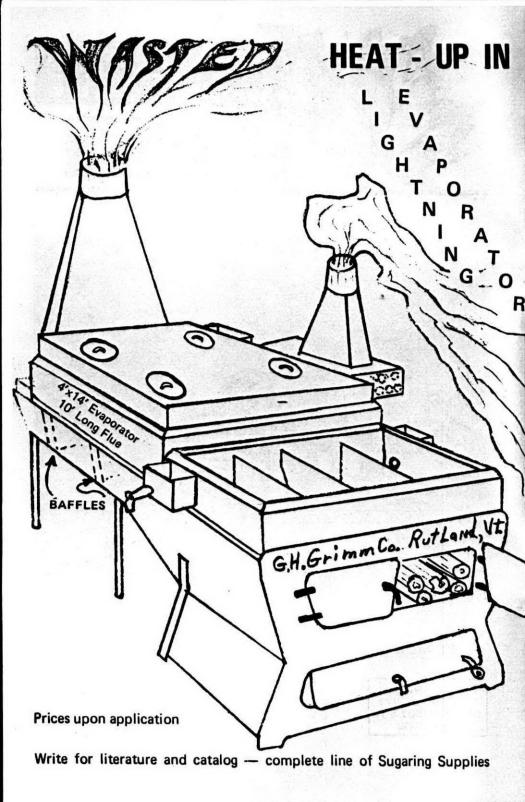


Vol. 21, No. 2

July 1981

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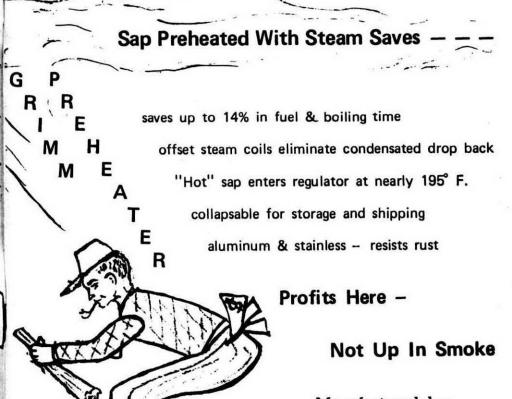
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COVER PICTURE

Intagilo Print (done with acid on steel) entitled "High on the Mountain," by Susan Duncan, Bainbridge, N. Y. Susan graduated in May from Marywood College, Scranton, PA.

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Editorial

This issue is late because we didn't get the material on time. It seems to be getting worse so - - from now on we'll have to stick to the deadline. ONE MONTH BEFORE THE DATE OF THE ISSUE.

On the lighter side, if you're going to Canada for the Council meeting this fall you'll find no difference except that Canada is now "metric". This should present no problem. Just remember: a meter is 1,650,763.73 times the wavelength in a vacuum of the unperturbed transition (2p10-5d5) of krypton 86.

COMING EVENTS: NEW HAMPSHIRE TOUR

The 1981 meeting will be held in Jaffrey Center at Bacon's Sugar House on Saturday July 18th at 10:00 AM.

At Bacon's all sap is gathered automatically by vacuum and pumps. After a picnic, a look at commercial exhibits, and Bacon's operation, you will next visit Dan Johnson's Sugar House where Dan has a new Reverse Osmosis machine, very efficient filling equipment, and beautiful location. The last stop on the tour will be at Ed's Sugar House where Ed, a natural mechanic, will have many interesting things to show you including his very active Ski-Doo dealership.

For more information call Bacon's Sugar House, Jaffrey Center, N. H. 03454. Tel. (603) 532-8836.

NEW YORK TOUR

The 1981 New York Maple Tour will be held in Erie and Wyoming Counties in western New York on August 3 and 4.

Assembly point will be at the Erie County Forestry Sugar House located in southeastern Erie County. Several maple operations will be visited during the tour illustrating good sugar bush management techniques, sap collection and evaporation, syrup packing, and marketing.

A tour schedule describing the maple stops on the tour, list of area lodging and campsites, and other information may be obtained by writing: Lewis J. Staats, Extension Specialist, John Brown Road, Lake Placid, N. Y. 12946. Phone: 518-523-9337.

PENNSYLVANIA TOUR

The 1981 Pennsylvania Maple Tour, hosted by the Potter-Tioga Maple Producers Association will be held on Friday and Saturday, October 2 & 3. Registration, at 11:00 AM, will be at the Tioga County Fairgrounds in Whitneyville, just off Rt. 6 between Mansfield and Wellsboro.

The Friday PM tour points of interest in Potter County include the Pennsylvania Lumberman's Museum. Dinner and program will be at the Fairgrounds Friday Night.

The Saturday tour in Tioga County will include a small Reverse Osmosis machine.

Early room reservations necessary for overnighters. Write Wellsboro Chamber of Commerce, 120 Main St., Wellsboro, PA 16901. Facilities for campers at Fairgrounds. For complete information contact Tioga Co. Coop. Extension office, County Building, 118 Main St., Wellsboro, PA 16901. Tel: 717-724-1906, Ext. 266.

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COMING EVENTS

22nd Annual Meeting of the
NORTH AMERICAN MAPLE SYRUP COUNCIL

Fall Meeting of the ONTARIO MAPLE SYRUP PRODUCERS ASSOC.

and the

INTERNATIONAL MAPLE SYRUP INSTITUTE

October 19, 20, 21, 1981 Registration — Sunday October 18th Highwayman's Inn

Orillia, Ontario, Canada L3V 6T4

FROM THE CHAIRMAN

It happened again, we were caught with our buckets and tubing down! Only the optimistic were ready for the month early syrup season. The early areas, I believe, made a fair to good crop. As for the medium to late season, most report a good to excellent crop. Maybe not as much sap as other years, but it was sweet, and the quality and color the best in years. There seems to be plenty of the top two grades left over, but no medium or dark syrup available. Syrup sales were about the same as last year but with more interest in smaller containers. Bulk prices have dropped, maybe 25% in some areas for some grades.

We now look forward to the annual summer tours. The producers and Extension staff cannot be thanked enough for the work they put into these programs. The best thanks though, would be your participation in their tours.

The Ontario Association in dispensing with its summer tour, and are anticipating having a bus tour into

Quebec. More information will be available shortly from Mr. John Butler, Box 340, Elmvale, Ontario, Canada, LOL 1PO.

In the Fall, comes the Council Meeting. This year it is to be held at the Highway man's Inn, Orillia, Ontario. Dates are October 19, 20, and 21. The Inn in located on Highway 11, at the junction of highway 12, 75 miles north of Toronto, near the Toronto International Airport.

The committee is looking forward to a large turnout. The Ontario producers would like to show you some of the hospitality which has been shared in the past by our gracious hosts. As for anyone crossing the border for the first time, you will find no difference, except that we are metric! But, your dollar is worth 16 to 17 cents more here, so we encourage you to take advantage of it.

Following the meetings, we will supply you with maps of the locations of different producers which will be opening their camps for you.

The committee has been working on the agenda. Taking the format used last year, they would like to have a large equipment display again. However, we may have to put up a tent, with security, if enough interest is shown. There is a possibility of a small charge to exhibitors of under \$20.00 if a tent is needed. If anyone is interested in space, please contact myself or the extension office, address above, telephone: 1-705-322-2231.

Each Fall the Ontario Association holds their annual meeting. They will hold it at the same time, with a 2 hour business session on the Tuesday morning and Council Meeting will be the rest of their program. Again, this year, the International Maple Syrup Institute will be holding their general meeting with their business session on the Wednesday morning.

So, we are really trying to get organized as early as possible. Some of the highlights will be:

SILVICULTURE AND TUBING SESSION — thinning and management of sugar bushes, washing tubing and maintenance of mainlines, etc. Co-ordinator - Lewis Staats.

EVAPORATION SESSION — A producer's first year with R. O. and vapour compression units. Also, Prof. George Raithby's ECONOMIZER, which uses steam from your present evaporator. Co-ordinator — Melvin R. Koelling.

MARKETING SESSION — Marketing syrup as maple butter and sugar, roadside stands, etc. Co-ordinator — Everett Willard.

We would like to hear from anyone who would like to contribute names of those doing a good job in any of the above mentioned or other categories. Please contact myself or John Butler if you have information that will be helpful. We would like to put on as informative a meeting for you as possible.

If we don't meet on the tours this summer, we will see you in October in Orillia.

> Your Chairman, Ronald N. Shaw

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IMSI NEWS

by Gordon Brookman

Since last October I have traveled over most of the maple production area for the International Maple Syrup Institute. Here are some thoughts I've had.

1. Are we all doing the best job possible of merchandising our products? Couldn't we work more cooperatively so it could be made available wherever people travel — thruway service areas, airports, etc.

- 2. How about new uses for Maple, such as Maple candy bars, Maple milk shakes, Maple sundaes, Maple recipes for cooking where sweetening is used to a large enough extent to give the finished product a maple flavor. Maple could be developed to the extent that vanilla and chocolate are now used.
- 3. Maybe we need to check out Federal and State Laws to catch and prosecute packers who sell imitation syrup as maple.
- 4. What about a national campaign to promote maple milk shakes and sundaes using pure maple syrup?
- 5. Promote pure maple as a high energy, easily digested health food instead of the idea that it is fattening.
- 6. An intensive effort to correct and try out maple recipes and promote the good ones nation wide.
- 7. Promote a 25% maple blend for pancake syrup for restaurants and hotels where cost is a factor.
 - 8. Work with State and Provincial

Foresters at their maple schools and clinics to stress the importance of marketing and how to do it.

Using Maple Queen and King contests to make money to promote maple and get coverage of news media.

10. Why not make money for promotion through making a label and selling T-shirts, jackets, bumper stickers, patches, etc. "Maple Makes Everything Taste Better".

11. Have an honor system for all producers in Canada and U.S. to send I cent per pound to the International Maple Syrup Institute for promotion. If we charged 11 per gallon more for our syrup, it wouldn't cost the producer anything.

12. Last but not least, and by far the most important. Why not establish an International Maple Syrup Bank. One year we have a good crop of dark syrup and not enough market; the next, more market than syrup. This year it is light syrup - - what will next season be?

What is your choice to deal with this year's crop? Should we cut prices, thus discourage production and spoil our market? Or should we do a better job of advertising, merchandising and marketing and hold some syrup over to the future and maintain a fair price for our product?

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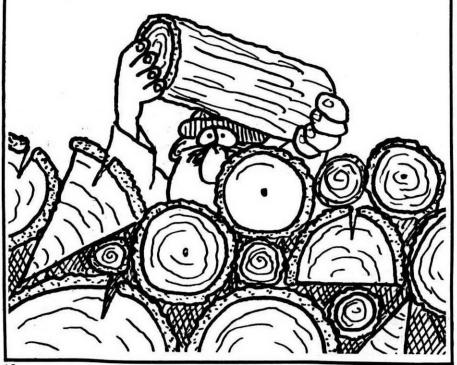
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Garner P. Mitchell, center, winner of the Pennsylvania Maple Producers Association Award of Merit, is pictured with Ed Curtis, of Honesdale, left, President of the Pennsylvania Maple Syrup Council, and right, Robert McConnell, of Coudersport, a maple producer and former partner with Mitchell.

Garner Mitchell Wins Maple Producers Award

Garner P. Mitchell of Tunkhannock, Wyoming County, received the Pennsylvania Maple Producers Council Award of Merit at the association's annual meeting at the Pennsylvania Farm Show Thursday, January 15.

Now a retired Potter County Extension Agent, Mitchell played a major role in the establishment of the Potter-Tioga Maple Producers Association in January 1964. He helped northern tier maple producers in developing methods of marketing bulk syrup in 1963. That summer he attended a meeting at Penn State to consider formation of a state association.

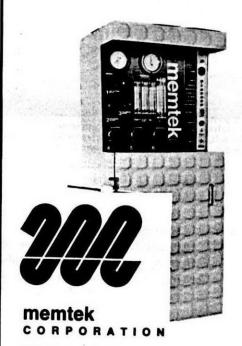
Follow-up of these activities resulted in the formation of the Potter-Tioga Association.

An experienced maple producer in Potter County, Mitchell served as an advisor to the Potter-Tioga Maple Producers Association from its formation until the present. He assisted in setting up the state maple tour in Tioga and Potter Counties in 1966.

Mitchell also was instrumental in organizing the Potter-Tioga Maple Festival in 1967. He has served as chairman of this annual event as well as participating in many of the activities surrounding the festival.

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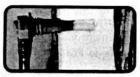
Our equipment was developed with maple syrup producers in mind. Three model series are available: MRO 50/200 is an electrically powered refrigerator-sized unit: MRO 400/800 is also electrically powered and suited to larger operations of up to 25,000 TAPS; MRO MOBILE is a self-contained, dieselpowered unit, designed for power-deficient areas.

All the equipment was designed around our vertical membrane concept, permitting easier draining and cleaning of the system. Other special features include: insulation, internal heater,



Vacuum tubing system for maple sap gathering.

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The sap is taken from the tree with use of a 5/16" threaded spigot. The sap then flows through 5/16" tubing to the main lines



A double fork is used to connect the 5/16" secondary lines to the main line



The main lines convey the sap to the sugar house.



In the sugar house, the sap flows into a vacuum release tank, which is connected to a pressure regulating



Vacuum pumps are used to create a suction in the release tank. This vacuum action causes the sap to flow through the tubing to the sugar house at increased flow.



A float device either electronic or mechanical is needed inside the release tank to determine when it is full. The sap is then transferred into a large reservoir for storage, until fed into the evaporator.

Exclusive features

New threaded spigot, equipped with grooves at the intake, serves to draw the sap from the new growth layers of the tree. As a result of numerous tests conducted at our experimental sugar bush, we have determined that spigots with grooves at the intake will increase flow rate by 20 to 30% over ungrooved spigots.

New spigot cap, threaded to fit the spigot. After sap flow ceases, this completely closes off the spigot, allowing the system to be easily cleaned and flushed in the bush

New hardness controlled 5/16" tubing, reinforced with lateral ribbing which prevents its collapse, such as when sharply bent around a tree or used under high vacuum pressure. It will also withstand high pressure needed during cleaning.

Advantages in comparison to buckets

The IPL VACUUM TUBING SYSTEM can easily double the

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A most important point is that the IPL specialist estimates at no cost the needs of each sugar bush. In order to insure maximum production, our company provides free of charge an expert team to assist the producer in the initial installation of the system.

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MAPLE QUESTIONNAIRE

The Cooperative Extension Association of Essex, Franklin, St. Lawrence, Jefferson, Clinton and Hamilton Counties will soon be sending out questionnaires to the various maple producers in their areas. The goal of this project is to determine the marketing methods of each operation and whether there is an interest in developing markets in the lucreative urban areas.

This questionnaire is the combined efforts of the Maple Producers Association, the New York State Department of Agriculture and Markets and the Cooperative Extension Association of each county. Please fill out and return these forms, as the information will be of great value for those involved.

Here is an example of the questionnaire for those of you that for some reason may have been over looked and would like to participate in the project.

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QUESTIONNAIRE -

SURVEY

Northern New York Maple Syrup Producers.

No name needed Date

"Grade B" (Commercial)

_____gallons.

Do you sell other maple products? ____

If so, what _____

PRODUCTION

Average amount of syrup produced each year ______gallons.

Number of taps ______

Do you buy sap? _____

1981 Production "Grade A"

Light Amber _____gallons.

Medium Amber _____gallons.

Dark Amber _____gallons.

MARKETING

Retail

Marketing methods and prices received.

Amount sold Price/Gal.

Wholesale ____gal. ___

Sold to dealers

for resale to _____gal. ____ processors

Cont'd. on page 16.

MAPLE MADNESS

(With apologies to Joyce Kilmer)

I think that I shall never see
A bossy like our maple tree,
A cow whose ample teats produce
A quantity of maple juice;

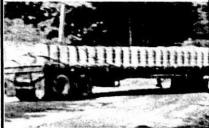
Who needs no grass or grain or hay, Who needs no milking twice a day, Who needs no breeder, needs no vet, Who needs no loud alarm clock set;

Who soaks up sunlight through the year From our polluted atmosphere And when the time arrives to tap Will give abundant pails of sap.

On January days I dream
Of brimming pails of Jersey cream,
But when in March the sap flows free
I'll take the sugar maple tree.

Marie A. Curtis Journey's End Farm Newfoundland, PA





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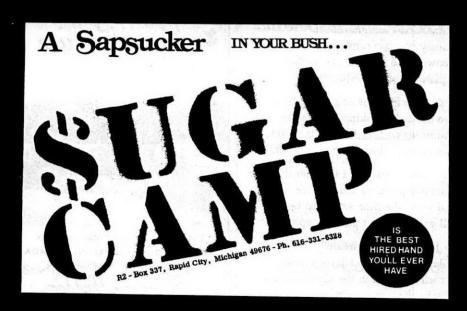
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Cont'd from page 15 Mail order ____ Other ways How do these prices compare to pre-Do you advertise or otherwise pubvious years? licize the availability of your syrup? How do you deliver? Within the county _____ If so, by what means? Adjacent counties _____ Cities (Albany, Syracuse, Etc.,)____ Would you be interested in marketing to a major Urban Market under an "Adirondack" label? _____ Vermont ____ Would you be interested in a maple cooperative for assistance in supply If you sell direct, do you do so: purchases and marketing? At home _____ Would you be interested in participa-Roadside market _____

Farmers market _____



ting in our Adirondack Maple Fesitival

in the fall?

Is Acid Rain Affecting the Maple Industry?

Warren Balgooyen Director/Naturalist Teatown Lake Reservation

Evidence is accumulating that acid rainfall is affecting the growth and general vigor of many hardwood species in the Northeast. A recent joint study by Cornell and Yale suggests that the rate of hardwood growth in our region has declined by 14 per cent. The sugar maple has been in a noticeable state of decline for some years now in many regions. Salt has been blamed for roadside tree declines but does not explain why maples far removed from highways appear to be losing ground. The maples in our sugarbush are not overtapped. Yet they have been in poor health for the past several years. Many branches are dying in the crowns of our trees and leaves are of poor color and smaller than normal. As an experiment, I limed several maples in the fall of

1979 and then root fed the trees. Those treated showed a remarkable improvement the next season. Leaves were full size and of good dark color. Crowns appeared thicker. While I am a naturalist and not a forest pathologist, I wonder if acid rainfall may be leaching calcium from the woodland soils or perhaps tying up trace elements in the soil causing our maples to slowly starve. Acid rain may also be causing toxic metals to be released in the soil. Taken up by the roots, these metals may poison the tree. The application of lime and fertilizer certainly can't hurt for those who have unhealthy maples. Control trees left untreated here remain in poor condition. Those limed but left unfertilized by me were later fertilized inadvertently by some enthusiastic volunteers so I cannot say whether it was the lime, the fertilizer, or both that improved our maples in this rather crude experiment. Perhaps some of your members might care to experiment further

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CAN WE HELP YOU WITH YOUR MAPLE REQUIREMENTS?

American Maple Museum

by Gordon Brookman



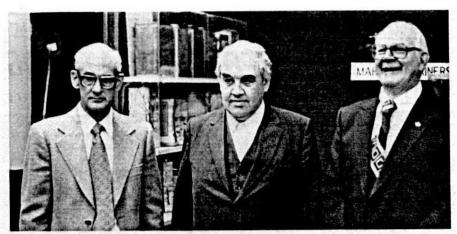
Saturday, May 16, 1981, was a big day in Croghan, N. Y. The American Maple Museum was opened to the public for the first time in its new location. The Lewis County Maple Producers need complimenting on the good job they did in starting the Museum in Beaver Falls, four years ago; and now moving its contents into its new location, and permanent building in Croghan. Anyone with maple antiques or unique maple pictures or materials should donate them to the American Maple Museum.

Now for the highlight. Three very dedicated and well-known maple producers were inducted into the Hall of Fame. First was Lloyd Sipple, of Bainbridge, New York, introduced by Bob Lamb. Among the many things Lloyd has done for the Industry are: providing a proving grounds and experimental station for researchers to prove their ideas in an operating maple operation. To name a few: Central Evaporator House, evaporators in a series, plastic tubing, ultra-violet lights to kill bacteria makes it possible to hold sap and syrup in tanks, steam finishing pans, reverse osmosis to take water out of sap. Making Maple Sugar 18

and Cream machines to make it possible to produce Maple Sugar and Cream more efficiently, crystal coating of sugar cakes to give them a longer shelf life, and many more. Also Lloyd helped found the North American Maple Council, served as chairman for 2 years. Has edited its Maple Digest ever since it was first published. By the way, if you have any interesting Maple News or Research you want published, send it to Lloyd. The digest can only be as good as we help make it. It is still a good source of information for maple people.

Lloyd helped start the New York State Maple Booth at the State Fair in Syracuse, and has managed it for more than 25 years now. He has provided many more services which space does not permit me to include.

Second on the program was Ture Johnson of Burton, Ohio, introduced by Paul Richard of Chardon, Ohio. Ture was another of the original founders of the North American Maple Council and has represented Ohio on its board of directors ever since; including serving as its chairman for two years. For the past 25 years or more



Lloyd Sipple, Nelson Widrick and Ture Johnson at the American Maple Museum.

he has involved his time and timeless efforts to help the Ohio Maple Producers do a better job with their industry both in production and marketing; cooperating with the North American Maple Council and Producers all over the North East for the betterment of the Industry.

Third, but not least, was Lewis County Local Man of the Year to be inducted into the Hall of Fame, Nelson Widrick; who has owned and operated a dairy and maple farm in Lewis County all his life and still is. Also, Nelson is well known for being a supplier of maple syrup equipment and has used his farm as a collection point and market place for bulk maple syrup for many years. He is known by syrup buyers all over the North East.

Another highlight of the weekend activities was the dedication of the new building purchased last Fall by Robert and Florence Lamb to house the American Maple Museum. In the photo on page 18 Mr. and Mrs. Lamb are being presented with a plaque and photo by Warren Lyndaker. This photo and plaque will be hung in the hall as

you enter the museum to remind every visitor of their generosity.

The Board of Directors invite maple producers and friends to visit the American Maple Museum this summer. It is open from mid May through Labor Day. Hours are: Monday, Thursday, Friday and Saturday from 11:00 a.m. to 4:00 p.m., and Sundays from 1:00 p.m. to 4:00 p.m.

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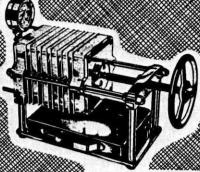
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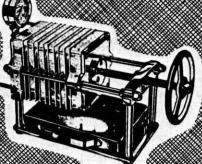
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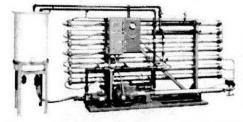
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Vacuum Transfer System

Russell S. Walters
Research Forester, USDA Forest Service
Northeastern Forest Experiment Station
Burlington, Vermont 05402

Installing a transfer tank in a vacuum sap collection system may increase sap yields if the vacuum pump is a long distance from the sugarbush. Vacuum loss due to friction inside a pipe increases with distance. The vacuum transfer system reduces such loss. During two maple sap flow seasons in northern Vermont, larger volumes of sap were collected from a pipeline with a vacuum transfer tank than from a similar pipeline without a transfer tank. The pipeline with the

transfer tank maintained higher vacuum levels at the taphole.

WHAT WE DID

We conducted this study in a typical even-aged sugarbush ¹ in northern Vermont. The trees ranged from 16 to 28 inches in diameter. In 1973, we tapped 111 study trees and the next year 135. Three tapholes were drilled in each tree in late February of both years.



Figure 1. The sap collection networks were constructed of 5/16 inch plastic tubing as unvented, aerial-line systems with droplines at least 18 inches long. The small lateral lines were connected to 1/2 inch main lines.

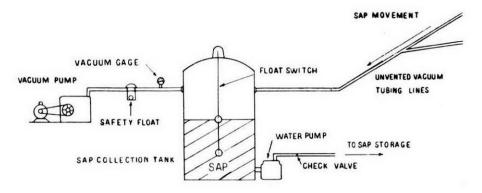


Figure 2. Schematic of a sap collection vacuum tank. The float switch inside the tank automatically controls the water pump for sap removal.

Each of the three tapholes per tree was connected to one of three parallel pipeline systems. The systems were identical except in the method by which sap was collected from them: gravity, vacuum pump, or vacuum pump with a transfer tank. The plastic pipelines were installed according to recommended procedures (Fig. 1).

In the gravity system, the sap simply flowed downhill through the pipeline to the collection tank. The second pipeline was connected to a 40-gallon steel tank, where vacuum was created by a compressor-type vacuum pump. This tank was emptied by a water pump that was controlled by a float switch inside the tank (Fig. 2). The third system—the vacuum-transfer system (Fig. 3) differed from the vacuum system only in that a second tank was placed in the sugarbush (Fig. 4). Conduit lines from this tank branched out to different parts of the

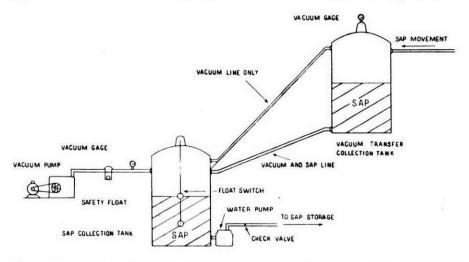


Figure 3. Schematic illustrates how the vacuum-transfer tank is connected to the sap collection vacuum tank.

23



Figure 4. The vacuum-transfer tank is in the sugarbush. Sap flows from the trees on the left into the tank. The upper pipe on the right removes air from the tank, creating a vacuum, and sap travels out through the lower pipe.

sugarbush. This system places the source of the vacuum closer to the trees. The slope from the transfer tank to the vacuum pump averaged about 6%. Two pipelines connected the transfer tank to the vacuum tank: the pipe at the bottom carried sap, while the one at the top evacuated gases, which created a vacuum.

The pumps were controlled automatically by a thermostat so they would run when the air temperature was above 30°F. Vacuum gauges were installed on each vacuum tank, the transfer tank, and each pipeline at the point farthest from the vacuum pump.

RESULTS

The volume of sap per taphole 24

collected by the vacuum-transfer system during each season was greater than that collected by the other two systems (Table 1). In 1973, the amount collected by vacuum transfer was 27% more than was collected by vacuum only, and 109% more than was collected by gravity. The amount collected by vacuum alone was 65% more than was collected by gravity. All of these differences were statisticially significant. In 1974, the transfer system yielded 17% more sap than vacuum alone; this difference was not significant. The transfer tank and the vacuum systems produced 29% and 23% more sap, respectively, than the gravity system. These differences were significant.

The vacuum level created and maintained in the vacuum tank by the pumps was very consistent, about 22.5 inches of mercury (Hg). At the transfer tank, the vacuum level was generally somewhat less, about 18 inches of Hg. The readings at the tapholes farthest from the pumps during the sap flows averaged about 17 inches of Hg for the transfer system and 14 for the vacuum system. The highest natural vacuum level that was recorded for the gravity system was 4 inches of Hg. However, quite often readings were zero, indicating no natural vacuum.

DISCUSSION

Vacuum pumping can often induce

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sap flow even when conditions are not quite right for a natural flow to occur. Vacuum can also increase the sap flow rate from the taphole during normal flow periods. In addition, applied vacuum helps sap to flow quickly through the pipeline; this reduces the possibility of back pressure buildup caused by pipeline overload, which inhibits sap yield.

In the vacuum-transfer system, the two separate pipes from the transfer tank to the sap collection tank evacuated air from the system more efficiently than the single pipe in the vacuum only system. Thus the vacuum level at the taphole in the transfer system was higher, usually by about 3 inches.

In our study, the distance between the transfer tank and the pump was only about 175 yards. If this distance had been longer, presumably, the advantage shown for the transfer system would have been greater. In a sugarbush where the trees are as much as twice that distance or more from the vacuum pump and the collection tank, the transfer-tank system would be more effective and is recommended.

For a more detailed account of this study, see Walters, R.S., 1978, "Vacuum Transfer System Increases Sugar Maple Sap Yield." U. S. Department of Agriculture, Forest Service Research Note, NE-264.

Table 1. Average sap volume per taphole collected by three tubing systems, 1973 and 1974, in gallons.

Vacuum transfer	Vacuum	Gravity flow
11.4	9.0	5.5
139	11.9	3.6
	transfer 11.4	transfer 11.4 9.0

All pairs within the same year differ significantly except those underscored.

Footnote: 1. This sugarbush is located within the boundaries of the Eathan Allen firing range and is available for Forestry research by the permission of the Adjutant General, Vermont National Guard.

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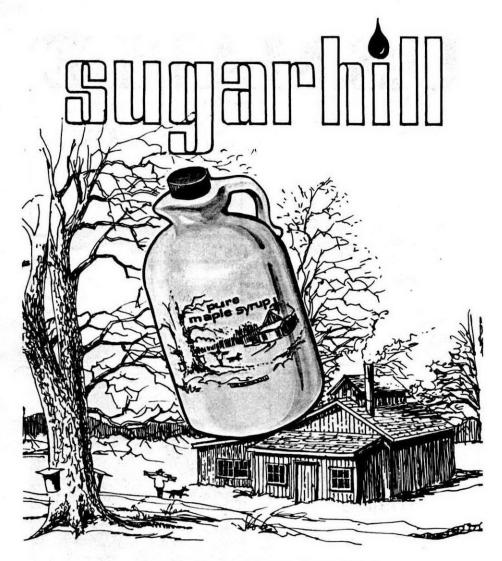
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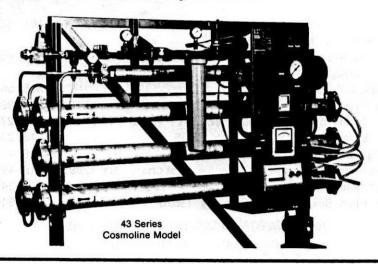
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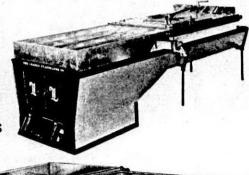
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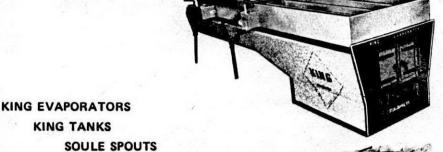
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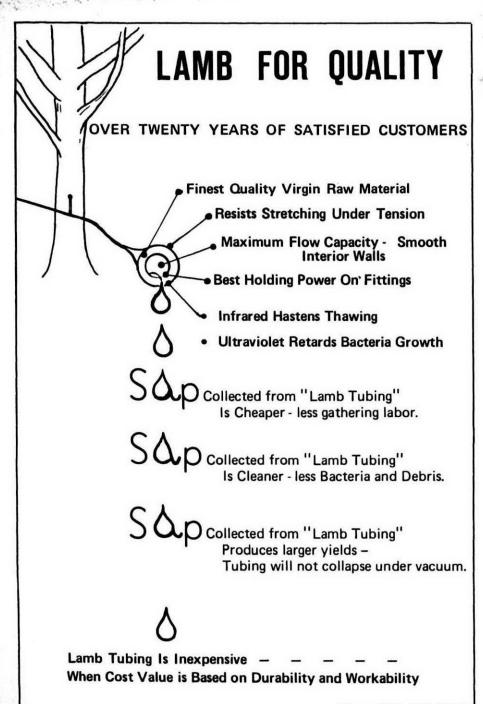
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