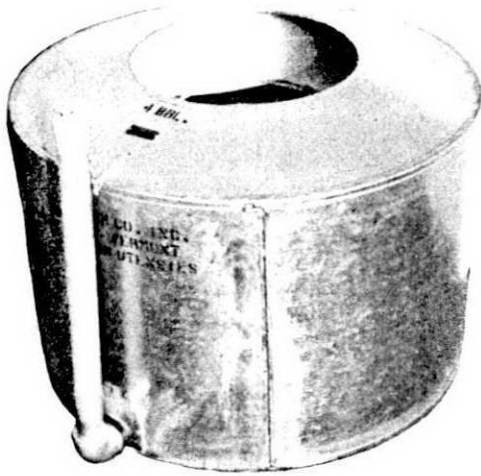


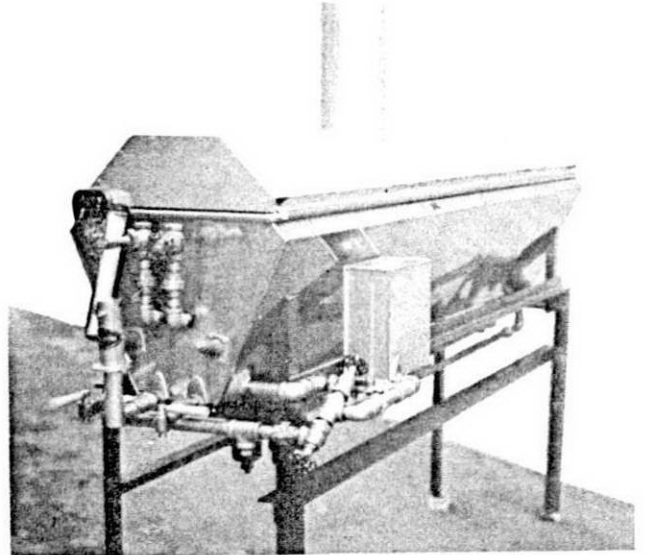
# National Maple Syrup • DIGEST •



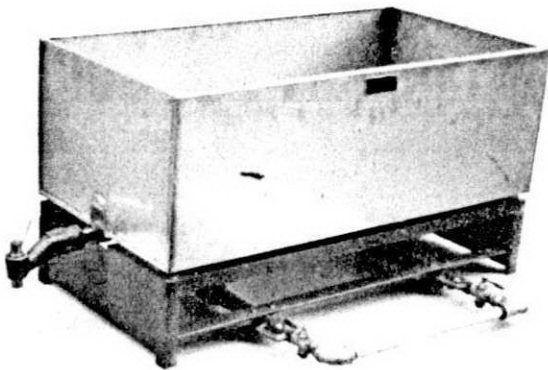
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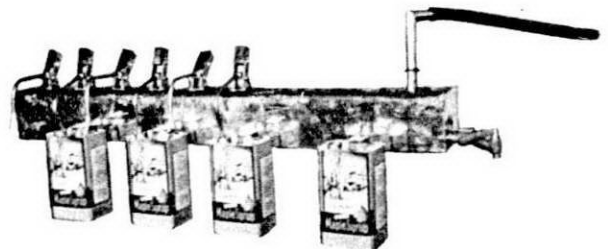
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**COVER PICTURE**

The title of this month's cover  
picture is "New Hampshire's Win-  
ter Mantle Herald's 'Peace on  
Earth' ". It appeared, in color,  
on 1967 Allis Chalmers calendar  
and was so beautiful we just  
couldn't resist stealing it.

**NOTICE  
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The following issues of the  
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Vol. 1, No. 1, 2, 3, 4  
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## Editorial

# Tri-ennial Maple Conference

What makes a conference successful? The program? The people who attend? It's probably a little of both. But when over 200 people, including maple producers, Extension and Research Foresters, County Agents, representatives of numerous state Departments of Agriculture and various industries associated with both the production and utilization of maple products travel to Philadelphia from such far away places as Highland County, Virginia; Morgantown, West Virginia; St. Paul, Minnesota; Athens, Maine; Collingwood, Ontario; Rawdon and Quebec City, Quebec and a hundred other places in between, there must be some attraction. This is supposed to be a dying industry.

Yes, you read it right — a dying industry! According to the U.S.

Crop Reporting Service, production has been gradually declining since about 1918 and everyone knows it really took a nose dive the last two years. I hope this condition was caused by adverse weather and won't be repeated again. Production has leveled off, to some extent, the last few years which, the experts say, is due, in part, to the advent of more central evaporator plants.

Just the other day I heard that the professors in one of our state colleges of forestry consider maple syrup production is on the decline to such an extent there's no sense in bothering to teach their students anything at all about sugar bush management. This is a fine predicament for the producers who think this industry is far from dead. One way to increase production is through good sugar bush management.

Well, this industry isn't dead yet, and I'm sure all who attended the conference in Philadelphia this past October will agree. On Monday, the 7th, the National Maple Syrup Council held its 9th annual meeting, using most of the day to take care of the normal accumulation of business that comes under the jurisdiction of this organization. Some of these are reported elsewhere in this issue.

The seventh Tri-ennial Maple Conference started Tuesday morning. Reports were given that covered all phases of production, control of quality, utilization of the products and marketing. Some of the reports were not very encouraging and I think by the end of the first day most of the group felt maybe the experts were right — maple was, indeed, on the way out.

By the end of the conference, though, a few lights had been lit that overcame the shadows of depression. Fred Winch's report on new developments in the industry was one of the bright spots. Maple promotional activities were described by Ray Foulds, Burlington, Vt.; James Bochy, Somerset, Pa.; Robert Coombs, Jacksonville, Vt. and Adin Reynolds, Aniwa, Wis. Dr. Kissinger outlined the use of germicidal lamps for control of microorganisms making it possible to hold sap for at least 5 days without loss in grade, and this writer reported on the 3 year field tests using this concept. Dr. Underwood gave the results of the first year's operation of the Reverse Osmosis sap concentrator. The meeting closed on the second day with a demonstration of the Reverse Osmosis machine in operation.

By this time, everyone was in a better frame of mind concerning the future of the maple industry. The old wood fired evaporator in a shack in the woods may linger awhile some places but it is probably on the way out, just as the wooden buckets and iron kettles have left the woods and found a home in some antique shop. The horse or oxen drawn sleigh gave way to tractors and trucks, and it's possible plastic tubing may some day take over for all of them.

The central evaporator plants are bringing both specialization and automation to the industry, and they make sense. A farmer wouldn't think of pasteurizing and bottling his milk, so why should he process his sap? Central plants will produce more at a lower cost and provide better distribution of a more uniform product.

By now you folks probably think I'm advocating a complete change that will run the small producer out of business. That's far from true, but he may be in for a change. After all, the automobile put the livery stable operator out of business, so what did he do? He opened up a gas station.

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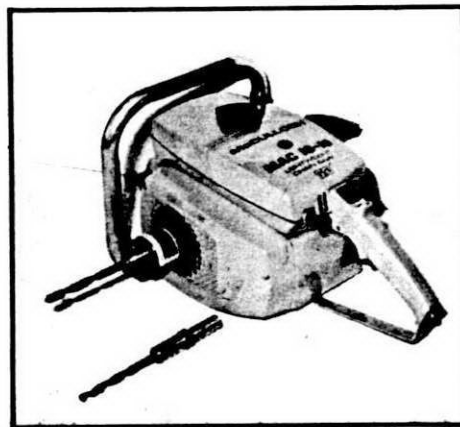
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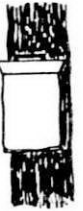


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Pivots to right or left directly on spout without removing from tree. Cover directs sap into gathering pail.

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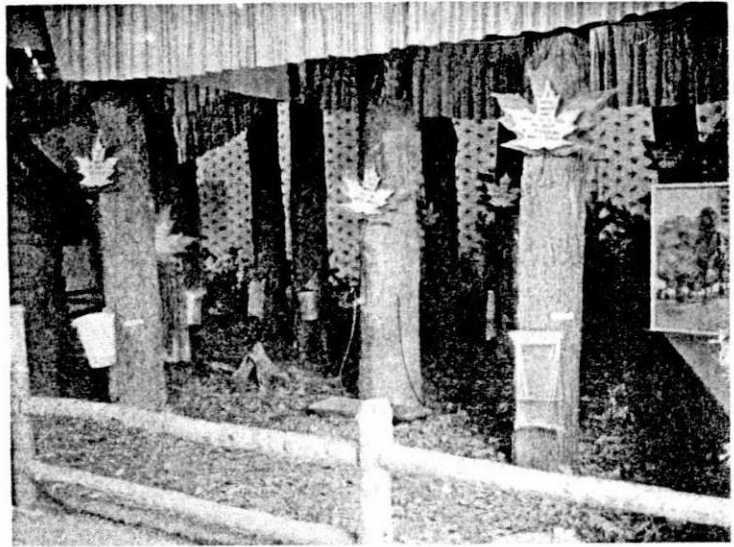
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# Wisconsin Promotes Maple

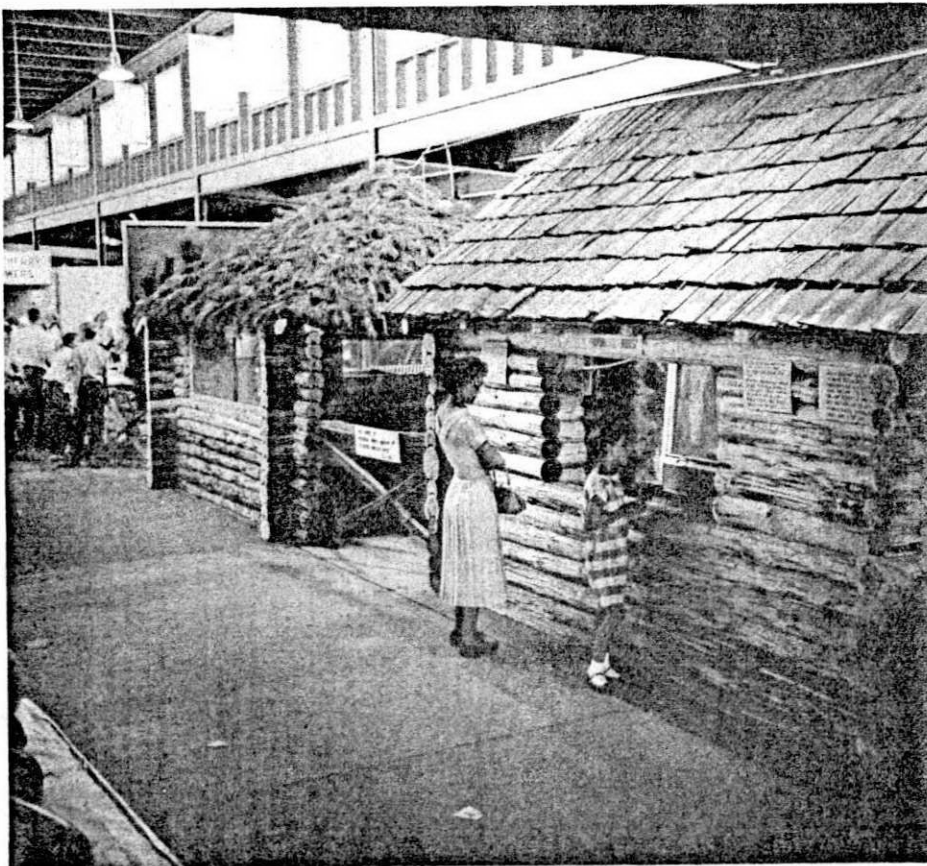
by Adin Reynolds

One of our best promotional activities is at the Wisconsin State Fair, where we have an exhibit that we think is one of the greatest. To briefly describe it, we have been allotted a space in one of the largest buildings on the fair grounds, this space being close to 100 feet long and about 40 feet wide (A complete island display whereby the fair goers can walk completely around it). At one end you would see a "Maple Forest" - - real Maple trees, full size, and reaching to the roof structure before tops are cut off. This woods is enclosed with old fashioned rail fence and among the trees is natural litter - - leaves, brush, and snow. The snow is State Fair snow and doesn't melt. The



trees are all tapped and are dripping sap - - State Fair sap of course. Few people question this sap flow in August and even some taste and believe it to be sweet. All types of collection equipment from the early hollowed wooden troughs through the different buckets to tubing and plastic bags are in use here. You would even find a few squirrels in this area.

Next you would see a beautiful hand made log cabin, every log axed and notched to fit so perfectly that no space is seen between the logs. The building is complete in every detail - even with roof shingled with genuine hand split cedar shakes. (This craftsmanship and design must be credited to our Extension Forester, Ted Peterson. His very special interest and cooperation helped to make this entire exhibit possible). This log cabin is the "Evaporator House," complete with a working model evaporator boiling "State Fair Sap". "Syrup" is shown coming out of a draw-off and filtered. Steam is floating upward and around and carries a Maple aroma throughout much of the building. We don't tell people



that this Maple "smell" is anything but genuine and few people even question it. We try and have a man "attending" the evaporator and answering the thousands of questions put to him. Another log cabin is next, equally well made and perfect in detail, and this is the "Candy Kitchen". Here the bottling and canning of syrup is shown together with Maple Sugar candy being made continuously throughout every day of the Fair. Here too, the boiling syrup reaching the candy stage sends out a true Maple aroma and tempts the appetites of hundreds of people watching the process. Following this, is another hand hewn log enclosure that serves as a sales counter where this freshly made candy is sold along with all Maple products packed in every kind of container. We feature the serving of a Pure Maple Sundae, that introduces people to Maple Syrup and another way it can be used.

Next is a display or exhibit of the winning entries of Maple Syrup that was judged and selected back in May at the Wisconsin State Maple Festival. The names of the producers are shown here too which is proudly viewed by the producers attending the Fair as well as the many, many thousands of Fair visitors. Information plaques are posted throughout the exhibit and helps to inform many fair goers unfamiliar with the Maple Industry. We feel real proud of this exhibit and we believe it is one of our best promotion efforts.

The Wisconsin State Fair topped the million mark in attendance this year and so an awful lot of people, potential customers, were exposed to Maple Syrup at this fair. I might add that we feature our Maple Queen at various events during the fair too.

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Henry J. Kreutter, Alexander, N. Y., had plenty of wood. But cutting the wood, hauling it, stacking it, and then feeding it to the fire was getting more expensive every year. He decided to switch to Agway fuel oil.

"It took only one season to prove that Agway had the answer to rising costs. I figure it takes about four gallons of fuel oil to make a gallon of syrup. You're ahead just on fuel costs. And that's only the beginning," Mr. Kreutter says.

"Once you get your system working right, you've got better heat control. You run less risk of burning the syrup. You get better color. Since you don't have to keep stoking the fire, you can keep closer tabs on the evaporator. That way you can control quality better.

"Since the work is lighter, my father is able to handle it nicely.

"One more thing. Most people don't realize that the cost of fuel oil for this purpose is tax-deductible. The labor for burning wood is not."

If you want to bring down the cost of boiling sap, contact your Agway Petroleum Service. Agway can install the equipment and keep you supplied with economical Agway fuel oil.

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## Ture Johnson Re-elected



At the ninth annual meeting of the National Maple Syrup Council held in Philadelphia, October 7, 1968, Ture Johnson, Burton, Ohio, was re-elected chairman for 1969. Ed Curtis, Honesdale, Pa. and Floyd Moore, Ocqueoc, Mich., were also returned to their respective positions of Vice Chairman and Secretary-Treasurer. For a complete list of officers and directors see the council directory on page 3.

Dr. John Kissinger, Philadelphia Laboratory; A.R.C. Jones, Mac Donald College, Quebec; Robert Moore, Sr., Grimm Evaporator Co. and Les Brown, Leader Evaporator Co. were elected to 3 year terms as Associate Members.

This meeting saw another year of perfect attendance. Never in the nine years of the Council's existence has a member state failed to send a representative. This is quite an accomplishment when the area covered stretches from Maine to Minnesota.

Probably the most important action taken by the council was the unanimous approval of the recommendations of the syrup grading committee. A copy of this is printed in its entirety in this issue.

New York State was approved as the location of the next National Maple Queen Contest. It will be

## Saddled Prominent Caterpillar

by C.F. Handy  
Cooperative Extension Agent,  
Lowville, N.Y.

Sugar maples in Lewis County encountered a severe infestation of saddled prominent caterpillars that attacked more than 100,000 forest acres during July and August of 1968.

Saddled prominent caterpillars feeding on maples were identified a

held in Franklinville, N.Y., at their Maple Festival on the evening of April 11, 1969. Gary Reed, Vermontville, Mich., thanked the Council for the privilege of hosting the queen contest in 1968.

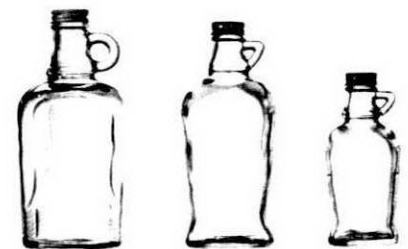
The National Council, never having had a gavel and striker, is now the owner of two. One was presented to them by the North East Forest Experiment Station in Burlington, Vt. The other set was made in Pennsylvania State University from pieces of sugar maple collected from all the maple producing states.

Recognizing the fact that our neighboring Canadian Provinces greatly influence the supply of maple syrup in the U.S., the Council approved a motion to invite these provinces to send a list of representatives from which the Council may select prospective associate members. A committee consisting of Gordon Gowen, Kenneth Bascom, Lloyd Sipple and Lin Lesure were appointed to investigate the can situation. Quality, design and delivery are to be taken into consideration as well as other materials, such as glass, plastics, etc.

After the meeting the entire group went to the Collegetown Inn near Philadelphia where a very delightful and gorging smorgasbord was enjoyed by all.

year earlier in the Belfort area. The infested area at that time was confined to about 200 acres and the caterpillars were nearing the end of their feeding cycle. It was in this area that a great saddled prominent moth population explosion was noted during late April and May of 1968. Each female moth is capable of laying from 400 to 600 eggs. Eggs are laid singly on the leaves, hatch in from 8 to 10 days, the young larvae appear, feed on the leaves of both maple and beech, molt four times, becoming full grown during late July or early August. They then crawl down the trunk or drop to the ground and fashion silk-lined pupal cells in the lower moist layers of leaf mold or in the upper layer of soil, in which they pupate and spend the winter.

More than two thousand acres of maples were sprayed from the air during the last three weeks of July



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# Threatens Maples



Ground view of sprayed area (left) and unsprayed area (right) along a roadway in Croghan area.



The culprit. The saddled prominent larvae crawling on a beech tree. Beech and maple, chief components of the sugar woods in New York are favorite host species of this insect.

and first two weeks in August. Sugar bushes that were sprayed when feeding was first observed remained green with dense foliage. Where no spraying was done, caterpillars stripped all the foliage from the trees in infested areas.

The infestation in Lewis County, starting with 200 acres in 1967 and

spreading to more than 100,000 acres in 1968, is a matter of grave concern for maple producers. In Lewis County, both the Lewis County Board of Supervisors and the District and Forest Practice Board have petitioned the New York State Conservation Department to initiate, compile, and present plans for controll-

ing this pest that threatens the maple, forest and tourism industries of this area.

That maple defoliation can cause severe losses to maple producers is evidenced by a Pennsylvania study that shows defoliation can result in death of about 30% or more of the trees. Studies in eastern New York by Robert Sweet of the Conservation Department, show a reduction of 30% or more in the sweetness of sap when the forest tent caterpillar defoliated maples.

Maple producers in Lewis County are looking forward to 1969 with full realization that saddled prominent moths will be back laying more eggs next spring to hatch into more caterpillars. Producers expect to spray again if an infestation threatens but will be expecting some form of financial assistance from the State Conservation Department.



Aerial photo of road in ground view (photo 1). Sprayed area in left foreground has normal foliage; hardwoods in rest of photo are completely defoliated as is the brush and ground cover.

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# Somerset County Hosts Pennsylvania Maple Tour

by James Bochy, Somerset County Extension Agent

More than 110 persons participated in the third state Maple Producers' Tour hosted by Somerset County Maple Producers last weekend. Including about 35 automobiles, the tour caravan was comprised of maple producers, processors and retailers from Maine, New Hampshire, New York, Ohio and West Virginia; also from Erie, Crawford, Wayne, Pike and Bradford Counties, in Pennsylvania. Coming the farthest to participate were Mr. and Mrs. Ted Harding of Somerset County, Maine.

The two-day affair began with a tour of the John B. Zimmerman maple camp on Route 30, between Jennerstown and Stoystown. In addition to a modern sugar camp operation with steam evaporation, a maple woodlot thinning demonstration was observed and discussed. This woodlot serves as a research area for maple canker disease. The tour then moved on to the Poorbaugh Lumber Company near Buckstown. This is one of the area's largest milling operations, having push-buttons and compressed air controls. A display of maple lumber defects was discussed by the company personnel.

The final stop for the day was at Mountain Meadow Farm near New Baltimore. This modern facility serves as a central evaporator in addition to tapping its own trees. It has been in operation for three full seasons and was built new from the ground up. Two large oil fired, hooded evaporator pans will soon be joined by a third. The most modern ideas for sugar water storage and processing were incorporated into this plant. A tastefully decorated sales room helps to sell the product. Several equipment and products demonstrations were featured.



**MAPLE TOUR PRINCIPALS . . .** Raymond Nessley, extreme left, greets principals of the State Maple Tour which visited his Sugar Shack here Saturday morning. Pictured left to right with Mr. Nessley are: Maple Queen Sally Ann Miller; County Agent James Bochy; President Ernest Miller of the Somerset County Maple Producers' Association; Dr. Clyde Underwood of the Maple Laboratory, Philadelphia; Bud Walters, Somerset; Ed Curtis, President of the State Maple Syrup Council and John B. Zimmerman, a member of the County Producers' Association.

A banquet was held Friday evening at Oakhurst Tearoom near Bakersville. Principal speaker there was Will Ketner, director of Pa. Bureau of Markets, who discussed methods being used to advance the role of the Pennsylvania farmer in today's technological world. "We are working," he said, "to establish a Pennsylvania Agricultural Development Authority to do for the farmer what the state Industrial Authority has done for labor and industry."

Entertainment was also provided by the Silent Knights of Cannonsburg. James Bochy, county farm agent, was master of ceremonies.

The tour was resumed in the Meyersdale area on Saturday morning, beginning with a visit to Raymond Nessley's Sugar Shack located in Meyersdale, home of the Somerset County Maple Festival. Mr. Nessley's central evaporator is gas fired and has operated during the past two seasons. Holding tanks, water

meters, bactericidal lamps, pressure filters and other modern equipment proved to be of interest. A fine kitchen and sales room add to the appeal of this new maple operation. Later Keim's Kamp situated near West Salisbury was visited. This camp serves partially as a central evaporator. In addition to their own extensive woodlot tappings, the Keims buy water from their neighbors. Both steam and oil fired furnaces do the boiling at this camp which hosts auto, bus and train tours during the producing season. The last Camp visited was Wagner's camp near West Salisbury. This rustic camp, in a typical woodland setting, also is the target for numerous tours and tourists. Coal and wood fire the evaporator in a traditional manner. Demonstrations of maple cookery, including sugar and other delicacies, were shown at Wagner's Camp and at Mountain Meadow.

Somerset County's Queen Maple



XXI, Miss Sally Ann Miller, also joined the tour, accompanied by representatives of the Maple Festival. Returning to Meyersdale the

tourists were served a lunch of pancakes, sausage and maple syrup at the Lions Pancake Jamboree, at noon Saturday.

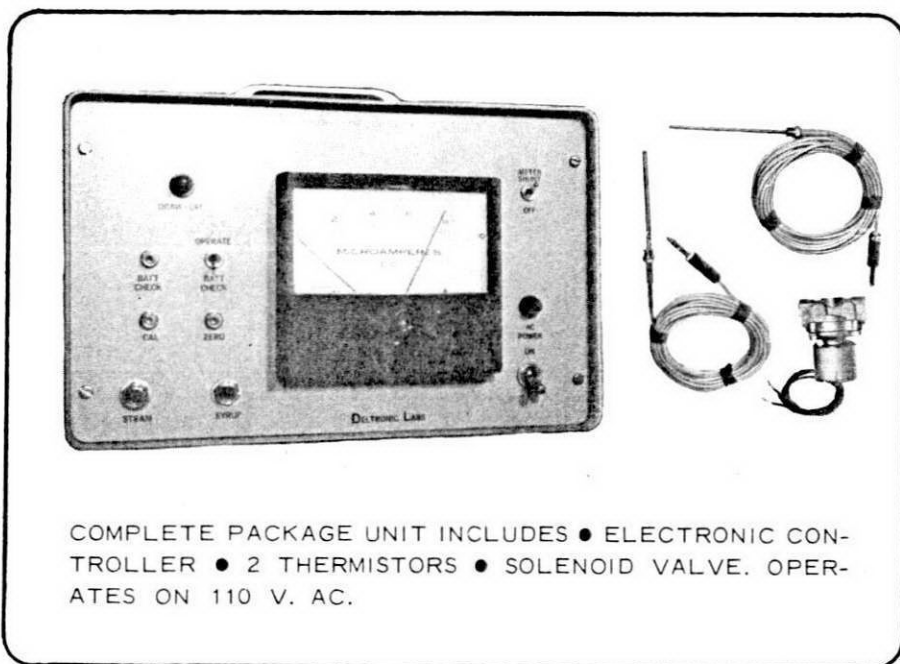
Under sponsorship of the Pennsylvania Maple Syrup Council, in cooperation with Somerset County Maple Producers' Association, the tour was coordinated by the Somerset County Extension Office, with James Bochy as tour guide. Also participating was Ernest T. Miller, Meyersdale, R.D. #3, president of the county organization; Ed Curtis, Honesdale (Wayne County) president of the state Maple Producers and his wife; Robert McConnell of Potter County, secretary-treasurer of the state organization, and J. Clyde Underwood of the Philadelphia Maple Research Laboratory.

Originated in Somerset County three years ago, the state maple tour was held the following year in Potter County. Its purpose is to better acquaint state producers and to keep them informed as to what is new in the maple industry.



Keim's Kamp of West Salisbury was one of the stops on the Pennsylvania Maple Tour. Perfect weather with foliage at the height of its Autumn coloration made for a gala event for the visitors from six states.

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English. Free to those who want  
to ask for it.



# How To Use Ultraviolet Rays For Sap Preservation

by John Kissinger  
Agricultural Research Service  
Philadelphia, Penna. 19118

**Q. Is it desirable to irradiate stored sap with ultraviolet light?**

A. Yes. All sap should be irradiated since it helps keep microbial growth to a low level (prevents fermentation).

**Q. Must all sap be irradiated with ultraviolet light?**

A. No. Only sap which must be held 24 hours or longer. However, as a safety factor, all sap should be irradiated.

**Q. Can spoiled sap be recovered by irradiation with ultraviolet light?**

A. No. Sap which has been degraded by bacterial action cannot be

recovered by irradiation.

**Q. Will ultraviolet irradiation of sap having a high bacterial count improve the grade of sirup made from such sap?**

A. No. However, irradiation will prevent further damage to the sap.

**Q. Does irradiation of sap cause any damage to the sap?**

A. None.

**Q. Should an empty tank be irradiated by ultraviolet light?**

A. Yes. UV light will control microbial growth on the walls of a tank while it is empty.

**Q. Will UV irradiation substitute for cleaning a tank between uses?**

A. No.

**Q. Does foam on the surface of the sap influence the effectiveness of the UV rays?**

A. Yes. Foam must be avoided. This can be done by bottom filling the tank.

**Q. Can anything be done to increase the germicidal effect of UV light on stored sap?**

A. Yes. Use a slow speed mechanical agitator to gently re-circulate the sap, to renew the sap surface exposed to UV light. Renewal of the sap surface is a must if the stored sap is more than 2 feet deep.

**Q. How many UV lights should be placed in a sap tank?**

A. The number of lamps required for a tank is determined by its size. A good rule of thumb is one lamp for each 4 ft. length of the tank.

**Q. How high above the tank should the lamps be mounted?**

A. Only high enough to permit the illumination of the entire width of the sap surface.

**Q. Should reflectors be used on the lamps?**

A. Yes. Without reflectors more than half of the UV radiation of the lamps is lost.

**Q. Should the lamps be kept lighted throughout the sapharvest season?**

A. Yes - and at least one week prior to the season.

**Q. What is the cost of operation of UV lamps?**

A. A 30 watt UV lamp uses the same amount of current as a 30 watt illuminating lamp bulb.

**Q. What is the life of a UV lamp?**

A. Like any light bulb, one month to several years, generally two or more years. Check your lights occasionally. An unlit or burned-out light kills no organisms.

**Q. Should UV lights be cleaned?**

A. UV lights should be cleaned twice a season, but only when the lamps are turned off. Do not clean UV light tubes with soap or detergent - residual scums will completely absorb the ultraviolet rays.

**Q. Is ultraviolet light dangerous?**

A. Yes. UV light can cause irreparable damage to the eyes. Never look directly at an ultraviolet light or at the reflected light from the sap surface or tank walls.

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# Cooperative Extension Workshops

by Dick Howard  
R C & D Office  
Norwich, N.Y.

Cooperative Extension scored three times in quick succession this fall in Chenango and Delaware Counties, N.Y. The first, on the production of maple cream, sugar and other products, was held on October 30 at the Norwich Farm and Home Center. Twenty seven persons attended.

This workshop, chaired by Prof. Fred Winch of Cornell, was presented by a staff made up of Dr. C.O. Willits and Dr. Clyde Underwood of the Philadelphia Research Laboratory with Lloyd Sipple of Bainbridge assisting. The training session followed the "learn and do" procedure with the trainees participating in taste tests, density tests and tests for invert sugars with maple syrup samples. Syrup was prepared and made into maple cream, maple sugar and maple fluff. The chemistry and processes of each demonstration were explained by the staff. Everyone joined in the discussions, asking the experts for answers to problems they had experienced. The experts were, quite often, other producers who offered do's and don'ts that they had learned through years of experience.

This school was aimed at the experienced producer of maple syrup and sugar. Everyone in the maple industry could benefit from the advanced type of training presented.

The second workshop, held in the town of Afton on November 6,

was sponsored by Prof. Fred Winch and this writer. State foresters from three districts covering eight counties, the area roughly covered by the south central Resource Conservation and Development Committee, met in Sipple's woodlot to discuss sugar bush management. Several plots of trees were marked, some ranging in size from 2 to 4 inches and others from 8 to 20 inches, D.B.H. Tree quality, growth rate, and spacing for sugar production was discussed at length. All participants agreed that since very little has ever been published on this subject, more workshops of this type should be held.

The following day, November 7, the third workshop, organized by Robert Lachman of Cornell and Robert Smith of Delhi, was held at the Agricultural and Technical Institute in Delhi. The program was designed for beginners or anyone interested in the production of maple sap.

In the morning about 25 "trainees", both beginners and veterans, listened to slide illustrated talks on modern methods of tapping and gathering sap and the various systems of using and handling tubing.

Adverse weather, which cancelled out the afternoon field trip, didn't dampen the program a bit. Five trees, which just happened to grow in the lab at the college due to Bob Smith's foresight, were tapped. Tubing was installed, dismantled, and installed again. Then

Lloyd Sipple was put on the carpet for a solid three hours with a multitude of questions.

The following day, in Norwich, the R. C. & D. Maple Steering Committee decided more of these workshops should be held throughout the state.

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# National Council Adopts Grading Regulations

Report of the committee appointed by the National Maple Syrup Council President, Ture Johnson, to study and to make recommendations for changes in the names and in the requirements of the four maple sirup grades.

The committee appointed to study maple sirup grades met December 5 at Syracuse, New York. The meeting attended by the full committee was successful in that they were unanimous in their decision to recommend changes in the current maple sirup grades.

Currently the Federal Government and the several maple sirup producing states have essentially the same requirements for the four maple syrup grades but differ in the name designation of the four grades. Currently some of the names in use for the same grades are:

Grade Names		
Federal Gov't	Vermont	New York
U.S. Grade AA (Fancy)	Vermont Fancy	New York Fancy
U.S. Grade A	Vermont A	New York No. 1
U.S. Grade B	Vermont B	New York No. 2
Unclassified	Vermont C	New York No. 3

The principal factor for the determination of a sirup grade is the color of the sirup. However, this occurs only after all other basic requirements of all of the table grades are met. These basic requirements are: source, density, flavor (Vermont requires a specific flavor for each grade), cleanliness, freedom from buddiness, fermentation, objectionable flavors or odors, and freedom

from damage caused by scorching or other means. Therefore, the color of a sirup is the principal grade determining factor and since the same colors (USDA Color Standards for Maple Sirup) are used in both the Federal and States grade requirements the difference in the four grades shown in the above table is their color.

Thus the four grades on the basis of their color could be named; Light Amber, Medium Amber, Dark Amber, and Darker than Dark Amber. Light Amber grade would be a sirup as light as or lighter than the light amber U.S. Department of Agriculture color standard for maple sirup. The Medium Amber grade would be darker than light amber but as light or lighter than the medium amber U.S. color standard. The Dark Amber grade would be darker than medium amber but as light or lighter than the dark amber color standard. The Darker than Dark Amber grade would be darker than the dark amber color standard.

Since the two top (lightest) grades of maple sirup are normally table grades and because the color of these two grades do not imply that one grade is inferior to the other, as the current grade designations do, the committee recommends that the two grades be designated by the names of their respective colors. The committee recognizes that adoption of these two grade designations could cause confusion and so they further recommend that the terms, FANCY and GRADE A be used as synonyms for the respective color designations so that the grade designations are:

LIGHT AMBER OR FANCY  
MEDIUM AMBER OR GRADE A

These grade designations to be used singly or in pairs.

The committee also recommends

that the two lowest grades should likewise be designated by their colors. Since these two grades are not normally used as table grades the committee recommended that the terms, UTILITY and COMMERCIAL be used as synonyms for the respective color designation so that the grade designations are:

DARK AMBER OR UTILITY  
DARKER THAN DARK AMBER OR COMMERCIAL

These grade designations to be used singly or in pairs.

The committee also considered the minimum density requirements of maple sirup. It has been recognized for many years that the current minimum density of 65.45° Brix at 68° F. is too low having a viscosity of only 164.3 centipoises which imparts to the sirup an apparent inferior taste. Why this minimum density was incorporated in the basic requirements is not definitely known. No doubt it resulted from a mix-up of the different types of Baume scales that were in vogue at the time the standards were first established. Raising the Brix of the sirup 1/2° reduces the water content only 1/2 per cent and increases the sugar content by a like amount. Increasing the Brix of the sirup from 65.45° to 66.0° does however raise the viscosity of the sirup 17.7 centipoises at 68° F. (from 164.3 to 182.0 centipoises). This causes a thickening of the sirup readily discernible to the tongue resulting in a taste improvement to the sirup. The committee therefore recommends that the minimum density of sirup be raised from 65.45° Brix to 66.0° Brix at 68° F. or its equivalent on the Baume scale (66° Brix at 68° F. = 35.6° Be at 68° F. or 35.72° Be at 60° F.).

A letter by Mr. H.V. Schute, Director, Vermont Division of Mar-



kets, read to the committee by Mr. Coombs recommended that the minimum density of maple sirup be raised.

The committee also recommended that the Brix Scale should be adopted as the sirup grade density requirement, and as the standard throughout the maple industry because of (a) Brix scale hydrometers are obtainable having high precision (0.1° calibration) and (b) the degrees Brix (% sugar) present a direct and meaningful description of the solids sugar content of the sirup.

Due to the confusion and misuse of the eleven pounds per gallon as a sirup density requirement the committee recommended that this density specification be dropped from all sirup grade requirements. The eleven pounds weight specification as a measure of concentration is valueless unless sirup is measured in a calibrated container, weighed at 68° F. and with scales accurate to one hundredth of a pound.

The above action concluded the specific charge of the committee. However, with Mr. Lowrie Beacham, Director of the Division of Food Standards and Additives, Food and Drug Administration, U.S. Department of Health, Education, and Welfare, present as a member of the committee, they took advantage of his knowledge to discuss two related topics; (a) the composition of cane-maple sirup and (b) the new labeling law.

The current trend by sirup packers to formulate cane-maple sirup blends with as little as 2 per cent maple sirup. This has implications of mislabeling since the low percentages of maple sirup (sugar) in the blend is insufficient to impart to the blend a characteristic maple flavor. The committee recommended that the label of blended maple sirup could not use the word maple nor otherwise imply that the blended sirup contained maple sirup (sugar) unless the blended sirup contained 10 per cent or more of maple sirup or 10 per cent maple sugar on a maple sugar/cane sugar basis.

Mr. Beacham explained to the committee the new Federal regulations governing labeling as it would apply to maple products. These regulations have since been printed by U.S. Department of Health, Education, and Welfare, part 1, title 21, Code of Federal Regulations, and because of their complexity the committee has reproduced only that part pertaining to maple sirup and other maple products; this is amended to this report.

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Supplemental Committee Report on  
Changes and Requirements of  
Maple Sirup Grades  
September 16, 1968

Since the meeting at Syracuse, New York, and after review of the minutes of that meeting, it became apparent that the problem of defining the lowest, or 4th grade of sirup, namely, "Darker than Dark Amber or Commercial", had not been adequately resolved for the following reasons: (a) this grade need not meet all of the basic requirements such as flavor and off flavor, specified for the three higher grades and (b) this lowest or darkest grade is never sold as, or considered to be, a table grade. The committee was therefore canvassed by phone and each member concurred that the lowest of the four grades should be dropped from the table grade category.

They further concurred that only the three top grades of maple sirup are the table grades, and because the color of these grades does not imply that one grade is superior or inferior to the others as the different but current designations do, the committee recommends that these three grades be designated by the names of their respective colors. The committee recognizes that adoption of these three color grade designations could cause confusion, so they further recommend that the terms Fancy, Grade A, and the new term "Utility" (adopted at the Syracuse meeting) be substituted for the current Grade B, and be used as synonyms for the respective color

descriptions so that the grade designations become:

Light Amber or Fancy  
Medium Amber or Grade A  
Dark Amber or Utility

These grade designations to be used singly or in pairs.

The committee also recommends that the lowest grade which is darker than the three table grades, and darker than Dark Amber, be designated as "Commercial Grade." This grade need not meet all of the basic requirements of the three table grades. It must, however, conform to the density and source requirements.

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Summary:

Committee recommendations:

1. Designate the current four grades of pure maple sirup as:
  - a. Three table sirup grades:  
LIGHT AMBER OR FANCY  
MEDIUM AMBER OR GRADE A  
DARK AMBER OR UTILITY
  - b. One commercial grade:  
DARKER THAN DARK AMBER  
OR COMMERCIAL
2. Raise the minimum density of sirup to 66° Brix at 68° F. or its equivalent.
3. Adopt the Brix scale for expressing the concentration of maple sirup and for specifying the density requirement for the four grades of maple sirup.
4. Delete the weight/volume (eleven pounds per gallon) specification of the density requirement for the four grades of maple sirup.
5. That all sirup blends that are labeled or implied to contain maple sirup must contain a minimum of 10 per cent maple sugar on a maple sugar/cane sugar basis.

Lowrie Beacham  
Gordon Brookman  
Robert Coombs  
C.O. Willits

The above grading recommendations were adopted unanimously by the National Maple Syrup Council at the 9th Annual meeting held in Philadelphia, October 7, 1968.

# Maple Marketing Practices

In 1967 a mail survey was made of Vermont maple producers. The purpose was to obtain information on their marketing methods, types of containers used, and problems with containers. Of the total 1,408 questionnaires mailed out, 281 were returned - 20 percent of them. For a detailed mail questionnaire, such a response is good. Also it can be interpreted as being somewhat higher in relation to active sugarmakers; some of the 1,408 addresses were for people no longer in maple production.

In general, those who answered the survey are representative of all Vermont maple producers (Table 1). A maple survey<sup>2</sup> made by Dr. Fred C.

Webster<sup>3</sup>, in 1960, indicates that the principal type of bias in a mail survey of sugarmakers is the tendency to receive fewer than proportionate replies from producers who sell primarily bulk wholesale syrup.<sup>4</sup>

Of the 205 sugarmakers reporting production, 22 made maple cream. Only 11 of these made more than 50 pounds of cream per year; 42 made maple sugar, but only 19 made more than 50 pounds per year.

In 1962, Dr. Webster surveyed centralized maple sap processing operations in Vermont.<sup>5</sup> In the entire state he found only 10 producers who purchased sap. From the 20 percent response to the 1967 survey, 16 sugarmakers indicated that they purchased sap. If data were available from the 80 percent of sugarmakers who did not reply, undoubtedly the number of sugarmakers buying sap would be greater. This indicates a considerable increase in sap purchasing activity since 1962.

Of the producers responding to this survey, 10 reported that they sold sap. Eight of these sold all the sap they gathered and made no syrup. Previous studies show that relatively

few of the producers who do not make syrup will trouble to complete and return a survey on maple marketing practices. Therefore, in relation to all Vermont sugarmakers, we would expect to find many more who sell sap.

## Definition of Survey Areas

The state was divided into three areas on a county basis.

Northern Area: Franklin, Orleans, Essex.

Central Area: Addison, Chittenden, Washington, Lamoille, Caledonia, Orange.

Southern Area: Rutland, Bennington, Windsor, Windham.

Grand Isle County was excluded because the few sugarmakers in that county made no response.

## Retail Sales

In the survey questionnaire, a retail sale was defined as "any sale made to a person who will consume the syrup and not offer it for resale".

As expected, the northern area shows considerably less retailing of syrup than the other areas (Table 2). For the entire state, about a third of the sugarmakers sell only retail;

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Table 1. Size of Sugarmakers Reporting

Gallons of syrup made per year	Number of sugarmakers	Percent
1 - 199	47	22.9
200 - 399	71	34.6
400 - 599	37	18.1
600 - 799	19	9.3
800 - 999	14	6.8
1,000 - 1,999	14	6.8
2,000 - 3,999	3	1.5
Subtotal	205	100.0
No syrup made in survey year	76*	
Total replies	281	

\* Eight of these sold sap.

# of Vermont Sugarmakers

by Charles W. Bigalow,  
Extension Economist<sup>1</sup>

Table 2. Extent of Retailing

Retail Sales	Percent of sugarmakers replying			
	State	North	Central	South
No sales	7.0	13.6	6.7	3.0
Some sales	93.0	86.4	93.3	97.0
	100.0	100.0	100.0	100.0
Over ½ of sales	61.8	45.5	68.3	68.2
Over 9/10 of sales	34.1	22.7	45.0	31.8

Table 3. Method of Retail Sale - - Vermont

Retail sales	Percent of sugarmakers replying			
	Farm or house	Mail Order	Roadside stand	Other
No sales	9.3	40.1	88.3	75.3
Some sales	90.7	59.9	11.7	24.7
	100.0	100.0	100.0	100.0
Over ½ of sales	70.3	13.0	6.2	10.5
Over 9/10 of sales	40.7	1.9	2.5	1.9

Table 4. Method of Retail Sale - - Northern Area

Retail sales	Percent of sugarmakers replying			
	Farm or house	Mail order	Roadside stand	Other
No sales	12.8	46.2	87.2	79.5
Some sales	87.2	53.8	12.8	20.5
	100.0	100.0	100.0	100.0
Over ½ of sales	64.0	20.4	2.6	12.8
Over 9/10 of sales	35.9	5.1	0.0	2.6

Table 5. Method of Retail Sale - - Central Area

Retail sales	Percent of sugarmakers replying			
	Farm or house	Mail order	Roadside stand	Other
No sales	6.9	37.9	94.8	74.1
Some sales	93.1	62.1	5.2	25.9
	100.0	100.0	100.0	100.0
Over ½ of sales	77.6	8.6	3.4	8.5
Over 9/10 of sales	46.6	0.0	1.7	3.4

61.8 percent of them sell over half their crop retail. Some retail sales are indicated by 93.0 percent of the survey respondents.

The 1960 maple survey previously mentioned showed that 81.5 percent of the responding sugarmakers had some retail sales. It is not known whether this subsequent increase is due to more sugarmakers selling retail, or whether to a better survival rate among those sugarmakers selling retail. But evidently, an increasing proportion of sugarmakers are selling syrup on a retail basis.

By far the most common retail sale is at the producer's house or farm - 70.3 percent retailed over half their crop at their farm; 40.7 percent sold most of their crop at their farm (Table 3).

In 1953, a study of Vermont maple marketing<sup>7</sup> showed about 60 percent of maple producers had mail order sales. The same proportion of sugarmakers were using mail order sales in 1967. Only 5 percent of maple producers in the 1953 study sold at roadside stands. The 1967 survey shows an increase to 11.7 percent making roadside stand sales. One-fourth of the producers reported "other" category (mostly home delivery) for at least part of their retail sales.

Fewer northern area producers made farm or house retail sales than in the other two areas (Table 4). The main difference in retail method between the northern area and the other areas is in mail order sales. Although slightly more producers in the other areas had some mail order sales, 20.4 percent of the northern producers made over half their retail sales by mail order. Few producers in the northern area retailed at roadside stands.

The outstanding retail charac-



teristic of central Vermont producers is the high percentage of farm or house sales; they made little use of any other retail sale method (Table 5).

Compared to the other areas, southern producers used roadside stands noticeably more (Table 6). Nearly 11 percent made over half their retail sales at roadside stands, compared to only 2 or 3 percent in the central and northern areas. But retail sales at the farm or house are of major importance in this area, as with the other two areas.

#### Wholesale Sales

In the survey questionnaire, a wholesale sale was defined as "any sale made to a buyer who will resell the syrup".

The number of sugarmakers selling over 9/10 of their crop wholesale increases from southern to northern Vermont (Table 7). Compared to the southern area, twice as many

Table 6. Method of Retail Sale - - Southern Area

Retail sales	Percent of sugarmakers replying			
	Farm or house	Mail order	Roadside stand	Other
No sales	9.2	38.5	83.1	73.8
Some sales	90.8	61.5	16.9	26.2
	100.0	100.0	100.0	100.0
Over 1/2 of sales	67.8	12.3	10.7	10.8
Over 9/10 of sales	38.5	1.5	4.6	0.0

Table 7. Extent of Wholesaling

Wholesale sales	Percent of sugarmakers replying			
	State	North	Central	South
No sales	26.5	15.9	33.3	27.3
Some sales	73.5	84.1	66.7	72.7
	100.0	100.0	100.0	100.0
Over 1/2 of sales	38.2	54.5	31.7	31.8
Over 9/10 of sales	15.9	29.5	15.0	7.6

Table 8. Drums vs. Packages

Wholesale sales	Percent of sugarmakers replying with wholesale sales							
	Packages (gallon or less)				Drums			
	Vermont	North	Central	South	Vermont	North	Central	South
No sales	49.2	75.7	51.2	27.1	26.2	5.4	22.0	45.8
Some sales	50.8	24.3	48.8	72.9	73.8	94.6	78.0	54.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Over 1/2 of sales	42.0	13.5	41.5	64.6	58.0	86.5	58.5	35.4
Over 9/10 of sales	29.4	5.4	31.7	45.8	50.0	75.7	53.7	27.1

central Vermont sugarmakers (15.0 percent) sell over 9/10 of their crop wholesale, and, compared to central Vermont, twice as many northern sugarmakers (29.5 percent) sell mostly wholesale.

The reverse is not true with retailing. Nearly half (45.0 percent) the central Vermont sugarmakers sell most (over 9/10) of their crop retail, but only 31.8 percent of the southern area sugarmakers sell virtually all retail (Table 2).

Table 9. Method of Wholesaling - - Vermont

Wholesale sales	Percent of sugarmakers replying with wholesale sales			
	Vermont wholesalers or dealers	Local stores	Other Vermont sugarmakers	Out-of-state dealers
No sales	45.2	58.7	84.9	78.6
Some sales	54.8	41.3	15.1	21.4
	100.0	100.0	100.0	100.0
Over 1/2 of sales	45.3	32.7	5.6	12.8
Over 9/10 of sales	32.5	18.3	4.8	4.0

For the state, 50 percent of the producers put up wholesale syrup almost entirely in drums; 29.4 percent entirely in packages (Table 8). The remaining 21.6 percent make part of their wholesale sales in drums and part in packages. The data show a consistently changing relationship between drum and package wholesale sales going from southern to northern Vermont. Only 27.1 percent of the southern producers make most of their wholesale sales in drums. This figure increases to 53.7 percent for central Vermont and to 75.7 percent in the northern area. The reverse is true for wholesale package sales. Southern producers make more of their wholesale sales in packages than central and northern area producers.

For the whole state, Vermont wholesalers are the most common outlet for wholesale syrup (Table 9). Local stores are also important, but only in the southern area are they the most widely used wholesale outlet. In the northern area local store outlets are of minor importance. The central area showed considerably less wholesaling to out-of-state dealers than the northern or southern areas. Wholesaling to other sugarmakers was not a substantial method in any area (Tables 10, 11, and 12).

#### Containers

Nearly all the sugarmakers responding used cans only. Only 6.0 percent used glass containers at all and then for only a small portion of their crop. Three percent used plastic containers to a limited extent.

#### Container Size

The following data were received in response to the question, "Which size container is the most popular among your customers?": 39.4 percent of the sugarmakers sold over half of their packaged syrup in gallon containers; 16.2 sold over half in 1/2 gallon containers; 1.0 percent sold over half in quart containers. Only a few sugarmakers sold more than a fourth of their packaged syrup in pint or 1/2 pint containers (Table 13).

Table 10. Method of Wholesaling - - Northern Area

Wholesale sales	Percent of sugarmakers replying with wholesale sales			
	Vermont wholesalers or dealers	Local stores	Other Vermont sugarmakers	Out-of-state dealers
No sales	32.4	78.4	83.8	73.0
Some sales	67.6	21.6	16.2	27.0
	100.0	100.0	100.0	100.0
Over 1/2 of sales	62.1	8.1	8.1	16.2
Over 9/10 of sales	43.2	2.7	5.4	8.1

Table 11. Method of Wholesaling - - Central Area

Wholesale sales	Percent of sugarmakers replying with wholesale sales			
	Vermont wholesalers or dealers	Local stores	Other Vermont sugarmakers	Out-of-state dealers
No sales	39.0	61.0	87.8	87.8
Some sales	61.0	39.0	12.2	12.2
	100.0	100.0	100.0	100.0
Over 1/2 of sales	43.8	36.6	4.9	4.9
Over 9/10 of sales	39.0	24.4	4.9	0.0

Table 12. Method of Wholesaling - - Southern Area

Wholesale sales	Percent of sugarmakers replying with wholesale sales			
	Vermont wholesalers or dealers	Local stores	Other Vermont sugarmakers	Out-of-state dealers
No sales	60.4	41.7	83.3	75.0
Some sales	39.6	58.3	16.7	25.0
	100.0	100.0	100.0	100.0
Over 1/2 of sales	33.4	48.0	4.2	16.8
Over 9/10 of sales	18.8	25.0	4.2	4.2

Table 13. Container Preference

Container	Percent of sugarmakers replying
Gallon	22.4
1/2 Gallon	17.3
Quart	9.2
Pint	1.5
1/2 Pint	.5
Gallon & 1/2 Gallon	9.2
1/2 Gallon & quart	5.1
Gallon & quart	3.6
All equal	1.5
No customer preference	29.6

#### Container Problems

Questions were asked about various problems encountered with containers. The replies all referred to can-type containers (Table 14).

Table 14. Container Problems

Problem	Percent of sugarmakers indicating problem
Leakage	12.1
Rusting	22.4
Solder flux in can	14.9

## Plastic Containers

Only 4.6 of the sugarmakers had ever used plastic containers, but 7.0 percent indicated they planned to use them in the future; 28.0 percent expressed an interest in them.

### Summary

The survey indicates that Vermont sugarmakers rely primarily upon farm or house sales and mail orders as retail outlets - - 91.0 percent marketed some of their syrup through retail sales at the farm or house; 60.0 percent marketed some through mail orders; 12.0 percent used a roadside stand; 25.0 percent made some sales through doorstep delivery. Vermont dealers and local stores are the principal wholesale outlets. Out-of-state dealers are used to a lesser extent.

The tin container is still by far the most commonly used type. Customer preference for size runs in direct relation to size of container, most popular being gallons, least popular ½ pints. Accordingly, volume of syrup sold per size container is directly related to size preference, most volume being sold in gallons, least in ½ pints. Plastic containers are gaining acceptance, but very slowly. The most prevalent problem with containers was rusting of cans, followed by solder flux in the cans.

Northern area sugarmakers sell considerably more syrup at wholesale than those in central and southern Vermont. The most prevalent

wholesale outlet in the northern area is Vermont dealers. Local stores are of minor importance as wholesale outlets. Retail sales in the northern area are mostly farm, house, or mail order. Roadside stand sales are negligible.

Central area sugarmakers make most of their retail sales at the farm or house. They make little use of any other retail sales method. Wholesale sales in this area are to Vermont dealers and also to local stores to a considerable extent. Very little wholesale syrup is sold to out-of-state dealers, compared with other areas.

Southern area sugarmakers use roadside stands to a much greater extent than in other areas although farm or house sales remain the major retail outlet. Local stores are the most important wholesale outlet in this area.

The home delivery method of retail sales is used to about the same extent in all areas. Approximately one-fourth of all sugarmakers reported some retail sales in this "other category."

In response to a general question on syrup marketing problems, the most frequently mentioned involved containers. Poor quality cans, handles that come off, and excessive cost were the main comments. Mail order problems were often mentioned. Breakage in the mail and the high cost of mailing were also frequent comments.

C. Webster, Department of Agricultural Economics, University of Vermont.

<sup>4</sup>In examining the data presented in this report, the reader is cautioned against interpreting percentage of producer figures as also meaning percentage of syrup produced. For example, Table 2 shows that 34.1 percent of Vermont sugarmakers sell over 9/10 of their crop on a retail basis. This does not mean that 34.1 percent of the syrup produced in Vermont is sold at retail by producers. All percentage figures are defined as percentage of sugarmakers reporting.

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<sup>6</sup>Farm Sales of Vermont Maple Products, 1960, University of Vermont Agricultural Experiment Station Misc. Pub. 16, October 1960.

<sup>7</sup>Marketing Vermont's Maple Syrup, Vermont Agricultural Experiment Station Bulletin 593, June 1956.

### CREDITS

<sup>1</sup>The author wishes to express appreciation to Raymond T. Foulds, Jr., Extension Forester, Vermont Extension Service, for his assistance in designing the survey upon which this report is based.

<sup>2</sup>Farm Sales of Vermont Maple Products, 1960, University of Vermont Agricultural Experiment Station Misc. Pub. 16, October 1960.

<sup>3</sup>Professor of Agricultural Economics and Extension Economist, University of Vermont.

<sup>5</sup>Survey of Centralized Maple Sap Processing Operations, Dr. Fred

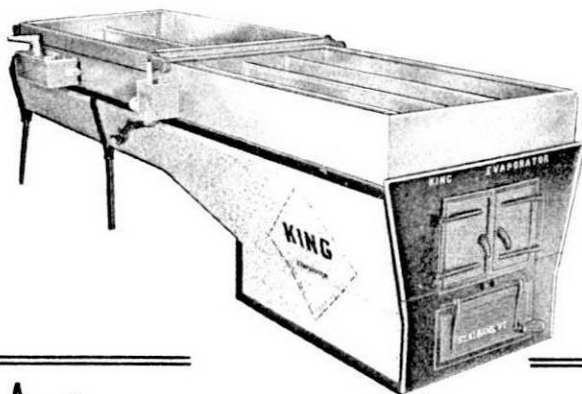
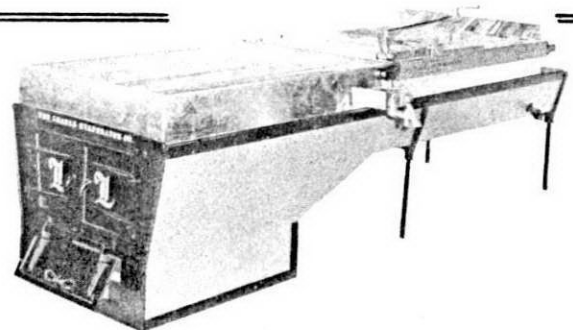


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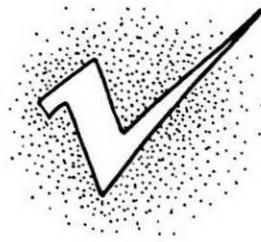


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