MAPLE SYRUP DIGEST

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MAPLE SYRUP DIGEST

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COVER PICTURE

"Malabar Sugar House"

Malabar Sugar House, built 3 years ago of native Ohio lumber sawed at malabar's mill. It houses a 3 x 12 Leader evaporator, has room for about 50 visitors.

Editorial

Every once in a while I hear someone say they would like to have a "normal" syrup season. I guess I would, too. After 41 years of sugaring, I don't think we've had a year you could call "normal". We've produced an average crop many times but there was always something unusual happening. Take this year, for instance:

It started out about normal. Here in Central New York we had a normal winter - cold but not too bad. The season started when it should, about the end of February. There was no late "January thaw" in early February to get everyone excited and make them tap too early. There was some snow but not too much, about a foot in the woods.

The first sap flow worth bothering with came the last week of February. We picked up our first load on the 26th. Everything was normal and we started boiling. Boy, what a let-down we were in for. There wasn't any sugar in it.

My telephone started ringing. Those who sold sap thought the buyers were cheating them on the test. The buyers thought the sap producers were filling up their tanks with creek water. The best roadside trees could do was about 2.4% and if woods trees hit 2% you had a good bush. This was when it hit the peak in the middle - both ends of the season were worse.

Why was the sugar content so low? I guess the main reason was last summer's seed crop. If you remember, at least in this area, many different species of trees had abundant seed crops. The spruces were loaded with cones and the sugar maples were extraordinarily prolific. When there's a lot of seeds there's fewer leaves to make sugar. Also, the seeds use some of the sugar so the tree can't store up much that year. Fred Winch told me that years ago and I've never heard anyone contradict it.

We expected a low sugar content and some of us talked about it last fall, but it's one of those disagreeable things you try to put out of your mind, like you don't want it to happen. In other words - ignore it, maybe it will go away.

But it never does. It's here and you have to put up with it. The surprising thing was it made good syrup. Most of it graded light. All that extra boiling didn't seem to matter. Since most of the color in syrup is caused by bacteria, I guess the sugar content was so low the bugs all died of starvation.

We finally ended up with a little under an average crop here and most other areas made from 80% to average. It just took a lot more wood than it should have.

1985 CROP

According to article appearing in the New York Times on June 2nd, (I have to refer to the Times because for some unknown reason, no matter how much I beg, I can't seem to get the Crop Reporting Service in Albany to send a copy to either me or the Digest) the maple syrup crop in New York and New England fell to 966,000 gallons this year from a million gallons last year. This means production was off only about 2½% from last year which was reported to be about an average crop.

No figures were quoted for Pennsylvania and the midwestern states but from what I hear from the grapevine their crops were about the same.

A few years ago the Crop Reporting Service was discontinued because of cutbacks in spending. The states are doing it to some extent themselves but here in the East, we never can get reports from the midwest. The reason is cost. It would amount to as much as a couple of Navy ash trays. Since the maple industry is so small (the New York and New England crop was only worth 18.2 million this year) we get the axe.

U.S. MAPLE

TUBING
CONNECTORS
SPOUTS

SPOUTS
- Black color aids in rapid tap-hole thawing.
- For removal use 1" wrench or hammer.

SPOUT-PLUG
- Interconnection between "T" and spout.

SPOUT-PLUG
- Tight seal with spout allows pressure or vacuum washing of tubing in place.

CONNECTOR
- Will not pull apart.

"T's" & "Y's"
- Tapered with smaller first ridge for easier tubing insertion.

TUBING

"SUPER—COLD" — Green translucent color. I.D. is standard for complete interchangeability. Minimizes ultraviolet sunlight deterioration. Blends with nature in summer for year round lines. Has a broad temperature range in which elasticity remains the same. Excellent for cold weather use and reduces extreme sags in warmer weather.

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603/835-6361, 835-2230
Mayottes Maple Products, R.D. 2, East Fairfield, VT 05448
Maple Syrup Supplies, P.O. Box 245, Potterville, MI 48876, 517/645-7305
Troy Firth, 136 Mechanic Street, Spartansburg, PA 16434

GREETINGS FROM THE CHAIRMAN

After a relatively mild winter, we here in the Northeast experienced an average?? maple season. Nothing spectaculer, but not bad either. One of the things that kept the production down for many of us in New England, other than the current weather, was the low sugar content in the sap. Plenty of liquid, but nothing in it. I hear of kinds of horror stories about .5% sap but certainly a lot of it was under 2%.

The cause of this low sugar content brings out as many theories as there are sugar makers. Some of us have noticed that last year was an extremely heavy seed year for maple trees. Could this have something to do with the low sugar content? Maybe some research on the problem would be in order.

Our particular area is said to be 18-20" of rain equivalent below normal since last August. Most areas have some degree of drought. During the last major drought of three years in the late 60's, we had good maple seasons. Doesn't make sense.

Syrup is in good demand. I keep hearing that it will be scarce. Maybe that's good! Have a good summer!

Gordon Gowen

JAMES W. MARVIN RESEARCH AWARD CONTRIBUTED BY THE VERMONT MAPLE SUGAR MAKERS ASSOCIATION AND THE VERMONT MAPLE INDUSTRY COUNCIL

Recipients in 1985 are
CHRISTINE FORDE of
MAPLEWOOD, NEW JERSEY and
IRENE RAINVILLE of
HIGHGATE CENTER, VERMONT

Christine graduated with a B.S. in Botany/Environmental Studies at UVM in May, 1985. Irene is a junior majoring in Biology/Environmental Studies at UVM.

In 1984-1985 they pursued separate undergraduate research projects, for credit, under the guidance of Dr. Morselli and the staff of the UVM Maple Research Laboratory, Botany Department.

For her project Christine chose to study the **"Enzymatic Responses in Wood and Sap of Salt-Stressed Sugar Maples (Acer saccharum Marsh.) to Wounding."** Irene chose to study the **"Microbial Ecology of Salt-Stressed Sugar Maples (Acer saccharum Marsh.)."**

Both projects were funded in part through awards they received from the Andrew W. Mellon Foundation.

SAP U.S.A. PLASTIC POWER CANADA TRAP!

New and Patent Pending:
SNAP LOK™ Pressure Cap for high pressure washing.

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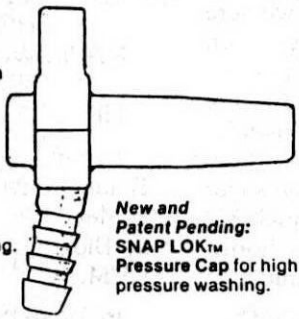
- ☐ Black color aids in rapid tap-hole thawing.
- ☐ For removal use wrench or hammer.



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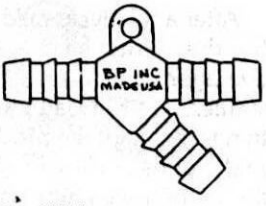
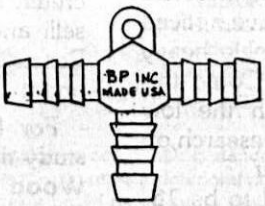


"Y's"
- ☐ Tapered with smaller first rib for easier tubing insertion.
- ☐ Maximum sap flow path.

SPOUT-PLUG
- ☐ Interconnection between "T" and spout.
- ☐ Tight seal with spout allows pressure or vacuum washing of tubing in place.
- ☐ Compatible with competition's fittings.



CONNECTOR
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All Parts Available FALL 1985 at NAMSC Meeting in Pennsylvania.

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—COMING EVENTS—

ONTARIO MAPLE TOUR

The 1985 Ontario Summer Maple Producers Tour will be held in Eastern Ontario at Kemptville on July 17, 18 & 19. Headquarters will be at the Kemptville college of Agriculture Technology.

The Theme for this tour will be energy saving equipment and will begin with an evening meeting Wednesday, July 17. A discussion will highlight reverse osmosis technology, sap preheaters, wood savers and economizers. A special program on maple candy making and cooking with maple is planned.

On Thursday a bus tour will visit several area producers including 3 using reverse osmosis. A banquet, Thursday evening, will be held at the College. Guest speaker will be Lew Staats, extension specialist from New York State. On Friday morning a maple research program at the college will be reviewed and discussed.

For further information and reservations, call: Clarence F. Coons, Tour Co-ordinator, Ontario Ministry of Agriculture & Food, Building 2004, Kemptville, Ont. KOG 1JO Telephone 613-258-3411

VERMONT MAPLERAMA

The 1985 Vermont Maplerama will be held July 19 and 20 at Vermont Technical College in Randolph Center, Vt. The Schedule is as follows:

July 19

9:00 Registration at Morey Hall

10:00 Board busses, go to Kent Ancliffe's Sugarhouse, Goose Green, Vt.

11:30 Early Lunch

12:30 Divide into 2 groups

Group A will see demonstration of tubing and pipeline installation and splicing by Tom Bahre, Addison Co. Forester.

Group B - tour around sugarhouse, learn technology of storage, vacuum, U V lights, Reverse Osmosis, Wood Savers, Pre-heaters, Marketing, Packing & Grading.

2:30 Groups Switch

4:30 Return to College

5 - 7 View Exhibits

6 - 7 Friendship hour at Morey Lounge. Cash Bar.

7-8:30 Banquet

8:30-9 4H Cloggers

9 - 11 Music & Dancing - "Cold Country Band"

July 20

7 - 8 Breakfast at Morey dining hall

8-8:30 Exhibits

8:30 Group A to Kevin Hall Sugarbush at Braintree. View washing tubing, roads, access and Sugar bush pests.

Group B to Jeff Vinton Sugarbush at Braintree. Discuss small, efficient Sugarbush operation. Display of several vacuum systems by dealers.

10:00 Groups switch

12:00 Chicken B-B-Q at Vermont Technical College by Randolph Center Firemen.

1:15 Group A Armstrong Sugarhouse at Randolph Center. Wood chip fired evaporator, tour retail shop, see video tape "Proved Tradition".

Group B See movie - "Frost & Fire" or tour exhibits.

2:15 Groups Switch

3:30 Maplerama Ends

For more information and reservations contact: Orange County Maplerama, Box 210, Randolph Center, Vt. 05061.

NEW YORK MAPLE TOUR

This year, the New York Maple Tour will be held in a county it's never visited before, Oneida, on July 29 and 30.

Centered at the Paul Revere Motor Lodge in Rome, NY, registration will begin at noon on Monday, July 29.

Several area Maple Operations will be visited including a combination maple syrup and pick-your-own vegetable farm, a minimum equipment but practical and efficient packaging operation and the Lamb tubing plant at Bernhards Bay.

For more information, contact Lewis Staats, Dept. of Natural Resources, Fernow Hall, Cornell Univ., Ithaca, N.Y.

OHIO MAPLE TOUR

Now that the 1985 maple season is over, plans are underway for an Ohio Maple Tour, to be held on September 18 and 19, 1985.

Mohican State Park Lodge will host the program. The lodge is surrounded by trees and perched on the edge of Pleasant Hill Lake. Mohican Lodge is located 20 miles southeast of Mansfield, Ohio.

The schedule for the first day includes tours of several Richland County sugar camps, including Malabar Farm State Park. Malabar Farm was the home of Louis Bromfield, world-wide known farmer, author and conservationist. Today, the land is still being farmed at Malabar and the sugar operation is an important aspect of the farm's programming. Each spring, the entire maple process is demonstrated to thousands of people. The three maple weekend festivals attract folks from all over the state, while during the week school children are guided through the camp. The stop at Malabar will include a tour of Malabar's Sugar Bush and also of Bromfield's "Big House", a 32 room mansion.

In addition to the sugar camps, participants will visit the Wade and Gatton Nursery. This large facility is a supplier to many metropolitan areas.

Toward the end of the afternoon, the group will return to Mohican Lodge where a banquet will be held. Entertainment will feature Noris Johnston as Cy Gatton. Years ago, Cy Gatton was a local storyteller and today his tall tales are shared by Mr. Johnston. Noris will be accompanied by the Double Layer String Band.

The second day will highlight the maple research being done at the Ohio Agricultural Research and Development Center (OARDC). The tour will include the High Sugar Maple Orchard as well as soil analysis and leaf labs and a forest research site. An optional tour of a commercial Christmas tree farm will be offered following the stop at OARDC.

Registration will be held at Mohican Lodge. Overnight facilities will be available at the resort lodge or at nearby motels.

The 1985 Maple Tour is sponsored by the Ohio Department of Natural Resources and the Ohio Cooperative Extension Service. To receive a brochure with a complete schedule and registration information, please write: Northeast District Extension Office, Administration Bldg. OARDC, Wooster, Ohio 44691 or phone: (216) 263-3831 (7:30-4:30, M-F).

DEADLINE FOR OCT. ISSUE SEPT. 1st.

INTERNATIONAL MAPLE SYRUP INSTITUTE

The Annual General Meeting of the I.M.S.I. membership will be held Sept. 23, 1985, at the Orford Music Camp in Magog, Quebec, located in Eastern Township.

Theme of the meeting will be Acid Rain and it's affect on maple. A number of well known speakers will be present to discuss the numerous affects of acid rain and whether it is a global problem of maple tree decline. Also, if it is affecting the decline of mature trees, can the individual producer institute proceedures to slow down the process until the problem can be solved.

Two well known speakers have accepted an invitation to present papers at the meeting. Dr. Hubert Vogelmann of the University of Vermont and Mrs. Lise Robitaille, Forest Engineer with the Ministry of Energy and Resources in Quebec will be present. Also awaiting confirmation on the presence of the Canadian Envoy on Acid Rain, the Honorable William Davis.

Based on reaction so far, we are expecting up to 500 participants including both members and non members. Accommodations can be easily arranged at the Music Camp for under $25 per person, U. S. funds.

For further information and reservations, contact: Paul Lamontagne, executive manager of I.M.S.I., 1010 Sherbrooke St. W., Room 902, Montreal, Que., Canada H3A 2R7, Tel. 514-288-2343

PENNSYLVANIA MAPLE TOUR

A tour of great interest and excitement is planned in Bradford and Sullivan Counties October 4th and 5th 1985. Will travel by Bus to visit several sugar camps and other places of interest.

A banquet and entertainment program with the Pennsylvania State Maple Queen contest scheduled for Friday night. Headquarters at Wysox fire hall Wysox, Pa.

For more information and reservation forms write to:

Al Homan
Agricultural Extension Office
704 4th St.
Towanda, Pa. 18848
Phone: 717-265-2896

NORTH AMERICAN MAPLE SYRUP COUNCIL

The Pennsylvania Maple Syrup Council extends a warm invitation to the 26th annual meeting of the North American Maple Syrup Council.

Center of activities will be the Penn Wells Hotel in Wellsboro, Pa.

Although the meeting dates are Monday and Tuesday, October 21 and 22, you are invited to arrive in time for a Sunday evening smorgasbord and some light entertainment.

Reservation information and program details are available by contacting Barbara Kinnan, Co-operative Extension Service, 118 Main St., Wellsboro, PA 16901 Tel. 717-724-1906, Evenings 717-376-2116

NEWS FROM CONNECTICUT

Connecticut Association active and growing

By Darrell F. Russ

The Maple Syrup Producers Association of Connecticut (MSPAC) was a beehive of activity from the middle of January until the end of March.

At the onset of the season, one of the major goals of the Association was to increase membership by bringing in new members and by signing up delinquent former members.

Director Ken Sherrick and Secretary Barbara Atwood sent member ship invitation questionaires to just about anyone that at one time or another showed any interest in making syrup. The response was most rewarding.

Cooperating with Huntington Williams, Adult Vo-Ag program leader at the Housatonic Regional High School in Falls Village, Darrell Russ, Star Childs, Mike Girard and Barbara and Newell Atwood ran three Wednesday evening classes on Home Production of Maple Syrup. There was an average of twenty people in attendance about half of which joined the MSPAC and attended the February 9th Workshop.

Kress Creations produces Connecticut jugs that may only be purchased by MSPAC members. This incentive alone has encouraged many to join. Kress also donates 5% of the Connecticut jug sales to the MSPAC which is a significant contribution and most beneficial to the Connecticut Association.

Our 8th Annual Workshop was held on Saturday February 9th in the W. B. Young auditorium at the University of Connecticut in Storrs. The overflow crowd arrived early to brouse through the large assortment of free literature print-outs available on all aspects of maple syrup production, and to purchase maple supplies from the half dozen dealers who set up displays. Coordinator Mike Girard presented Kathy Teveris of the Connecticut Department of Agriculture who spoke on 'Connecticut Grown' marketing, and Everett A. Willard, Vermont Department of Agriculture who did an excellent job of explaining quality control in packaging maple syrup. MSPAC president Rich Norman presided over the business meeting and the workshop ended with the IMSI film "Pure Maple - Frost and Fire".

Excellent and timely news coverage featuring many of the prominent maple producers around the state in most of the major Connecticut newspapers as well as the New York Times and The New England Farmer. Public interest was high all season long.

1985 N. E. CONNECTICUT SEASON

By Rich Norman Pres. MSPAC

Presidents day weekend in February came upon us very quickly. This is the day we usually start to tap. We picked up our first run on the 18th. The next week was very hot so it didn't run much. Our last date for picking up was March 23. The weather was so warm our season was shortened by almost 2 weeks. Others were able to go a little longer.

Production was off 20 - 30% due to many reasons. First, the weather was dry due to very little rain or snow. Second, the days got very hot during the season and didn't get cold enough at night. In the later part of the season the weather was better. By then a lot of the trees had started to heal up. Third, the sugar content was down for most producers.

The flavor of the syrup was very good, even though most producers made mostly medium to dark syrup. This was due, mainly, to the hot weather early in the season. Some pro-

ducers also had a lot of sediment in their syrup. This could also cause the syrup to be dark.

Sales were very good. People are starting to realize that Connecticut can produce good maple syrup. This was due to the many newspaper articles about the M.S.P.A.C.

1985 WESTERN CONNECTICUT SEASON

By Darrell F. Russ

In the western portion of Connecticut seasonal temperatures and bare ground got the syrup producers into the bush about the middle of February and ready for the first run that started with record breaking warmth on the last weekend of the month.

The season was quite variable. Production was up in a few areas with as much as 30 percent grading light amber, but in nearby areas production was down about 10 percent and the color was mostly medium amber to dark amber. For the most part, the season lasted only four weeks, with the sugar content down about 10 percent. Places that averaged 39:1 last year were getting 42:1 this spring. Demand was good at $20.00 to 23.00 per gallon at the sugarhouse.

LEGISLATORS LEARN ABOUT CONNECTICUT MAPLE INDUSTRY

By Stephen H. Broderick
Conn. Extension Forester

Tuesday, March 19, 1985 was declared "Connecticut Agriculture Day" by Governor William O'Neill. To mark the occasion, the lobby of the state capitol was filled with displays erected by over two dozen agricultural commodity groups. Legislators viewing the displays were able to learn about Connecticut agriculture and forestry while sampling

everything from Connecticut wines to milk shakes flavored with real maple syrup.

Included in the displays was one representing the Maple Syrup Producers Association of Connecticut. Each legislator received a sample of Connecticut syrup, thanks to donations from several members, including Elmer Kress of Kress Creations, and the efforts of Association president Rich Norman in pulling the samples together. The display itself was put together by Mike and Connie Girard and Steve Broderick and featured several unique items from Mike's personal collection of antique maple equipment, illustrating the evolution of the maple production process.

The display was a popular one among the legislators and several indicated that they had learned a great deal about maple in general and the extent of sugaring in Connecticut, or in some cases, in their own districts.

SAP AND SYRUP COST ANALYSIS

From
Lewis J. Staats
Extension Specialist
Maple Programs

MAPLE SAP AND SYRUP COST ANALYSIS - 1985
SAP COLLECTION SYSTEM: TUBING

ANNUAL COSTS - PER TAP

	2000 TAPS			3000 TAPS			4000 TAPS		
WOODS OPERATION									
EQUIPMENT	$ 0.90			$ 0.76			$ 0.68		
LABOR	0.80			0.80			0.80		
MATERIALS	0.16			0.15			0.14		
TAX	0.11			0.11			0.11		
TOTAL WOODS OPERATION	$ 1.97			$ 1.82			$ 1.74		
	2000			3000			4000		
PROCESSING OPERATION	WOOD FIRED	OIL FIRED	GAS FIRED	WOOD FIRED	OIL FIRED	GAS FIRED	WOOD FIRED	OIL FIRED	GAS FIRED
SUGARHOUSE	$ 0.22	0.19	0.19	0.18	0.15	0.15	0.14	0.12	0.12
EVAPORATOR	0.55	0.75	0.67	0.48	0.64	0.56	0.40	0.57	0.48
TAX & INS	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.03	0.03
LABOR	0.44	0.41	0.41	0.29	0.27	0.27	0.22	0.20	0.20
FUEL	0.81	1.04	1.35	0.81	1.04	1.35	0.81	1.04	1.35
MISC.	0.26	0.30	0.28	0.22	0.25	0.23	0.19	0.22	0.20
PACKAGING	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
TOTAL PROCESSING OPERATION	$ 3.18	3.58	3.79	2.86	3.23	3.44	2.64	3.02	3.21
TOTAL PRODUCTION COSTS									
PER TAP	5.15	5.56	5.76	4.68	5.05	5.26	4.38	4.76	4.95
PER GALLON SYRUP	16.49	17.78	18.43	14.98	16.16	16.83	14.02	15.24	15.84
ANNUAL INCOME									
RETAIL SYRUP PRICE	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36
PRODUCTION COSTS	16.49	17.78	18.43	14.98	16.16	16.83	14.02	15.24	15.84
NET RETURN(GAL)	$ 1.87	0.58	-0.07	3.38	2.20	1.53	1.34	3.12	2.52
CAPITAL INVESTMENT									
WOODS OPERATION	8099.05	8099.05	8099.05	11161.91	11161.91	11161.91	14224.77	14224.77	14224.77
PROCESSING	11702.95	13782.55	12672.55	14737.60	17129.20	15549.20	16343.90	19667.50	17147.50
TOTAL INVESTMENT	$ 19802.00	21881.60	20771.60	25899.51	28291.11	26711.11	30568.67	33892.27	31372.27

Maple Sap and Syrup Cost Analysis Update for 1985 for Tubing and Bucket Sap Collection Systems

The following cost analysis information for 1985 for both tubing and buckets has been updated by U.S. Forest Service economists, based on the U.S. Forest Service Research Paper Nos. NE-430 and NE-216.

The costs and return values are intended to serve as information, not recommendations for pricing.

MAPLE SAP AND SYRUP COST ANALYSIS - 1985
SAP COLLECTION SYSTEM: BUCKET

ANNUAL COSTS - PER TAP

	2000 TAPS	3000 TAPS	4000 TAPS
WOODS OPERATION			
EQUIPMENT	$ 1.35	$ 1.22	$ 1.15
LABOR	1.03	1.03	1.03
MATERIALS	0.31	0.29	0.29
TAX	0.11	0.11	0.11
TOTAL WOODS OPERATION	$ 2.80	$ 2.65	$ 2.58

	2000			3000			4000		
PROCESSING OPERATION	WOOD FIRED	OIL FIRED	SAS FIRED	WOOD FIRED	OIL FIRED	GAS FIRED	WOOD FIRED	OIL FIRED	GAS FIRED
SUGARHOUSE	$ 0.22	0.19	0.19	0.18	0.15	0.15	0.14	0.12	0.12
EVAPORATOR	0.55	0.75	0.67	0.48	0.64	0.56	0.40	0.57	0.48
TAX & INS	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.03	0.03
LABOR	0.35	0.32	0.32	0.23	0.22	0.22	0.18	0.16	0.16
FUEL	0.65	0.83	1.08	0.65	0.83	1.08	0.65	0.83	1.08
MISC.	0.26	0.30	0.28	0.22	0.25	0.23	0.19	0.22	0.20
PACKAGING	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
TOTAL PROCESSING OPERATION	$ 2.76	3.12	3.27	2.48	2.80	2.95	2.27	2.60	2.73
TOTAL PRODUCTION COSTS									
PER TAP	5.56	5.92	6.06	5.13	5.45	5.60	4.84	5.18	5.31
PER GALLON SYRUP	22.22	23.68	24.25	20.50	21.81	22.40	19.38	20.73	21.24
ANNUAL INCOME									
RETAIL SYRUP PRICE	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36	18.36
PRODUCTION COSTS	22.22	23.68	24.25	20.50	21.81	22.40	19.38	20.73	21.24
NET RETURN(GAL)	$ -3.86	-5.32	-5.89	-2.14	-3.45	-4.04	-1.02	-2.37	-2.88
CAPITAL INVESTMENT									
WOODS OPERATION	15369.10	15369.10	15369.10	22020.70	22020.70	22020.70	28672.30	28672.30	28672.30
PROCESSING	11702.95	13782.55	12672.55	14737.60	17129.20	15549.20	16343.90	19667.50	17147.50
TOTAL INVESTMENT	$ 27072.05	29151.65	28041.65	36758.30	39149.90	37569.90	45016.20	48339.80	45819.80

★ ONTARIO REPORT ★

The 1985 crop was reported good in most regions of Ontario. The Grey-Bruce, Waterloo Districts and many areas in Eastern Ontario bordering on the St. Lawrence river reported bumper crops with some operators making an Imperial gallon of syrup from 2.5 taps or better. The only region reporting a poorer crop is the Algonquin region. The weather in this area was not warm enough to run sap most of the season. The sap started flowing in the south west region of Ontario around the 20th of February and the season lasted until mid April in the South West and until the third week in April in the Northern regions. The quality of syrup was excellent and prices ranged from $25 to a top price of $30 for a 4 litre container retail.

Compulsory grading of all syrup sold in Ontario was started in 1985 with very good results. The grading was well accepted by the public because of a lot of advertising done to educate the public about the grading system.

The Ontario Directors got our Promotional committee started and they have come up with some great posters and have come up with a lot of different ideas for promoting maple as well as increasing memberships in the Ontario Association.

The Ontario Annual meeting is going to be held in the Haliburton region in October. For more information call

John Butler at 705-322-2231. The Ontario Summer tour will be held in Kemptville area, July 17, 18 and 19, 1985. For more information contact Clarence Coons at 613-258-2705.

Ontario hopes to have a report at the Council meeting this fall about research done on Acid rain in the Muskoka region of Ontario.

Bill Robinson
R.R. #2
Auburn, Ontario
NOMIEO

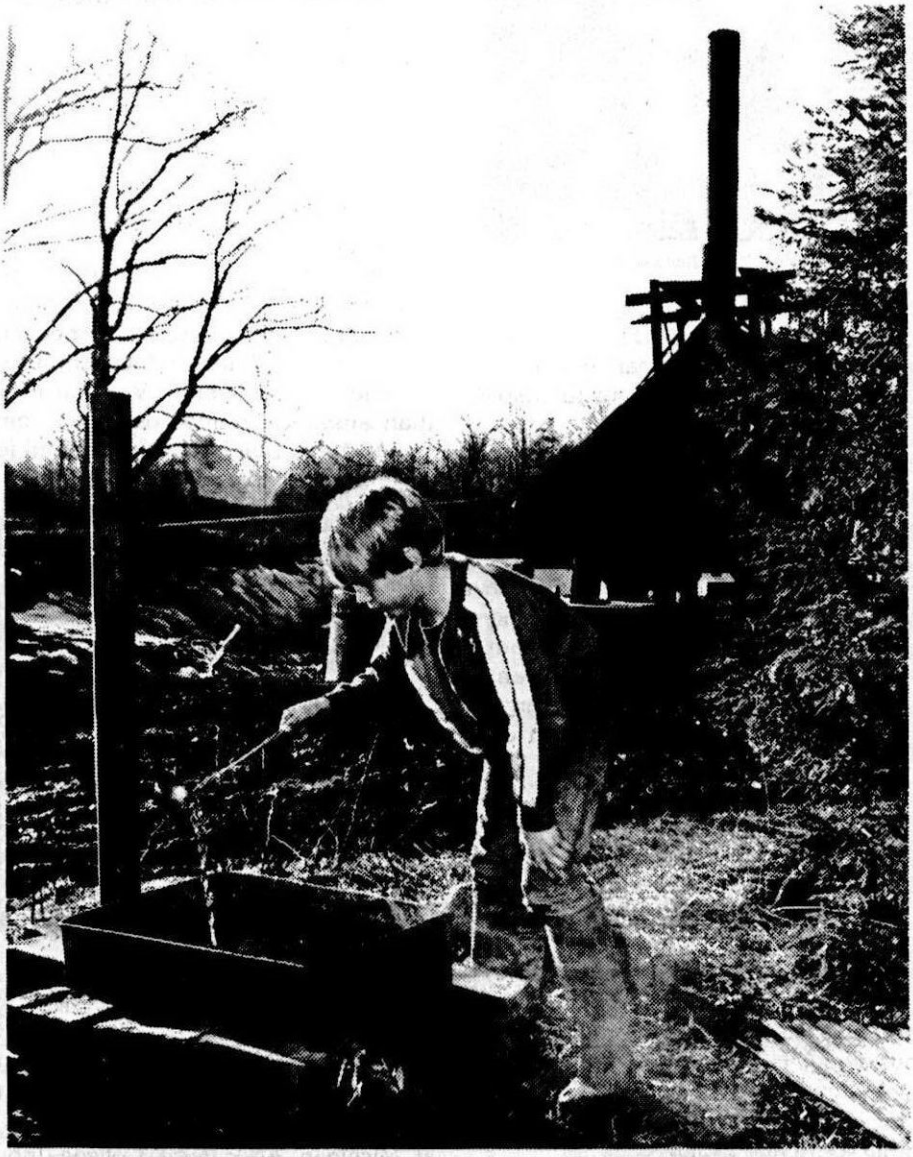
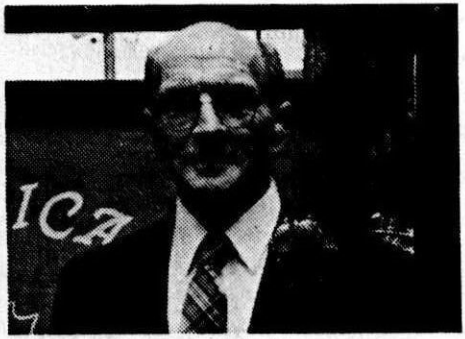


Photo by Edward W. Vidler, 309 Parkdale Ave., East Aurora, N.Y., won 2nd prize in New York State photo contest.

AMERICAN MUSEUM HALL OF FAME



Frederick Mitchell Laing

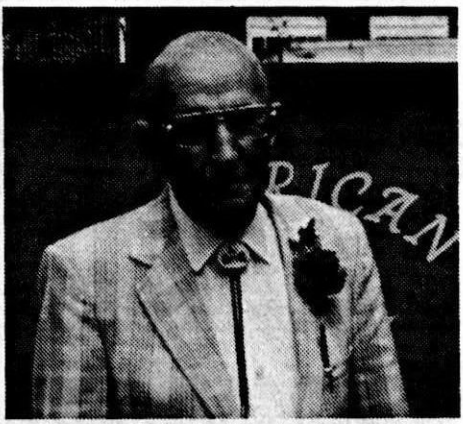
Frederick Mitchell Laing for more than 30 years has worked to enhance a proud tradition--the sugar maple industry--with his commitment to maple research.

In 1951 he earned his Bachelor's degree in botany from The University of Vermont, and then went on to complete a Master's degree in the same department under the advising of Dr. James Marvin. In 1953, upon completion of his studies, he joined the Botany Department as a research associate and began a long career of maple research. A scientist, plant physiologist, and expert in maple technology, he has worked extensively for sugarmakers, both in Vermont and around the country, to research and evaluate new maple production techniques and equipment. He has been a pioneer in the study and development of alternate methods of gathering maple sap, including the proper use of plastic tubing, dependent upon his knowledge of maple tree physiology. He has given great contributions to the research and implementation of greatly efficient methods for maple syrup processing.

He has provided leadership in recent years for the activities at the Proctor Maple Research Center of the University of Vermont, a field laboratory and educational center used by students, teachers, scientists, and maple producers.

His work in maple industry earned him the Man of the Year Award from the Vermont Maple Industry in 1981, the 1982 Vermont Sugarmaker of the Year Award, and an award for distinguished service from the North American Maple Syrup Council in 1983.

In 1978 he was promoted to Research Associate Professor. He has shared his knowledge and respect of the maple tree through considerable published research as well as in scientific meetings and in sugarbushes and sugarhouses. As one student wrote: "You did more than answer our questions, you communicated a love for your work and for the things you work with."



Robert B. Huxtable

Bob Huxtable's interest in Maple dates from the year 1907 when he first made maple syrup in an iron kettle on the family farm near Lansing, Michigan. After finishing a degree in Horticulture at Michigan Agriculture College (now Michigan State Univ.) Bob clerked on Banana Boats plying the route from the

NEW YORK MAPLE QUEEN

The 1985 New York State Maple Queen is Dawn Rennie, from Denmark, NY, pictured above, center, with runners-up Christine Brown, Gilboa, NY, left and Jennifer Chatterton, Mannsville, NY, right.

United States to Central America. Then he entered the paper sales field.

In 1934 he founded Sugar Bush Supplies Co., one of the early mail order supply houses offering a full line of maple needs from tree to table. Working closely with the M. S. U. Forestry Dept. and the U.S.D.A. Researchers, Bob was an early advocate of attractive packaging, first with color labels and later with 4 color lithographed cans. He also promoted packing in glass and made glass available to small producers together with multicolored labels to match. He promoted the manufacture of maple products and special packaging for them. He worked on designs for power tappers, pill injectors, maple cream machines, the introduction of the taphole pellet and offered council and assistance to 3 generations of maple producers in the midwestern section of the maple territory.

Although the company he founded was sold in 1976, Bob maintains an active interest in maple at 88 years of age and must be considered one of the pioneers of the modern maple industry.

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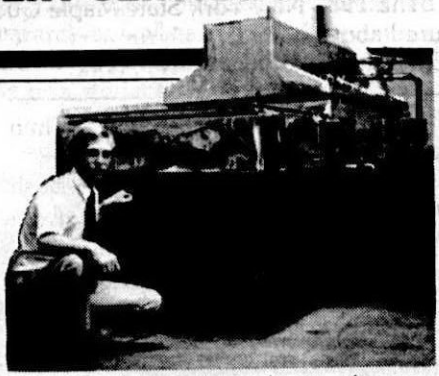

David Buttolph, maple producer and operational manager of the Swanton Maple Syrup Equipment Service Center, in front of the 4'x12' 19-50 LIGHTNING EVAPORATOR.

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SAPSTREAK OF SUGAR MAPLE: HOW SERIOUS IS IT?

David R. Houston
USDA Forest Service
Northeastern Forest
Experiment Station
51 Mill Pond Road
Hamden, CT 06514

"One of my best running trees--sweet, too,--didn't run much sap at all year before last. In the spring, its leaves were really small--sunlight came right on through it. This past summer it was dead."

"Over the years I've watched several trees near my sugarhouse die. Not many at a time--but probably over a dozen, all told."

"Each summer I go through and cut down dead trees. I use them for fuel the next spring. There are always one or two. Some haven't even been tapped yet. Sometimes the stumps have dark wood inside."

Do any of these descriptions by sugarbush operators in northern New York and Vermont sound familiar? If so, it could be that sapstreak disease of sugar maple is present in your sugarbush. What is sapstreak? How serious is it? Can it be prevented?

Cause

Sapstreak disease is caused by fungus **Ceratocystis coerulescens. Ceratocystis** is also the genus to which the important pathogens of Dutch elm disease and oak wilt belong. It is also, however, the genus that contains many nonpathogenic fungi, including those that cause blue-staining, especially of softwood lumber. The fungus that causes sapstreak appears to wear two hats--it is a common stainer of hardwood logs and lumber, but sometimes it enters living trees and turns killer. What triggers this "Jekyll to Hyde" transformation is not clearly understood.

Symptoms

Usually, the first indication that a sugar maple tree has sapstreak is the thinning of its crown. The leaves are small, often half or less the size of healthy ones (Fig. 1). In subsequent years, diseased trees may show successive branch dieback and crowns may undergo a progressive deterioration.

Fig. 1

Figure 1.--The crown of sugar maples with sapstreak disease often appears thin because the leaves are small. This "half-leaf" symptom usually is the first indication that a tree has the disease.

Diseased trees sometimes succumb rapidly. Trees with no crown symptoms one year may fail to leaf out the next, while others may die a year after the first foliar symptoms. By contrast, some trees linger for many years, exhibiting repeated sequences of crown dieback and recovery until, finally, they die (Fig. 2a, b).

Inside the tree, the wood of buttress roots and lower stems exhibits a stain of distinctive color and pattern. When freshly exposed, the stained tissue appears water-soaked and moist; it is

Fig 2a

Figure 2.--Some affected sugar maples exhibit repeated sequences of dieback and recovery over several years. This tree, which had small leaves over much of its crown in 1982 (a), exhibited extensive crown dieback in 1983 (b).

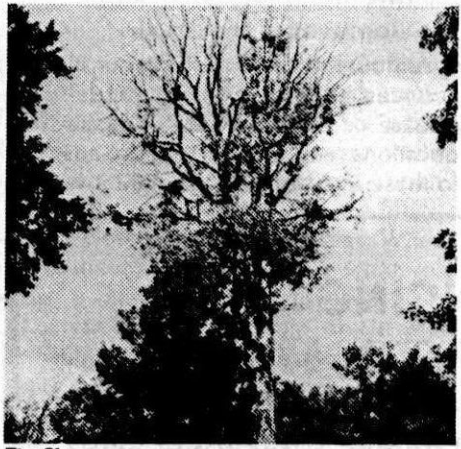

Fig. 2b

yellowish-green bordered by a thin, dark green margin (Fig. 3a). Imbedded in the stain are flecks that are reddish in color when fresh. Within a few minutes of being exposed to air, the stain darkens dramatically and the red flecks become less discernable. On drying, the discolored tissues fade to a light brown. In cross section, the stain appears to radiate outward toward the bark in "finger-" or "star-like" projections (Fig. 3). Cambium (the delicate growth layer between the bark and wood) touched by the stain dies and cankers or dead areas develop. In severely diseased trees, this radiating pattern disappears as the entire cross section of roots becomes stained.

As sapstreak continues to develop, the flow of sap begins to slow and finally ceases. This reduction in flow can occur even before crown symptoms appear. In such cases, it is likely that the taphole was placed in diseased wood. As evidence, drill shavings from such wood will be moist, often "mealy" in consistency, and discolored compared to bright, crisp shavings from healthy wood.

Wound association

Wounds appear to be positively associated with sapstreak disease. At some time in its life, nearly every infected tree has been wounded severely on its roots or buttress-root area. Because this wounding may occur many years before symptoms develop, wounds are sometimes nearly closed by callus (new wood) by the time the disease is recognized. The close association of wounds and disease seems related to where diseased trees are located in the sugarbush or forest.

Location of Diseased Trees

Trees affected by sapstreak are found primarily along skid trails in the forest or along haul roads in a sugarbush. The more heavily used the roadway, the more likely it is that adjacent trees will be wounded when logs are skidded or wood and/or sap is hauled. Thus far, significantly more diseased trees have been found in sugarbushes where buckets are used than in those where tubing is used, presumably because of the greater number of injuries inflicted during the many trips through the sugarbush to gather sap.

Fig. 3a

Fig. 3b

Figure 3.--The distinctive stain pattern appears to radiate outward toward the bark in the lower trunk (a) and in buttress roots (b) of diseased trees. Eventually, the entire cross section of the roots and stump become discolored.

Although diseased trees often occur as scattered individuals, there are instances where they occur in groups. In several sugarbushes, concentration of diseased trees have been found near the sugarhouse (Fig. 4). In some sugarbushes and forest areas, groups of diseased trees also seem to occur in poorly drained areas where soils are wetter than normal.

Factors affecting spread and development of sapstreak

Although there is a strong correlation between buttress-root wounds and disease occurrence, many unanswered questions remain. Knowing the answers to these questions is important if we are

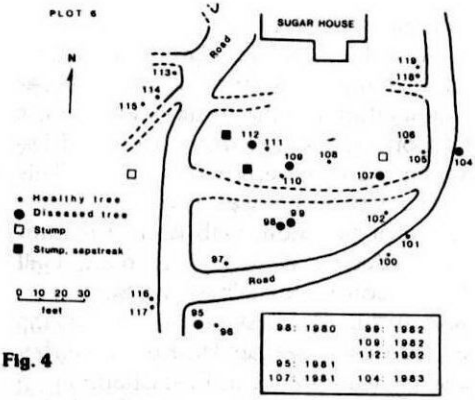

Fig. 4

Figure 4.--This map of a sugarbush in upstate New York shows the locations of the sugarhouse and the surrounding trees, and illustrates how sapstreak progressed between 1980 and 1983. Note that the diseased trees were located where they were especially subject to wounding.

to understand the disease and its prevention. For example, we do not know whether other wounds such as broken branches, insect injuries, or even tapholes can serve as places for infection to start. Is the observed greater incidence of disease in bushes where buckets are used due to more traffic-caused root injuries? Or could "open" spouts be more accessible to the fungus than "closed" tubing systems? Where does the fungus reside and what role does it play outside of diseased trees, and how does it get from one tree to another? Insects are suspected as the primary vectors, but which ones? And can the fungus move through root grafts, or be spread on tools such as drill bits, saws, or axes?

The occurrence of diseased trees in groups could be the result of (a) local transmission through common root grafts or through dissemination by vectors with limited territories; (b) the infliction of injuries to groups of trees at specific times; or (c) concentration of the causal fungus. Concentrations of dying or dead trees also could result from interactions with other pathogens, such as those causing root rots. Nearly all trees killed by sapstreak also are severely attacked by one or more root fungi, some of which are known to attack and kill groups of stressed trees.

Is sapstreak a serious malady? We are not sure. We do know through inoculation trials that **C. coerulescens** is a virulent pathogen--sometimes able to kill saplings in a few weeks, and trees in a few months. Yet in nature, the disease thus far has occurred only sporadically and relatively few trees have been affected. While this may reflect, in part, our past inability to recognize the disease, it probably also attests to the fact that a specific set of conditions must be met before the interactions required for the disease occur. Only when we more fully understand how the fungus moves through the sugarbush and infects trees, and the factors that cause some trees to be infected while hundreds of others--even when severely wounded--are not affected, will we know if sapstreak has the potential to cause a disaster in the sugarbush--or if it will continue to remain a scattered problem.

ACKNOWLEDGMENTS

I thank personnel of the New York State Department of Environmental Conservation for their continuing assistance in our studies of sapstreak. I also thank the several landowners who have made their sugarbushes available for our research.

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VERMONT MAPLE FESTIVAL WELL ATTENDED

Crowds estimated in the thousands attended the 18th annual Vermont Maple Festival, which was held in St. Albans on April 12-14. Concluding with the Parade on Sunday, which featured the Governor, the Congressional delegation, the Mayor, and other notables, the Festival enjoyed better than average participation in the syrup and sugar judging, Maple Cooking Contest, Arts and Crafts Show, and exhibits at the American Legion Hall.

As with any similar event, the success of this maple promotion and educational effort was the result of long hours of work by the Chairman, Board of Directors, and several Committees. This year's Chairman was Richard Underwood of Swanton, with Brent Brigham of St. Albans as Vice Chairman, Gail Casperson of St. Albans as Secretary, and Arthur Riddlesworth of St. Albans as Treasurer. Samuel Hudson of Fairfax also gave assistance as Past Chairman.

One of the events connected with the Festival that proved to be especially popular was the Maple Essay Contest for 7th and 8th Grade Students. Essays came from over 20 schools. The winner was Andrew West of Peoples Academy in Morrisville. His essay was entitled, "Maple Sugaring - Nature's Sweet Gift." Second best essay was written by Sarah McGuire of Mississquoi Union High School, Swanton. Her subject was "Vermont's Maple Industry - the Old

and the New." Third place was won by Jonathan Luce of Spaulding High School, Barre. He wrote on "Maple Syrup - My Life Story". Fourth place winner was Jennifer Smith of Williamstown Jr. - Sr. High School, who wrote on "Maple Sugaring."

Others receiving awards at the Festival included Vermont ladies who were adept at using maple recipes. First among these in the Maple Cooking Contest was Marie Reynolds of Swanton, who was both Over-all Winner and tops in the Pies and Other Pastries category. Second was Jean Burnor of Fairfield, who was especially proficient at making Cakes and Cookies. Third was Lorraine Laroche of Swanton, who was outstanding with Quick and Yeast Breads.

One of the most popular Areas in the Festival was the American Legion Hall, which featured educational maple and forestry exhibits, 4-H and FFA exhibits, a display of syrup and sugar contest entries, and maple sales store. In charge was a Committee headed by Glenn Rogers, County Extension Agent. The maple exhibits were outstanding, and totalled 129 in number, sent from 9 different Counties. Of these 104 earned an Excellent ribbon, with only 25 rejected because of color, flavor, or density. There were 68 entries of syrup, with 54 rated Excellent. As for sugar and candy, there were 61 entries, and 50 rated excellent. Over $100 was paid out in premiums.

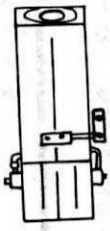
An especially popular feature in the exhibit hall was the sale of raised doughnuts spread with warm, freshly-prepared maple cream.

Among youth exhibits the winner was Dean Wright of Enosburg, with a 4-H exhibit. Second was an FFA exhibit from Newport. Third was a Hard Worker 4-H Exhibit from Fairfield. There were eight youth exhibits altogether.

Continued on page 31

WATERLOO EVAPORATORS-SINCE 1919

THE ORIGINAL "WATERLOO" REVERSE-FLOW MAPLE SAP EVAPOR



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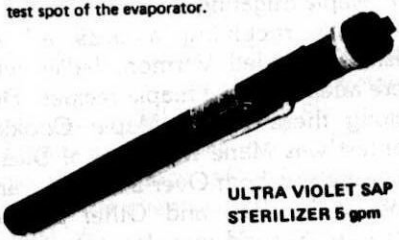

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Continued from page 29

Another popular event was the Saturday night banquet, which featured a turkey dinner, contest awards, and talks by the Commissioner of Agriculture and others. Over 200 attended. Another event especially well attended was the Arts and Crafts show at the City Hall. All space was taken, with exhibits by 68 crafts people. A particularly popular "craft" was dumplings covered with warm maple syrup. These sold for 50¢.

Raymond T. Foulds, Jr.
Vt. Correspondent

MAPLE LEAFCUTTER THE INGENIOUS DEFOLIATOR

Douglas C. Allen
State University College of
Environmental Science and
Forestry
Syracuse, New York
Lewis J. Staats
Uihlein Sugar Maple Research
Extension Field Station
Lake Placid, New York

In recent years, you may have noticed sugar maple foliage turn light brown during mid-to late summer. The discolored leaves usually contain holes that vary in diameter from one-eight inch to about the size of a nickel (Figure 1, A). At first glance, the insect responsible for this damage is not readily apparent. Inspection of these leaves may reveal pancake-shaped pieces of leaf tissue that are attached to the surface of the leaf (Figure 1,B). Without a closer look, however, the responsible party remains elusive. These signs of defoliation are increasingly prevalent throughout northern hardwood stands in New England, New York and parts of southeastern Canada. The culprit is a clever and potentially noxious moth called the maple leafcutter, known to forest entomologists as Paraclemensia acerifoliella. High leafcutter populations can significantly reduce the quantity and quality of sap produced by affected sugarbushes.

Causes of Foliage Discoloration

Changes in the appearance of sugar maple foliage results from a combination of three types of damage; leafmining, skeletonization of foliage and holes in the leaves. Brown blotches are first evident on the leaves in late June shortly after the caterpillars hatch from eggs. The young caterpillars enter the leaves and live, fully concealed, between the upper and lower surfaces of the leaf. Wherever these leafmining stages feed, only the light brown and semitransparent outside surfaces of the leaf (I.e., upper and lower epidermis) remain intact (Figure 2). Completed mines are one-half to three-quarters of an inch long. The leafcutter abandons the leafmining habit after two or three weeks, and begins skeletonizing the leaf surface. At this time the caterpillar consumes the green tissue, but not the leaf veins, in a circle as far as it can reach around the perimeter of its' case. When all the reachable tissues are eaten, it moves to another location on the same or an adjacent leaf. It can not feed directly beneath the case, therefore, feeding results in many disk-shaped patches of green ringed by skeletonized tissue (Figure 3,A). The latter gives the damaged area a lace-like design. It is during this transition from leafminer to skeletonizer, usually in early July, that caterpillars are most vulnerable to insecticides. Finally, holes in the leaf result when each caterpillar constructs it's oval case. The case, or shelter (Figure 1,B) is made from two discs of leaf tissue that the insect removes from the leaf and lashes together with silk. Silk is also used to attach the case to a

substrate, usually a leaf. The caterpillar feeds beyond the perimeter of the lower, smaller disc (Figure 3,B), but is rarely visable because the larger upper disc serves as a roof that covers its' entire body (Figure 3,C). The case is portable and whenever the insect moves to a new feeding site, so does its' shelter!

Presumably, this ingenious case-making behavior protects caterpillars from adverse weather and many natural enemies. The case is enlarged by cutting successively larger discs each time the insect molts. Molting is a process by which the caterpillar sheds its' old skin and creates a new one. This phenomenon, inherent to all insects, is necessary for the caterpillar to grow and progress to the next larval stage.

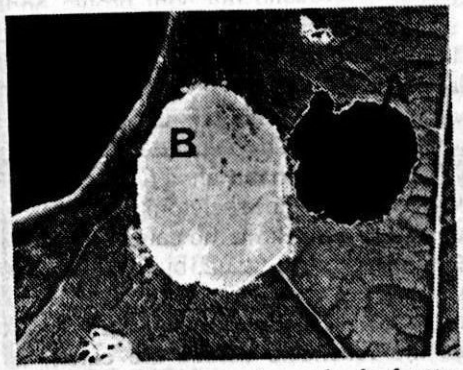


Figure 1. Close-up of maple leafcutter damage (A) and shelter made from leaf discs (B).

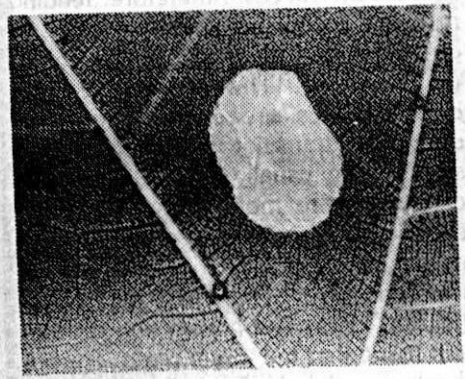


Figure 2. Example of feeding damage caused by a leafminer.

Figure 3. Maple leafcutter feeding results in patches of skeletonized leaf tissue (A). Note the top (B) and bottom (C) of the case, which has been turned over to expose the leafcutter caterpillar (white arrow).

Figure 4. Typical appearance of a sugar maple leaf infested by maple leafcutter.

Life History

Moths deposit eggs from mid-May to early June, but because the adults are very small, they are rarely observed unless populations are very high. During outbreaks, however, the small, steel blue moths with yellowish-- orange heads are readily seen on the undersides of leaves. The combination of discolored foliage, holes that result from disc removal and the presence of oval cases attached to leaves, branches or tree trunks, are the most readily detectable signs of the insect (Figure 4). Caterpillars emerge around mid-June from eggs that are deposited in small pockets pierced by the female moth on the underside of sugar maple leaves. When larvae complete feeding in late August or early September, they drop to the ground or descend trees with their cases in preparation for overwintering as pupae amoung the fallen leaves. At this time of year, sugarbush owners are often presented with a rather bizarre sight as hundreds of brown pieces of leaves "walk" down tree stems and across the ground!

Consequences of Defoliation

Early in an outbreak, extensive feeding damage is usually confined to regeneration or mid- and lower crown foliage of overstory trees. Defoliation usually becomes evident in late June or the first week of July, but unless populations are very high, damage may not be obvious until late August. The earlier that heavy defoliation occurs during the summer, the less opportunity the tree has to produce adequate food needed for current growth and for reserves that will be required the next growing season. Consequently, in sugarbushes that are heavily defoliated, production of sap with lower than normal sugar content is likely the following spring.

In a recent outbreak of maple leafcutter in Vermont during the 1970's, a few pole to small sawtimer-sized stands experienced extensive crown dieback after only one year of heavy leafcutter defoliation. Mortality averaged 10% of trees six inches in diameter and larger. Forty-three percent of the remaining trees were in poor condition. In general, however, throughout the 42,000 infested acres, significant tree stress did not occur until trees were subjected to three years of heavy browning. Degree of stress was determined from annual samples of root starch. Low starch levels indicate low tree vigor and represent the end product of severe stress. After one or two years of heavy "browning", sugarbush owners should assess the condition of their trees and, if appropriate, consider control measures. State or Provincial forestry agencies should be consulted before making a pest management decision, however. These professionals may assist you with the evaluation and will bring you up-to-date on control recommendations.

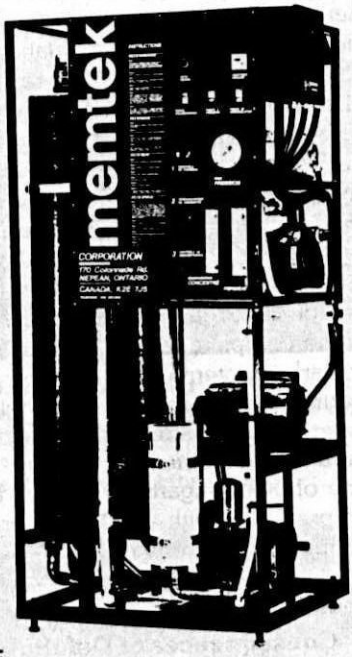
ACKNOWLEDGEMENTS

We thank Mr. H. Brent Teillon and Mr. Ronald S. Kelley, Department of Forests, Parks and Recreation, Montpelier and Morrisville, Vermont, respectively, for providing editorial comments and unpublished observations about maple leafcutter.

New From MEMTEK: ECONOTEK

Memtek is proud to announce the addition of the Econotek Model to its line of Maple Sap Concentrators.

We offer three sizes: Econotek-300
Econotek-600
Econotek-900
(Discounts apply)



These machines are designed for the do-it-yourself Maple Producer.

They are a very basic machine consisting of the following:

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ARCHIES SUGARBUSH

Dear Mr. Editor,

My wife she sez, "Truthful Archie, please tell that nice Mr. Editor man about the storage problem we had the season after the season of the blue snow."

"Well, ya see, it was like this. Our storage tank sprung a leak. It was the concrete one we used for the olympic swimming practice team during the summer months. It only held 2 millian gallons, which wasn't quite enough for our 16 evaporators, 5′ x 20′all of them. Why, we had to increase the size of the feed pipe from 6″ to 8″ when we got a good head of steam up.

Well, anyway, this here contractor who built water towers for cities over extended and ordered one too many. Now that contractor offered me a real discount and he would set it up, too. 3 million gallons. What I liked about it was the feed pipe, full 12 inches.

Now we waz set up on the edge of the town of Job Switch, which was 4 miles from Spurline. The next summer there waz a drouth and the mayor of Job Switch condemned that thar tower, sez it twasn't safe. He used it to store water for both cities.

I really didn't mind cuz I had my fill of 12″ feed pipes. Ya see, this one busted and all that pressure of the 3 million gallons of 4% sap caused so much erosion, it washed away all them beautiful evaporators. The U. S. Park Service called that section between Job Switch and Spurline the "Little Bad Lands", just like the "Big Bad Lands" in South Dakota.

The next year we decided to make syrup on a smaller scale, went back to the round 40 where we only tapped 80,000 trees,

Your truthful friend

Archie

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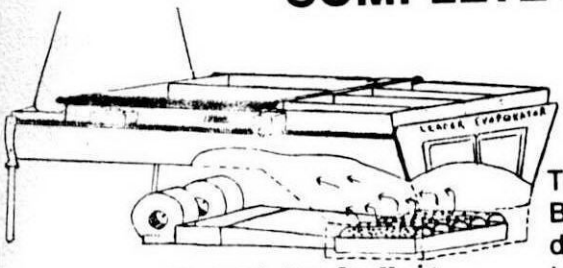

Forced Draft Unit

This unit will increase the BTU's by 10% to 20% and reduces the wood consumption by 30% to 50%. Can be installed in any wood fired arch.

LEADER KING VERMONT EVAPORATORS

STORAGE - GATHERING TANKS

MADE WITH DOUBLE SEAM LOCKS FOR DURABILITY

RAITHBY ECONOMIZER

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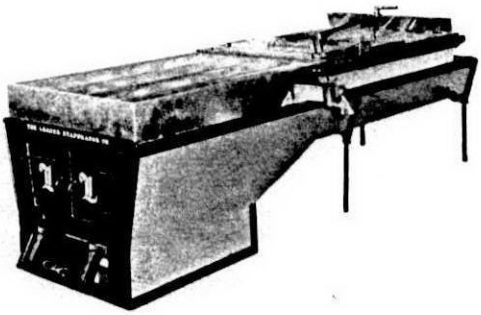

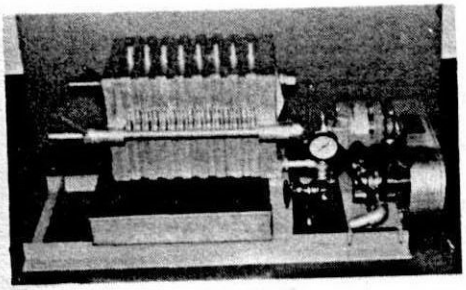

Leader Maple Syrup filter press.

10" plate & frame filter Press, filters upwards to 150 gallons before needing paper change. No cloths needed.

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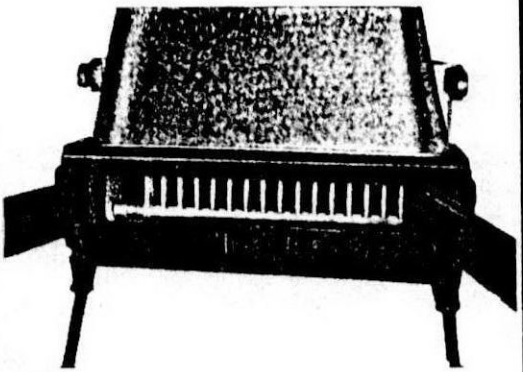
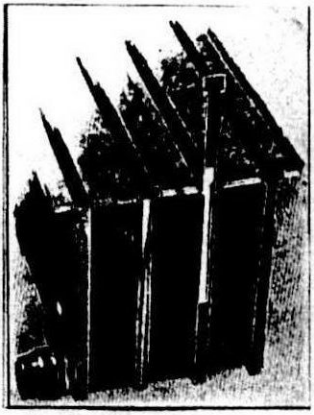
COMPARE QUALITY BEFORE YOU BUY

REAR VIEW OF LEADER ARCH



We have built the rear of the Leader arch of the same quality castings, featuring wide doors for the convenient cleaning of flues. It is very essential that flues be kept clear of soot and carbon if best results from fuel are to be obtained. A flue brush is included with each rig. Note the seamless drawn copper drain pipe 1 1/8″ square, firmly soldered to the bottom of the flues which, through a 3/8″ hole in each, are quickly drained, flushed and automatically cleaned.

Have A Good Summer



LEADER FLUE CONSTRUCTION

Notice the double locked seam construction used in our flue ends resulting in four thicknesses of metal at this point. The ends are then saturated with hot solder. Each step is carefully brought out in the picture at the left. To give added protection the flue ends at the front of the flue pan which come in direct contact with the flames are also soldered on the inside. These sections are then fastened together by a special method of locking seams which ensures a tight rigid joint. This method eliminates any danger of moisture accumulating in the seam itself. The inside of a Leader seam has never been known to rust out. Notice heavy brass flange securely attached to end of drain pipe and side of flue. Here again you see that extra quality found throughout the LEADER.