MAPLE SYRUP DIGEST

VOL. 7A, NO. 3 MAILED BY 10-1-95 OCTOBER, 1995

The New Jug On The Block . . .

3 COLOR SUGAR HILL CONTAINERS.

Our exclusive design was chosen to represent the maple industry at the July 1995 NATIONAL GOVERNOR'S CONFERENCE

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Pancakes • French Toast • Cereals
Warmed Biscuits • Steamed Rice
Ice Cream • Apple Pie
Home Fried Potatoes

This 100% U.S. produced product is part of our heritage. Produced on the farm by boiling down pure maple sap from the maple tree.

Store in a cool place
Refrigerate after opening

Back View Of Jug.

Nutrition Facts
Serving Size 4 tbsp (60mL)
Serving Per Container 16

Amount Per Serving	
Calories 200	
	% Daily Value*
Total Fat 0g	0%
Sodium 7mg	0%
TotalCarbohydrates 53g	18%
Sugars 53 g	
Protein 0g	0%

*Percent Daily Values are based on a 2,000 calorie diet

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COVER PICTURE
Paul Weeks Sugarhouse, Campton, NH.

GREETINGS FROM YOUR PRESIDENT

This is the last Presidents message from me. Of course it is late per usual. But Mary Ellen and Roy are very patient. To them I want to say thank you, for all their hard work in putting out the Maple Digest.

As I have reflected over the past two years. We certainly have had to deal with some of the toughest issues that have faced the maple industry. It has been good to see that people have been able to come together to deal with the issues. I know we have not solved all the issues, but I think by working together we are better prepared to deal with the future.

As we prepare to go to Kingston, Ontario for our annual meeting. I would like to say thank you to those who have worked hard for the Council. To the past president Lynn Reynolds, I thank him for the many hours of guidance on the phone. To Carl Vogt, our secretary and treasurer, a very busy man who is hard to get a hold of, but does keep good track of our records. I appreciate his efforts. To Bob Smith, vice president, we have had a lot of good times together at the meetings and I have valued your support. To the rest of you who have worked so hard for the maple industry. I also say thank you.

Looking forward to seeing many of you in Kingston, Ontario.

Your President,
Richard P. Norman

IMSI BUSINESS

Good things are happening. The IMSI is in the process of forming another world wide promotional effort. This one would be beneficial to only those that use the logo. The promotional event would promote the use of pure maple syrup by spreading the distribution of IMSI cookbooks. This campaign is designed to promote quality use of pure maple rather than quantity and should encourage higher profitability.

The crop was down from past bumper crops, but still about normal. We produced about 60 million pounds of syrup. By selling essentially the remaining syrup left in the Regroupement, we should have just about enough syrup to meet the requirement of last year's market. Very positive news.

EUROFINS has proceeded to establish its own database for pure maple syrup. This will save the IMSI and the Council considerable money. It has been reported that the adulteration test by EUROFINS is in effect now, detection will be to less than 10 percent. Cost per test will be $499.00 per sample. We finally have an adulteration test available. The maple industry should still provide as many samples as possible to EUROFINS to make sure their database is geographically widespread and that it is as extensive as possible so as to increase the detection accuracy. This is all good news. Your money, time, and efforts are finally rewarded. We stuck with it. We did it.

The surplus is gone, production is about normal, price is going up, and enough syrup is available for the current market. Sound great? It is. Forgive me one moment of pessimism, which I normally avoid. But I urge a degree of CAUTION. This all sounds too familiar! We all know from experience how fast it goes the other way. Let us do it smart this time. Make sure we use disciplined expansion this time around, and that we do not expand ourselves back into trouble. Otherwise, this is a wonderful situation. We got the job done.

A small commercial. IMSI logo stickers are now available to you through your Provincial and State Maple Associations, or from commercial members. These are being produced and sold directly to members by the IMSI. If your source does not have them, please urge them to order a supply. To make the IMSI work, we must use the logo. To make the logo mean anything, we must protect it. You must help do this. The IMSI and the logo are yours. Please take good care of them.

The NAMSC and IMSI convention will be held in Kingston, Ontario, October 22-24, 1995. The Ontario Maple Syrup Producers Association has planned a tremendous program for our benefit. There will be many significant maple issues discussed. Entertainment and tours will be highlighted. There is so much more, don't miss it. See you in Kingston. It is your convention, please support it. For more information call Ken McGregor, (519) 232-4596, or write OMSPA, R.R. 6, Strathroy, Ontario, Canada N7G 3H7. Ontario, thank you for a great job.

This summer I stopped to see Dr. Willits to thank him for his lifelong efforts in maple. Please, you do the same. He can be reached by phone at (609) 654-3558, or Dr. C.O. Willits, Apt. #558, Medford Leas, Medford, NJ 08055. At 94, he is in better shape than I am. And while you are at it, why not stop to see, write, or call someone else that would appreciate your remem-

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brance. There are a lot of folks out there that would love to hear from you. Be sure to remember the partners of those maple folks departed. So many have done so much for all of us. Please do not forget them. It will make you, them, and me, all feel better. Thanks.

Lynn Reynolds
Executive Director, IMSI

NEW YORK NEWS

By Mrs. Marion Wells

On July 15 a tornado-like storm passed through the Adirondacks. Besides smashing many trailers, barns and house roofs, it has wiped out some operating sugarbushes. The largest maple producer in Lewis County lost at least 15,000 of his 20,000 taps and others say they are out of business for a while. In the 'Big Woods' east of Belfast where lots of light amber syrup was made, a lot of damage was seen where the trees were in a sandy soil. Where the soil was deeper, often the managed stands had the most losses, since the larger-crowned threes offered more wind resistance and were blown over while other trees with dead limbs were untouched. It is very hard to understand 'Mother Nature'!

With the summer heat and humidity came the local and county fairs which keep State Maple Queen, Jessica Woodrow from St. Lawrence County, busy. She attended many county fairs as well as the State Fair in Syracuse presenting pure maple to the public and giving samples to those who have never tried it. Jessica is well versed in all phases of the production of maple syrup and its products being involved in the family operation since a little girl.

The 3rd annual Wyoming County Maple Festival was held September 16th at 'The Farm' in Wyoming, New York. Pancake meals were served all day. Demonstrations and displays of various phases of maple production were put on by local producers.

Wyoming County maple producers have had a maple booth at their fair in Pike, New York for the 30th consecutive year. Of the five original families that started it in 1966, the Merle, Sage and Ziegler families still have members involved. Many other producers in the county have also gotten involved.

SEPTEMBER 1995 AMERICAN MAPLE MUSEUM REPORT

By Haskell Yancey

Many things have taken place at the American Maple Museum since our last report to you. First, of course is the follow-up on the Opening and Induction Ceremonies held on May 13th, 1995. As discussed before, Wilson (Bill) Clark and Lynn Reynolds were inducted into the Hall of Fame. However, discussion of the New York State Maple Queen contest had to be left until now.

Turning over their 1994 New York State Maple Queen titles were Erin Abrahamsen from Schoharie County and Karen Keefer from Lewis County. Each of these girls has done an excellent job during their joint reign. Each has been appreciated and deserves to be congratulated.

The 1995 contest featured three contestants from three counties. Representing Schoharie County was Tiffany Sanders, representing Lewis County was Michelle Schneider and representing St. Lawrence County was Jessica Woodrow. Each did an excellent job, making a difficult job for the three judges. Serving in this capacity were Janet Haas -- Turner Falls, MA; Charles Bacon — Jaffrey, NH; and Richard Norman - Woodstock, CT.

After having individual interviews with the judges, giving a presentation and answering an unrehearsed question, the 1995 Queen was selected.

This year's New York State Maple Queen is Jessica Woodrow followed closely by Michelle and Tiffany.

Along different lines, the American Maple Museum's Annual Strawberry Social drew a very nice turnout. With beautiful weather, a good crowd of friends and neighbors gathered to enjoy another of nature's products — Strawberries.

New this year was a Bluegrass music concert held on the museum grounds. The event chiefly sponsored by the Lewis County Chamber of Commerce, was held on a perfect day. A large crowd enjoyed the music along with Maple sundaes and Maple cotton candy.

However, the event with the greatest impact this summer was not a museum event, but rather an act of nature. On July 15th a very severe storm did significant damage to a number of sugarbushes in the Croghan area as well as some buildings and to the entire power grid of Northern New York. Several of the people active in the affairs of the Maple Museum suffered large losses in their own maple operations. All in all the Maple Museum personnel along with many others will remember this as the year of the "Microburst".

JOIN ME FOR A FEW MINUTES TO LISTEN TO THE "VOICES FROM THE PAST"

I wondered, "Why am I in the Maple Hall of Fame"? Then it hit me. There are 45 reasons why I am in the Hall. It is clear. The voices from the past led me there.

The first 39 reasons start with the name Fred Winch and end with Bill Clark. I can hear them. Bob Lamb saying about his very early tubing system, "Well, we may as well put it on the ground, it is probably going to get there anyway" and "talking about spending Florence's egg and butter money" . . . Dr. Willits telling his favorite story about "watch for fallen rock" and if you listen closely, you can hear him relating my inspiration to return to college to study chemistry, tree physiology, and science . . . Lloyd Sipple gathering news faithfully defending the Maple Syrup Digest, and his down home style describing the menisus around a hydrometer as "that bubble thing that comes up around it" . . . Lin Lesure, we can hear his sharp words of advice and his words describing his personal relationship to me, "in that we had the same name" . . . Ed Curtis, in his unbending support for whatever cause I chose to

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tackle" . . . Putt Robbins with his calming effect and his sense of reason . . . I can hear Ray Foulds telling "about his trip to Washington, D.C. with my father to have tariffs applied to maple syrup" . . . Nelson Widrick and Gordon Brookman for their wise friendship at a time when "buying syrup was not exactly fun and was a challenge," to say the least . . . I can hear the excitement of my sons Andy and Jack (my sons at age 3 and 4), when they witnessed their first birth of a calf in Nelson Widricks's barn in Croghan New York . . . I hear all the Presidents of the Council which I had the honor to serve; Gordon Gowen, John Kroll, Arthur Merle, and Bill Clark, with their wise counsel . . . I hear Russ Davenport creating good will . . . Dr. Morselli sharing her wisdom . . . I hear my friend Ture Johnson, with his beautiful accent, advising me and he has been standing by my side for nearly 40 years . . . Paul Richards and his wife Clara Jean have shared their friendship with us for over 40 years . . . and, I hear the voices of all the others enshrined in the hallowed halls of the American Maple Museum . . . It was with the help of all the inductees already enshrined . . . They were patient with me . . . They all helped me learn . . . I was the young kid on the block; at 18 I was attending maple meetings and have been ever since . . . I thought I knew everything and that my father didn't know anything . . . In a very few years, I found out that I did not know anything and that my father knew most everything–It was amazing how smart he got so fast . . . I hear my father in his soft words of diplomacy, his wise counsel, his voice for the causes, his encompassing advice, and his never ending faith, "that things will always work out for the best." When something I thought was so important that I would not have, he would say, "Don't worry, you can't lose something you never had." He would say, "If you work as hard as you can, even if it is wrong, it probably will turn out right." And, he would say, "You cannot give anything away, I always comes back to you two fold."

Reasons why I am here? 39 of the reasons are already in the Hall of Fame, along with all their wives and husband. And, yes to all the maple widows out there, we can hear you too.

Number 40 is to all of you in the maple syrup industry, all of my friends . . . Number 41 is my faith in all of you and a vision for what we all wish to accomplish . . . Number 42 is all of the Reynolds family. I include my family, ➳

Juan and his family, and I dedicate this honor to my mother Geraldine and my father Adin . . . 43 is my wonderful wife Anne . . . 44 is my God and my faith . . . And 45 is our magnificent maple syrup industry which I love so much.

Those are the 45 reasons I am in the Maple Hall of Fame. But I want you to join me. So together, let us listen to the whispers that echo through the hallowed halls of the maple shrine in Croghan. Listen real close. You can hear them now . . . "voices from the past."

They are saying . . . "We set the foundation, it is up to you to build the structure" . . . "We laid the path, now be sure to lead, not follow" . . . "Walk the path of the future" . . . "Work hard" . . . "Keep the faith" . . . "Join hands and work together" . . . "Be honest" . . . You can hear those voices now, can't you? . . . "Don't cheat" . . . "Do what you believe" . . . "Love what you do" . . . Hear them? . . . "Be proud of what you are" . . . "Help your neighbor" . . . "Reach for success" . . . "If you believe in something, fight for it" . . . "But be satisfied with what you have fought for" . . . "Share it with others" . . . "Give don't take" . . . "Listen to your heart" . . . "And be humble" . . . .

Today and forever more, I shall be truly humbled by this experience. I thank all of you very much for the honor.

Lynn Reynolds

NEWS FROM THE NUTMEG STATE

By Jerry Milne

The Connecticut Maple Syrup Producers Association had a booth in the Connecticut Building at the "Big E" (billed as New England's State Fair) held at West Springfield, MA in mid-September. Several members also had displays at country fairs throughout Connecticut.

The Association will hold its next meeting on Saturday, November 4, at Hillside Plastics, the home of Sugarhill Containers, in Turners Falls, Massachusetts. Members will tour the production facility and also visit a nearby sugarhouse.

DEADLINE

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EDITORIAL

Another summer has gone and so have some of our friends. Arthur Merle was a friend to many and he will be missed by all of us. My condolences to the Merle family.

The problem with getting old is that we lose more and more of our friends. One friend I lost several years ago worked for the Department of Agriculture as an inspector. He was working on a theory of his to predict the sweetness of sap for the coming maple season. It was based on the number of sunny days the previous summer, temperature, rain and how long the leaves stayed on the trees that fall. Unfortunately he died before he could perfect it. If sunny days mean a lot of sugar in sap this coming spring we should see sweet sap in this area. We have had a lot of sunny days, but no rain, and the maples are showing signs of stress with a lot of trees coloring up already.

I appreciate any and all suggestions concerning the "Digest." I would like to thank the Smiths's from Wallace, MI for theirs. From now on the subscription form will be on the inside back cover, so as not to destroy an article.

I would like to thank Sherb Doubleday for contributing so many articles over the years. Sherb wrote to say his wife was in poor health and that his spare time was limited . . . "Besides it is time for new blood to fill the gap."

Sherb is absolutely right, this is your Digest. It will only be as good as what you contribute . . . we have not heard from a number of field editors for some time . . . so, lets get the spile out of the taphole and send me an article!

See you in Ontario.

Editor

1995 VERMONT MAPLERAMA

By Larry Myott
Taken with permission from
New England Farmer

After a summer of drought and then several days of floods in northern Vermont, the 1995 edition of the Vermont Maplerama was attended by nearly 300 sugarmakers from all over the world of maple.

The annual event was hosted in Chittenden County, in the heart of the Lake Champlain basin, as a cooperative effort with the county association, the UVM extension system, The Vermont Departments of Agriculture and Forests, Parks, and Recreation and the Vermont Maple Sugarmaker's Association.

Visitors found that despite its relative population density (one-quarter of Vermont population lives there) Chittenden County is loaded with agriculture and great marketing opportunities. The visit to Dakin Farm proved to be a highlight, with great education in marketing and market development. The Cutting family members were very generous in sharing in their market techniques, allowing all to understand that development of a market is a long-term project.

Lots of innovation and creative technology was seen at stops such as at the Neill's in Jericho with their vapor-compression unit and Peter Purington's unique vacuum unit for pumping sap. Every stop was unique and provided lots of education and ideas.

Leon Graves, Vermont commissioner of agriculture, proved he is no novice in the maple industry. His brief message at the banquet showed that his long experience in state government will be a big benefit to maple producers. Also speaking at the banquet was UVM College of Agriculture Dean Larry Forcier with encouraging words about maple research at UVM.

Huntington sugarmaker and former Vermont Maple King Tim Taft was named the Ray Foulds Outstanding Young Sugarmaker for 1995 at the Vermont Maplerama banquet.

NORTHEASTERN NEW YORK NEWS

By Mary Vi Sanger

The Northeastern New York Maple Producer's Association held their annual Maple Banquet on Friday, May 19, 1995 at the Elk's Lodge in Plattsburgh, New York. Master of Ceremonies for this event was Wayne Brow, former president of the Association. Guest speakers were Assemblyman Chris Ortloff who informed us of the state of the budget. Also Lewis Stats, Maple Specialist at Cornell. Lewis gave us an update on the current activities at Cornell.

The annual Sugarmaker of the year award went to Wayne Deno, President of our association and fourth generation syrup producer. Our maple essay contest winner was Ryan Blondo. Ryan is a fourth grader at Northern Adirondack School. His essay was based on both research and practical experience. Ryan's grandparents, Weldon and Theresa Dragoon are owners of Foxhill Maple Farm in Sciota, New York.

Our New York State Maple Queen, Jessica Woodrow and her parents, Joan and James Woodrow were our guests for the evening. The crowning of the 1995 Maple Queen, Kristen LaPier and 1995 Maple Princess, Kristina Parker was carried out by 1994 Maple Queen, Lori Hobbs.

ROAD SIGNS SELL MAPLE PRODUCTS

By Larry Ault OSU Extension District Specialist and Greg Passewitz OSU Extension State Specialist

Producers of maple products can encourage purchase of their products by non-users, strangers, friends, neighbors, family, and many other people through advertising and marketing strategies. Road signs are one of many ways available to sell maple products. Other methods, to name a few, are media advertising, work of mouth, point of sale displays, labels, and logos.

Following are some tips for increasing the effectiveness of road signs to promote the sale of maple products. Practical experience combines with research conducted by the California Institute of Technology reveals some tips that maple producers can use to effectively market their products by using the road sign approach.

Signs Work 24 Hours Per Day

Road signs are the most common type of advertising used by maple producers. Almost every maple producer has a sign. Signs are very important to producers who depend upon auto traffic past their sugar house. The number of people who can be reached by road signs is limited to those traveling past your sign. Those people may be very good prospects since they are already near your farm or sales area. The job of your sign is to convince people to stop at your operation. Like most other advertising media you use, consumers must take some action, such as getting into their car and driving to your sugar house. This potential customer who sees and reads your road sign is already in the car and near your sugar house. You have already won part of the battle. But, they must see and read your sign.

Rate Your Sign On Four Factors

Unlike some other advertising forms, your sign is on the job 24 hours a day. By comparison, other forms of media are short in duration and usually more costly. A wide variety of sizes, shapes and types of signs are used by producers in the maple business. How effective your sign is depends upon its appearance, content, visibility and location.

Appearance

The appearance of your sign can attract the attention of people driving past your establishment. A bright, clean and neatly painted sign is a novelty in itself. Take a look at the signs you are now using. Are they bright, clean and neatly painted? Signs which are scrawled in crayon on a piece of cardboard should be avoided. Also, do not imitate highway department or traffic signs in shape, color, or letter design.

Some signs need to be painted as often as every three years or so to keep them looking neat and attractive. Shabby signs can convey an image of a sloppy, poorly managed operation. Professionally developed and painted signs are available through many of the maple associations or through maple equipment dealers. If your sign does not look bright, clean and neat, use the following points to market more maple using improved road signs.

Content

Your sign should encourage a motorist to stop at your business. Have a distinctive name or trademark customers can remember. Use this name or trademark in all of your advertising and put it on your road sign. Customers will recognize it. The sign can tell cus-

tomers how to find your business. Give distances in tenths of a mile rather than feet or yards.

Too much information on a sign can be as bad as too little. The more words a sign has, the less likely a motorist is to read it. The skillful use of symbols, such as a large picture of a maple bucket and tree, can often convey the product you are selling. This can give an impression of freshness and quality much faster and better than words. Words are important and effective but quantity is not a virtue. A few carefully selected words can have impact.

Visibility

How far a sign can be seen depends upon the color contrasts of the sign and size of letters used. The most legible color combinations for road signs are black on yellow, green on white, scarlet red on white, black on white, and navy blue on white. The colors on your road sign should be selected to contrast pleasingly with the background the sign is set into.

If a motorist is traveling past your sign at 50 mph, the maximum number of words that can be read is about four. The driver must be able to see the sign for at least 100 feet and the minimum letter height should be about three and one half inches. For slower moving traffic, say 40 mph, eleven words can be read by the average motorist if they have 200 feet of distance and the letters are about seven inches high. Keep this information in mind. A research summary on content, visibility and letter size is available by contacting the authors of this article. Travel speeds of 30 to 60 mph are listed with distances ranging from 50 to 500 feet of visibility for letter sizes from 1¾–17½ inches tall.

Location of Advance Signs

Deciding to stop at your business takes time. Bringing a car to a stop takes several seconds. When a motorist is traveling 50 mph each second carries the car 73 feet closer to or past your sugar house. Be sure your customer gets adequate time to decide to stop. Place your sign at the proper distance. For cars traveling 50 mph the minimum distance from the advance sign to your turn off should be 3/10 of a mile. Cars traveling 30 mph can stop in 2/10 of a mile and those traveling 60 mph require 4/10 of a mile notification.

The angle of your sign, in relation to the road, is also important. Signs at right angles to the road are more difficult to read than a sign at a 45° angle. Signs which are parallel to the road are very difficult to read. Drivers should not have to turn their head to read your sign.

To summarize, look at your current signs. Are they clean and neat? Do they communicate what you want to tell drivers? Can the sign be read in the time available? If not, now is the time to redo or replace them. Follow letter size and color suggestions for improved readability. Place your signs so they are easy to read. Give drivers adequate time and distance to stop. A smaller sign at the driveway to your establishment may also be helpful if there is any confusion about your location. Improved road signs may pay by dividends in your maple business.

Larry Ault and Greg Passewitz work for Ohio State University Extension. They can be reached at 216-263-3831 or address your request for additional signage information to OSU Extension, 1680 Madison Avenue, Wooster, OH 44691.

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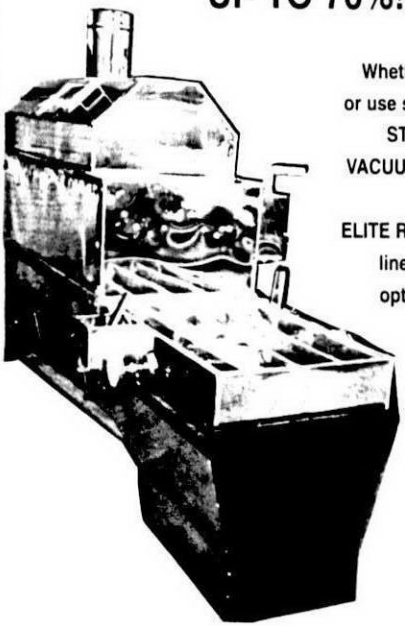

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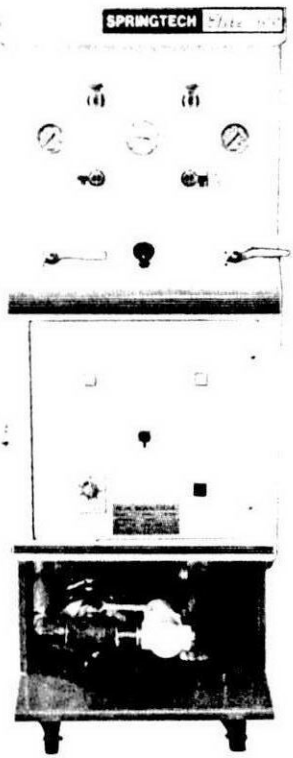

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MAPLE RECIPES

MAPLE SALAD DRESSING

1/4 cup olive oil
1/4 cup vinegar
1/4 cup extra dark or Grade B
maple syrup
2 tablespoons prepared mustard
1 tablespoon crushed garlic
salt and pepper to taste

Mix together and heat to a simmer, pour over washed spinach and serve. A chopped hard cooked egg, chopped cooked crisp bacon or chopped artichoke hearts could be added to the spinach for some variation.

MAPLE GLAZED CHICKEN WINGS

2 1/2 lb. chicken wings
4 oz. maple syrup
5 tablespoons chili sauce
1 small onion, chopped
2 tablespoons cider vinegar
1 tablespoon mustard
1 teaspoon Worcestershire sauce

Combine the maple syrup, chili sauce, onion, cider vinegar, mustard and Worcestershire sauce in a shallow dish. Marinate the chicken wings for a minimum of four hours in the refrigerator, keeping covered and turning occasionally. Grill, oven bake or barbecue the chicken wings until thoroughly cooked, basting occasionally. As an alternative, chicken drumsticks are equally delicious.

MAPLE CREAMY FONDUE

4 oz. maple syrup
1 pint cream
2 teaspoon corn flour
Firm fruits and berries cut into small pieces

Gently heat maple syrup in a pan for 5 minutes. In a bowl, mix the corn flour with 2 teaspoons of cream. Bring the remaining cream to a boil and add the maple syrup. Blend the corn flour into the syrup mixture. Heat gently, stirring continuously until thickened. Serve the fondue in a small pan over a spirit lamp.

➳

MAPLE APPLE CRUNCH

2 pounds peeled and sliced apples
2 tablespoons flour
3/4 cup white sugar
1/2 cup maple syrup
1 teaspoon cinnamon
1 1/2 cups oatmeal
1 1/2 cups flour
1/2 cup maple syrup
3/4 cup melted butter
1 teaspoon baking soda
1 teaspoon baking powder
1/2 cup chopped nuts

Mix first 5 ingredients and put in an ungreased 9'' x 12'' baking dish. Combine remaining ingredients and spread on top of apple mixture. Bake 40 minutes at 350 degrees. Serve with ice cream or whipped cream.

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REMINDER
Research Proposal Guidelines

Research projects may be submitted for consideration based on the following guidelines:

(1) Proposals must be received no later than July 1, 1996 for consideration in 1996. Proposals received after that date will be considered in 1997.

(2) Proposals shall be complete and detailed in content. However, proposals shall contain a short concise cover statement briefly explaining cost, scope, objective, procedure, and anticipated value to the maple industry.

(3) Proposals shall contain detailed estimated cost breakdown, within the detailed report.

(4) Proposals shall be submitted with a minimum of forty (40) complete copies.

(5) Proposals must contain a complete reference section listing and explaining any similar or duplicating research previously accomplished. Proposals for duplication of previously completed research must contain detailed explanations of why such duplication is warranted.

(6) Results or progress of funded projects must be presented annually at the convention of the NAMSC and must be published in the Maple Syrup Digest as soon as possible after completion.

(7) Send proposals to: Lynn H. Reynolds, Research Committee, North American Maple Syrup Council W10010 Givens Road, Hortonville, WI 54944.

Remember: July 1 Deadline.

COMING EVENTS

36th ANNUAL MEETING OF THE
NORTH AMERICAN MAPLE SYRUP COUNCIL
October 21-25, 1995
Kingston, Ontario, Canada
Contact: Mr. Ken McGregor, RR 6, Strathroy, Ontario, Canada, N7G 3H7

MAPLE PRODUCERS CONFERENCE & SWAP MEET
January 13, 1996 — 9:30 a.m. - 2:30 p.m.
DCMO BOCES, E. River Rd., Norwich, NY
Contact: Gerald Cushman — (607) 334-8688

29TH ANNUAL VERMONT MAPLE FESTIVAL
April 19, 20 and 21, 1996
St. Albans, Vermont
Contact: Larry Myott — PO Box 53010, Burlington, VT 05403 — (802) 656-5433

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EFFECTS OF THE USE OF PARAFORMALDEHYDE (PFA) STERILISING PELLETS ON SUGAR MAPLE HEALTH: A REVIEW

Mariafranca Morselli, Ph.D., Research Professor Emerita
Department of Botany, University of Vermont,
Burlington, Vermont

Introduction

Tree wounds, commonly known as tapholes, are opened in the maple tree wood at the beginning of each sap season late in the Winter, when the weather becomes favorable for maple sap flow. Sap within the xylem wood of healthy trees is free of microorganism (Edson 1912, Howland 1971, Morselli and Whalen 1991), but a wound opens the way for their penetration. More than thirty years ago, research by Costilow et al. (1962), looking for a germicide which would free the taphole of microorganisms, brought the paraformaldehyde (PFA) pellet into extensive use by the maple sap/syrup industry. The germicide in the taphole would keep it open longer into the sap flow season, eventually increasing the volume of sap gathered by the sap/syrup producer.

The researchers were mainly interested in the economical aspects of sap collection (Mac Arthur and Blackwood 1966). Their concern about the effects of paraformaldehyde was limited to its possible residue in maple syrup, the product of sap concentration, which was found not to exceed 2 ppm (Costilow et al. 1962). Recently, Baraniak et al. (1988) found residues in maple syrup samples as high as 14 ppm. They also reported that some maple syrup made from sap derived from non-PFA treated tapholes had a low content of formaldehyde (0.74 ppm). They hypothesised that low levels of this chemical "may be representative of typical background levels of formaldehyde in maple syrup." Research did not establish if those syrups had been made with sap from trees previously treated with PFA pellets. Underwood (1971) had found that, by heating syrup for 3h under vacuum at 250 degrees F, the value of formaldehyde increased by threefold (from 0.45 to 1.50 ppm). These considerations would seriously question the available methods for the detection of formaldehyde in maple syrup and their opinion that all maple syrups may contain some formaldehyde. Furthermore, no one has yet extracted and measured, in time sequence, the levels of formaldehyde in PFA treated and non-PFA treated maple wood tissue. Laing (1989) reported that a substantial portion of the pellet remains in the taphole at the end of the season, unless a vacuum system is used in sap collection.

In a 1962 Maple Research Seminar, scientists meeting at the University of Vermont raised concern at possible damage by the PFA pellet to the maple wood. A few of these scientists had not detected in their own research the alleged increase of sap volume by the pellet usage. Nevertheless, in 1965 (Federal Register) the U.S. Food and Drug Administration (FDA) and the Health and Welfare Canada, without any further testing, approved the manufacturing of the PFA pellet containing 400 mg of

paraformaldehyde, later reduced to 250 mg, and set at 2 ppm the tolerance of the PFA residue in maple syrup. The Vermont Department of Agriculture never allowed the use of the pellet in the sugarbush (maple groves), considering it a pesticide.

Research Review

Wounding the wood of trees always represents a normal stress which triggers a natural defence reaction from wood tissues, and tapping maples opens a three inch deep would which may take a long time to heal. Ching and Mericle (1960) had found that microorganisms invading tapholes were not only physically blocking the sap flow in wood vessels with "gummy" substances, but were also entering the living wood tissues. The researchers thought that those substances were produced by the microorganisms themselves. They had not cited early research by Scott (1950), Laing (1953) and Good et al. (1955) which had hypothesised that those "gums" were produced by the living wood tissues stimulated by the invading microorganisms.

Later, Shigo (1965) and Shigo and Hillis (1973) analysed the cause and extent of wood discoloration, followed by compartmentalisation of wood tissues by gum-clogged vessels. They concluded that such events are a defence response by the tree wood tissues to the invasion of microorganisms after wood wounding or tapping. This process involves the production of phenolic substances by accelerating the catabolic (ageing) processes of wood living cells. Decay by fungi may or may not follow. If a decay area occurs in the compartmentalised wood, it may be either dark or very light in color. These processes block large portions of wood and diminish xylem conductivity (Sperry et al. 1988), hence the translocation of sap and nutrients. Genetically

controlled compartmentalisation processes that differ from tree to tree have been suggested by research on poplar clones (Shigo et al. 1977).

Shigo and Laing (1970) became concerned with extensive decay in maple wood from PFA pellet treated tap holes. Their research on trees in Vermont, New York, Michigan, Maine and Pennsylvania showed that, after twenty months from tapping, the vertical columns of discolored and decayed xylem wood in PFA treated tap holes were higher and wider than those found in wood above and below non-PFA treated tap holes (Fig. 2. of Walters and Shigo 1978). They concluded that paraformaldehyde inhibits the early response of living tissues to the invasion of pioneer microorganisms, thus delaying wood discoloration and compartmentalisation. It alters the earlier normal successional pattern of microorganisms, facilitating the later invasion by wood decaying fungi. The research recommended that the use of the PFA pellet be discontinued, because its use can seriously harm the maple trees in the long range.

The more extensive decay following the use of PFA pellets in the tapholes were confirmed by Houston (1971). His latest research from 1990 to 1995 at fifteen Wisconsin sugar bushes (Houston 1992, and personal communication) indicates that wood above and below PFA treated tap holes shows longer and wider discolored columns and significantly wider decay areas than wood of non-PFA treated tapholes. Houston got the same results when he analysed wood in which PFA treated tapholes had been flushed

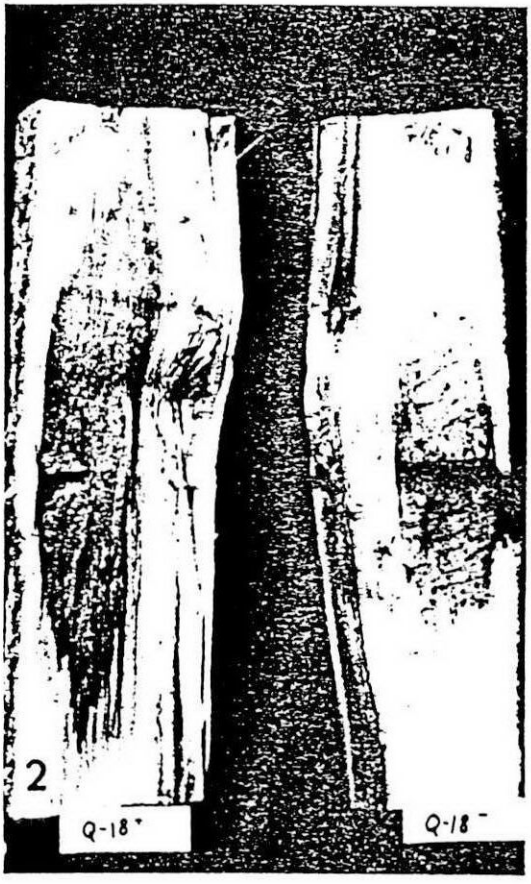

Fig. 2 Dissection of two 20-month-old tapholes, showing greater discolouration and decay in the pill-treated taphole (left) than in the control taphole (right). Walters & Shigo, 1978. Can.J.For.Res. 8:54-60.

with water immediately after the end of the sap flow seasons. However, he did not find any difference of proximal cambial damage between PFA treated and non-PFA treated tap holes.

Research by Coradin and Giannasi (1980) found that formaldeldehyde pre-extracts phenolics and flavanoids from plant tissues, actually eliminating plant colors from herbaria collection plants. These findings would suggest that the PFA pellet may extract phenols from wood living tissues. Therefore, discoloration and compartmentalisation, due to the production of phenols, would not occur in the wood closer to the taphole but much further away. Furthermore, the larger bleached decayed areas found in the PFA treated wood, may very well be produced by the species of decay fungi that grow well only when the concentration of phenols is very low (Tattar and Rich 1973). Earlier it was found that different species of fungi respond differently to varying levels of phenolic compounds (Shortle et al. 1971).

As recently as 1993, both U.S. and Canadian government agencies have denied new registration for the manufacturing of the PFA pellet, under the advice of the North American Maple Syrup Council and the International Maple Syrup Institute. However, unconfirmed information supports that the PFA pellet is still being manufactured, and that three million or more pellets may have been used during both the 1993 and 1994 sap seasons.

Conclusions

The research results cited above should help to convince the maple producers and forest managers that higher and wider discoloration, compartmentalisation and decay in maple wood by the use of the PFA pellet restricts the healthy sapwood areas and diminished translocation of sap and nutrients. Furthermore, technological advances for better sanitation in sap collection and storage presently in use by the maple industry, tested by research to be safe for maple tree health and syrup quality, have made the use of the PFA pellet unnecessary. The use of the pellet, combined with overtapping and other biological and environmental stresses, could eventually become a greater threat to maple tree health and survival. "Caring for the forest in the 21st Century" should be our motto. Let us keep the maples, with their sap, autumnal red leaves and hardwood timber, alive for future generations of maple syrup producers, leaf peepers and timber users.

Literature Cited

Because of space restrictions, a copy of the literature cited may be obtained by writing to Mariafranca Morselli, Ph.D., 49 Manorwoods, Kennedy Drive, South Burlington, Vermont 05405

This was an invited paper presented at the IUFRO (International Union of Forest Research Organisations), XXth World Congress, 6–12 August, 1995, Tampere, Finland. The abstract has been published in the Congress Abstracts Proceedings.

NORTHERN NEW YORK SUGARBUSHES BLASTED BY MICROBURST

By Haskell Yancey

Most people in Lewis County and/or Northern New York had no idea that there was such a thing as a microburst, let alone what it was. Early in the morning (approximately 5:00 AM) on July 15th many of us found out. Much damage was done throughout Northern New York, but in particular a number of sugarbushes in the Croghan area of Lewis County were literally flattened.

A microburst, it turns out, is associated with severe thunderstorms and tornado like winds. In this case most of the damage was done in a relatively short time, no more than 1/2 to 3/4 of an hour. In fact, most of the damage may have been done in minutes.

To help understand the impact of the storm on the local maple industry, you need to consider an area approximately 8 miles long, 1 mile wide at its widest and including 4,700 acres. Within this area some timber is completely flattened, some partially harmed, and some with only minor damage. But within this area are at least 15 sugarbushes, some of which have lost 75 to 80% of their taps. Included in this loss is one of the largest bushes in the area, which had 14,000 taps. They are now not sure if there is going to be anything left to tap. One estimate placed the loss of taps to be in the neighborhood of 25,000 to 30,000 taps in the Croghan area alone.

Many of these bushes were family operations, with some going back several generations of operation. In many cases, they have been left with few if any trees standing that have not been damaged. Loggers have already moved into many of these bushes in an attempt to salvage as much of the timber as possible. No matter what is salvaged, how does a maple producer feel when nearly off that is left is stumps where his bush once was?

The New York State Department of Environmental Conservation has estimated 1.7 million acres of forest on the Tug Hill Plateau and within the Adirondack Forest were affected. Forest damage in the Star Lake area was also quite severe. In many cases the damage was so severe that it was nearly impossible to travel even well used and/or town roads on foot. At times it was necessary to climb over and under trees. It was nearly useless to go around for 2 reasons: you just ran into more downed wood and it was easy to become disoriented even though next to a gravel road.

Simply put, the "Microburst" of July 15th, 1995 will be remembered as a very brief storm that greatly changed the maple industry in the Croghan area for the worse. The impact will be felt for many years and several generations of sugarmakers and forest owners.

IN MEMORIUM

ARTHUR E. MERLE

With the death of Arthur E. Merle, New York State and Wyoming County lost one of the pioneers of the modern era of maple syrup production. He was a Charter Member and First President of the County Maple Producers Association as well as being Secretary/Treasurer of the State Maple Producers Association for the past 20 years until his death. In 1988, he was inducted into the American Maple Museum Hall of Fame which is located at Croghan, New York. He was always promoting maple, taking an active interest in the quality of maple syrup. Mr. Merle was instrumental in starting maple tours in New York State. He was always present at the local and State Fair maple booth, presenting pure maple to the public. He was President of the N.A.M.S.C. from 1988-1990. He was presented the Charles Hubbell Award in May 1994 at Albany for his outstanding dedication to the State's maple industry. The Merle family has 10,000 taps on its maple operation. Besides maple, Arthur had many other interests such as being a 4-H club leader, influencing young lives for more than 55 years, a member of the Trinity United Methodist Church and Church Treasurer for more than 25 years. He served as Sunday School leader and young peoples group leader, as well as a member of Dairylea County Fair Board, Attica School Board, and a former Town of Bennington Assessor.

Mr. Merle will be remembered for his ability to be fair and tough at the same moment. He indulged his family in their own paths with the admonishment to finish what you start and that you learn lessons along the way and gather great wisdom from them. We remember his sense of humor and enjoyment of life. A man who was known to say he married Florence on February 29th because it was an extra day in the year; therefore, they were not wasting a day or that they had only been married 14 years (on their 52nd anniversary). Arthur had a solid sure faith in his Lord and Master Jesus Christ.

He is survived by his wife of 55 years, Florence; 5 children — Phyllis, Bruce, Milton, Douglas and Lyle; 4 children-in-law; — Charles Couture, Marilee, Sara and Dottie; 1 brother; 11 grandchildren and 3 great-grandchildren.

Art will be greatly missed by all of his maple friends throughout the maple industry.

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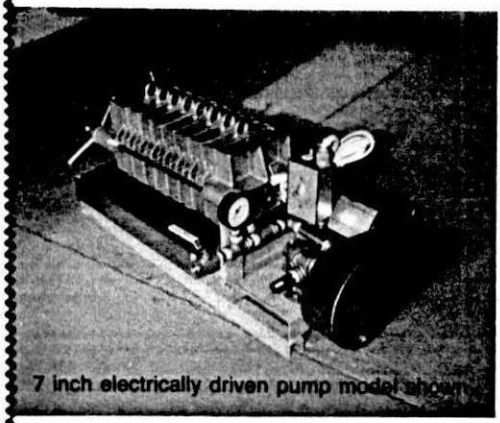

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