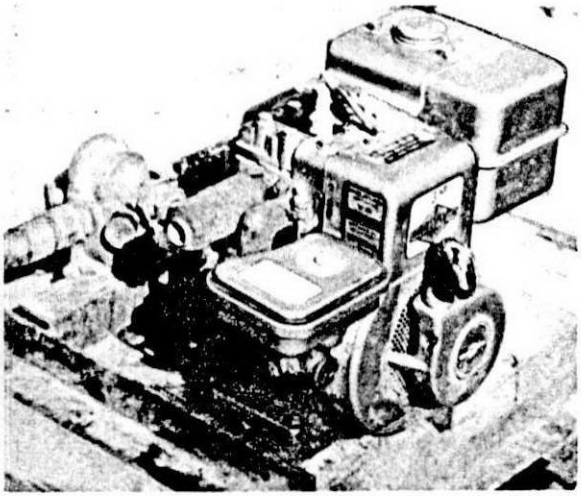
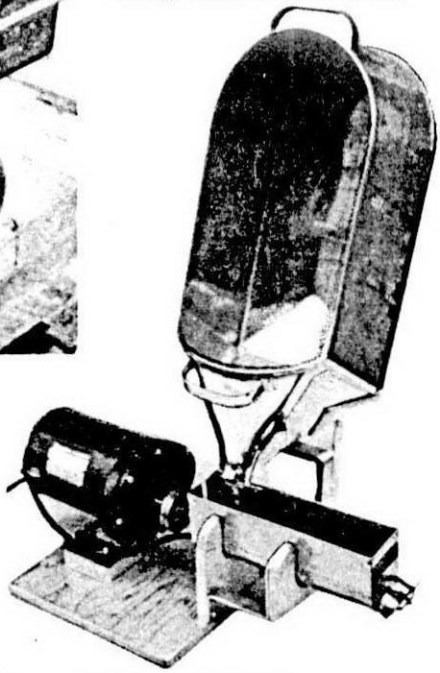
NATIONAL MAPLE SYRUP DIGEST

Vol. 12, No. 2 July, 1973



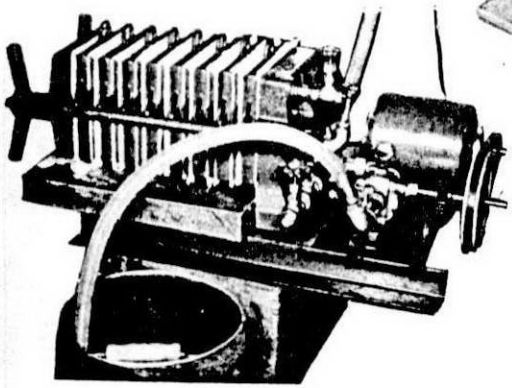
MAPLE CANDY MAKER

Time saver and profit maker. Brings out maple flavor in candy. Stainless steel const.



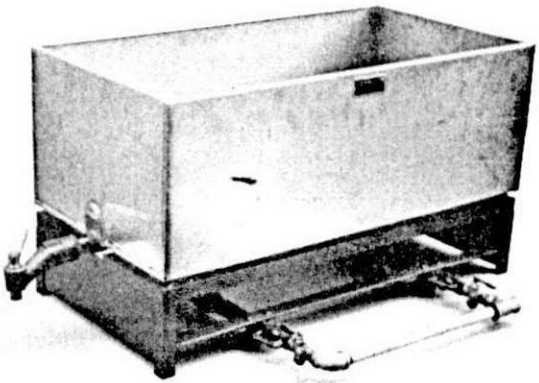
SAP PUMP SUCKER FOR EFFORTLESS GATHERING

Pump and engine 50 ft. 1 inch Dia. Rubber Hose



MAPLE SYRUP FILTER PRESS

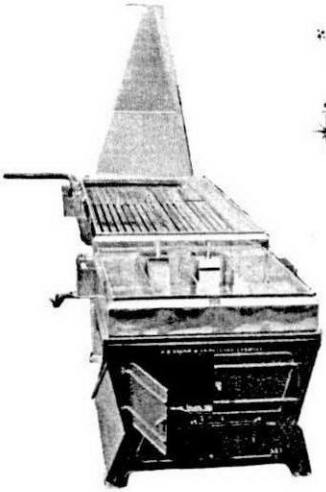
Takes out all dirt and sugar sand. Electric motor operates a bronze gear pump to push hot syrup thru filter and lift it to any height. Capacity 2 gallons per minute.



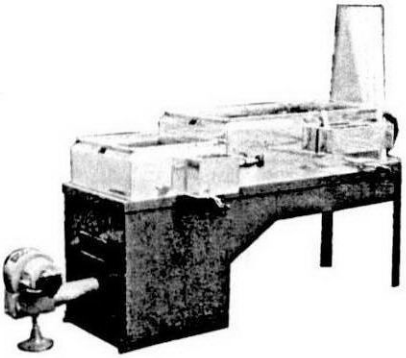
GAS FIRED FINISHING PAN

A new gas fired finishing pan for the smaller sized evaporators. Also ideal for making cream and sugar. Rugged base and fittings.

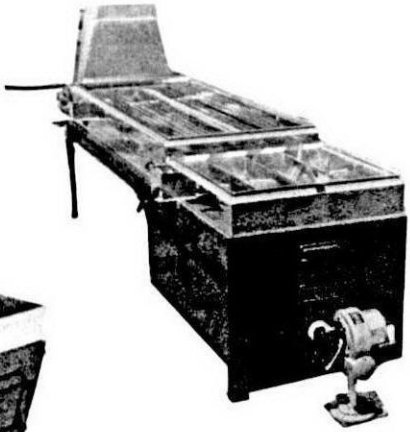
WOOD & OIL BURNING EVAPORATORS



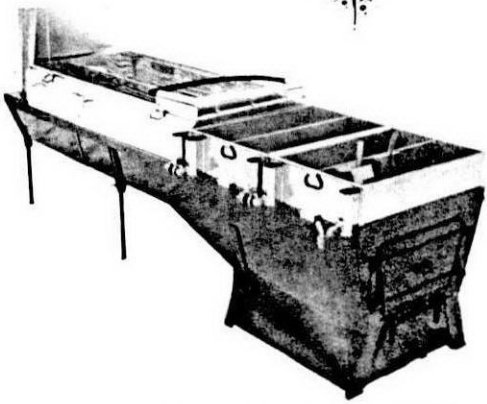
4' x 12' WOOD LIGHTNING



2' x 6' OIL LIGHTNING



4' x 14' OIL LIGHTNING



3' x 10' GRIMM EVAPORATOR

G.H. GRIMM CO.

RUTLAND, VERMONT 05701

AC802 775-5411 773-9519

NATIONAL MAPLE SYRUP DIGEST

Printed by . . . . York Mail-Print
Bainbridge, N. Y.
Edited by . . . . . Lloyd Sipple
Bainbridge, N. Y.

DIRECTORY OF OFFICERS

NATIONAL MAPLE SYRUP DIGEST

Published by: Lloyd H. Sipple
R.D. # 2
Bainbridge, N.Y.

Published four times a year.
(Feb., July, Oct., Dec.)
Postage
Paid at Bainbridge, N.Y. 13733
Mailed outside our circulation area for $2.00 per Year.

Printed by:
YORK MAIL-PRINT, INC.
Corner of Pruyn & Parsons Sts.
Bainbridge, New York 13733

COVER PICTURE

Horses, once the backbone of most sugaring operations, have given way to tractors and pipelines. Could this be why there's been such a decline in maple production?

Photo courtesy USDA, Philadelphia
Origin unknown

DIGEST ADVERTISING RATES

2 Page Spread	$220.
Full Page	120.
½ Page Vert. or Hor.	65.
Column Inch	9.
Classified	.25 per word

Deadline for copy—
First of month preceeding issue.

MAPLE SYRUP PRODUCTION – 1973

This year's syrup crop was extremely erratic, varying from 5% or less in some areas of Ohio, Pennsylvania and western New York, to 125% in northern New England, New York, Michigan and Wisconsin. Canada had about the same variation from southern Ontario to Quebec.

The poor season was attributed mostly to unseasonably warm weather. Sweetness of sap was lower than in previous years, and a larger proportion of dark syrup was produced.

STATE	Syrup Made[1]		
	1971	1972	1973
		1,000 gallons	
New York	305	340	225
Maine	8	8	8
New Hampshire	38	51	48
Vermont	240	335	344
Massachusetts	25	28	19
Pennsylvania	94	96	48
Ohio	110	95	35
Michigan	86	83	66
Wisconsin	56	63	84

[1] Includes syrup later made into sugar. Does not include production on nonfarm lands in Somerset County, Maine.

U. S. Department of Agriculture
Statistical Reporting Service

N. Y. Dept. of Agriculture and Markets
Bureau of Statistics

ERRATA

On page 8 of the February, 1973 Digest, a sentence was omitted from the next to last paragraph in the article by Morrow and Staats. This paragraph should commence as follows: "Batch samples, taken before and after heating, were compared for color change. Of the 9 batches, 7 showed little if any visible color change. In one batch, the heated sirup . . ."

3RD ANNUAL ONTARIO MAPLE SYRUP TOUR
SATURDAY, July 28, 1973

PLACE:	St. Joe's Island (30 miles east of Sault Ste. Marie, Ontario
REGISTRATION: 8:30 – 10:00 a.m.	Central Algoma Secondary School ½ mile West of Desbarets (corner Kensington Road and Highway 17) Registration fee – $2.00
Stop 1	(Tour by Autobus) Gilbertson's Maple Bush and Pancake House
12 noon – 1:30 p.m.	LUNCH – Pancakes, Sausages and St. Joe's Island Maple Syrup Adults – $1.50 Children – $1.00
Stop 2	Stanley Down's Maple Bush
Stop 3	Harold Kent's Maple Bush Light refreshments available
Stop 4	St. Joe's Island Museum
6:30 p.m	BANQUET AT CENTRAL ALGOMA SECONDARY SCHOOL Adults – $3.00 Children – $2.00

Entertainment provided by Fred Kent and the Northernaires.

ACCOMODATION IS THE RESPONSIBILITY OF EACH INDIVIDUAL

For further information or advance registration write:
W. A. Humphreys, Sec. - Treas., Ontario Maple Syrup Producers' Association
Box 175, Barrie, Ontario L4M 4T2 Tel. Elmvale (705)322-2233

(Cost of the complete day would be $6.50 for adults).

N Y STATE MAPLE TOUR JULY 30-31

This year the New York State Maple Tour will take maple producers and other interested people to the hills and valleys of Chenango County in the southern tier region of the state. A committee has been working hard at making plans for the tour since late last winter. Chenango County is a large maple producing county and has a great deal to offer to maple producers throughout the east.

The tour will gather at the Rogers Conservation Education Center in Sherburne. Registration will take place from 11:30 a.m. until 1:30 p.m. For those producers that are interested and want to arrive early, a maple tubing demonstration will be set up at 10:30 a.m. There are picnic facilities at the Center for those bringing their lunch. The Education Center is quite unique and if you are interested in our environment here is an excellent opportunity to learn more about it through a visit to the main building or a walk along one of the nature trails.

During the afternoon there will be a stop at a woodlot to visit with state foresters about thinning and maintaining the sugar bush. Three local producers in the Sherburne area will also be visited. One producer purchases much of his sap and a local sap producer will be present to discuss his part of the operation.

The evening banquet will be held at the Canasawacta Country Club in Norwich where you will treat your taste buds to a wonderful buffet. Along with the usual tour business after the buffet, John Weeks, Director of the Rogers Center will tell you more about the programs he and his staff have developed during the last few years.

On Tuesday morning the tour will pick up again and three producers will be visited in the southern end of the county. Plans call for the tour to conclude at Lloyd Sipple's at about 1:00 p.m. A light lunch will be available at the last stop for those who wish to eat before heading home.

The producers in Chenango County have tried to put together a tour for producers, large or small. In addition the wife and children will enjoy the stop at the Rogers Center.

People requesting further information about the tour should contact William Worth, Cooperative Extension Agent, Farm, Home & 4-H Center, 99 North Broad St., Norwich, N.Y. 13815, telephone 607-334-9971.

VERMONT MAPLERAMA '73

"In the heartland of Vermont"

Washington and Orange Counties — Thurs., Fri. — Aug. 16-17

It all begins at the Davis farm and sugarbush, Cabot, Vt. Woods thinning, pipelines and proper pipeline cleaning methods are demonstrated here. Registration is at 10 AM; lunch at noon.

Then for a detailed tour of Vermont's famous Cabot Creamery and Cheese Factory.

Last stop of the afternoon is the new VTC sugarhouse and maple operation at Randolph Center. Here at VTC (Vermont Technical College) will be the evening program including banquet, exhibits and entertainment. Dormitory for lodging, camping and motels available.

Friday morning breakfast at VTC, then off to Williamstown and the Flint farm for a new twist in vacuum pumping, among other things.

Then on to the Morse farm in E. Montpelier for a rounded out program of merchandizing and marketing from maple to Christmas trees. Demonstrations by N. E. Forest Ser., UVM, Vt. Dept. Forests & Parks and Vt. Dept. of Agric. & Mkts. along the way.

For advance Reservations and information contact John B. Smith, South Newbury, Vt., 05066, Tel. 802-866-3315. (For those who have time Fri. PM, a tour of the Barre Granite Quarries is near by).

NEED FANCY, A OR B BULK MAPLE SYRUP?

Plenty in northern Vt. Contact any of the following:

Vermont Dept. of Agric., E. Willard, Montpelier, 802-828-2419.
Franklin County Coop., C. Branon, Fairfield, 802-827-4440.
Orleans Co. Bulk Syrup, A. Patenaude, Derby Line, 802-895-4439.

PLEASE! SEND US YOUR CONTRIBUTION NOW!

VERMONT MAPLERAMA
AUG. 16–17, 1973

The Vermont Maplerama has been scheduled for Thursday, August 16, and Friday, August 17, 1973. Sponsored jointly by Washington and Orange Counties, the Maplerama will be conducted with the help of the Vermont Maple Sugar Makers Association and The Extension Service, University of Vermont. The program will begin at 10:00 a.m. on August 16 with a visit to the sugar bush of Robert and Barbara Davis in Cabot. Here demonstrations of sugar bush thinning and the washing of tubing will be seen. After lunch it will move to the Cabot Creamery; and to Williamstown and the sugar house of Roy Flint. (Tubing with vacuum pumps.) An evening dinner, exhibits, and program will take place at Vermont Technical College in Randolph Center.

On August 17 a visit will be made to Harry Morse's Sugar Shack on the County Road north of Montpelier. In the afternoon visits will be possible to the Rock of Ages granite quarries in Barre, as well as optional visits to other sugar places.

The Maplerama Committee consists of Rudolph (Shorty) Danforth of South Royalton, Chairman; Mrs. Barbara Davis of Cabot, Vice Chairman; Mrs. Mary Flint of Williamstown, Secretary; John Smith of South Newbury, Treasurer; and Myron Smith of Randolph, Asst. Treasurer. Reservations for meals and lodging should be sent to John B. Smith, South Newbury, Vt. 05066. (Tel. 802-866-3315). County Extension Agents involved are Edward Bouton of Montpelier (Washington County) and Gordon Farr of Chelsea (Orange County).

CAN COLD WEATHER NEGATE BUD EFFECTS?

Robert R. Morrow
Cornell University

The 1973 maple sirup season, with its early March heat wave, was most unusual. Temperatures averaged 15° F. above normal during the first half of March at Lake Placid, New York. Half a crop of sirup was made prior to the usual date of the first sap flow. A normal season's accumulation of heat (summation of mean temperature times duration for portion of day above 35° F.) occurred by early April. Bud break appeared near.

This sequence of events followed:

(a) March 30 - April 4. Generally warm, temperatures ranged from 31 to 60° F., mean 40° F.

(b) April 5 - 6. Mostly freezing weather, mean 29° F.

(c) April 7 - 10. Sap flow weather, mean 30° F. Sirup became progressively poorer. April 10 sap, with a sugar percent of 1.5 made light amber sirup, but the boiling sap had an off-smell and the sirup an off-flavor. A buddy test was positive.

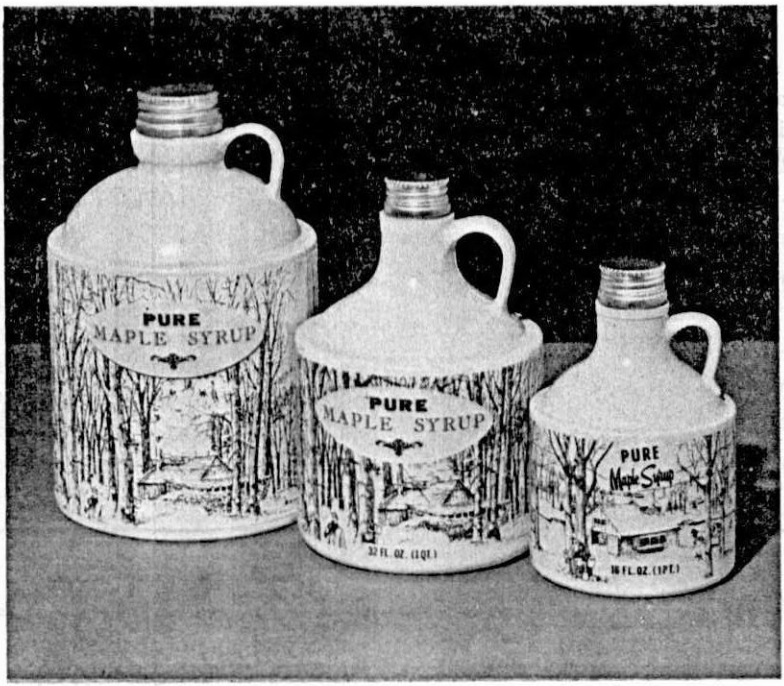
(d) April 11 - 13. Very cold, mean 20° F. Collecting tanks were cleaned.

(e) April 14 - 16. Sap flow weather, mean 37° F. This flow followed nearly 90 hours of freezing weather. Sap sugar was only 1.4 percent. There was no off-smell nor off-flavor, and three drums of good table grade sirup were made from this thin sap.

Apparently the sharp cold preceding the last run negated the effects of earlier bud activity. The cold was both intense and of long duration. Others have also reported that they believe late cold spells this year negated bud activity.

Proven Plastic Containers for Pure Maple Syrup

TOUGH, HOT FILLABLE JUGS of XT® POLYMER



This beautifully silk screened container with the quality appearance of pottery is made from an outstanding new material — XT® polymer. Already in use for dozens of food products, this polymer has full FDA approval and provides impact strength at a competitive price.

The contour of this lightweight jug remains stable even under a vacuum. A pilfer proof cap is featured along with a choice of standard of custom decoration.

For further information contact your jobber, distributor or Kress Creations, 1 DeForest Street, Bldg. 18, Seymour, Connecticut 06483.

YEASTS, FAT JUGS AND HOT SIRUP

J. C. Kissinger
Eastern Regional Research Center[1]
Philadelphia, Pennsylvania 19118

The maple producer shares a common problem with every other producer of food products. Innovations in processing and packaging come along and gain acceptance. Then a "new" spoilage problem appears and causes a bit of uneasiness in the industry. The innovation gets the blame, and at times, this is appropriate. However, in most cases, it's the same old microbe doing the damage, and the mishandling of the innovation due to overconfidence or inexperience gives the microbe its chance to cause havoc. Once again the maple industry faces an old microorganism and a new packaging situation. Someone called them "fat" jugs. The term is humorous, but the losses of sirup packed in plastic jugs which ultimately become swollen hurt the pocketbook. The producers tend to blame the container, and this is a natural reaction. Nevertheless, it does not account for the many producers who have no "fat" jug problem. The real problem is as old as the maple industry - certain yeasts will grow in maple sirup, if given the least opportunity. These organisms produce gas when they break down the sugars in the sirup, and the build-up of this gas causes a plastic container to become "fat". Most maple producers never worried about "swollen" cans. The "swell" can was an occasional fact of life in the industry and seldom gave much trouble. On the other hand, the "fat" jug seems to be a minor epidemic in certain sugar houses.

No single member of the yeast family is responsible for the "fat" jug. Instead, any one of a group of yeasts can do the damage. They are called osmophiles (lovers of liquids of high osmotic pressures like sirup) and grow slowly but well in slightly dilute sirups.[2] A tiny drop of condensation on the surface of a sirup containing these yeasts will give enough local dilution to start them growing. As they break down the sugars, they produce water as well as gas from the sugar molecules. One might say that they create their own dilute sirup environment. The first inkling that the producer gets of this condition is the "fat" jug, and by that time the damage has been done.

Osmophile yeasts are ever present in our environment. Honey bees are notorious carriers of them, and a maple operation attracts bees. Sugar house interiors and equipment provide excellent areas for the cells to lodge and reproduce, and it is an easy matter for airborne yeasts to find their way into sirup. Stringent cleaning and a regular cleaning schedule will minimize yeast contaminants, but a sugar house cannot be sterilized. Well-placed U. V. lights will protect bulk stored sirup, but they will not safeguard a filling and packaging operation.

This problem can be solved by hot packing. Yeasts are among the most heat-sensitive of all microorganisms.

Text books usually have graphs giving a general picture of the killing effect of heat on yeasts, but we thought that producers might be interested in the effect of heat on one of the original "fat" jug yeasts. A few years ago, Harold Tyler of Westford, N. Y., gave us a sirup sample which was undergoing a wild yeast fermentation. The organism was identified as a true osmophile, Saccharomyces rouxii, by Dr. L. Wickerham of U. S. D. A.'s Northern Regional Research Center at Peoria, Illinois. We have kept this organism in a maple sirup culture at ERRC because it exhibits spectacular gas production in sirup. We took a young sirup culture of S. rouxii (10 days old) and heated it to 185° F in a water bath. In the course of heating, samples of the sirup culture were taken for yeast cell counts as the following temperatures were reached: 72° (room temperature), 120°, 140°, 160°, 180°, 185° F. The results of this work are shown in Table I. Note that even at 160° F, a few yeast cells were left alive. Thus, if cans or jugs had been filled with this sirup, the results would probably have been "swell" cans and "fat" jugs within 3-4 weeks. At 180° F and 185° F, we did not find any surviving yeast cells. Filling jugs with 185° F sirup will give some additional insurance that you have an extra 5° Fahrenheit which will help to kill any yeast contaminants which might be on interior surfaces of the container. Immediately after filling, invert the container or lay it horizontally so that the hot sirup will kill yeasts on the neck or closure surfaces. Do this before the sirup has a chance to cool. This will cut packaged sirup losses drastically.

"Swell" cans have never been a major problem, and there might be some psychology behind this seeming superiority of the can over the jug. A hot-filled can is rigid, can be easily handled with padded gloves, and the filler operator expects it to be hot. A hot-filled plastic jug is odd - the plastic is expanded, it seems to slump a little and has too much "give" to it when you pick it up, and who ever heard of hot plastic anyway?? The jug filler wants a rigid, easy to handle vessel when he has finished filling. To get this rigidity with plastic containers, he cuts down on his filling temperature and pays the price in "fat" jugs.

Sirup must be at 180°-185° F when dispensed into cans or jugs. This temperature must be maintained at all times during filling. Fill from a vessel which can be heated and will maintain the fill temperature. Keep a reference thermometer in the sirup at all times; and, if possible, use a thermostatically controlled system. At current sirup

Table I

Decrease in Yeast Cell Count as Yeast-Contaminated Sirup is Heated From Room Temperature to 185° F

	Room Temp. (72°)	Temperature ° F 120°	140°	160°	180°	185°
Yeast Count Cells/ml.	180,000	120,000	23	7	0	0

SUGARING OFF

by Linda Clark, Cooperative Extension,

P. O. Building, Delhi, NY 13753

Until the late 1800's, when maple forests became depleted and cane sugar gained in popularity, maple sugar was the standard sweetener. Indians prepared sugar by putting heated rocks into the sap or by freezing the water out. Today, farmers boil syrup in large evaporators until a clear light amber syrup is ready for marketing.

Making maple syrup and . . . . .

sweet stuff made from maple sap is big business. Thirty-two lively ladies expressed a desire to have a special session on maple product production and promotion in 1974.

Linda Clark, Extension Home Economist in Delaware County, (shown) talked with the "women in maple" at the 1973 Maple School. Time did not allow for much talk but it was decided that for 1974, plans would be made to have at least one hour in a quiet room to share ideas about maple: its history, its versatility, and its value to families today.

In 1972, the Home Economics Division of Extension had produced maple recipe books for producers to distribute in their shops. The 1972 order was 1500, the 1973 order was 2,325. Maple has many uses and these recipes help extend the use of the product.

Many families - especially the children, look forward to sugaring season each year. It's such fun to sink your teeth into some jack wax or invite the neighbors in for a maple sugar stir. Maple sugar is not only delicious on pancakes and waffles, but can be used on ice cream, hot biscuits, jonnycakes, grapefruit, french toast, and all kinds of cereals. Maple syrup can be used to replace cane sugar in most recipes for added flavor. In cooking, use 3/4 cup maple syrup for one cup sugar. In baking, use same proportions but reduce the other liquid by 3 tablespoons for every cup of syrup substituted.

prices this system will pay for itself in one season. You can pack sirup in any reasonable container, if you do a good job of hot packing.

---

[1]Agricultural Research Service, U. S. Department of Agriculture.

[2]A. H. Cook, page 34.

BIBLIOGRAPHY

1. Cook, A. H., The Chemistry and Biology of Yeasts, Academic Press, New York, N. Y., 1958, page 34.

MAPLE PRODUCTION IN NEW BRUNSWICK

by C. F. Harding, Head
Horticultural Division
N.B. Dept. of Agriculture

The Province of New Brunswick has a relatively small Maple Industry. Canada Statistics figures indicate an average annual production of 10,000 imperial gallons of syrup and 35,000 pounds of sugar, etc.

While maple men may be found in most areas of the Province there are three or four centres of production. These groups of producers are located for the most part along the Saint John and Petitcodiac Rivers.

There are approximately three hundred names on our maple producers mailing list. These are located as follows:

Madawaska County Area:	125
York County Area:	50
Albert-Westmorland Counties:	100
Scattered	25

New Brunswick lies on the northern limits of the Maple Industry and we are even more dependent on the vagaries of the climate than most other areas.

Sap season is generally of shorter duration and our trees more subject to the effect of frozen ground, deep snow and to a certain extent, winter injury. The sap flow in most years is less than that reported in the better areas. Our producers must be satisfied with six to seven imperial gallons of sap per tap in most years. The past season was one of the poorest on record and most operators reported collecting only 3 – 3½ gallons of sap per spile.

EXTENSION AND RESEARCH

No maple research is conducted in the Province. The Provincial Department of Agriculture has employed a Maple specialist, on a part time basis, since the nineteen-twenties.

The Horticultural Division has published a Maple Newsletter since 1962.

MAPLE ORGANIZATIONS

On February 15, 1933, the Maple Producers organized the New Brunswick Maple Producers' Association. This served all producers in the Province until 1969 when the producers were re-organized into three local organizations with the three executive officers of the locals, together with the extension specialist, forming what is called,

—The N. B. Maple Producers' Council.

MARKETING

The bulk of our syrup is sold in glass. Suitable open-stock glass containers are difficult to obtain and the producers have adapted the 16 fl. oz. Kent Jug.

Many producers use a standard label on this container, although private labels are also used by some producers.

Most maple products are sold on local markets, the greater portion being sold directly to users by producers.

The N. B. Maple Producers' Council has actively promoted the use of smaller containers and higher prices. Our Maple men feel they are producing a "Gourmet" product rather than a food product and try to market accordingly.

PROMOTION

Since the organization of local organizations the producers' wives have been accepted to membership, without dues and we are finding that they do most satisfactory promotion and advertising work.

Promotion Committees comprised of ladies appear on radio and T.V. programs to discuss and demonstrate maple products. They arrange maple displays in such places as tourist resorts and Provincial Parks and they are most successful in arranging tours to sugar camps by such groups as, The Agricultural Committee of our Legislative, the press, etc.

MAPLE SCHOOLS

The Department of Agriculture acting on a request from the Maple Council, sponsored a Maple Short Course in Fredericton in the winter of 1972 and have agreed to hold two this winter. One of these will be conducted in the French Language at Edmundston while the other will be held in Fredericton and will accept English speaking producers.

SCIENTIST HONORED FOR CONTRIBUTION TO MAPLE SYRUP INDUSTRY

Left to right: E. P. Farrand, Extension Forest Resource Specialist, Dr. Underwood, E. A. Curtis and James A. Bochy, Somerset County Extension Agent.

Dr. J. Clyde Underwood was presented the "Pennsylvania Maple Man of the Year" award at the annual meeting of the Pennsylvania Maple Syrup Council recently in Harrisburg. Edward A. Curtis, R. D. 1, Honesdale, president of the Council made the presentation.

The award is presented annually to an individual who has made significant contributions to the improvement of the maple products industry in Pennsylvania and the Nation. This was the fourth such award presented to maple syrup producers or public employees who work with them.

Dr. Underwood has been a member of a research team devoting full time to the production and processing of maple sap and syrup in the United States since 1955. He was made head of this research group in 1968. The work is being done at USDA's Wyndmoor facility known as the Eastern Regional Research Laboratory of the Northeastern Area of the Agricultural Research Service.

Included in his numerous research projects have been detailed chemical analyses of maple sap and syrup, determination of the components which make the flavor in maple syrup, a method of producing high-density, high-flavored maple syrup, a method for making fluffed maple products, a test for "buddy" flavor in maple syrup and the development, adaptation and testing of methods for concentrating maple sap by the use of reverse osmosis.

His continued interest and knowledge of maple syrup production has been an invaluable asset to maple producers throughout northeastern United States. He has participated in many workshops and demonstrations in the ten principal maple producing states.

Dr. Underwood has written or contributed to over 40 papers and articles pertaining to maple products

NEIL HANDY RETIRES

Over 200 friends attended a testimonial dinner last November to honor C. F. "Neil" Handy for his years of service to Lewis County as their County Agricultural Extension Agent. A highlight of the evening was a presentation to Neil by the Lewis County Maple Producers Association with a wood carved reproduction of an American Pioneer carrying two buckets of sap on a wooden shoulder yoke. Mr. Handy was instrumental in the formation of the Lewis County Maple Producers Association and has given many years of sincere devotion and service to the State Maple Producers Association.

and shares in the authorship of three patents in processing maple products.

A native of State College, Pa., Dr. Underwood earned bachelors, masters and doctor of philosophy degrees in agricultural biochemistry at The Pennsylvania State University.

MAPLE PRALINE RECIPES

by Becky Harding,
Athens, Maine

For a good many years we have made maple pralines according to a recipe in the Boston Cooking School Cook Book (Fannie Farmer).

1-7/8 cups powdered sugar
1 cup cream
1 cup maple syrup
2 cups nut meats cut in pieces, hickory or pecan

Boil sugar, syrup and cream to 234° F. or until mixture forms a soft ball when tried in cold water. Remove from fire, let stand until cool. Beat or work like chocolate fudge. Add nuts, drop from tip of spoon on waxed paper or spread in buttered pan and cut in squares. Makes 1-1/2 lbs.

A Cornell Extension Bulletin (No. 985) New York State College of Home Economics gives the following recipe:

Yield: 10-12 patties
Pan: 1-1/2-qt. saucepan

1 cup sugar
2/3 cup milk
1/2 cup maple syrup
2 tablespoons butter
3/4 cup pecan meats

1. Combine sugar, milk and maple syrup in saucepan, place over moderate heat and stir until sugar is dissolved.
2. Cook mixture to 230° F. or until mixture forms a very soft ball. Add butter and cook to 234° F. (a soft ball)
3. Remove pan from the heat and let the mixture stand 5 min. without stirring; then add the nuts and stir until the mixture looks cloudy and is slightly thick.
4. Drop the mixture from a tablespoon in patties onto wax paper. Let them stand until cool.

And from our State of Maine maple syrup folder a pure maple recipe:

2 cups maple syrup
1 tablespoon butter or ¼ cup cream
1½ cups quick oats or nut meats (pecans or butternuts are good)

Boil in large pan syrup and cream or butter to 233° or until a firm ball when tried in cold water. Remove from heat, cool, add oats or nuts and drop by spoonfuls on wax paper.

Usually when using maple syrup for cooking, I use part B grade, especially if white sugar is used.

IF YOU MAKE MAPLE SYRUP

YOU NEED OUR CATALOG

HERE ARE JUST A FEW OF THE ITEMS AVAILABLE

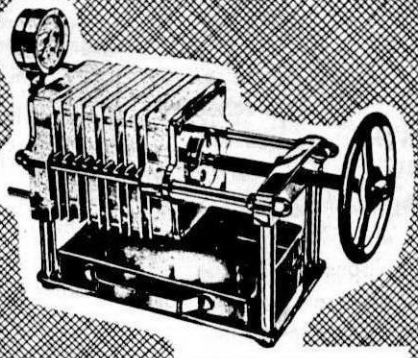
MODERN SAP COLLECTION
Throw-Away Bag

Trouble With Moldy Syrup?
Use FERMIBAN
Inexpensive!

TAPERED BUCKET BRUSHES
Full Size

REFRACTOMERS
For Extreme Accuracy
In Syrup Testing

Old Fashioned Earthen Jugs
All Sizes
2 Oz. Up To One Gallon



PRESSURE FILTERS FOR
SPARKLING CLEAR SYRUP

POLETHYLENE
LINERS
For Leaky
or Rusty
Buckets

CANDY CUPS

GOLD FOIL
Pressure Sensitive
NAME STICKERS

Light Weight
Big Capacity
GATHERING PANS

Plastic As Well As Paper
CANDY BOXES–Many Sizes

Glass Jugs
Bottles - Decanters
Plastic Bottles
and Jugs
All Styles and Sizes
of Syrup Cans

Non Toxic Paint
For Buckets and Tanks

ALL MAKES
OF EVAPORATORS

WE NEED MAPLE SYRUP – SEE OUR AD THIS ISSUE

SEND FOR A
FREE COPY
OF OUR CATALOG

REYNOLDS

SUGAR BUSH INC.

ANIWA, WIS. 54408 Ph: 715-449-2057

SAP QUALITY DETERMINES SYRUP COLOR

Proctor Maple Research Group
Department of Botany
University of Vermont
Agricultural Experiment Station

Does the high vacuum on plastic pipelines alter the composition of the sap and the quality of the syrup? A three-year research project, initiated at the Proctor Maple Research Farm in 1970, gave a negative answer to this question. A research report of the first season findings was published in 1971[1]. The results of the completed project are in manuscript form and they will be published soon. One of the crucial experiments in the project was to relate syrup color and flavor to the quality of the sap. Since it was impractical to separate, in the evaporator, sap collected by gravity and sap collected from vacuum lines, we developed a technique of boiling samples of sap on a gas heated plate, under controlled conditions. Three separate 2-liter sap samples were taken from each pipeline on each sap flow day. One sample was frozen for future reference, another was used for chemical and physical analyses. The third sample, divided into four 500 ml portions, was boiled in large glass beakers. When 80% of the water was evaporated the sap was combined into two beakers and then into a smaller one, where the syrup was finished to a standard density of 66.5° Brix, as measured by a temperature-compensated refractometer. By this method it was possible to observe the subtle color changes and the time at which they occur during the boiling process of the sap. It soon became obvious to Dr. Morselli, who boiled several hundred samples, that:

1) The physical (color, odor and turbidity) and chemical characteristics of the sap are the results of the history of the sap and will determine the quality of the syrup.

2) Different patterns of color changes occur early in the boiling stage of the sap, when it seems possible to predict the color of the final product.

The obvious development was to extend gradually the boiling time, either increasing the initial amount of sap, or adding, at intervals, fresh sap in the beakers. The heat, too, was lowered and the SAP was boiled for two, three or four hours. The resulting syrups had the same color as the syrup obtained from the sap samples boiled on a regular time schedule.

It has been the belief in the maple industry that dark color in the syrup is correlated with boiling time of the sap, i.e. dark color develops when the boiling time is prolonged. There is enough evidence now that, at least in glass beakers and in small volume, syrup doesn't darken with extended boiling time. Preliminary experiments, in which a small amount of fancy syrup was boiled in glass beakers to a concentration higher than standard, support the findings that syrup color doesn't change with extended boiling.

The evaporation of sap to syrup involves many complex reactions as pointed out by Willits and his research group[2]. However, there are indications from our chemical analyses of sap that the initial amount of invert sugars in the sap is a determining factor in the development of the syrup color. Since microorganisms are mainly responsible for enzymatic degradation of sucrose to invert sugars, the sap should be boiled as soon as possible after collection, in order to develop lighter grades of syrup.

Flavors are not mentioned here, since color and flavor are not necessarily correlated. Occasionally known samples of sap have developed Fancy syrups with off flavors, including "buddy". Any speculation on the factors responsible for flavors at this time is premature.

REFERENCES:

1. F. M. Laing, J. W. Marvin, Mariafranca Morselli, D. W. Racusen, E. L. Arnold and Elizabeth G. Malcolm. 1971. Effects of high-vacuum pumping on volume yields and composition of maple sap.
   Vt. Agr. Exp. Sta. U.V.M. Res. Rep. MP 65.
2. Willits, C. O. 1965. Maple Sirup Producers Manual. Agr. Handbook No. 134. Rev. Ed. Washington, D.C.: USDA Agricultural Research Service.

DEALERS & ASSOCIATIONS CARRYING BACON'S JUGS

N. H. Maple Producers Assn. Larris Moore, RFD No. 8, Concord, N. H. 03301	(603) 783-6521
R. N. Johnson, Walpole, N. H. 03608	(603) 756-3321
Berkshire Pioneer Maple Producers Coop. Russell Davenport, Shelburne Falls, Mass. 01370	(413) 625-2866
Lesure Farm, Ashfield, Mass. 01330	(413) 628-3268
Harry Jorgensen, W. Woodstock, Vt. 05091	(802) 457-2261
Vermont Sugar House Exit No. 3, I. 89, South Royalton, Vt. 05068	(802) 763-8809
Stuart Newton R.D. No. 2, St. Albans, Vt. 05478	(802) 524-5620
W. S. Mitchell, Inc., Newport, Vt. 05855	(802) 334-2800
Justus "Dutch" Asthalter Neversink, N.Y., P.O. Parksville, N.Y. 12768	(914) 292-8569
W. Barry Branon, 31 Tremblay Ave., Plattsburg, N.Y. 12901	(518) 563-1063
Burdick Syrup Supplies, Andover, N.Y. 14806	(607) 478-8103
Kenneth Jordan & Son, Franklin, N.Y. 13775	(607) 829-5634
C. B. Clay, DeRuyter, N. Y. 13052	(315) 852-6237
Claude Sisson, Sr., Central Bridge, N.Y. 12035	(518) 234-3194
Ralph VanBrocklin, RFD No. 2, Canton, N.Y. 13617	(315) 386-3036
Neil C. Wright 28 Liberty St., Camden, N.Y. 13316	(315) 245-1434
J. Curtis Dom P.O. Box 56, Wellersburg, Penna. 15564	(814) 324-4414
Northeastern Pennsylvania Maple Producers Assn Box 549, Honesdale, Penna. 18431	(717) 689-2353
Potter-Tioga Maple Producers Assn.	(814) 274-8540
Robert McConnell, Coudersport, Penna. 16915	(814) 274-9143
H. W. Russell & Sons, Maple Farms, Rome, Penna. 18837	(717) 247-7361
Sugar Bush Supplies Box No. 1107, 4109 West Saginaw, Lansing, Mich 48904	(517) 372-1149
Wesley Kinny, Cumberland Center, Maine 04021	(207) 829-5565
Titcomb's Dairy, Farmington, Maine 04938	(207) 778-4959
Wyman W. Manes & Son Sycamore Valley Farm, East Orwell, Ohio 44034	(216) 583-2388
Richards Maple Products 545 Water St., Chardon, Ohio 44024	(216) 286-4160
O. C. Stevens & Son Maple Lane Farm, Mt. Gilead, Ohio 43338	(419) 946-3300
Reynold's Sugar Bush Inc., Aniwa, Wisconsin 54408	(715) 449-2057

DON'T FORGET YOUR DIGEST CONTRIBUTION

UNBREAKABLE POLYETHYLENE* JUGS
DEVELOPED FOR PURE MAPLE SYRUP

Pint Half-Gallon Quart

CONSIDER THE ADVANTAGES OF OUR CONTAINERS –
– BEFORE ORDERING OTHERS

ONE OPERATION CAP AND SEAL
EASY FILL
NO RUSTING IN STORAGE
TAMPER-PROOF INNER SEAL
NO SHIPPING LOSSES
HOT FILL TO 200° F.
EXACT SIZE FOR HOT PACK
LOWEST PRICED CONTAINER

EASY OPEN CAP
DRIP-FREE POUR
NO RUSTING IN REFRIGERATOR
ATTRACTIVE "OLD" JUG DESIGN
EASY POUR - SERVE FROM JUG
NO "TINNY" TASTE
SAFE - SHATTERPROOF
VERY NICE GIFT ITEM

DESIGNS printed for Pure New Hampshire, Vermont, New York, Maine, Pennsylvania, Ohio and "all states" Maple Syrup. Also Private Labels.

* Celanese® Fortiflex® high density polyethylene

See your dealer or write

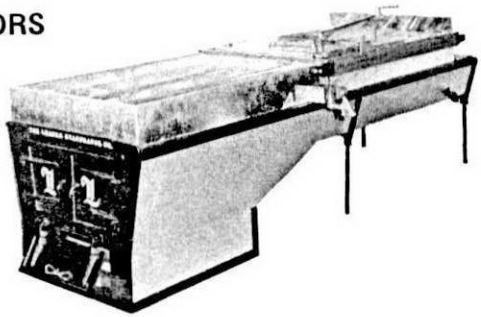
BACON'S SUGAR HOUSE

JAFFREY CENTER, NEW HAMPSHIRE 03454

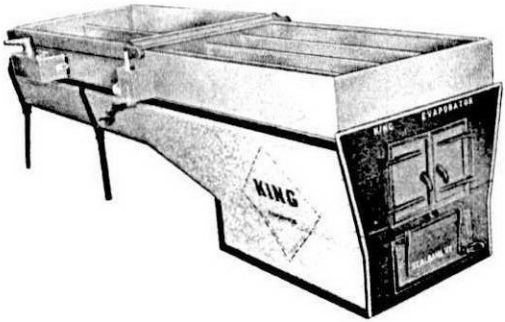
(603) 532-8836

LEADER EVAPORATOR

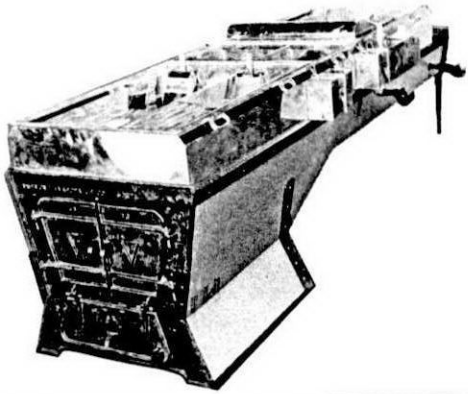
LEADER SPECIAL EVAPORATORS
MONITOR TANKS
WARNER SPOUTS



KING EVAPORATORS
KING TANKS
SOULE SPOUTS



VERMONT EVAPORATORS
VERMONT SPOUTS



We wish to thank our customers for their cooperation during our recent acquisition of Vermont Evaporator Co.

CO. INC. – SINCE 1888

M ANUFACTURED ITEMS OF HIGHEST GRADE
AND FINEST QUALITY

A TTENTION AND CARE GIVEN THROUGHOUT ASSEMBLY.

P ERSONALIZED HANDLING OF EACH ORDER.

L ONG ESTABLISHED FIRM DEDICATED TO SERVICE

E VAPORATORS – A WIDE RANGE OF –

LEADER – KING – VERMONT

As in the past we will continue to offer the Maple Producer the the best possible in maple sugar utensils.

When you think of Maple think of:

Leader Evaporator Co. Inc.

Box 588 St. Albans, Vermont 05478
802-524-4966 or 802-524-3931

LAMB'S CORNER

Dear Friends,

About fifteen years ago we rounded up a few bits of polyethylene tubing so one man could tap a few trees with it. The following year quite a few people used a lot of the same stuff. The next year, against our better judgment, we spent a lot of money on molds to make spiles and tees so you could use vinyl tubing. Then we found we were in the tubing business so deep we couldn't get out. We kept going, improving a little here, a little there, until now our system can be used on level land or steep hills, sealed for natural or artificial vacuum or fully vented, any way that works the best for you. All of them will produce more sap for less labor. But if you are getting all the sap you can boil, and can hire help for a dollar an hour, maybe you shouldn't buy our tubing.

Shortly after our tubing venture, along came the tap hole pellet. We set about the task of obtaining the best pellet that could be made - one that would last long enough to insure a full length season. But here again, if you don't care if you get a pretty short crop some years, maybe you shouldn't use our pellets.

The electronic, automatic draw-off is a great labor saver in the sugar house, but if you have plenty of cheap help, don't waste your money - they're expensive.

Now the Electro-man, that little gadget that warns you if one of your pans is getting too low, is a horse of a different color. It doesn't save you any labor, just evaporator pans. And, after all, someone has to keep the evaporator companies in business, don't they?

Sincerely yours,

Bob Lamb

Bob Lamb