to maple sap in the production of maple syrup is illegal. The addition of defoamer is permitted in the maple industry because it is necessary as a processing aid. With the new natural air bubbler technology as a defoaming option, the use of commercial and other organic based defoamers is not necessary. It could be argued that now that air can be used as a natural defoamer that adding defoamer of any kind is adulteration of the pure maple product.

With the use of the bubbler there is also very little nitre build up on the sides of the pans and about half the build up on the flues and bottom of the flat pans. The finishing pan is considerably easier to clean during the season with the bubbler because of the decreased nitre build up. By filling the pan with water, heating it, and then running the bubbler for an hour, only minimal scrubbing of the pan is generally required to remove the nitre.

The bubbler acts to eliminate hot spots in the pans as the syrup is boiling. Hot spots can contribute to darker colouring and stronger flavouring and off-flavouring of the maple syrup, particularly in the more delicate lighter grades. The bubbler does help make lighter coloured syrup but the taste is also a true and delicate maple flavour characteristic of the colour. This is a result of the cleaner more even boiling process. Not all syrup made with a bubbler is light though. Warmer weather and the growth of bacteria still brings darker syrups.

I have found that later in the season when the darker syrup is made, the steam smells strong and unpleasant. The resulting syrup is dark but with a nice dark flavour. My theory is that the bubbler helps to remove some of what would cause a harsher and more unpleasant flavour in the dark syrup, essentially cleaning the sap. It smells worse when the dark syrup is boiling but the syrup itself has a nice flavour characteristic of the colour rather than a more harsh flavour.

The bubbler must be installed properly to be effective, just like any other piece of equipment. The air fan should not be located in an attic or loft where there could be damp wood, near a fuel tank, down wind from any farm smells, or near any other strong smelling or contaminated areas. The air being used should be fresh and clean. The blower is also loud so is best not to be too close to your work area. The blower should have dual filters, one for dust and a carbon filter to remove odours. For best performance there should be a run of air pipe for every flue. It should be at the top of the flue not at the bottom. At the top you get double action from the bubble going down and then up. It also has to be installed so that it can be put in and taken out with minimal effort for easy cleaning of the pan.

There have been many rumours circulating about how the bubbler affects the syrup that I have found to be untrue. It was said that the colour of syrup produced with a bubbler was not stable and that it would darken more than what would be normal after it was bottled. We have never seen this. Another rumour was that maple sugar could not be made from maple syrup that was boiled in an evaporator with a bubbler. We have made hundreds of pounds of maple sugar each year since we have used the bubbler and have found no difference. There is also no difference in how easily the syrup can be made into maple butter, taffy, or granulated maple sugar. There has been research done on the bubbler with varying results. Research in Vermont has come out with some positive results while research in Quebec has come out with conflicting results. Something that may be hard to measure with research, but is the most important thing, is that it allows us to boil cleaner.

I have attended most of the North American Maple Syrup Council meetings since the 1970's and served as an Ontario alternate director for about 10 years. I think there is a flaw in the system when it comes to research. I don't think that the media and the general public should get the information from a research project until it is complete. The problem is when preliminary findings are released from a study, the media can grab onto it and distort it into bad news. I do think that the NAMSC research committee should be informed of ongoing research findings on a regular basis whether the research is funded by NAMSC or not. I think it would be beneficial to the industry if NAMSC played an even larger role in research. There should be a spokesperson for the U.S. and one for Canada that are appointed to speak to the media on behalf of the maple industry when it comes to important issues.

Issues that are being effectively dealt with in the maple industry such as the use of paraformaldehyde and lead have been reported in the media as though they are part of accepted practices within the maple industry that are being hidden from the consumers. New technologies such as the air bubbler have been reported in the same manner by the media. Two examples of this are an article in Maclean's magazine (The less sweet side of maple syrup, March 26, 2007) and another in Harrowsmith Country Life (Say It Ain't So, February 2010). One quote from the Harrowsmith article comparing regular maple syrup to organic states "How about 50 mL of regular maple syrup? Exactly the same, plus the possible drawbacks of formaldehyde, lead, insect carcasses and injected oxygen." It doesn't matter which part of Canada or the United States receives misinformation or a negative news story, it hurts the whole maple industry.

The high quality of maple syrup and the future of the maple industry are important to me. The information that I have presented here are my own findings and opinions. In closing, I encourage everyone to do what they can to work towards finding a balance of common sense and research in our industry. Maple syrup is valuable to our heritage and our livelihoods. We owe it to ourselves and the future of the Maple Syrup Industry to make smart decisions now and aid the media in relaying accurate information.

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30" x 8' Grimm oil fired evaporator, no oil burner, w/stainless pans, stainless hood and preheater	\$3,750
30" x 10' Leader evaporator w/Small Brothers stainless pans	\$3,750
3' x 10' Grimm oil evaporator w/Carlin 601 oil burner, stainless stack and stainless pans made 1989 (never used)	\$9,750
4' x 13' Waterloo evaporator w/welded pans, cross flow w/two extra syrup pans, stainless stack & cover	\$8,500
5' x 5' D & G welded stainless syrup pan	\$650
725 Gallon horizontal plastic tank	\$650
Airblo electric 3/4 hp vacuum pump w/flood system (excellent)	\$2,300
Small Brothers Sap Brothers RO machine w/two 4" membranes 50 +/- gph	\$3,500
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We welcome you to Ontario for the annual meetings of NAMSC, IMSI and OMSPA to be held in Stratford, home of the Shakespearean Festival. Please join us to experience the uniqueness of Southern Ontario. The International Program begins on Wednesday, October 20th and continues through with a Maple field trip and banquet on Saturday, October 23rd.

A number of Ontario's Maple Producers will be at their maple facilities on Sunday, October 24th so that you may drop in on them on your way home, as an added feature.

The business meetings and technical programs/workshops will be held at Arden Park Hotel, 552 Ontario Street, Stratford, ON N5A3J3, Phone: 1-877-788-8818.

There will be maple products and photo contests, Commercial and Research/Extension Exhibits, Technical/Marketing Presentations and workshops. Learn about the latest maple research projects and new information from Canada and the United States related to maple syrup production and quality assurance as well as about effective maple marketing strategies.

(Continued on page 22)



REGISTRATION FORM

Annual NAMSC, IMSI and OMSPA Meetings

October 20 - 23, 2010 - Stratford, Ontario Canada

Please make hotel reservations directly: Arden Park Hotel, 552 Ontario Street, Stratford, ON N5A3J3. **Phone:** 1-877-788-8818 **Website:** www.ardenpark.on.ca. Room Rate is \$99.00, if you advise you are attending the 2010 Maple Conference. There is a restaurant in the hotel. For more details or a full conference package contact Dave Chapeskie at (613) 658-2329 or email: agrofor@ripnet.com or Bill Robinson at (519) 529-7857 or email: robinmap@hurontel.ca.

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Registration Fee/Person	Price	# of People	Total
Wednesday, Thursday, Friday, Saturday	\$90.00		
After August 1st	\$115.00		
Saturday Only	\$30.00		
After August 1st	\$40.00		
Wednesday, October 20th			
Taste of Ontario (Food and Entertainment)	n/a	Yes No	\$0.00
Please indicate if you are planning to attend			
Thursday, October 21st	Price	# of People	Total
Breakfast Buffet	\$16.50		
All Day Companion Tour (lunch included)	\$45.00		
Lunch at Arden Park (attending workshops)	\$16.50		
Dinner on your own			
Friday, October 22st	Price	# of People	Total
Breakfast Buffet	\$16.50		
Companion Tour A (lunch included)	\$50.00		
Companion Tour B (Theatre) (lunch included)	\$85.00		
Lunch at Arden Park (attending workshops)	\$16.50		
Dinner on your own			
Saturday, October 23rd	Price	# of People	Total
Breakfast Buffet	\$16.50		
All Day Tour (lunch included)	\$50.00		
Banquet	\$45.00		
Total Amount Payable (Canadian Funds)			

We have arranged companion Tours for your enjoyment as well.

On Thursday, we will begin the tour by visiting an apple packing/distribution center and Martin's Sugar Camp, a 6th generation farm. Then it's off to the quaint town of St. Jacobs, for a visit to the Maple Syrup Museum, the Visitors Centre where you will hear the Mennonite Story and then lunch at the Crossroads Restaurant. After lunch, a bus will be available to take you back to the technical sessions if you wish or you can continue the tour and see the St. Jacobs Farmers Market – the largest market in Ontario.

On Friday, you can participate in one of two tours:

Tour A: Props and wardrobe for the Festival Theatre, a historical tour of Stratford, interactive tour of the Perth Stratford Museum, shopping at unique shops on the main street of Stratford and lunch.

Tour B: Attending the play “Kiss Me Kate” at the Festival Theatre (musical comedy), a walking tour behind the scenes at the Festival Theatre, historical tour of Stratford and lunch.

You may use the Registration Form in the centerspread of the Digest or contact Dave Chapeskie or Bill Robinson for a full conference package.



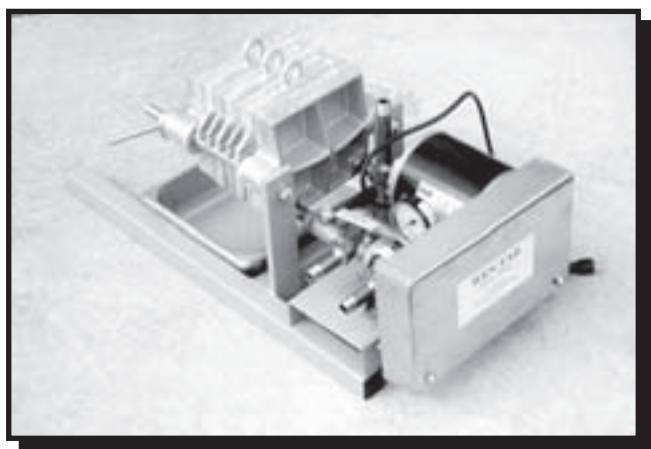
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New Hampshire's Maple Season Summary

By Barbara Lassonde

The maple season in New Hampshire began in late February, but officially kicked off on March 12 with our annual tree tapping ceremony when the Governor and First Lady, Dr. Lynch competed for the title of the most "Rapid Tapper". The Governor once again won, but neither saw sap fall from their spile. The temperatures had not dipped below freezing the previous night, so the newly hung buckets remained dry.

Midway through the season, the New Hampshire Maple Museum opened. Located at The Rocks Estate in the northern town of Bethlehem, the museum shares a building with a working sugar house. The staff at The Rocks selected an interesting assortment of artifacts from Charlie Stewart's collection to display, complete with signage for self-guided tours. An official grand opening will be held at a later date.

New Hampshire Maple Weekend arrived with much fanfare and high expectations. The record-breaking crowds hungered for a taste of new syrup and an opportunity to learn how the ancient tradition of maple sugaring is carried on today. Many were fascinated with the modern equipment that saves on fuel and labor. Unfortunately some producers had no sap to boil on Maple Weekend, but early reports indicate syrup sales were outstanding.

When the season ended about the last of March, most southern producers were disappointed that they had made only 1/2 to 2/3 of an average

crop, with very little of the lighter grades. Those in the far northern reaches of the state made a larger percentage of the lighter grades and realized close to an average crop if they had high vacuum. Those without vacuum throughout the state experienced a poor harvest.

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AN ALTERNATIVE MEASURE OF YEARLY MAPLE SYRUP PRODUCTION (YIELD-PER-TAP/DAY)

By: William P. Tyminski

Department of Geography, University of North Carolina, Greensboro

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INTRODUCTION

The success of the sugar maple industry is strongly associated with minor meteorological variations that affect sap production (MacIver *et al.*, 2006). Maple syrup production is one of the most poorly forecasted crops in the U.S. (Morrow, 1973), because sap flow is dependent upon critical changes in temperatures during a relatively short period of alternately freezing and thawing diurnal temperatures. Maple sap is collected for approximately 4-6 weeks each year under specific weather conditions that occur in northeastern North America from February-April. Optimal climatic conditions include a combination of night-time temperature minima ($< 0^{\circ}\text{C}$), contrasting warm, sunny days ($> 4^{\circ}\text{C}$) (Marvin, 1957, 1958), and sub-freezing soil temperatures that delay the onset of budding.

Typically, production is measured in terms of the number of gallons produced. Where, bumper years are identified by years of above-average production preceded by a series of below-average years. Production, as measured by the number of gallons produced does not offer much information about the efficiency of sap flow for a given year or region. The number of gallons produced during a season can be influenced by the physical environment (e.g., meteorological) and variables such as the number of producers and trees tapped, and season start and end dates. To adjust for these factors and to provide a measure that would express the meteorological-based variation in yield, the industry standard, Yield-per-Tap, is commonly used. Thus, this measure allows practical comparisons between years and regions where syrup is produced.

Despite improved collection techniques and changes in sugarbush management strategies to enhance sap collection during suboptimal periods throughout the twentieth century, between 1967 and 2008, average maple syrup production (Yield-per-Tap) has declined by 22 percent in New York (Fig. 1). A suite of causes have been identified for the decline including forest pests and diseases, nitrogen leaching, elevated carbon dioxide, ice storms, summer and fall droughts, decreased snow cover, and increased springtime temperatures. As changes in weather conditions during the sugaring season continue to reduce sap flow (Skinner *et al.*, 2009), considerable attention has been placed into further understanding and quantifying the current state of decline. Therefore, an adjusted measure of production may enhance the understanding of yield behaviors of the last 42 years.

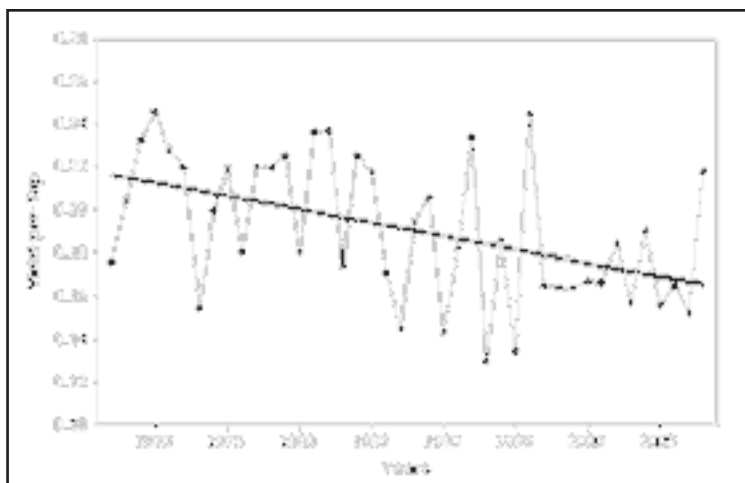


Figure 1. Yield-per-Tap for the period 1967-2008; ($R^2 = 0.21$, $p = 0.002$, D-W = 2.3).

Increases in springtime temperatures (e.g., minima and maxima) not only affect sap flow but dictate start and end dates (i.e., season length) of the sugaring season. The effect of a shorter sugaring season on syrup production has been implicated as a factor contributing to the decline over the last two decades. Season length, however, does not take into consideration the number of ideal days within that season. Additionally, as increases in springtime temperatures for the northeastern United States are forecasted to continue, the relationship between season length and production requires further investigation.

While the adjustments for non-meteorological effects provide a robust measure of yield behavior, the influence of season length still remains. Therefore, in order to evaluate the effects of season length of maple syrup production I purpose an alternative measure of seasonal maple syrup production, "Yield-per-Tap/Day." I then determine whether the addition of season length affects the calculated rate of decline in production during 1967-2008. Lastly, after ranking the years of production, the bottom and top 10 years are compared for the two measures of production.

MATERIAL AND METHODS

Statewide yearly maple syrup production (gallons), number of taps, and Yield-per-Tap values were obtained from the United States Department of Agriculture's National Agricultural Statistics Service New York Field Station for 1967-2008. Additionally, I obtained yearly sugaring season start and ends dates to calculate a season length using the Julian dates (e.g., January 1st = day 1) and tested the 42-year period (1967-2008) for change in season length using simple linear regression.

Next, I calculated a new index (Yield-per-Tap/Day) by dividing the Yield-per-Tap for a given year by the sugaring season length for that year. Dividing Yield-per-Tap

by season length will produce a new data series that takes into consideration seasons with more days of potential sap flow, thereby, rescaling production.

Simple linear regression was then used to determine if there was a statistical relationship between season length and Yield-per-Tap and whether a significant decline in both Yield-per-Tap and Yield-per-Tap/Day for the period of 1967-2008 was present. Additionally, the Durbin-Watson statistic (D-W) was calculated to check for autocorrelation in the time series. I then determined if the slopes (i.e., the rate of decline) for the two models were statistically different. Lastly, I ranked the two data sets and analyzed the top 10 and bottom 10 years of production to see if temporal patterns of production change after correcting for season length.

RESULTS AND DISCUSSION

While it has been reported that the sugaring season is starting earlier and season length has decreased by three days in some regions of New England (O'Connor, 2007), no significant change ($p = 0.450$) in season length was found for New York (Fig. 2). Conversely, a significant linear relationship between season length and Yield-per-Tap ($R^2 = 0.14$, $p = 0.007$) was found (Fig. 3), indicating that accounting for season length in yield measures may be appropriate.

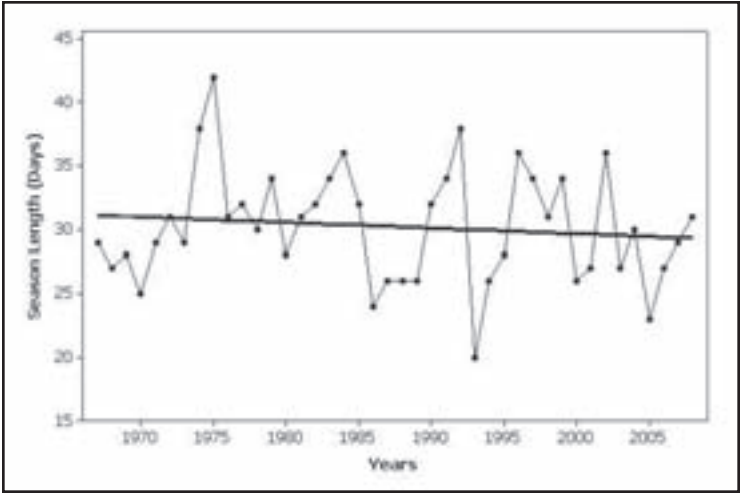


Figure 2. Length (number of days) of sugaring seasons for the period 1967-2008; ($R^2 = 0.02$, $p = 0.45$, D-W = 1.52).

After removing the effect of sugaring season length on syrup production, average syrup production (Yield-per-Tap/Day) during the 1967-2008 declined 18 percent as compared to the 22 percent (Fig. 4) found when Yield-per-Tap is used. While it is not significantly different ($p = 0.668$), the difference in decline between the two models was 16 percent. Regardless, the addition of including season length may provide the industry and producers a more appropriate measure of decline, production, and identification of bumper years.

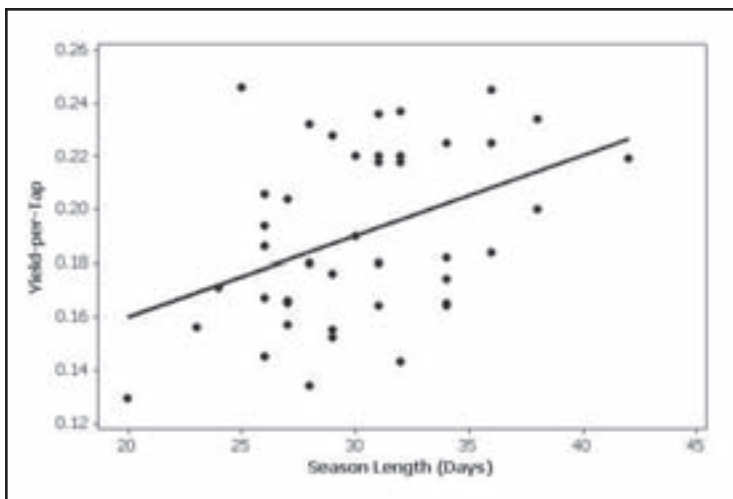


Figure 3. Yield-per-Tap as a function of the sugaring season length (1967-2008); ($R^2 = 0.14$, $p = 0.001$).

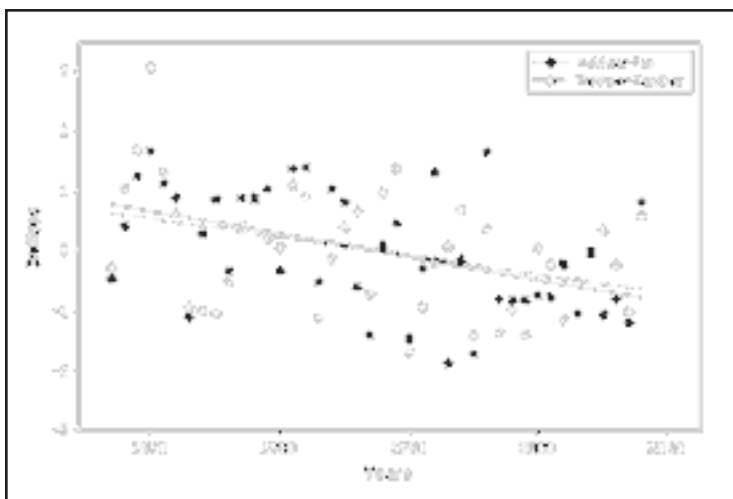


Figure 4. Standardized Yield-per-Tap and Yield-per-Tap/Day values for 1967-2008 with their respective trend lines. Trend lines are significant for Yield-per-Tap and Yield-per-Tap/Day (dashed line); $R^2 = 19.0$, $p = 0.004$, D-W = 2.3; $R^2 = 13.0$, $p = 0.024$, D-W = 1.42, respectively.

While both measure of production provide similar rates of decline and model fit (R^2), the rankings of the top and bottom 10 years of production are not consistent (Table 1). Sixty percent (6/10) of the top 10 years and 40 percent (4/10) of the bottom 10 years are found within both measures (Table 1). However, only two (i.e., 1970 and 1995) of 10 common years hold identical rankings.

Table 1. The ranks (1 = highest, 42 = lowest) of yearly syrup production based on the two measures for 1967-2008. An asterisk (*) indicates common years found between measures (i.e., the year 1998 is ranked in the lowest 10 years of production regardless of which measurement is used). Bold values hold equal ranks.

Yield-per-Tap		Yield-per-Tap/Day	
Bottom 10 years of production			
Rank	Year	Rank	Year
33.5	1998	33	1991
33.5	1999	34	1974
35	2007	35	1975
36	2003	36	1983
37	2005	37	2002
38	1973	38	1997
39	1987	39.5	1998*
40	1990	39.5	1999*
41	1995	41	1995*
42	1993	42	1990*
Top 10 years of production			
1	1970	1	1970*
2	1996	2	1969*
3	1982	3	1989
4	1981	4	1971*
5	1992	5	1981*
6	1969	6	1968
7	1971	7	1988
8	2008	8	1982*
9.5	1979	9	1978
9.5	1984	10	2008*

CONCLUSIONS

For the state of New York, season length and Yield-per-Tap were positively associated. Conversely, no significant change was found for season length. Analysis of Yield-per-Tap and Yield-per-Tap/Day using linear regression does not reveal any statistically different results in terms of production trends. While statistically not significant, correcting for season length may highlight years with ideal conditions for syrup production despite average- to below-average yields. For example, if year 1 and 2 have the same yield, but year 1 had a 20 percent shorter sugaring season, then year 1 would be a more productive season. The ranked data however, suggests that inclusion of season length may help in iden-

tifying alternative bumper years. Because the data are derived from statewide surveys, these results and interpretations may not represent regional or local-scale maple syrup production. A regional average or a statewide regionally-weighted average may be more appropriate given the climatic and topographic variability of New York.

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An Overview of Consumer Research Conducted to Determine Support for a Standardised Grading System for Pure Maple Syrup

*By Dr. John B. Garwood
Independent Marketing Consultant*

Background and objectives

In late summer, 2008 Cintech Agroalimentaire was mandated by the IMSI and the Federation of Quebec Maple Syrup Producers to undertake research on their behalf that would serve as input to a potential uniform grading system destined for consumers of maple syrup¹. It was felt that such a grading system would not only be useful to producers and packers but would also help stimulate sales to customers. The attributes considered for the grading system included: colour, flavour (descriptors and intensity) and region of origin; in addition, the study investigated which descriptive terms best describe consumers' perceptions and judgements of what appeals to them with respect to maple syrup.

The specific objectives set out for the study were as follows:

1. Determine if consumers are able to discriminate between different types of maple syrup based on taste alone.
2. Verify if consumers are able to categorize different syrups into at least two categories based on visual clues alone.
3. Elicit spontaneous category names or attributes that differentiate maple syrups.

Methodology

A two-pronged approach was adopted in the study. Consumers first participated in a blind taste test in order to assess their ability to distinguish one product from another based solely on their sensory characteristics (quantitative). A sub-set of these participants were subsequently invited to participate in a focus group designed to explore the way in which syrups are grouped based primarily on visual cues (qualitative).

The client provided a total of 13 different maple syrup products varying on colour code (AA, 4; A, 4; B, 3; C, 3), flavour (vanilla, 2; maple, 3; confectionary, 3; empyreumatic, 3; woody, 2) and intensity (<3.0/7-point intensity scale, 2; 3.0-3.9/7, 6; 4.0-4.9/7, 3; 5.0/7 or greater, 2). Two blended products (colour code, A; intensity, 3.0/7) were also included in testing. The client was responsible for both the choice and classification of the products tested.

Quantitative

A total of 300 maple syrup users between 18 and 64 years old were tested in Quebec (106), Ontario (94) and New Jersey (100); there was a 60/40

¹Since that time, the author has left Cintech and is working as an independent consultant.

female/male split. The syrups were presented to participants in pairs in opaque glass in order to avoid visual cues; they were asked to evaluate if the two syrups were the same or different based on taste alone. In fact, all pairs were comprised of two different products but participants were led to believe that pairs could be either the same or different. Each participant tasted 8 of the 32 pairings tested. The fact that not all flavours were represented in all classes imposed an incomplete design on pair selection. After the 8 primary pairs had been evaluated, participants evaluated a 9th pair consisting of one of the blended products and table syrup (table syrup was included in the mix due to its popularity among consumers in general).

Participants were also asked to rate the product(s) on a 10-point rating scale, indicate which product they preferred when considered different and describe the product in their own words for the first 3 pairs. For the remaining pairs, a list of possible descriptors was provided in order to ensure that all possible descriptors were given consideration.

Qualitative

A total of 6 focus groups of approximately 10 participants were conducted in Quebec (2), Ontario (2) and New Jersey (2). All participants were selected from the blind taste tests. Participants were first asked to reflect on their taste test experience and then to group the 16 different products used in the taste test based on their visual cues; the products were presented in small, transparent vials. They were asked to create between 2 and 7 groups of products that they felt "went together" with no criteria being suggested. Once the groupings were created, they were ordered from most to least preferred; merging of groups was permitted. Participants next assigned the words used in the taste test to the different groupings - a limited number of words were allowed to be used for multiple groupings. Finally, participants discussed the relative merits of the classification systems currently in use and provided suggestions for their ideal classification system.

Findings - what was learned

Overall, consumers who participated in this study could only guess at whether or not the two products in a pair presented to them were similar or different. Although 100% of the pairs contained different products, only 58% said that this was the case; this is the equivalent to a coin toss.

If one considers all pairs with two different grades of syrups, ignoring differences in taste, the percentage saying that the products are different remains basically unchanged when an AA-Grade syrup is paired with an A-Grade syrup (59%) or a B-Grade syrup (55%) or an A-Grade syrup is paired with a B-Grade one (56%); when B-Grade is paired with C-Grade syrup, the percentage who say that they are different drops to 45%.

Similar results are observed when different tastes are paired and the differences in colour grades are ignored. The highest percentage saying that the tastes are different occurs when Maple is compared to Confectionary (58%) and the lowest when Confectionary is compared to Emphyreumatic (39%). It

should be mentioned that comparisons with Woodsy tasting products were ignored due to the fact that one of the products tended to be universally rejected by participants and was considered to be an extreme outlier.

When it comes to liking, three of the four highest rated products are the B-Grade syrups (Maple, Emphyreumatic, Confectionary) with the highest score going to B-Grade, Maple flavour (6.6 on 9-point liking scale). Three A-Grade (Maple, Vanilla, Confectionary) and three AA-Grade (Vanilla, Woodsy, Maple) syrups also score at least 6.0. With the exception of A-Grade, Woodsy which scores a very poor 3.6, the remaining C-Grade products each score a fairly respectable 5.4 or higher. The data suggest that there are no major differences in liking scores based on grade (with the possible exception of C-Grade) or flavour (A-Woodsy being an exception) although the B-Grades and the A-Grades tend to be somewhat more appreciated.

The data were also analysed in order to determine if taste intensity has an impact on liking. Inspection of the data clearly demonstrates a completely flat curve for intensity scores ranging from 2.8/7 to 4.8/7; scores fluctuate between 5.7 and 6.6 on the 9-point liking scale. Liking drops off dramatically for the two most intense products - C-Grade Emphyreumatic, 5.5/7 and A-Grade Woodsy, 5.6/7; scores of 5.4 and 3.6 are observed on the 9-point liking scale.

When asked to describe the products they tasted based solely on their sensory experiences, participants tend to use the terms "sweet" and "thick" regardless of the grade of the syrup tasted. AA-Grade syrups tend to be differentiated from other grades by the terms "smooth, mellow, light, thin", A-Grade syrups are also characterised by the terms "smooth and mellow" but there is indecision about whether the maple taste is "light" or "strong", B-Grade syrups are labelled as "strong maple taste, natural" whereas C-Grade syrups get characterised as "burnt, bitter, artificial, strong".

The qualitative part of the study provides results that tend to confirm and complement those observed in the quantitative phase. When asked to group the 16 products presented to them visually, participants in Quebec and Ontario use 6-7 distinct groupings whereas those in New Jersey use 3-4 groupings. As one might expect, the groupings are generally based on the intensity of the colour of the product although a few participants also take viscosity into consideration.

When asked to organise the groups by attractiveness, the number of groupings tend to be reduced to 3-4. The most preferred products are those in the medium to medium-dark range (Grades A and B). The least preferred products are those classified as AA-Grade although C-Grade products are considered as equally unattractive by some of the participants. Positive words used to describe the more preferred, darker syrups include: "thick, bold, rich, full-bodied, strong maple flavour, substantial, robust", those used to describe the middle category include "creamy, smooth, mellow, amber, golden, clear", while words like "delicate, mild, subtle, light" are used to describe the lighter coloured syrups. Participants tend to feel that the intensity of the colour of the syrup is a very good indication of the intensity of its taste and perhaps its quality.

Participants were also asked what information they would like an "ideal"

classification system to communicate to them; they provided the following elements: it's pure maple syrup with nothing added or taken away, the colour category to which it belongs, a description of the intensity of the maple taste (flavours other than maple are viewed with suspicion), the country and province/state of origin.

Summary

- Consumers have difficulty discriminating one maple syrup from another based on taste alone; there is a tendency, however, to prefer the taste of medium to medium-dark syrups.
- Colour is very important to them.
- Consumers generally use 3-4 categories when grouping maple syrup based on its colour.
- They tend to assume that there is a one-to-one relationship between the colour of a syrup and the intensity of its taste - darker colours have more full-bodied, intense tastes. Visually, the medium to medium-dark products are preferred.
- Words used to describe different visual grouping of syrup tend to reflect this assumption; i.e., darker = robust, bold, full-bodied, etc., lighter = delicate, mild, subtle, etc.
- They want maple syrup to have a maple taste; other tastes cannot override the maple taste without creating the suspicion that something was added to the product.

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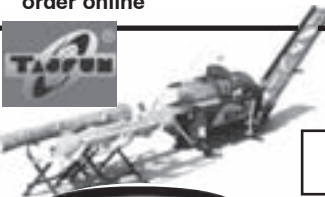
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Are you concerned about the future of the Maple Industry? Help us fund Maple related research. Producers and Packagers are encouraged to send \$.01 per container to the NAMSC Research Fund. Grant recipients are announced at the NAMSC Convention each October.

Suggested contribution is \$.01 per container. Send contribution to treasurer Joe Polak at the address below.



For more information contact:

Michael A. Girard, Chairman PO Box 383 Sainsbury, CT 06070

Phone 860-658-4790 FAX 860-408-4667 Email: mgirard@stanscraft.com

Joe Polak, Treasurer, W1887 Robinson Drive, Merrill, WI 54452

Phone 715-456-7251 FAX 715-456-1295 Email: maplefollowmyinspiration.net

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



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Look at these examples of how efficient a MAX can be!

Evaporator Size	Standard Evaporator	The MAX	The MAX w/ Enhanced Steamaway
2x6 with 4' flue pan	37 gph	50-60 gph	85-95 gph
30x8 with 5' flue pan	60 gph	85-95 gph	140-160 gph
3x10 with 6' flue pan	95 gph	130-145 gph	220-245 gph
4x12 with 7' flue pan	162 gph	230-250 gph	385-425 gph
5x14 with 9' flue pan	305 gph	435-460 gph	725-780 gph
6x16 with 10' flue pan	451 gph	650-675 gph	1,075-1,145 gph

Evaporation rates based on the use of high efficiency oil fired arches, or wood fired arches with forced draft. Evaporation rates will vary per installation.

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Andy & Sally Dewing Tel: 570-395-3458

or syrup@epix.net<mailto:syrup@epix.net>

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led by Steve Childs, NYS Maple Extension Specialist

hosted by the Northeastern PA Maple Producers Association

September 25, 2010

For more information contact:

Ed Pruss Tel: 570-253-5970 x 4110 / e-mail: edp4@psu.edu

NAMSC/IMSI ANNUAL MEETING 2010

October 20-23, 2010

Arden Park Hotel, Stratford, Ontario

For more information contact:

Dave Chapeskie, 613-658-2329, email: agrofor@ripnet.com or

Bill Robinson, 519-529-7857, email: robinmap@hurontel.on.ca

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