

# M A S S A C H U S E T T S SUGAR BUSH NEWS

*The Newsletter of the Massachusetts Maple Producers Association*

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## **MA Maple Weekend March 22-23, 2014**

Thanks to a Specialty Crops Grant from the USDA, via the Massachusetts Department of Agricultural Resources (MDAR), the Massachusetts Maple Producers Association will coordinate 'Maple Weekend' on March 22-23, 2014. This weekend of events is intended to promote local, pure Massachusetts maple products.

Sugarmakers are encouraged to participate by opening their sugarhouses to the public during that weekend and offering demonstrations, tastings, tours, meals and other activities to entertain and educate customers. Participating sugarhouses will be featured on the Mass Maple website, and the Association will be purchasing advertising to attract consumers to the website. Please see the back of the membership renewal form in this mailing for details about how to participate.

A recipe contest will be held, which will solicit entries from the general public for recipes using Massachusetts maple syrup. Participants can enter recipes for main dishes, side dishes and desserts, and entries will be judged at an event at Williams' Sugarhouse in Deerfield at 7:00 p.m. on March 18. Prizes will be awarded for the best entries in each category.

Restaurants around the state will be asked to highlight items on their menus featuring Massachusetts maple syrup. Sugarmakers who have contacts at restaurants are asked to contact Coordinator Winton Pitcoff to help solicit participation.

This is an exciting opportunity to have a coordinated range of activities designed to raise awareness about our work and encourage consumers to purchase pure maple products direct from their local sugarmakers. Members are strongly encouraged to participate by offering an open house and publicizing the weekend's events to your customers via Facebook and other social media.

Emails over the next few months will offer more details and solicit input, but please fill out the enclosed form and start planning your events today!

## **MMPA Annual Meeting January 18 • 9:00 - 4:00**

The 2014 Annual Meeting and trade show will be held on Saturday, January 18, from 9:00 a.m. - 4:00 p.m. at Mohawk High School in Buckland.

The trade show will feature a range of dealers from the maple industry. As in past years, members can bring hydrometers for free testing. The business meeting in the morning will include a recap of the year's events and an election of a board member and we'll enjoy a great barbeque lunch.

After lunch we'll hear from speakers on a range of topics: Massachusetts Farm Viability Grants, the Massachusetts Forest Alliance, the Commonwealth Quality Program, and more.

Register today, using the enclosed form.

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## **Come to Verona!**

MMPA is once again sponsoring a bus to provide free transportation for any member who wishes to attend the New York State Maple Conference in Verona, NY, on Saturday, January 4. This is always an excellent conference and members who have attended in the past have learned a great deal. See <http://maple.dnr.cornell.edu/> for full details on all of the workshops, covering everything from research to marketing to production to forestry and more.

Contact [winton@massmaple.org](mailto:winton@massmaple.org) or 413-628-3912 to reserve your space on the bus. MMPA will register everyone going on the bus as a group, so don't register directly with the folks in NY.

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## **Kickoff: March 4**

The MMPA March is Maple Month Kickoff will be held on Friday, March 7 at 10:00 a.m. at the Town Common in Belchertown.

# Notes from the President....

Ed Parker, President

The leaves are off the trees and the frost has killed the ticks. It's time to get out in the woods and check lines, add new, repair old, and plan for another great year.

The past year has been good for the Association. Our annual meeting was well attended, and the vendors had a few new gadgets to show off as well as the old standby equipment we all use. This year the program will be a little different and very informative.

The summer picnic at Davenports was well attended. The lunch was delicious, the weather could not have been better, and the Davenport family was a perfect host.

Mass Maple did very well this year at the Big E. We arranged for a chocolatier to make chocolate candy cups filled with maple cream. They were a good addition to the booth and sold well. As always, Andy could have used more volunteers this year. The fair booth pays most of the bills so please try to volunteer for at least one shift if you

have not done so in the past. It's fun and you get to know other members of the Association. Franklin County Fair also did very well selling mostly maple cones and candy.

With my other hobby (tractor pulling) I go to most of the local fairs and try to check out the maple syrup entries. It takes some extra effort to enter these contests but what better way to show people that we make quality maple products in Massachusetts.

This is my last year on the board of directors and the end of my fourth year as president. The experience has been good as I got to meet most of the membership and visited all but two sugarhouses that serve breakfast. I encourage you all to take this course if you can. It will make Mass Maple stronger.



## Massachusetts Maple Producers Association Board of Directors

The Massachusetts Maple Producers Association is a non-profit organization representing more than 250 producers in our state. The Association is governed by a board of directors, and daily operations are conducted by a coordinator who serves at the discretion of the board. If you have any questions, problems or suggestions, please let one of the following people hear from you. The board relies on your input to keep them informed on issues of importance to you.

Name	Term Expires	E-mail Address	Town
Keith Bardwell	2015*	kbardwell@massmaple.org	Whately
Cynthia Cranston	2016*	ccranston@verizon.net	Ashfield
Pat Delaney	2016*	pdelaney@massmaple.org	Belchertown
Missy Leab	2015	missy@iokavalleyfarm.com	Hancock
Ed Parker – President	2014*	eparker@massmaple.org	Granby
Andy Schmidt - Vice President	2016*	windsorhill5@yahoo.com	Windsor
Chip Williams	2016*	cwilliams@massmaple.org	Deerfield
Stan Zawalick	2014	szawalick@massmaple.org	Florence
Paul Zononi	2014	pzononi@massmaple.org	Haydenville

*Those Directors with a \* next to their term expiration date will have served two consecutive terms as directors, and cannot be re-elected without at least a one year break.*

### Containers

Mass Maple Warehouse	212 Reynolds Rd., Shelburne, MA 01370	413-625-2900
Devon Lane Farm Supply	357 Daniel Shays Hwy., Belchertown, MA	413-323-6336
North Hadley Sugar Shack	181 River Drive, Rte. 47, Hadley, MA	413-585-8820
Red Bucket Sugar Shack	Kinne Brook Rd., Worthington, MA 01098	413-238-7710
Bascom Maple Farms	56 Sugarhouse Road, Alstead, NH 03602	603-835-6361

### Main Office

Winton Pitcoff - Coordinator/Treasurer	winton@massmaple.org	Plainfield
Mass Maple Association office	PO Box 6, Plainfield, MA 01070	413-628-3912
E-mail: info@massmaple.org	Mass Maple Website: www.massmaple.org	

## Classified Ads

**For sale:** 800 gal. wooden storage tank: \$600. 5hp Sihi vac. pump: \$1600. Older Grimm cream machine: \$500. 400 gal. aluminum gathering tank: \$400. 300 used fire bricks: \$1 each. Wanted. 1000 gal. storage tanks, 3000+/- storage tank, also some cheap sap buckets. Paul's Sugarhouse, Williamsburg. 413-695-3461.

**For sale:** 2 lots of 50 good quality buckets with flat covers: \$350 each lot. 100 gallon galvanized open stock tank: \$50. 25 gallon galvanized open stock tank: \$25. 1920s Crawford gas stove: \$600. 413-789-6477 or email at maplehut@comcast.net.

**For sale:** Five stainless steel tanks. Call for descriptions and prices. 413-298-3473.

**For sale:** Leader Gas Fired Finishing Evaporator 2' x 6'. Excellent condition. Stainless Steel 250,000 BTU. \$2,200 Please contact John Wheeler: 413-625-2900, [jwheeler@wheelviewfarm](mailto:jwheeler@wheelviewfarm).

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## Welcome New Members

The following people joined MMPA in the last six months. If they're neighbors of yours, stop by and welcome them!

Kenneth Close, Belchertown  
Jason Goodhind, Hadley  
Ben Jennell, West Newbury  
Alan Miery, Otis  
Will Premru, Groton  
Ruben Somero, New Ipswich, NH

### DO YOUR GIFT SHOPPING WITH MASS MAPLE

Get all of your gift shopping done AND support MMPA!

Does your favorite sugarmaker have the **The North American Maple Syrup Producers Manual**? We've got it for only \$35!

Then there's our great DVD -- **Making Maple Candy & Cream**. \$25

And don't forget Mass Maple **tshirts** (\$10), **sweatshirts** (\$15), **hooded sweatshirts** (\$23) and **caps** (\$12). Limited quantities of some sizes, so order soon!

Everything's available online, at:

<http://www.massmaple.org/buy.php>

## New Book: The Sugarmaker's Companion

*The Sugarmaker's Companion*, by Michael Farrell, is the comprehensive guide that small-and large-scale syrup producers have been waiting for in their quest to create a profitable business model. Author Michael Farrell documents the untapped potential of American forests and shows how sugaring can turn a substantial profit for farmers while providing tremendous enjoyment and satisfaction.

Farrell, sugarmaker and director of the Uihlein Forest at Cornell University, incorporates the wisdom of traditional sugarmaking with the value of modern technology (such as reverse-osmosis machines and vacuum tubing). His balanced view of the industry offers a realistic picture of how modern technology can be beneficial-economically and environmentally.

Mass Maple has purchased a case of these books and they will be available for sale at the annual meeting. It's also available online and at local bookstores.

### Mass Maple Warehouse

212 Reynolds Road • Shelburne, MA 01370  
413-625-2900

**SUPPLIES:** The warehouse is well stocked with all sizes of maple syrup jugs, maple cream jars. Other syrup containers stocked include three sizes of glass maple leaf bottles and five-gallon plastic containers for bulk packing. The warehouse also has cardboard cartons for all size of jugs, gift boxes and maple candy boxes. Many other materials are available: Posters, recipe booklets, coloring books, labels, hang tags, producer manuals, instructional and educational videos, etc.

**HOURS:** The warehouse is open seven days a week, on a "call ahead" basis only. During the maple season if no one can answer the phone, a message on the answering machine will indicate the hours for that day when someone will be home. Otherwise, please leave a message and someone will return your call. Please be sure to call ahead for everyone's convenience - don't be disappointed by arriving unannounced and finding no one there to assist you. Terms are cash or check only upon pick-up - no charges.

**UPS:** We can ship only full cases of jugs. You will be billed for the cost of the jugs plus UPS charges. Call in your order to the warehouse (413-625-2900) and we will send it out with a bill. Partial cases of jugs and glass of any quantity cannot be shipped safely.

# New Bulk Syrup Drum Policy from Bascom Maple Farms

In our continuing effort to provide maple syrup of the highest quality, the following policy is in effect:

- Starting March 1, 2014, maple syrup stored in galvanized drums will not be accepted.
- Starting March 1, 2014, Bascom Maple Farms will not be providing free drums. Producers will need to own their drums. Bascom's will no longer have a drum exchange program.
- If any producer's drum is lost, Bascom's will replace the drum with one of equal quality, new or used (i.e. plastic for plastic, stainless for stainless).
- Continuing with our current practice, only food grade drums of maple syrup will be accepted. Stainless steel, food grade plastic, and food grade epoxy lined are good examples of what will be accepted. (No syrup transferred from tin milk cans or any other unacceptable drums will be accepted.)
- Drums that have previously held non-food grade products (i.e. sanitizers, acids) will not be accepted.

- Drums that have previously held food considered an allergen will not be accepted. The "Big Eight" major allergens in the U.S. are milk, eggs, fish, Crustacean shellfish, tree nuts, peanuts, wheat, and soybeans.

- Plastic drums that have been labeled "not for reuse" will not be accepted.

- We will continue to accept food grade five gallon drums and will continue to charge a five cent per pound deduction.

Syrup drums should arrive at Bascom Maple Farms clean. Drums should be transported in clean vehicles. We reserve the right to refuse any dirty syrup drums.

Bascom Maple Farms is selling at a steep discount new stainless steel 40, 30 and 15 gallon drums. We also have available 55, 30 and 5 gallon new epoxy lined steel drums. The estimated lifespan of a new stainless drum is 25 years with epoxy lined estimated at 3 years.

We're proud to have some of the best producers in the industry supplying us and as we all raise our standards to grow the maple industry to new levels, we look forward to your continued cooperation.

## Our Heriage Is Maple Sugaring...

Call and ask for our maple equipment catalog and current used equipment list. Bulk maple syrup bought and sold. Syrup and equipment may be accepted in trade toward equipment.

*Photo: Ken Bascom with Jack and Jerry collecting sap, 1953.*



**Bascom Maple Farms**  
56 Sugarhouse Road, Alstead, NH  
M-F, 7:30 - 4:30 Saturday, 8 - 12  
Tel/603-835-6361 Fax/603-835-2455  
E-mail: [sales@bascommapple.com](mailto:sales@bascommapple.com)

# Report on New Grading System from IMSI

In August 2013, the IMSI prepared a summary chart showing the status related to the movement of the IMSI's Proposal for an International Maple Grading and Nomenclature system through government regulatory approval processes at both the Federal and State/Provincial levels in Canada and the United States (refer to attachment). The intention of the IMSI is to update this chart and distribute it to IMSI members and the North American Maple Syrup Council on a quarterly basis until all of the various government approvals for implementation of the new grading standard are obtained in the United States and Canada.

In recent months, a number of IMSI members and others have been asking when the new standardized grading system will come into effect. A related question is regarding when they should be ordering new product labels to accommodate the change. Neither regulatory authorities nor the IMSI are able to say with any absolute certainty when the new grading system will be approved in maple regulations. The Canadian Food Inspection Agency (CFIA) and the Vermont Agency of Agriculture Food and Markets have indicated that their plan is to have the changes take effect for the 2014 production season. Both of these organizations are expected to allow a transition period of at least two years for maple producers and packers to adopt the change. It is expected that the United States Department of Agriculture (USDA) and other states and provinces will most likely have the grade changes accommodated in regulation and approved for the 2015 maple production season. These government departments are likewise expected to allow some time to transition into the

new grading system. Consequently, maple producers and packers who have old labels to use up or prefer to wait until the end of the transition period are expected to have that option. Other maple producers and packers may opt to adopt the new grading system as soon as regulatory approvals affecting their jurisdiction are obtained.

It is also important to remember that manufacturers of the new colour classification kits are reluctant to invest in production of the kits until government regulatory approvals are very close to being finalized or are in place. Most current manufacturers of temporary grading kits have indicated an interest in making the new kits. Production and distribution of the temporary kits is not expected to take very long. Production of the new Lovibond colour wheel may take a little longer but a prototype for the new wheel has already been developed. The IMSI will keep parties interested in producing the new colour classification equipment informed regarding the status of regulatory approvals.

The IMSI continues to encourage federal, state and provincial governments to expedite the regulatory approvals process so that the change can be as synchronized as possible across all of the jurisdictions. Quarterly updates will be posted on the IMSI's website and published in the Maple Digest. Maple Producer Associations, maple packers and other maple industry stakeholders are asked to help extend the reach of these communications.

Dave Chapeskie, R.P.F., Executive Director,  
International Maple Syrup Institute

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## Sign up for USDA-NRCS conservation programs by Jan. 17th

Do you own or manage farmland or forest land in Massachusetts? Would you like help addressing natural resource concerns on your land? If so, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) encourages you to get in touch with your local NRCS office by January 17, 2014 to apply for federal conservation programs that can provide financial and technical assistance.

Applications may be submitted at any time for NRCS programs that can help with soil erosion, water quality and conservation, integrated pest management, forest stand improvement, greenhouse efficiency, pasture and hayland improvement, invasive plant control or wildlife habitat improvement.

NRCS has offices in USDA Service Centers in Greenfield, Hadley, Holden, Hyannis, Pittsfield, Westford, and West Wareham, which work with local conservation districts and other partners to serve farmers and landowners throughout the commonwealth. USDA Service Center locations are listed on-line at <http://offices.usda.gov> or in the phone book under Federal Government, U.S. De-

partment of Agriculture. General program information is available on the NRCS Massachusetts website at [www.ma.nrcs.usda.gov](http://www.ma.nrcs.usda.gov).

Among the voluntary conservation programs are:

**Environmental Quality Incentives Program (EQIP)** – EQIP helps farmers and forest landowners address water quality, water conservation, invasive species control, soil quality, erosion control, nutrient and pest management, residue management, irrigation efficiency, energy conservation, air quality and other natural resource concerns.

**Wildlife Habitat Incentives Program (WHIP)** – WHIP provides assistance to landowners who want to improve fish and wildlife habitat or restore natural ecosystems on their land.

**Agricultural Management Assistance (AMA)** – AMA helps farmers adopt conservation practices that will reduce or mitigate risks to their agricultural enterprises. In Massachusetts, financial and technical assistance is available to producers for drought mitigation.

## Notes from NAMSC/IMSI meetings

The North American Maple Syrup Council (NAMSC) and the International Maple Syrup Institute (IMSI) held their annual meetings in October in New Brunswick.

### Facts and figures from some of the presentations

2013 maple syrup production

United States: 36.3 million lbs.

Quebec: 120.3 million lbs.

Other Canadian Provinces: 12.5 million lbs.

Quebec's strategic reserve is currently at 66.7 million lbs.

Annual per capita consumption of pure maple syrup in the U.S.: 2.5 oz.

In 2012 the U.S. imported 83% of the maple syrup it consumed.

Table syrup sales are at least 4x that of pure maple syrup.

Less than 1% of sweetener used in the U.S. is pure maple syrup, but the sector is growing faster than other sweeteners.

The 10 top maple producing U.S. states set 9.6 million taps last year, utilizing only .8% of the potential taps available. Vermont has the highest utilization rate, at just under 3%. Massachusetts is below .5%.

## NAMSC Update

- Work has begun on a revised version of the *North American Maple Syrup Producers Manual*.
- The NAMSC Research Fund approved three proposals for funding: "Detection of Toxins in Contaminated Maple Syrup," "Tap Hole Injury in Red Maple," and "Evaluation of Safety Aspects Regarding the Use of Isopropyl Alcohol as a sanitizer of the maple Sap Collection System."
- A policy committee was established, to represent the maple industry when legislative and regulatory issues arise.
- NAMSC submitted comments to the FDA in response to the proposed rules for the Food Safety Modernization Act, asking that maple cream, maple sugar, and maple candy be included in the 'low-risk' category, along with maple syrup, and thus be exempt from the regulations.

## IMSI Update

- Sugarmakers or consumers who have syrup that they feel may have been adulterated may send the syrup to IMSI for testing.
- IMSI is taking action against companies that misleadingly market and sell products that are not made with pure maple syrup, but indicate or imply that they are. They are sending letters to those companies, and are investigating possible courses of legal action.
- IMSI is developing a position paper regarding commitments on the part of the industry and desired actions

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from government in relation to the spread of invasive species that threaten maple production, such as the Asian Longhorned Beetle and the Emerald Ash Borer.

- U.S. and Canada are implementing the new grading standards. Maine, Vermont and New York have enacted laws to change to the new standards with some other states planning the introduction of the new standards in the near future.

### Technical presentations

Centre Acer presented on their research related to the use of isopropyl alcohol for cleaning tubing (a practice that is legal in Canada, but not in the U.S.), and on its new computerized system for testing syrup for adulteration and grading.

Tim Perkins from The Proctor Maple Research Center presented on the Center's ongoing research on spout sanitation, particularly their findings that spout replacement has a greater impact on production than tubing replacement, and that the optimal replacement rate for droplines is every three years. He also reported on new tapping guidelines (available online at [http://www.uvm.edu/~pmrc/tapping\\_guidelines.pdf](http://www.uvm.edu/~pmrc/tapping_guidelines.pdf)), and on their experiments with collecting sap from saplings (see article in this issue of *Sugarbush News*).

Mike Farrell, researcher at Cornell University, reported on his ongoing investigation into birch syrup as a potential new product for sugarmakers to produce.

## Glass bottles available at MMPA warehouse

Members have noticed these etched glass jugs and some have begun bottling syrup in them. MMPA carried a limited amount at the Big E booth and they sold out quickly. The Association has purchased two pallets of these jugs to sell to our members, and they are available at the warehouse.

The jugs are sold in cases of 12. A case of the 500 ml size is \$25.80 and a case of the 250 ml size is \$24.

The etching is done by Artisan Printing of Vermont ([www.apofvt.com](http://www.apofvt.com)), a company run by Vermont Sugarmaker Bill LaPorte.



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# Microbial Contamination of Maple Syrup

Kathy Hopkins, Extension Professor  
University of Maine Cooperative Extension

Occasionally, maple syrup gets mold growth on the surface or sometimes even within the syrup. These growths are somewhat mysterious and shouldn't occur since maple syrup is produced by a lengthy boiling process. Even the Food Safety and Modernization Act classifies syrup, as well as jams and jellies, as low risk foods.

The industry has always managed mold growths with the advice to scrape off any mold, reboil and then consume. No literature exists to suggest that this is a food safe practice. Rather, we have just "always done it that way."

Our work at the University of Maine suggests that microbial growth, primarily fungi, can grow in syrup and some of the fungi and yeasts that we grew out from contaminated samples contain species that can produce mycotoxins that may present a health concern. We now advise that any contaminated syrup be discarded and not reboiled and consumed. Boiling may kill fungal growths but has no effect on mycotoxins that may have been produced.

Our work will continue for another year thanks to the support of the North American Maple Syrup Council Research Fund and we hope to present more information and best practices recommendations during 2014. We hope all producers have a great season and suggest another old saying in regards to moldy syrup, "When in doubt, throw it out."



## Notes on Mass Maple Jugs

If you purchase Mass Maple jugs, 100% of the syrup put into those jugs **MUST** be from Massachusetts. If you buy in bulk and are unsure about where the entire product comes from, please do not use these jugs. The warehouse has Allstate jugs available.

If you sell in Mass Maple jugs, you **MUST** add a label or hang tag with the name and contact information for your sugarhouse. Federal regulations require this.

The artwork on the Mass Maple jugs is owned by MMPA and may not be copied, in whole or in part, for any reason. Photos of your jugs in advertising or on your website are acceptable.

All of the plastic jugs we sell are 100% BPA free.

## Tools and Equipment for folks who work in the woods



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**Brownwood Sales**  
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# FSMA impact on Food Additives and Processing Aids

Frank J. Magazine, Business Manager, Emerald Foam Control business group

"If it touches food, it is food," is the basic philosophy of the scope of what is covered under the Food Safety Modernization Act (FSMA), signed into law in 2011. The proposed rules under this legislation mandate a preventive approach to contamination, following food "farm to fork" and requiring careful documentation and vetting of every part of the production process: from receipt of ingredients, additives and processing aids, to processing, to packaging and shipping. That means that any additives or processing aids that may appear in the final food product, even in trace amounts, must be safe for consumption and documented as such.

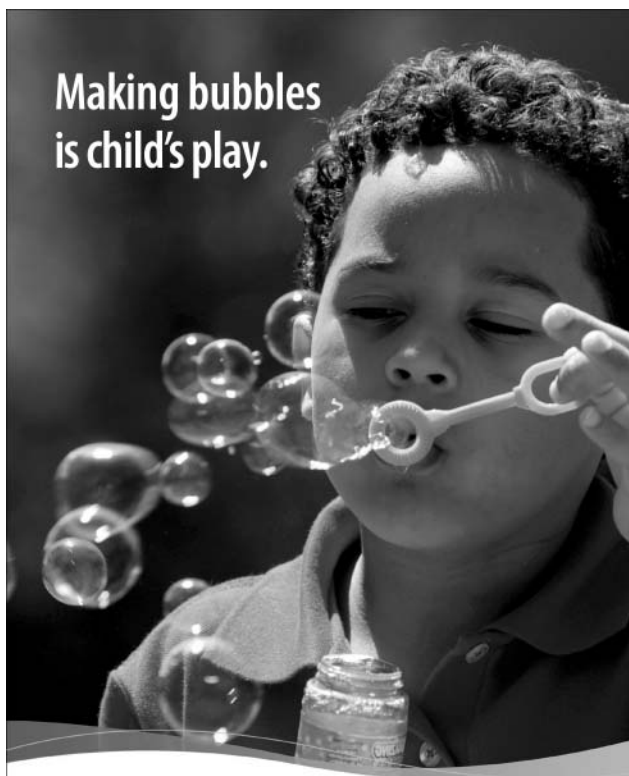
Defoamers can be defined as either an additive or processing aid depending on the application, and so will be impacted by FSMA. Not all additives or processing aids are created equal, and some may not be safe to use under FSMA. For instance, defoamers fall into one of four categories: 1) silicone emulsions, 2) mineral/vegetable oil-based, 3) synthetic/polyol-based or 4) specialty organic/natural-based defoamers. The selection of an appropriate defoamer is based upon the specific end-use application as well as processing considerations, such as potable water rinse steps. The food manufacturer may also have addi-

tional factors for the selection of an appropriate product, such as Kosher or Halal certification, or listing on health and safety inventories in other regions of the world.

Additives or processing aids should also originate from a facility certified to produce food products. ISO-9001 certification by itself is not sufficient to meet the standards proposed under FSMA. Facilities must be HACCP-certified to the standards under FSMA/GFSI, using recognized programs such as Safe Quality Foods Institute (SQF) or the Foundation for Food Safety Certification (FSSC 22000). Certifying organizations will provide certificates indicating compliance to the standards, and some may allow the certification symbol to appear on the product label as is often the case for Kosher or Halal certified products. For instance, some companies make certificates available on their website as a readily available resource to aid customers in selecting a product certified to the standards they require.

There will most likely be new requirements for labeling additives and processing aids. Ingredient statements, Manufacturing date, Expiration date as well as the protocol for naming the product will all become considerations under Food Safety certification standards once the FSMA rules are finalized.

*(continued on next page)*



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## Controlling them to ensure the safety of your food product is our business.

**Emerald Foam Control – our food safety practices continue to set the standard in the industry. Now AIBI / SQF-GFSI certified.**

Requirements for additives and process aids – including defoamers – are becoming more stringent as regulators around the world seek to further protect food and feed supplies. For years, Emerald has led the food processing industry with proven-safe foam control solutions to provide added peace of mind. Food safety is a top priority for us because we know the safety of your products and by-products for food and feed depends on the quality of ours. That's why processing aids from Emerald Foam Control are the preferred choice of food processors for safety, quality and reliability.

No one offers more clearances in the food category. Whether it's for food processing applications, Halal and Kosher programs, or organic materials, our products continue to meet even the most stringent requirements set forth by the **cGMP/HACCP** accreditation process of the American Institute of Baking, International and **SQF (Safe Quality Foods)** certification under the new **GFSI (Global Food Safety Initiative)** standards. The new certification also aligns with the new **FDA FSMA (Food Safety Modernization Act)** requirements for Food or Feed products.



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(FSMA, from previous page)

Food producers that operate within a local area and earn less than \$500,000/year may be exempt from some FSMA provisions, but will continue to be regulated by local and/or state entities. It is still recommended that all producers follow HACCP (Hazard Analysis of Critical Control Point) guidelines for good management practices.

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## Getting the lead out for Commonwealth Quality

After several years of discussion, Massachusetts maple producers are eligible to participate in the Massachusetts Commonwealth Quality Program. Details about the program and how to participate are included in this mailing on separate sheets, and more information about the program itself is available online at <http://www.thecqp.com/>.

One requirement for participation is having your syrup tested for lead, and getting results of less than 250 ppb. To have this test done, send one ounce of syrup in a plastic or glass bottle, to Endyne, Inc., 160 James Brown Dr. Williston, VT 05495. Include a check for \$30, and the following information:

- Your name
- Farm name
- Mailing address
- Email address
- Phone number
- Sample description (boil date, grade)
- Date and time sample was collected

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# Remaking Maple:

## New method may revolutionize maple syrup industry

by Joshua E. Brown  
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Four years ago, Tim Perkins and Abby van den Berg cut the top off a maple tree. As researchers at the University of Vermont's Proctor Maple Research Center, they wanted to learn more about sap flow.

Instead, they discovered an entirely new way to make maple syrup. "It's revolutionary in some ways," says Perkins.

Their new technique uses tightly spaced plantations of chest-high sugar-maple saplings. These could be single stems with a portion — or all — of the crown removed. Or they could be multiple-stemmed maples, where one stem per tree can be cut each year. Either way, the cut stem is covered with a sealed plastic bag. Under the bag, the sap flows out of the stump under vacuum pressure and into a tube. Voilà, huge quantities of sap.

In short, these plantations can allow maple syrup production in a farm field.

Typically, a traditional sugarbush produces about 40 gallons of maple syrup per acre of forest by tapping, perhaps, 80 mature trees. With this new method, the UVM researchers estimate that producers could get more than 400 gallons of syrup per acre drawing from about 6,000 saplings.

The new technique has the potential to enhance business for existing syrup producers, the researchers think, and defend Vermont's maple industry from threats that range from climate change to spiking land costs to Asian longhorned beetles.

### From the ground up

"We didn't set out to develop this system," says van den Berg. "We were looking at ways to improve vacuum systems." But, during a spring thaw, the tapped tree, from which they had removed the crown, just kept yielding sap under vacuum pressure. And more sap and more sap.

"We got to the point where we should have exhausted any

water that was in the tree, but the moisture didn't drop," says Perkins. "The only explanation was that we were pulling water out of the ground, right up through and out the stem." In other words, the cut tree works like a sugar-filled straw stuck in the ground. To get the maple sugar stored in the trunk, just apply suction.

While the cut plantation saplings will regrow branches and leaves from side shoots — and can be used year after year — "the top of the tree is really immaterial for sap flow under vacuum-induced flow," Perkins says.

"Once we saw that we could get yields without tops it was — wow! — this changes the basic paradigm," says van den Berg. Large, mature trees are no longer needed to provide the sugar. "It became clear that we could deal with an entirely new framework," she says.

### Parallel production

Maple syrup production is a rich part of Vermont's working landscapes. Some people make it their full-time profession, using hundreds of acres and tens of thousands of taps. Others supplement farm income or other work with smaller sug-

aring operations. At all scales, maple syrup producers face increasing challenges.

One of the most pressing is the rising cost of land. "There is a great deal of expansion in Vermont's maple syrup industry right now, and forestland prices have gone up a lot," says Perkins. "This can help those producers who are at the stage where they can't afford to go out and buy a few million dollars worth of land to be a full-time producer." But they could add some acres of plantation production — for more syrup with less land.

"If you are using 10 acres of abandoned farmland or a regenerating forest that you already own, this technique makes a lot of sense," says van den Berg. With lower start-up costs, and quicker expansion (or contraction) of one's business, "it's another way to help us maintain the traditional working landscapes of Vermont," she says, letting people continue to make a living — and remain — on their land.



University of VT maple researchers have developed a method of extracting sap from saplings by topping the tree and capping the cut top to collect the sap. (Photo: Sally McCay)

The researchers estimate that the cost of production using the plantation technique will be roughly the same as current methods. Though the sap yield per acre is much higher on a plantation than a forest, so, too, are the potential costs of equipment, labor and maintenance. “I think you’re going to find sugarmakers who are doing both,” says Perkins, “standard sugarbush and plantation.”

### Coming threats

With climate change, this dual approach may become increasingly attractive — even a matter of business survival. “If this region is going to warm more — then with a plantation we don’t have to rely as much on strong freeze/thaw cycles,” to get sap flowing, Perkins says, “because these smaller trees freeze faster and thaw faster.”

Any form of maple syrup production relies on freezing temperatures to transform starch in the wood into sugar. But in larger trees, it’s much more important to generate sap pressure from a freeze/thaw cycle, van den Berg explains, than in a plantation system with small trees that can rely predominately on vacuum-assisted flow.

“The spirit of this work is to augment and help out existing producers,” she says/ “With a semi-wild harvest you’re always going to have limitations.” One of which may be a deadly limitation in the form of an invasive pest. Though Asian long-horned beetles are not currently found in Vermont, they are infesting trees in Ohio, Massachusetts,

New York and Ontario. They kill mature maple trees, and so federal and state officials have been vigorously cutting and burning any trees where the beetles are found. “This pest likes big trees,” Perkins says, “they don’t like saplings.”

Jacques Couture, a maple syrup producer in Vermont’s famed Northeast Kingdom, and chair of the Vermont Maple Sugarmakers Association, sees how this new technique might help producers be more nimble or recover from trouble. “One of the really interesting aspects (of the plantation approach) is the possibility to establish some maple syrup production in a much shorter time-span than is the current norm,” he notes.

“If we had a natural disaster such as a widespread hurricane or some insect pest that would wipe out a large percentage of the maple stands,” he says, “this might appeal to some who were affected as an alternative way of getting back into production sooner than the normal 40-plus years for trees to grow to tap-able size as we know it today.” Plantation saplings could be ready in seven years.

Another potential advantage of agricultural-style maple plantations is, well — they’re agricultural. “We can control the system much better by fertilization and irrigation,” Perkins says. “One of the limiting factors on sap production in the spring is soil moisture. Typically we have enough in Vermont — but during years where it’s a very dry winter we may not have enough,” he says, and that hurts production.

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## Unknown outcomes

Still, despite the potential for more predictable and profitable management of maple sugar operations that plantations might bring, much remains unknown about the implications of this research. "It's too early to make any predictions," says Eric Sorkin, a producer of organic maple syrup from Cambridge, Vt., who was briefed on the new project.

"Any time something comes along which fundamentally undermines the status quo, there will be clear winners and losers — and that is what this could be," he says. "This could lead to a fundamental shift in the way we make maple syrup, so certainly there will be people who benefit from it." But just who benefits is hard to say, and many other changes are afoot in the industry and the world that make the impact of plantations hard to foresee.

"I don't think there will be a sudden shift; the lifecycle doesn't permit it," Sorkin says. But if over the next 20, 30, 40 years, the plantation technique is combined with efforts to select seedlings with improved "sweetness" (that is, the amount of sugar they yield) or faster growth, this could give plantation syrup a distinct market advantage.

"If you can grow these sweet trees that have twice the sugar content, then your price of production drops in half," Perkins says. "In 20 or 40 years from now this method could be considerably less expensive than the standard methods used now."

For Sorkin, the future seems unclear. "If this leads maple syrup from a semi-wild crop to something farmed, plantation-style, I think that would be tremendously sad," he says. "And that would have implications for multi-generational operations and landscape-scale implications for the working forest in the Northeast. But that's a huge, huge 'if.'"

To date, the UVM researchers have made one presentation to a conference of maple syrup producers about their research and applied for a patent. Perkins will make another presentation this week. The new equipment needed for plantation syrup is not yet on the market. "This is research," van den Berg says, "and there's a lot more research to be done before we know what the implications of this research will be." It could be that plantations become the lifeline for multigenerational operations and allow small-scale and family landowners to retain ownership of working forests instead of going broke or selling them off for development. "This could prevent condos," says Perkins.

## Forest futures

The cultural mythology around maple syrup production is strong and deeply sentimental. Even brand-new books on the modern maple syrup industry have cover images of trees covered with metal buckets and plaid-shirted

woodsmen toting sap behind horses and sleighs.

Except as tourist attractions and a kind of rural theatre, this method of producing syrup is mostly gone, having been displaced by efficient networks of plastic tubing, reverse osmosis devices that quickly remove water from sap, and vacuum pressure pumps to bring sap out of trees to storage tanks.

"Tubing was going to destroy the industry; reverse osmosis was going to destroy the industry; vacuum was going to destroy the maple industry. We've heard this again and again," says Tim Perkins. But the opposite is true, he says. "The maple industry is at the strongest it's ever been because of all these changes." Plantation maple syrup may be next.

"The natural progression of the industry is to look at more controlled ways of managing resources," says Sorkin. "Whether it's good or not, only time will tell."

For Perkins, the past of other Vermont forest businesses provide clues about possible futures. "Today, no one thinks at all about going to cut a Christmas tree in a tree plantation," he says. "But fifty or seventy years ago you didn't do that. You went to the woods. Nobody planted Christmas trees. And then somebody said, 'well, it would be a lot easier if we planted Christmas trees' — and now the Christmas tree farm is our heritage."

"We don't know whether this will happen with maple," Perkins says, "but this new method is a tool for producing maple syrup that we didn't have before."

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