

# National Maple Syrup • DIGEST •



Vol. 5 No. 3

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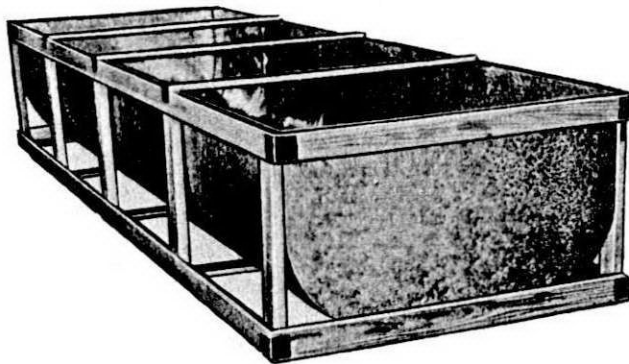
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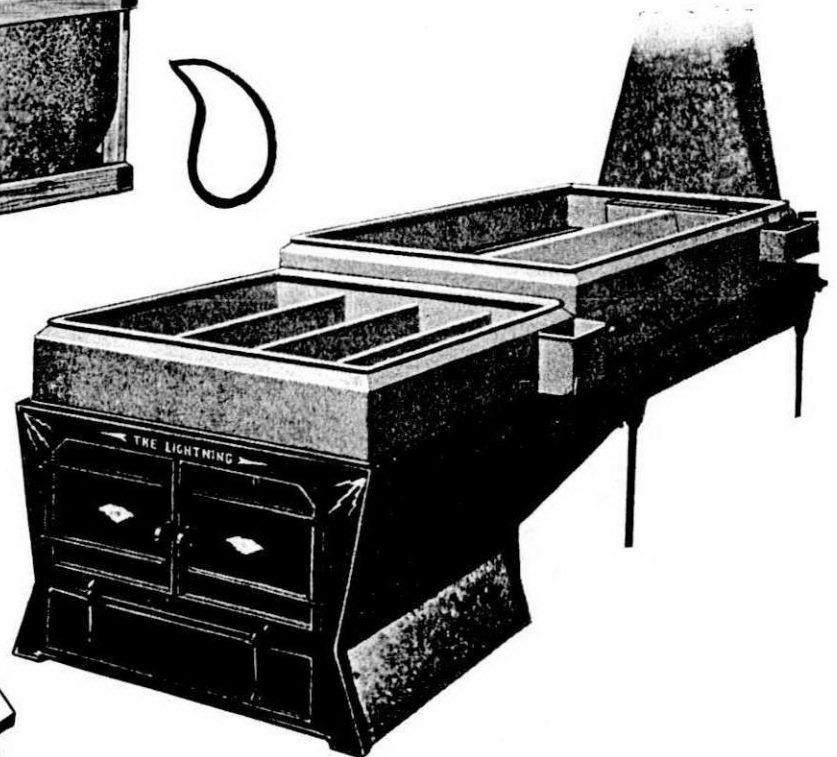
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**NOTICE**

**BACK ISSUES AVAILABLE**

The following issues of the Digest have been printed to date:

- Vol. 1, No. 1, 2, 3, 4
- Vol. 2, No. 1, 2, 3
- Vol. 3, No. 1, 2, 3, 4
- Vol. 4, No. 1, 2, 3, 4
- Vol. 5, No. 1, 2

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DECEMBER ISSUE  
NOVEMBER 1st

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GEORGE KEIM  
April 3, 1966

CHARLES HAGER  
June 29, 1966

"Forever honour'd, and forever mourn'd.

*Iliad. Book XXII*

Castleton, Vt.  
August 25, 1966

Mr. Lloyd Sipple  
Editor, Maple Syrup Digest  
Bainbridge, N.Y. 13733

Dear Lloyd,

On behalf of the Rutland County Maple Producers Assoc., Inc., I am enclosing a check in the amount of fifty-five dollars and ninety-two cents which was the results of a train hold up on our Maple-rama Saturday morning, Aug. 13th, 1966. This was done by masked bandits on horse back, with the use of Lamb electric tappers and gathering pails with signs inscribed on the pails "Dollars for the Maple Digest".

Sincerely yours,

Kenneth O. Proctor, Secretary

*The above letter with enclosed check was received recently. While it is not our policy to accept stolen property, I believe, in this instance, we are justified in a slight relaxation of ethics.*

Editor.

**Maple Manual**

A completely new Maple Sirup Producers Manual, written by Dr. C. O. Willits is now ready for distribution. This publication is the most complete handbook on maple sirup production ever written. It contains 112 pages of the latest developments in the maple industry. If you want a copy, and we don't see how you can get along without it, send 70 cents to the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, and ask for Agricultural Handbook No. 134, Maple Sirup Producers Manual by C. O. Willits.

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## --from the President--

## Editorial

The last time I "saw" you via the Digest was last February and now here we are at the first of October. Can someone tell me where in blazes those in between months went to? Anyway during those months a bumper crop of syrup was made and by now much of it has been marketed. The next big problem is to find some way to spend all the money that was made. We are told that the Internal Revenue people are all set to help you on that, and you won't need to call them - they'll call you!

By the time you get this issue, very likely the Annual National Council Meeting will be over but just in case this does reach you in time, remember you are invited to attend. The Meeting will be held at Antigo, Wisc. on October 5 & 6. Write or phone me for reservations. The next issue will probably have something on this Meeting and this report will certainly include the feeling of the many delegates on the great loss to the Industry when we lost men like George Keim and Charles Hager. It is impossible to "fill the shoes" of such men, but may their work inspire us all to greater things in their memory.

According to Adin's letter, he's been kind of busy this summer. I guess we all have. There just doesn't seem to be time to do anything any more.

I remember, years ago, when we had lots of time. Farmers picked the stone off their fields and built stone walls, cultivated the corn with a walking cultivator, kept the weeds out of the garden and even tied up the tomatoes. Now we let the weeds grow and the tomatoes lay on the ground; but that's all right . . . the wife wouldn't have time to can anything if it did grow.

I can't understand why we don't have time to do the things we used to do. The days aren't any shorter, and labor saving machines should get the jobs done quicker. But everybody's always in a hurry - got to do this and got to do that. I guess now-a-days everyone is trying to do a lot more than they used to expect to do.

I know I bit off more than I could chew this summer. I remodeled my bathroom! Even moved the furniture!! Been working at it off and on all summer and it isn't done yet. And

talk about a waste of time - I can't see but what it works just the same as it always did.

Then just a week ago I had to get my son married off, and I'm telling you, Adin, that didn't just use up a lot of good time but it pretty well took care of that surplus of money you're worried about. It's a good thing our kids don't get married very often.

Well, that's about enough nonsense for one issue. Maybe next time I'll have something more important to write about. Right now I've got to put together an issue of the Digest and only about a week to do it in before the National Council meeting in Wisconsin. My wife and I are looking forward to that trip. If we're lucky we'll just about make it. One thing that makes it a whole lot easier is the fact that our advertisers have been so prompt in placing their ads. It's tough enough to put an issue together without worrying how we're going to pay for it, and I want everyone to know I certainly appreciate their cooperation.

Getting back to the Council meeting, I'm afraid there's going to be an awfully big hole in it since both George Keim and Charles Hager passed away this year. I suppose there will be men to take their places who will be just as capable as they were, but we're sure going to miss them anyway. In case you are interested, Gordon Brookman of So. Dayton will represent New York and Ed Curtis of Honesdale will be the Pennsylvania representative.

I'd better let you get back to your apple picking and 'tater digging now, and I hope your hogs get good and fat by butchering time. I've only got one this year. He's plenty fat but folks tell me a german shepherd doesn't make very good eatin'.

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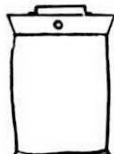
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WE WILL BUY YOUR SYRUP

# Condensed Directions for Making Maple Sugar Products

The following directions were taken from Agricultural Handbook No. 134 by Dr. C.O. Willits. For more complete instructions send for Maple Manual as advertised on page 3 of this issue.

## Maple Sugar

- (1) Converting maple sirup to maple sugar is not difficult. The only special equipment required for small-scale operations is a thermometer having an upper range of 250° to 300° F. calibrated in 1° units.
- (2) Sirup that is saturated with sugar at one temperature will be supersaturated when cooled to another temperature.
- (3) Supersaturated sugar solutions tend to regain their normal or saturated state by throwing the excess sugar out of solution. This precipitated sugar usually is in the form of crystals, and the amount formed depends on the degree of supersaturation.
- (4) The size and number of crystals in the precipitated sugar depends on the degree of supersaturation, the rate of cooling the sirup, and the amount and time of stirring.
- (5) Invert sugar, a product of sucrose, tends to retard the crystallization. Its presence in maple sirup is usually the result of fermentation of the sap. It influences the crystallization of maple sugar. Too much invert sugar may prevent crystallization of sugar from a supersaturated sirup. Too little will cause the maple sugar to be coarse and gritty.

## Maple Cream or Butter

- (1) Use a sirup low in invert sugar (0.5 to 2 percent). U.S. Grade AA (Fancy) or U.S. Grade A (No. 1) usually meets these specifications.
- (2) Test all sirup for invert sugar by the quick test. Do not use sirup that contains more than 4 percent of invert sugar.
- (3) Heat the sirup to 22° or 24° F. above the boiling point of water.
- (4) Cool the sirup rapidly to 50° F.
- (5) Stir the thickened sirup continuously until creaming is completed.
- (6) Freshly made cream can be packed immediately or it can be aged before packaging.
- (7) Aged cream can be softened for pouring by heating to a temperature not exceeding 150° F.
- (8) Store the cream under refrigeration.
- (9) Causes of failure to cream:
  - (a) If the sirup contains too little invert sugar or if it is not chilled sufficiently before stirring, the cream will have a gritty texture.
  - (b) If the sirup contains too much invert sugar, it will not cream (crystallize).

## Fondant

- (1) Prepare as for cream, except increase the boiling point of the sirup to 27° above that for water.
- (2) Stir or beat the sirup as for cream.
- (3) Place drops of the semisolid sugar on marble slab, waxed paper, or metal sheet—OR—
- (4) Pour the semisolid sugar into rubber molds.

## Soft Sugar Candies

- (1) Use any of the top three grades of sirup.
- (2) Heat the sirup to 27° F. above the boiling point of water.
- (3) Cool the sirup slowly to 155° F.
- (4) Stir the thickened sirup until enough crystals have formed to make a soft, plastic mass.
- (5) Immediately pour or pack the soft sugar into molds—OR—
- (6) Set it aside in a crock at room temperature for 24 to 48 hours.
- (7) Concentrate an equal amount of sirup as before.
- (8) As soon as the same elevation of boiling point (27° F.) is reached add the hot concentrated sirup (bob) to the aged soft sugar.
- (9) Stir only enough to mix and pour the semisolid sugar into the molds.

## Crystal Coating

- (1) Make crystallizing sirup from top grades of maple sirup.
- (2) Concentrate the sirup to a density of 70° to 73° Brix by heating it to 9.5° or 11° F. above the boiling point of water (63.5° Brix hot test).
- (3) Cool to room temperature.
- (4) Keep the surface of the sirup covered with heavy paper, except when adding or removing the candies.
- (5) Place the freshly made candies in the heavy sirup and leave them in the sirup 6 to 12 hours.
- (6) Remove the candies and completely drain the sirup from them.
- (7) Place the candies on paper-covered trays and turn each piece every hour until dry, or wipe with a damp sponge.
- (8) Do not attempt to crystal coat candies during humid or rainy weather.
- (9) Air dry at room temperature 4 to 7 days.

## Maple Spread

- (1) Use any of the three top grades of sirup.
- (2) Heat the sirup to 10° or 11° F. above the boiling point of water (70° to 78° Brix).
- (3) Cool the thick sirup to 150° or below and add

- 1½ ounces of invertase per gallon of sirup.
- (4) Store at room temperature for 2 weeks. The resulting product is high-density sirup.
  - (5) "Seed" the high-density sirup with dextrose crystals from previous batches of spread or from crystallized honey. Use 1 teaspoonful per quart of sirup.
  - (6) Mix the seed thoroughly through the sirup and pour the mixture into the final package.
  - (7) Store at 55° to 60° F. Within a few days the dextrose crystals will grow to yield a plastic spread.

#### **High-flavored Maple Sirup**

Use either of the two top grades of sirup to make high-flavored maple sirup, and make it by either the atmospheric or the pressure-cooking process.

##### *Atmospheric Process*

- (1) Concentrate the sirup by heating to 40° F. above the boiling point of water (250° to 255° F.). Process only in a steam kettle, jacketed or with coils.
- (2) Hold the thickened sirup at the final temperature of concentration for 1½ to 2 hours.
- (3) Cover the kettle and reduce the steam pressure to approximately 24 or 26 pounds per square inch—to keep the sirup at 252° to 255° F.
- (4) Turn off the steam at the end of the processing period and cool the thick sirup to 180° F.
- (5) Add water with caution and in small amounts until the sirup is restored to about standard density and reboil to 7° F. above the boiling point of water.

##### *Pressure-Cooking Process*

- (1) Heat the sirup almost to boiling temperature (210° to 215° F.).
- (2) Transfer to containers to fit the cooker (usually 1- or 2-quart jars).
- (3) Place the lids on the containers loosely, and put them in the cooker.
- (4) Add water to the cooker according to the manufacturer's directions and secure the cooker lid.
- (5) Bring the steam pressure in the cooker to 15 pounds per square inch. Hold at this pressure for 1½ hours.
- (6) Allow the pressure to fall slowly; do not vent or quench.
- (7) When the pressure has fallen to zero, open the cooker and remove the high-flavored sirup.

#### **Crystalline Honey-maple Spread**

- (1) Use U.S. Grade B, Vermont B, or New York No. 2. sirup.
- (2) Heat the sirup to 19° or 20° F. above the boiling point of water (80° Brix).
- (3) Cool the thick sirup to below 150° F. and add 1½ to 2 ounces of invertase per gallon of sirup.
- (4) Store at room temperature for 2 weeks to produce a high density sirup.
- (5) Mix thoroughly one part of the high-density

- sirup to two parts of mild flavored honey.
- (6) Add seed (dextrose crystals) at the rate of 1 teaspoonful per gallon of mixture. Use a previous batch of honey-maple spread or crystalline honey as seed.
  - (7) Hold the seeded mix at 60° F. until the dextrose crystals grow to produce a semifluid plastic (from 3 to 7 days).
  - (8) Store under refrigeration.

#### **Rock Candies**

- (1) Use one of the top grades of maple sirup.
- (2) Heat the sirup to 8° F. above the boiling point of water (67.5° to 70° Brix).
- (3) Store several months at or below room temperature.

#### **Hard Sugar**

- (1) Use any grade of sirup.
- (2) Heat the sirup to between 40° and 45° F. above the boiling point of water.
- (3) Remove from the heat and begin stirring the hot, thick sirup immediately.
- (4) Continue stirring until crystallals form (sirup begins to stiffen).
- (5) Pour the partly crystallized sirup into molds to harden.

#### **Granulated (Stirred) Sugar**

- (1) Use a top grade of sirup.
- (2) Heat the sirup to between 40° and 45° F. above the boiling point of water.
- (3) Pour the hot sirup immediately into a tray or trough for stirring.
- (4) Begin stirring immediately and continue stirring until granulation is completed.

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# CONTROL OF MICRO-ORGANISMS IN MAPLE SAP

- by Lloyd H. Sipple

Storing maple sap for any length of time before evaporating has always been a problem for maple syrup producers. You can't afford to have evaporating capacity to quickly handle a really good run because you only get one about once every two years. With the coming of the central evaporator plant this problem is amplified. The relatively larger number of taps handled by these plants sometimes produce enough sap in one day to last 5 or 6 days of continuous operation. Even under normal conditions when the sap flows two to four days a week, a central plant operates more efficiently and economically by storing the sap a few days and running every day in the week.

Many years ago bacteriologists found that sap doesn't just "sour". Spoilage is primarily caused by excessive growths of micro-organisms in the sap. The first approach to controlling these growths was the use of underground tanks. These proved to be more or less ineffective because some kinds of bacteria and yeast will grow at very low temperatures and the tanks were usually quite difficult to keep clean.

The first real break-through was the use of ultra-violet light. (See *Microbiology and Sanitation in the Sugarhouse* by Aaron Wasserman in *Maple Syrup Digest*, February, 1964). These lights are very inexpensive but will kill bacteria and yeast almost instantly on contact. However, when these lights were used to illuminate the surface of the sap in storage, they proved to have very little effect because the light penetrated only a few inches below the surface.

About three years ago, Dr. C.O. Willits and Dr. Aaron Wasserman of the Eastern Utilization Research and Development Division of the U.S.D.A. in Philadelphia, Pa., found that by pumping the sap through an Aqua-Fine Sterilizing Unit\* they could get almost a 100% kill of all micro-

organisms in the sap. An Aqua-Fine Sterilizing unit is merely a jacketed ultra-violet tube which forces the liquid to flow past the U V lamps in a thin layer so the U V light penetrates all the way through.

After their experiments proved successful, Dr. Willits asked the Research Division of the U.S.D.A. to contract a central evaporator plant to run further experiments to find out if this procedure was both economical and effective under normal production conditions. We were awarded that contract, and having completed two of the three years it is to run, feel that, while we can only give an unofficial and incomplete report at this time, enough information has been collected which substantiates their laboratory experiments to allow us to pass it along to our fellow producers.

## Treated and Untreated Stored Sap

Three times during the sap flow season a 4000 gallon batch of sap was divided into four 1000 gallon aliquots by pumping into separate storage tanks. The four identical, 35 bbl, round bottom storage tanks were designated as Number 1, 2, 3, and 4. All were tightly covered with black sheeting mounted on wooden support frames to eliminate any effect from sunlight. Two Aqua-Fine Sterilizing Units were used, each containing two, 36 inch, 30 watt ultra-violet tubes. The sap was pumped through both units in series at the rate of 16 gallons per minute. One unit could be used at a rate of 8 gpm with the same results.

Tank Number 1 was the control and the sap was pumped into it without any treatment and allowed to remain static until the prescribed storage period was up, or until the sap became very cloudy, or odorous, due to microbial fermentation.

Tank Number 2 was filled by pumping the sap through the sterili-

zing units, after which the sap remained static.

Tank Number 3 was filled by pumping the sap directly into the tank where it was radiated with three, overhead, 30 watt, 36 inch ultra violet lamps, mounted to illuminate the entire surface of the stored sap.

Tank Number 4 was filled in the same manner as Number 2. This tank was also radiated with overhead ultra-violet lamps in the same manner used for tank Number 3.

Four-ounce samples were obtained from each of the tanks at the time of filling and then once every 24 hours thereafter to the end of the storage period of seven days (or until the control sap was judged spoiled). The temperature of the sap in each tank was recorded at the time the sample was obtained, and the samples were analyzed for yeast and bacterial counts.

At the end of the storage period the sap in each of the four tanks was separately converted to sirup using conventional commercial sap evaporators.

The experiment was run three times each season for two years. In each of the 6 tests the results were practically the same. Tank Number 4, which had the complete treatment showed no growth whatsoever in bacteria or yeast and produced the same grade of sirup as was produced from the sap as it was delivered to the plant. The control tank, which had no treatment at all produced a sirup from one to two grades darker in color. Tanks Number 2 & 3, which had only partial treatment, produced a grade of sirup somewhere in between that which was produced in tanks Number 1 & 4. There was absolutely no effect on the flavor since no bactericide of any kind was used.

The sap was held in these tanks for a period of 5 to 11 days - usually 7 days. The bacteria count in the control tank ranged from a low of 470



per cc when filled to a high of 24, 900,000 per cc when emptied. The highest bacteria count encountered in tank Number 4 in all 6 runs was 4,400 which is still almost sterile.

Besides running these tests, we used the Aqua Fine Sterilizers on sap pumped into our regular storage tanks. Here again we found that sap held for 3 to 4 days produced no appreciable loss in grade.

#### Where Do Micro-Organisms Come From?

Another part of this research contract was more of a probing action designed to learn where the greatest growth in micro-organisms takes place. Samples were taken every sap flow day from several pre-designated areas which included metal buckets, plastic tubing, gathering tanks for both buckets and tubing, hauling tanks, and commercial storage tanks at the plant. Since all taps contained taphole sterilizing pellets,

the chance of contamination before the sap left the tree was negligible.

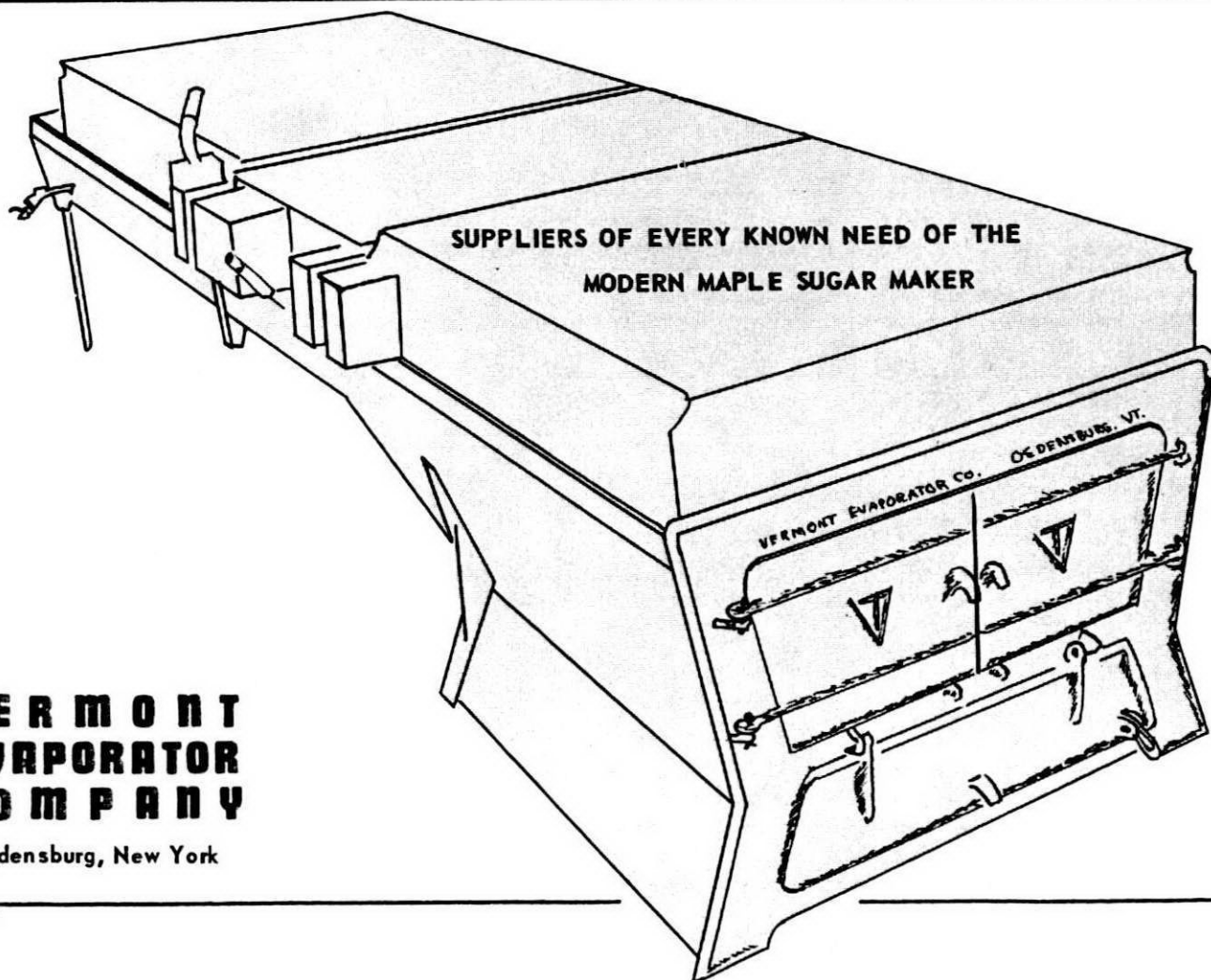
The data obtained for bacterial and yeast counts for all methods of collection and field storage show no exceptional growth. However, samples taken from the hauling tanks revealed an unsuspected source of contamination. After the first few days of use, there was a sudden increase in both yeast and bacterial counts. Since the sap used to fill these tanks was low in microbial count, the pronounced increase in microbial count of the sap during the short time it remained in the hauling tank must be accounted for by the fact that between hauls the tanks were not completely emptied and the fermenting, residual sap produced a rich inoculant for the subsequent filling. This was confirmed by the fact that when the tanks were washed and sterilized, the microbial count dropped to that of the sap used to fill the tanks.

The source of infection is serious

since the excessive growth of micro-organisms damages the sap. The sterilizer merely kills these micro-organisms preventing further growth and damage. It will not overcome damage that has already been done. In other words - if the sap is delivered to the plant in such a condition that it will produce a dark syrup and is then pumped through the sterilizers, it will still produce a dark syrup. Both the sterilizers and the overhead U V lamps are a prevention and not a cure.

This is a brief and unofficial report on proceedings to date. A more complete report will be published when this project is completed next year.

*\* Mention of company or trade name does not imply endorsement by the writer or Department over others not names.*



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# THE *FIRST* VERMONT MAPLE-RAMA

BY BOB LAMB

As soon as I returned from the first Vermont Maple Tour, held in Rutland County, Vt. on Aug. 12th & 13th, I called Lloyd Sipple, Editor of the Maple Syrup Digest, to report on the unbelievable event I had attended. This only got me in trouble. Since other commitments had prevented Lloyd from attending, he immediately asked me to write it up. "I can't write," I said, "but I've got 48 wonderful pictures from the tour." Lloyd kept insisting, so, after many well chosen cuss words, I gave in. My only hope is that I can do justice to such a well planned trip, so here goes --

Since I have a small interest in the maple industry, I armed myself with a pair of mountain climbing boots, a couple of cameras and a whole bag full of film and headed east. By 10 a.m. people had begun to collect at Bill Clark's place at Wells,

Bill has a central evaporator set up and buys a good deal of his maple sap. Emphasis is put on newspaper advertising during sugaring and much of his crop is sold at the time at retail prices. It has taken years adding space here and there along with a sugar house routing system. Bill feels all this worthwhile, by properly entertaining his visitors and keeping them in an enjoyable frame of mind, they buy his fine product. Ray Foulds, Vermont's Extension Forester, was on hand as usual to keep things going smoothly and handle the loud speaker. Ken Proctor handled the meal tickets and reservations and was busier than a cat on a tin roof. Attendance for this first tour was wonderful and stayed with the group through the whole tour, about 80 cars and 200 people. People came from Ohio, Penn., N.Y., Ontario, Quebec, Maine, N.H., Mass. and, of course, Vermont. All through the

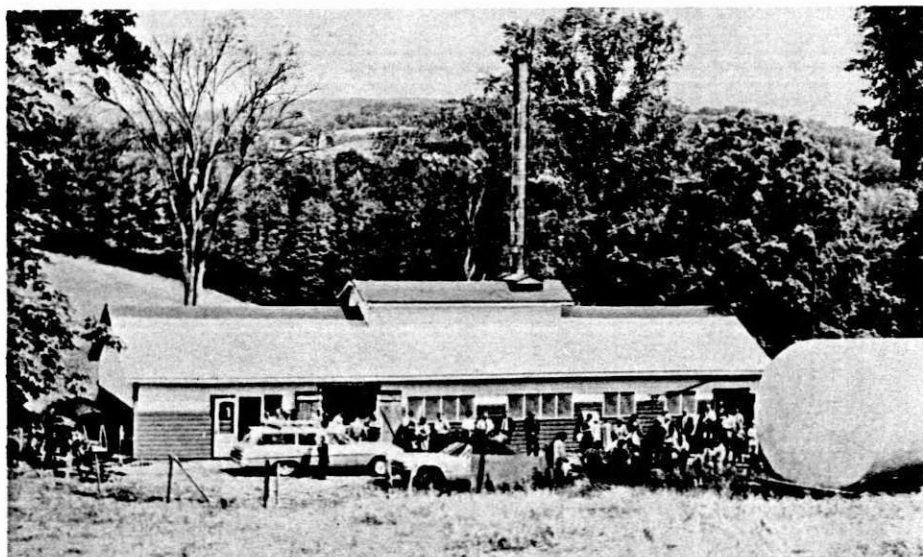
You never really see a country 'til you follow a maple tour. Mr. Hunting of the Vermont State Police supervised the train of cars and did a wonderful job of it. The routes taken were off the main highways where the scenery seems always best, and one can't but sometimes wonder why they built those main roads where they did anyway.

The second stop was an unhurried trip to G.H. Grimm & Co. of Rutland, Vt. owned by Bob Moore. Bob was on hand to welcome us to his Maple Utensil Factory, and we were leisurely shown through the entire factory in groups of 25. Everyone seemed to watch all the steps of production as closely as if they had money in the place. I almost believe that the workmen were watched with so much interest that at least 1/3 of the men attending the tour could now build their own equipment. At short intervals the tour would be stopped and Bob Moore or his men would carefully explain every minute detail and then go on again.

The next and last stop of the day was to arrive at the Rutland Fair Grounds. All during the tour we had heavy showers. These unfortunately had apparently been necessary and unavoidable, but at least they were turned on and off at just the right times so no one got wet.

At the Fair Grounds, a lot of work had been done for everyone's convenience and continual entertainment. Bill Clark told me when I quizzed him that there had been more than 1000 hours of work and preparation before the tour. The Rutland County Association apparently was determined to start the tours off with a fine example for their state to follow, and they did.

Congressman Stafford flew up from Washington to dedicate a beautiful new Rutland County Fairgrounds Sugarhouse in honor of Mrs. Betty Davis. Again the rain came, but



Vermont. The basic characteristics of Rutland County is that when they built that area they had a hundred times more material than they needed all piled up in great big piles and I guess they never got time to smooth it out. Maybe they went on strike or their equipment was worn out by the time they got there.

tour, as with all maple groups, was the wonderful, friendly, relaxed atmosphere of everyone talking and smiling and joking with each other, and quietly having the time of their lives. You really have to work at it to be a stranger in maple, like pinch babies and spit tobacco juice on women's shoes.



there was plenty of room for everyone to move inside.

The next stop on the program was to have all you could eat. Barbecued roast beef or swordfish, picnic fashion, was the meat and taters part of the meal to get your ribs out of your backbone, and we all sure were hungry.

After supper we moved into another new building for the evening program. The Rutland County Extension Agent was everywhere checking, supervising, and just seeing all was well. Dick Adams said that they were very fortunate to have such a fine representative and that he had worked as hard as anyone all through the entire formation of the tour.

Eric Nye, President of Vermont Maple Sugar Makers Assoc. and representatives to the National Council, opened the evening program, with only a few words. Eric plainly stated that it was a pleasure to be there, and that he would continue to do all he could to help Maple. But we all know that, so that sentence was wasted. Next, he turned the program over to those that made it possible, so as not to take any chances on losing it up.

Dr. Jim Marvin, who heads up Maple Research at the University of Vermont, was the main speaker — the topic being “Sugaring in 1976”. Everyone was very pleased with his talk, and felt he had just about hit the nail on the head.

Next morning at 7:30 a.m. we were again at the Fairgrounds, and

believe it or not, a brightly colored passenger train was waiting for us to get on. Karl Chapman, Superintendent of Vermont Railway and a Rutland Co. Sugarmaker made this possible.



Amid a great deal of noise and enthusiasm and whistle tooting, the train started off. The first stop was at the Old Brick Church in N. Clarendon. Here the only hitch in the whole tour occurred. The pancake griddle wouldn't griddle and we had to wait awhile for a real good breakfast. The holdup must have cost the caterers quite a bit as we all ate a lot more. I reckon they will pay better attention to their equipment after this.

After breakfast the train took us on to Karl and Frank Chapman's sugar operation which is basically a hobby and scientific experimentation center. The teflon finishing pans were just one of the attractions. The neighbors say that this sugar operation works so smooth you go to sleep watching it.

Our train ride started back to Rutland at a leisurely pace so we could all enjoy the beautiful mountain scenery.

As our train neared No. Clarendon riders appeared from behind the hills galloping furiously, fully armed — out of the West, complete in all fine train robbery tradition.

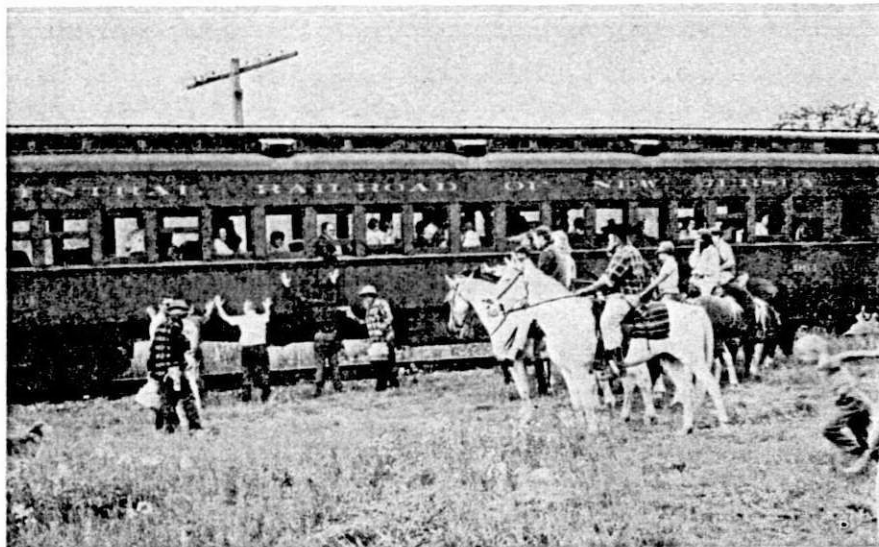
Stopping the train was a real job for them. Their ten gallon hats blew off and their red bandannas flew up and covered their eyes, hindering their operation even more. As I understand, a good train robber keeps his face covered, but riding a horse at top speed over uneven ground with

your eyes covered too, must be quite a handicap.

As soon as the train was stopped the bandits came through the train yelling "The Maple Digest needs your help". They were armed with electric tree tapping drills, which they shoved in many fellow's ribs. Donations were collected in skimming ladles and deposited in sap collecting pails. Over \$50.00 was donated to the Maple Digest amid a great deal of fun and noise.

After this highlight of the tour we continued back to Rutland. I was talking with Karl Chapman later, and I said to Karl that this train trip means a lot more than meets the eye. Even though most of the people here will yet live a good number of years, probably 95% of them will never ride in a train again. Also, this could well be the last Great Train Robbery.

Our next stop was to the Truman Young Farm where 4-H groups with Truman and his family provided us



with a wonderful picnic dinner. A large tent was set up in a big field overlooking a full grown mountain.

George Clark from Stamford, N.Y. and I were talking about the wonderful scenery that Vermont provided. George commented "You can't eat it, but you sure can look at it."

Our final and last stop of the day was at Bill and Dick Adams'.

In this operation one had the impression of much research and advancement hidden in the mountains and in this picturesque old sugar house that has been used by the Adams family for generations. (See Cover Picture)

Dick Adams even builds his own evaporators, chopped them up and hooked parts together at different levels. The fact is that all through the Adams operation everything really works and they know what they are doing.

Dick has years of work all figured out and the efficiency of his different steps. But after 10 minutes here he had gone so deeply into his data that I was completely lost. Never-the-less, the Adams deserve a lot of credit. From here we slowly left and started to get ourselves unlost and find a main road.

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# Thiram Not Registered for Plastic Tubing

By G. R. Nielsen

During the past season thiram was suggested as a squirrel repellent for use on plastic tubing in the maple sugar industry in at least two publications (Vermont Maple Memo #3, August 1965, and Agriview, vol. 24 (13):2, Sept. 8, 1965).

Thiram is the common name for tetramethyl thiuram disulfide, a compound that was initially marketed as a fungicide and seed treatment under the trade names Arasan and Tersan. In recent years this pesticide has also been found to be effective as an animal repellent against certain chewing animals, since it has a very "disagreeable taste".

According to the Pesticides Regulation Division, ARS, USDA, thiram, as an animal repellent, is registered only for use as a repellent for deer, rabbits and meadow mice when applied to the bark of dormant trees to prevent gnawing and growsing.

Thiram is not registered as a squirrel repellent nor for use on plastic tubing. Such use is, there-

fore, illegal and inadvisable. The use of thiram on plastic tubing, besides being illegal, would almost inevitably result in the contamination of the maple sap.

At this date nothing is known regarding the penetration of plastic tubing by thiram or the changes in flavor and odor that might be brought about by contaminating maple sap with thiram, a known taste repellent. Aside from the possibility of off-flavor and odor a tolerance would have to be established for thiram in maple syrup before the product could enter interstate commerce. This would also have some bearing on the validity of the statement "pure Vermont maple syrup", a product often advertised as a natural food, free of pesticides and other chemical residues.

(Dr. Gordon R. Nielsen is Pesticide Coordinator for the Extension Service, University of Vermont.)



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# PENNSYLVANIA MAPLE TOUR

The 1966 Pennsylvania Maple Tour will start at 1:00 p.m., Friday, Oct. 7 at Potato City Hotel, located 8 miles east of Coudersport, Pa. on Route 6. Sugar Camps in the northern part of Potter County will be visited and return to the hotel for a banquet at 7:30 p.m.

Saturday, Oct. 8, the tour will continue and will feature a stop at the Pennsylvania Grand Canyon. All maple producers are invited to attend.

Since it is possible that this issue of the Digest will reach our readers in New York and Pennsylvania in time for this tour, we are including the above announcement.

It seems that maple tours are becoming very popular. The New York tour, started 20 years ago with two cars and a handful of producers is getting so large it is almost unmanageable, which is a tribute to Fred Winch. Pennsylvania started last year and Vermont this year — both with a bang. This pretty well proves that most maple producers are anxious to get all the information they can to save time and labor and improve their products.

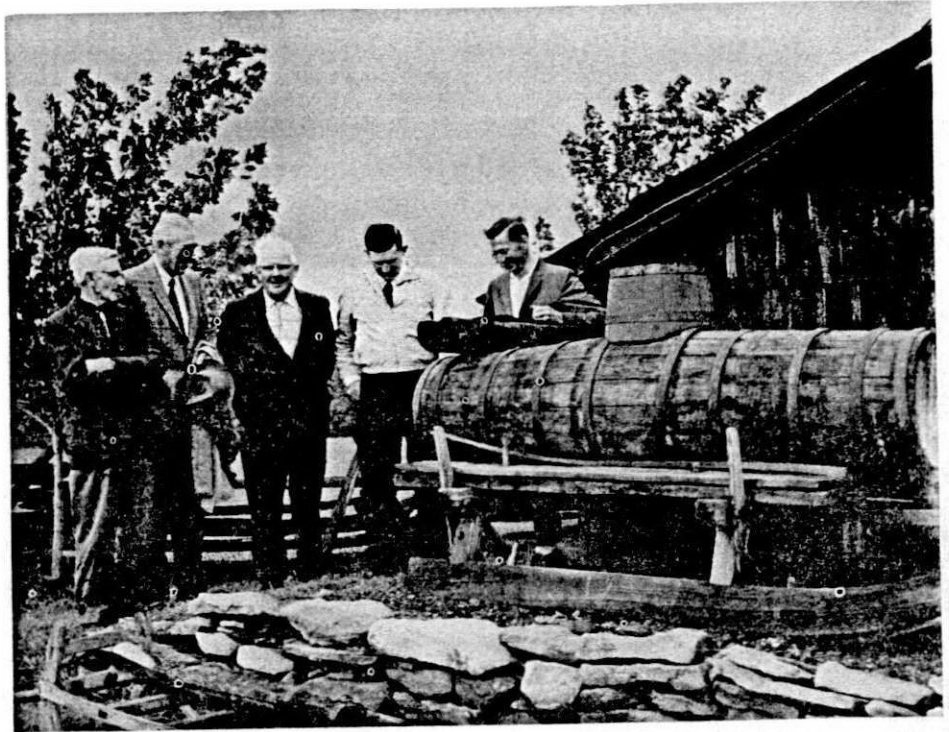
The following is an account of last year's Pennsylvania tour which arrived too late for the February issue.

Ed.

Seventy-five maple producers from Pennsylvania, New York, Ohio and Wisconsin participated in the first tour sponsored by the Pennsylvania Maple Syrup Council last fall. The site of this event was Somerset County in southwestern Pennsylvania.

The itinerary included a fully equipped maple museum owned by Dr. & Mrs. O.E. Haupt. A covered bridge, reconstructed log cabin of 1804 vintage and fully furnished, and a farm equipment museum added to the interest.

The N.S. Critchfield camp was recently renovated with self designed equipment with a 450 gallon per hour



Viewing an old gathering tank and wooden trough are (L-R) N.E. Beabes, J.R. Stuart and George Keim (Deceased) of the Somerset County Maple Producers' Association and who are also active in the State Council; Ed Curtis of Honesdale, President of the state group and J.B. McConnell of Coudersport who serves as State Secretary.

boiling capacity. Mr. & Mrs. Critchfield produced 900 gallons of syrup from 3,000 taps last year. Coal is used for fuel at the rate of 50 pounds per gallon.

The John B. Zimmerman camp features high pressure, coal generated steam for boiling. Mr. Zimmerman uses a series of pans with steam coils — a system which he pioneered in cooperation with the Philadelphia A.R.S. Maple Laboratory. At the Zimmerman farm, a rain curtailed plastic tubing erection and dismantling demonstration was carried out with Dr. C.O. Willits of Philadelphia, and Ed Farrand, Extension Forester of Penn State in charge.

The first day of the Maple Tour was concluded with a banquet featuring comments by Ed Curtis, President of the State Association; Dr. Willits, Ed Farrand, C.C. McDowell,

retired local County Agent and A.M. Matthews, Esq., of Somerset, who traced the history of sugar and syrup making. County Agent, James Bochy, acted as toastmaster and George Keim, President of the Somerset County Association in charge of arrangements. A folk singing trio provided entertainment for the evening.

On the second day the entourage of twenty-five cars journeyed through mountainous countryside in Fall coloration to the Herbert Hall camp near Glencoe. A typical evaporator pan is wood fired and bottled gas is used in the finishing pan.

The new W. Curtis Dom camp near Wellersburg is oil fired and automated. Mr. Dom specializes in all types of maple confections. The Roy Blocher farm at Salisbury caters to the tourist trade and maintains an air of antiquity about its efficient



Dr. C.O. Willits, head of the A.R.S. Maple Investigations unit at Philadelphia discusses maple tubing installation system to the first Maple Tour in Pennsylvania.

operation. Three generations of camps were in view in the sugar orchard. Wood and coal were used under conventional pans.

The final camp visited was that of George Keim at West Salisbury. Here, the tourists saw two huge steam engines which furnish power to coils immersed in a custom made pan. A second flue pan is oil fired and does pre-boiling only. The Keim camp, the largest in Pennsylvania, uses more than thirty miles of plastic tubing along with metal buckets attached to more than 11,000 tap holes.

In addition, 7000 taps at a neighboring location are processed at the Keim camp which manufactures all products for an expanding tourist industry.

The event was concluded with a pancake - sausage - maple syrup dinner at Salisbury. Part of the crowd visited the local Springs Folk Festival. Part visited other camps in the area and others wended their ways home bringing a happy ending to a very successful first venture in Maple Camp Touring in Pennsylvania.

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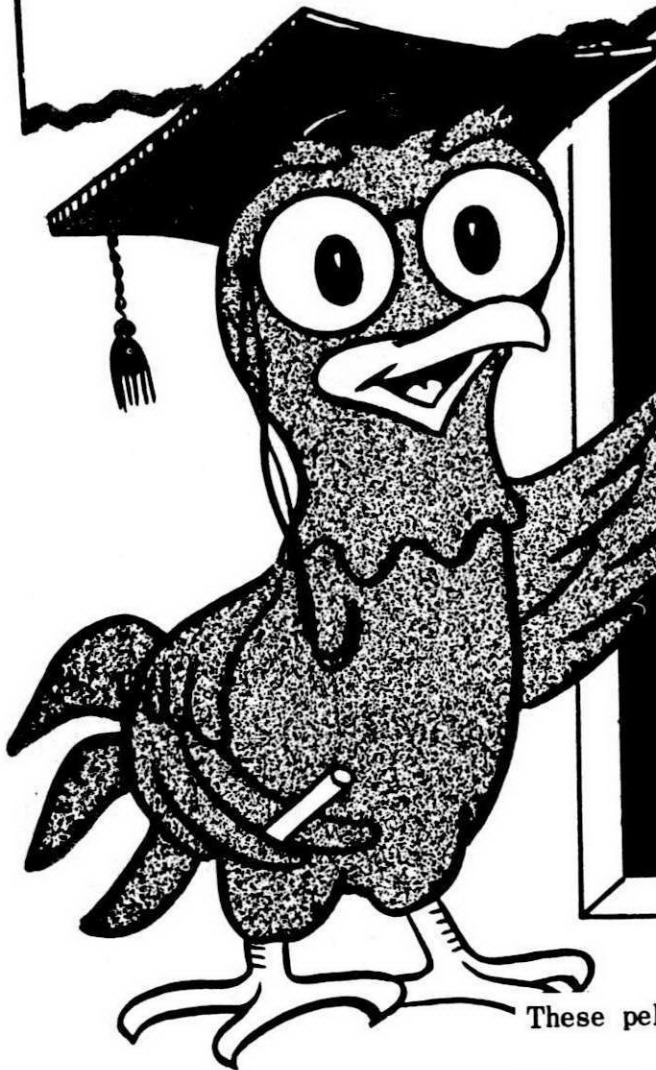
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# Maine Maple Festival



MAINE SUGARHOUSE-ON-WHEELS was a popular place during the Maine Maple (Syrup) Festival in March, at Lewiston. Here, L-R, are Mrs. Theodore C. Harding of Athens and Mrs. Warren Voter of Farmington, selling maple syrup and other products to a visiting snowshoer (raquetteur).

—Maine Dept. of Agric. Photos—

LEWISTON, MAINE — The 1966 Maine Maple (Syrup) Festival was held in conjunction with the American Snowshoe Congress here, March 4, 5 and 6.

Highlight of the opening day program was the crowning of a new Maine Maple Queen Nina G. Rogers of Madison by Theodore C. Harding of Athens, president of the Maine Maple Producers' Association.

On stage at LeMontagnard Club (one of the local snowshoe clubs) was the outgoing Maine Maple Queen Barbara Barrows of Farmington and Merritt Z. Caldwell, assistant director, Division of Markets, State Department of Agriculture.

The 1966 Maple Queen was presented a large can of maple syrup, a box of maple sugar candy, by the Maple Producers; a huge basket of flowers by LeMontagnard Club; and a bouquet of red roses by Maine

Snowshoe Union President, Arthur Lizotte of Lewiston. Outgoing Queen Barbara Barrows also received a can of maple syrup and box of maple candy.

A sports enthusiast and drum majorette, Miss Rogers was not disheartened by the gloomy, rainy weather, college board exams at Lewiston High School and the waning effects of Mononucleosis.

Queen Nina is 5'-5", weighs 125 pounds, has chestnut brown hair and dark brown eyes and a peaches and cream complexion.

The Maine Maple Producers and State Department of Agriculture manned the famous sugarhouse-on-wheels, March 5 & 6, serving maple taffy (maple sugar on snow) one afternoon, to snowshoers in uniform and children accompanied by parents in the dress of the day. Other maple syrup products were available

from this La Cabane a Sucre the two days.

Making its first appearance (1966) at Sugarloaf ski area, Kingfield, on Washington's Birthday, the sugarhouse along with the new Maple Queen traveled to Pleasant Mountain Ski Resort, Bridgton, on March 13, promoting Maine's maple industry. April 2nd saw Queen Nina Rogers at a Woods Training and Safety Day session at Rumford, Maine (home of Oxford Paper Co.), where she manned a maple syrup display and talked with those attending about Maine Maple Syrup.

Working in the sugarhouse at the Maine Maple Festival in Lewiston were Mr. and Mrs. "Ted" Harding of Athens; Mr. and Mrs. Warren Voter of Farmington; Harold Blaisdell, William Buckland, Robert Wilson and Carl Watts, all of the Maine Department of Agriculture.

Maine Maple Queen Nina rode in



MAINE MAPLE QUEEN Nina Rogers of Madison is shown being crowned by Theodore C. Harding, president of the Maine Maple Producers, at a ceremony at Lewiston in March, held in conjunction with the American Snowshoe Congress. QUEEN NINA is planning to attend the University of Maine.

Saturday's parade of snowshoers, in the evening, as did the Snowshoe Queen Yvette St. Onge of Lewiston. Mrs. St. Onge was also presented a can of maple syrup and box of maple candy by the Maine Maple Producers.

Miss Rogers hopes to enter the University of Maine at Orono where she will prepare for the teaching profession. She is the daughter of Mr. and Mrs. Earl D. Rogers of Madison.



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Take it from a man who formerly made maple syrup with wood . . . the old way can't compare with oil.

Gifford Timian of Oneida County, New York, taps nearly 2,000 trees and buys additional sap from other producers. He has two 5' x 10' flue pans and one 3' x 5' flat pan.

The cold sap pan burner has twin six-gallon nozzles. The other pan has twin five-gallon nozzles. Mr. Timian finishes the syrup with LP gas.

Agway installed the new system before the 1964 season. In two years, the fuel used has averaged about 3 gallons per gallon of syrup.

"We have no problems with oil", says Mr. Timian. "We used to make sugar back in the woods. We had no electricity, no plumbing. We did everything the old way. Now we have a new sugar house . . . with all the conveniences . . . right next to the road. There's just no comparison."



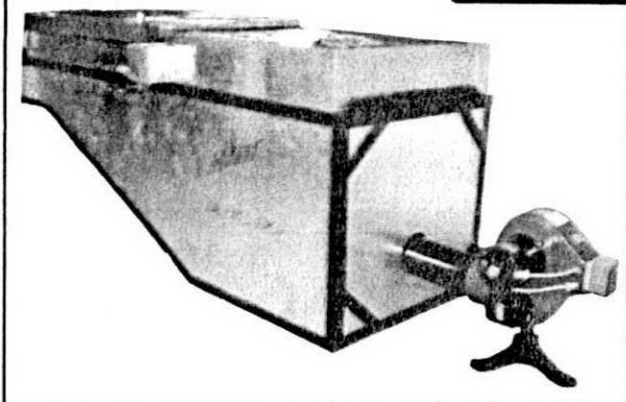
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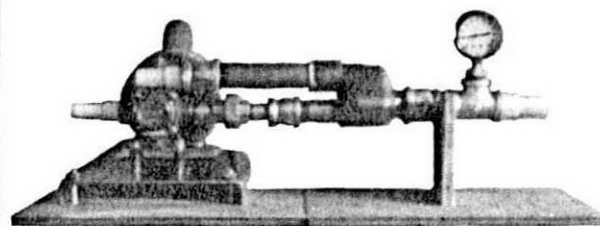
# LOOK - *What's New For The '66-'67 Season!*

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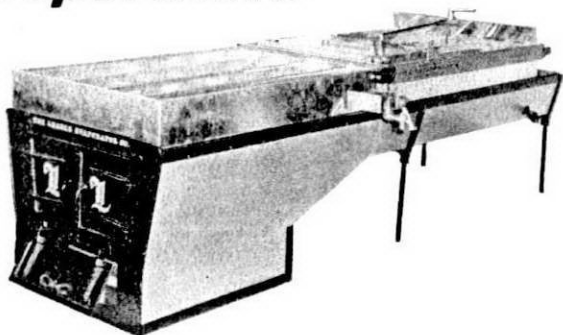
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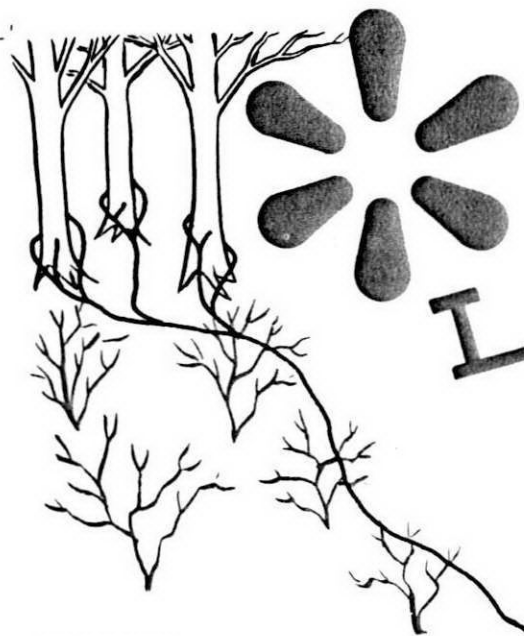
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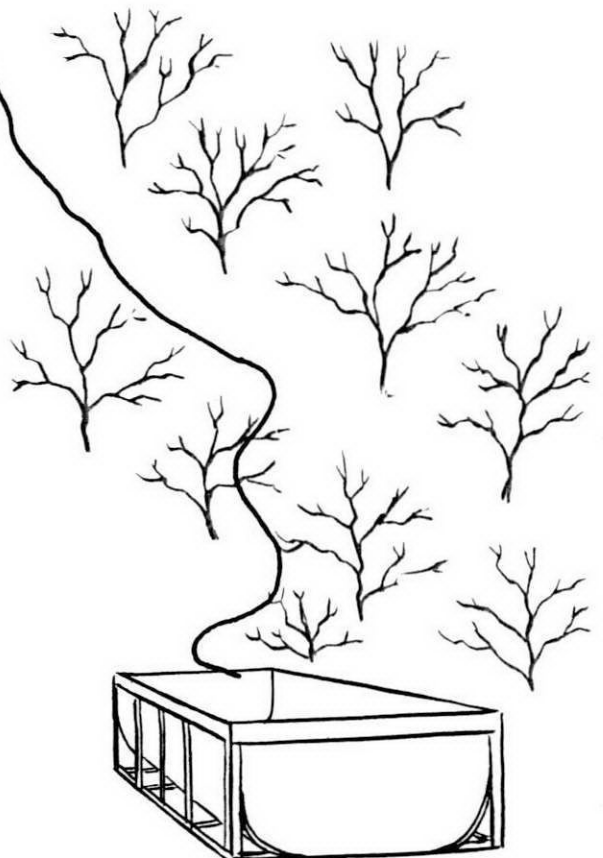
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- Makes each day longer. It's easy to pick up sap from tanks at night.
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There's a lot more ways that tubing can help you, but - if you've got plenty of help, and you're not too fussy about quality or how much sap runs on the ground - - we think you should use buckets.

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