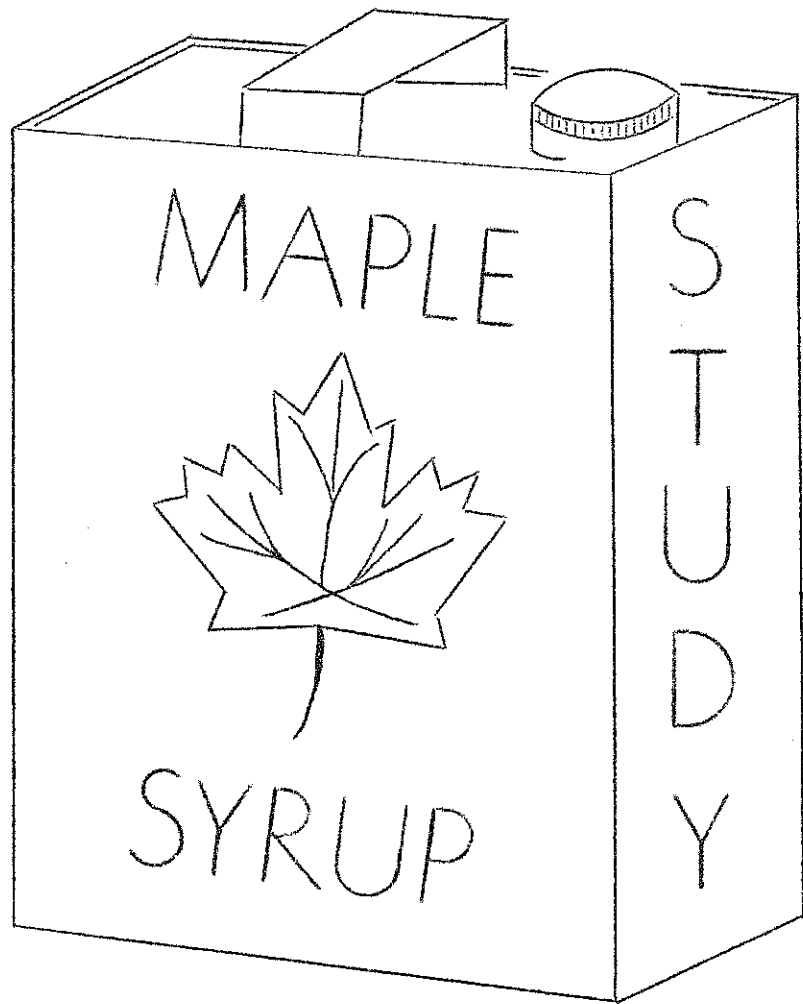


LEWIS COUNTY 1969



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LEWIS COUNTY MAPLE SYRUP STUDY 1969

New York has long been known for its maple syrup and related maple products. These products are produced only in certain areas of the world. They are delicacies and are used by most people as a specialty food. For New York dairymen, a sugarbush on the farm makes it possible to have a secondary enterprise. In years past, most farmers with a sugarbush made maple syrup.

New developments in recent years have had a bearing on the maple enterprise. As dairies have increased in size, some farmers have given up syrup making because of time. New equipment developed for use in sugaring requires the investment of capital. This raises the management question, will an investment in new maple equipment pay?

Many sugar operations have been discontinued, but the maple industry continues to be important in the State. Vermont for many years was the leading state in maple syrup production. New York has passed Vermont in syrup production a couple of years recently and has been a close second the other years.

Cash receipts from the farm marketings of maple products in New York for 1968 amounted to \$1.5 million. This compares with \$1.3 million in 1967 and \$2.0 million in 1966, \$1.8 million in 1965, \$2.2 million in 1962, and \$2.5 million in 1957. Maple receipts for the nation in 1968 amounted to 5 million dollars with New York accounting for 30 percent of this amount.

Maple producers in Lewis County and other areas are confronted with two major management questions. First, does the maple enterprise pay, and second, what might they do to increase the returns from this enterprise? Some co-operators in the Lewis County Farm Business Management Project decided to study the maple enterprise in 1968. The project was continued in 1969 with 17 maple producers submitting enterprise records which provide the basis for the study reported here.

Table 1. MAPLE SYRUP PRODUCTION AND PRICE
New York and U.S., 1958-1968

Year	Production (1,000 gal.)		Price per gallon	
	N.Y.	U.S.	N.Y.	U.S.
1958-62	409	1,323	\$4.45	\$4.75
1963	368	1,143	4.45	4.86
1964	512	1,546	4.55	5.02
1965	410	1,266	4.55	5.04
1966	480	1,476	4.40	4.96
1967	275	979	5.00	5.33
1968	300	979	5.20	5.48
1969	348	1,032	5.80	6.11

Resources Used in Maple Enterprise

The seventeen maple producers included in this study were farmers who volunteered to keep and submit records for 1969. They do not necessarily represent all producers in Lewis County. The results presented are simply those of the seventeen producers. It is believed that this group is typical of many producers both in Lewis County and other areas in New York State.

Table 2. PHYSICAL INPUTS FOR MAPLE ENTERPRISE
17 Lewis County Farms, 1969

Item	Your farm	Average 17 farms
Acres in woods	_____	56 (16 farms)
Number of trees	_____	1,900 (13 farms)
Number of taps	_____	2,187
<u>Labor used: (hours)</u>		
Operator	_____	224 hours
Family	_____	85
Regular farm help	_____	12
Extra hired help	_____	<u>263</u>
Total	_____	584 hours

The 13 farms that reported number of trees averaged 1,900. The number of taps for the 17 farms averaged 2,187. The operator's labor accounted for 38 percent of the total. Extra labor hired for syrup making accounted for 45 percent of all labor.

Each producer estimated the value of his sap house and other special maple equipment. This averaged \$4,400 per farm with a range from \$1,000 to \$14,000.

Table 3. INVENTORY VALUE OF MAPLE EQUIPMENT
17 Lewis County Farms, 1969

Item	No. reporting	Your farm	Average 17
Sap house	17	\$ _____	\$ 898
Evaporator	17	_____	652
Finishing pan	8	_____	205
Plastic tubing	7	_____	351
Buckets, covers & spiles	15	_____	953
Tanks and pails	15	_____	317
Tapping machine	15	_____	83
Trailer or sleds	13	_____	82
Other equipment	17	_____	<u>827</u>
Total		\$ _____	\$4,368

Income From Maple Enterprise

The quantity and value of sales of maple products was reported by each cooperator. In addition, they estimated the amount and value of products consumed by the family and given as gifts. Products on hand at the time the records were collected in the fall were included to get the total amount made and its value. Syrup on hand the first of the year was deducted from the sales to get the quantity and value of syrup made in 1969.

Table 4. INCOME FROM THE MAPLE ENTERPRISE
17 Lewis County Farms, 1969

Item	Your farm		Average 17 farms	
	Gallons	Value	Gallons	Value
Sales:				
Syrup in cans		\$	411	\$2,103
Syrup in drums			125	,457
Cream & candy (quantity in syrup equivalent)			17	176
Total Sales		\$	553	\$2,736
Home use and gifts			17	76
On hand at end			71	418
Total		\$	641	\$3,230
Less on hand at beginning			3	15
TOTAL 1969 SYRUP INCOME		\$	638	\$3,215

These 17 producers made an average of 638 gallons of syrup in 1969. The range was from a low of 130 gallons on one farm to a high of 2,800 gallons. The average value per gallon was \$5.04. Syrup sold in drums averaged \$3.65 per gallon, that sold in cans \$5.12, and that sold as cream and candy \$10.30. The range in average value per gallon for individual producers was from \$3.96 to \$6.65.

Six producers made and sold maple cream and/or maple candy. The quantities of these products (usually given in pounds) were converted to gallons of syrup equivalent. A conversion factor of eight pounds of cream or candy per gallon of syrup was used.

Four producers reported cash expense for sap or syrup purchased. This is included in the figures given above for syrup made in 1969.

The 19 producers included in the 1968 summary made an average of 510 gallons of syrup. The average value per gallon in 1968 was \$5.22 compared with \$5.04 for 1969. The 17 producers included in the 1969 summary made an average of 499 gallons of syrup in 1968 compared with the 638 gallons in 1969. Only two of the 17 producers made less syrup in 1969 than in 1968.

Cost of Production

An economic study of an enterprise must include the cost of production. This is not easy since some of the costs are combined with those of other enterprises. Allocations and estimates must be made. Although the cost thus determined is not precise, it does give a reasonable indication.

Table 5. COST OF PRODUCTION OF THE MAPLE ENTERPRISE
17 Lewis County Farms, 1969

Item	Farms reporting	Your farm	Average 17 farms
<u>Cash items</u>			
Extra hired labor	14	\$ _____	\$437
Containers	16	_____	189
Sap or syrup	4	_____	68
Fuel	8	_____	111
Repairs, house & equipment	13	_____	56
Spraying	4	_____	49
Pellets	7	_____	7
Taxes	15	_____	95
Insurance	12	_____	19
Electricity	8	_____	19
Tree rental	2	_____	5
Miscellaneous	11	_____	27
Total Cash Costs		\$ _____	\$1,082
<u>Overhead items</u>			
Depreciation (house & equip.)	17	\$ _____	\$528
Interest @ 5% on inventory	17	_____	218
Use of sugarbush @ 5¢/tap	17	_____	109
Fuel wood @ \$1/20 gal. syrup	9	_____	11
Use of tractor @ \$1.25/hr.	17	_____	124
Use of trailer @ \$.50/hr.	11	_____	39
Use of other equipment	9	_____	17
Total Overhead Items		_____	1,046
Total cost other than regular labor		\$ _____	\$2,128
Regular labor other than operator @ \$1.25/hr.		_____	122
Total cost other than operator's labor		\$ _____	\$2,250
Value operator's labor @ \$1.75/hr.		_____	392
TOTAL COST PRODUCTION		\$ _____	\$2,642

For taxes, insurance, and electricity, the farmer estimated the share of the total farm item which should be allocated to the maple enterprise. Depreciation was calculated for each item inventoried. In previous studies, charge for use of the sugarbush has been figured at 5¢ per tap and the value of fuel wood at \$1.00 per 20 gallons of syrup made. The 5¢ per tap is a charge for the use of the investment in the sugarbush. It is comparable to an interest charge on the investment. Machinery and labor costs per hour were based on typical rates used in New York State.

Financial Summary

The financial returns from an enterprise can be calculated in several ways. Four measures have been used in this study. They are: enterprise profit or loss; net cash flow; return per hour of regular labor; and return per hour of operator's labor.

Table 6. FINANCIAL SUMMARY OF MAPLE ENTERPRISE
17 Lewis County Farms, 1969

	Your farm	Average 17 farms
<u>1. Profit or Loss</u>		
Total 1969 Syrup Income	\$ _____	\$3,215
Total Costs of Production	_____	2,642
NET PROFIT OR LOSS	\$ _____	\$ 573
<u>2. Cash Flow</u>		
Total Sales	\$ _____	\$2,736
Total Cash Costs	_____	1,082
NET CASH FLOW	\$ _____	\$1,654
<u>3. Return Per Hour Regular Labor</u>		
Total 1969 Syrup Income	\$ _____	\$3,215
Costs other than regular labor	_____	2,128
Return to regular labor	\$ _____	\$1,087
Hours of regular labor	_____	321
RETURNS PER HOUR REGULAR LABOR	\$ _____	\$3.39
<u>4. Return Per Hour Operator's Labor</u>		
Total 1969 Syrup Income	\$ _____	\$3,215
Costs other than operator's labor	_____	2,250
Return to operator's labor	\$ _____	\$ 965
Hours operator's labor	_____	224
RETURN PER HOUR OPERATOR'S LABOR	\$ _____	\$4.31

The profit or loss reflects the return to management from the enterprise. The average profit was \$573 but three of the farms had a loss while 14 had profits. The range was from a loss of \$660 to a profit of \$3,600. Since many of the costs are fixed some think in terms of the cash situation or the net cash flow. This averaged \$1,654 with a range from minus \$40 to \$4,000.

In considering the returns to the regular farm labor force and the operator, it is well to keep in mind that these are fixed items as far as the business is concerned. Any return from the maple enterprise might be considered as a net gain if the assumption is made that the labor would not have been used profitably otherwise. This assumption would not be valid if the work on the maple enterprise interfered with the profits from the dairy or other farm enterprises.

Business Factors

It is common to find a wide variation in the net returns from any business venture. This is true with this maple study. Managers then ask why this variation exists. Business studies over the years have shown that usually there are some key factors which affect the profitability of the business. Some likely factors have been calculated for these maple enterprises.

Table 7. MAPLE ENTERPRISE BUSINESS FACTORS
17 Lewis County Farms, 1969

Factor	Your farm	Average 17 farms
Size:		
Number of taps	_____	2,187
Gallons syrup made 1969	_____	638
Total 1969 syrup income	\$ _____	\$3,215
Rate of production:		
Gallons syrup per tap	_____	.29
Labor efficiency:		
Gallons syrup per hour labor	_____	1.09
Capital efficiency:		
Investment per tap	\$ _____	\$2.00
Cost control:		
Cash cost per gallon syrup	\$ _____	\$1.70
Costs other than regular labor/gallon	\$ _____	\$3.34
Total cost per gallon syrup	\$ _____	\$4.14
Price:		
Income per gallon of syrup	\$ _____	\$5.04

One technique used in analyzing a specific business is to compare its business factors with what others are doing. This can be done in the table above.

If the cost control measures here seem high, you can compute the cost per gallon for each of the major cost items. This will help to pinpoint the specific sources of the high costs.

Size of Enterprise

Seven of the maple producers made more than 500 gallons of syrup each. For a study of the effects of size, the averages for these 7 farms were calculated. Below are comparisons for selected factors of the average for the 7 largest enterprises with the group of 17.

Table 8. COMPARISON OF 7 LARGEST ENTERPRISES AND ALL 17
17 Lewis County Farms, 1969

Item	Average 7 large enterprises	Average all 17 farms
Number of taps	3,580	2,187
Maple enterprise inventory	\$6,867	\$4,368
Gallons syrup made 1969	1,045	638
Hours of labor on syrup	885	584
Percent extra hired labor was of total	47%	45%
Total 1969 syrup income	\$5,286	\$3,215
Total cost of production	<u>4,070</u>	<u>2,642</u>
Net Profit from Enterprises	\$1,216	\$ 573
Net Cash Flow	\$2,703	\$1,654
Income per gallon syrup	\$5.06	\$5.04
Cash cost per gallon syrup	\$1.66	\$1.70
Total cost per gallon syrup	\$3.89	\$4.14
Gallons syrup per tap	.29	.29
Gallons syrup per hour labor	1.18	1.09
Returns to operator per gallon made (for his labor and management)	\$1.69	\$1.51
Return per hour to regular labor	\$4.17	\$3.39
Return per hour of operator labor	\$5.65	\$4.31

For all measures of financial returns, the large enterprises paid better than the average of all 17 farms. The large enterprises had considerably more invested, but the quantity produced was in proportion so that the investment per tap and the total cost per gallon were less than the average of the 17.

Array of Factors

Individual factors were calculated for each farm. In order to see how your factors compare with the other 16, arrays have been made from best to poorest for several important factors. Each factor is arrayed independently of all other factors. For example, the "top" farm for one factor might be the bottom one in the next factor column. Circle your factor in each column.

<u>Number of taps</u>	<u>Gallons syrup made in 1969</u>	<u>Gallons syrup per tap*</u>	<u>Gallons syrup per hour labor</u>
9,000	2,840	.47	1.77
4,000	950	.40	1.59
3,350	830	.40	1.48
2,600	800	.38	1.42
2,300	710	.35	1.35
2,300	620	.33	1.28
2,200	560	.32	1.18
1,600	500	.32	1.17
1,500	470	.30	1.13
1,300	460	.28	.98
1,250	450	.27	.93
1,200	400	.27	.87
1,080	330	.27	.76
1,000	320	.20	.71
850	270	.20	.67
840	210	.20	.65
800	130	.15	.62

* In some cases, includes sap bought which raises the amount of syrup per tap.

Array of Factors contd.

<u>Income per gallon syrup</u>	<u>Cash cost per gallon syrup</u>	<u>Return per hour all regular labor</u>	<u>Return per hour operator labor</u>
\$6.65	\$.18	\$9.44	\$12.58
6.60	.37	8.91	9.57
6.44	.43	7.61	8.91
5.66	.58	6.34	7.43
5.45	.76	4.39	6.34
5.11	.82	3.81	6.30
5.05	1.35	3.30	4.41
5.01	1.57	3.09	4.18
4.98	1.64	2.85	3.86
4.78	1.87	2.68	2.87
4.74	1.96	2.47	2.68
4.60	2.10	2.22	2.49
4.56	2.35	1.84	2.43
4.29	2.76	1.82	1.87
4.17	2.76	.98	.72
4.16	2.87	- .81	-1.15
3.96	2.94	-1.84	-3.11

Table 9. PRICE PER GALLON AND RETURNS FROM MAPLE ENTERPRISE
17 Lewis County Farms, 1969

Item	Investment		All farms
	Over \$5,000	Under \$2,000	
Number of farms	4	4	17
Gallons made 1969	1,200	293	638
Maple investment	\$9,716	\$1,477	\$4,368
Profit (or loss)	\$884	\$294	\$573
Return per hour operator's labor	\$2.56	\$3.90	\$4.31

It appears that a high average price per gallon was not a major factor contributing to high returns from the enterprise.

Table 10. MAPLE INVESTMENT AND RETURNS FROM MAPLE ENTERPRISE
17 Lewis County Farms, 1969

Item	Investment		All farms
	Over \$5,000	Under \$2,000	
Number of farms	4	4	17
Gallons made 1969	1,200	293	638
Maple investment	\$9,716	\$1,477	\$4,368
Profit (or loss)	\$884	\$294	\$573
Return per hour operator's labor	\$2.56	\$3.90	\$4.31

New equipment usually means an increase in the total inventory value of the sap house and maple equipment. The four farms with the largest investments made a larger profit than the average of all 17 farms, but a lower return per hour of operator's labor.

Comparison With Earlier Studies

Ten maple producers in St. Lawrence County submitted records on their maple enterprise for 1966 and 1967, and 19 from Lewis County submitted records for 1968. A comparison of the groups for the four years is made below.

Table 11. COMPARISON OF MAPLE ENTERPRISE BUSINESS FACTORS
Lewis and St. Lawrence Counties

Item	St. Lawrence County		Lewis County	
	1966	1967	1968	1969
Number of farms	10	10	19	17
<u>Inputs</u>				
Number of taps	1,795	1,616	2,305	2,187
Inventory maple equipment	NA	\$2,146	\$4,228	\$4,368
Hours of labor - operator	358	320	202	224
- other	242	228	356	360
<u>Output</u>				
Gallons of syrup made	467	356	510	638
<u>Financial Summary</u>				
Total receipts	\$2,031	\$1,604	\$2,674	\$3,215
Total costs	1,948	1,779	2,447	2,642
Profit or Loss	\$ 83	\$ -175	\$ 197	\$ 573
Net cash flow	NA	\$ 945	\$1,596	\$1,654
Return/hr. operator's labor	\$ 1.98	\$ 1.20	\$ 2.73	\$ 4.31
<u>Production</u>				
Gallons syrup per tap	.26	.22	.22	.29
<u>Labor Efficiency</u>				
Gallons syrup/hour labor	.78	.65	.91	1.09
<u>Price</u>				
Receipts per gallon	\$4.35	\$4.49	\$5.22	\$5.04

NA - Not available

Management Questions for Maple Producers

1. Is your maple enterprise profitable?
2. Is the "net cash flow" added money for family use?
3. Should gift and home use products be included as income?
4. What part of total costs are cash items?
5. Are depreciation and interest "real" costs?
6. How does size affect returns?
7. Is price a major factor?
8. How do some get \$6.50 per gallon while others get \$4.00?
9. What do you consider to be the major factors affecting returns from a maple enterprise?
10. Can you afford to invest in new equipment?
11. Would it pay better to sell sap than to invest in new equipment?
12. Does a profit of only \$573 mean you should discontinue your maple enterprise?
13. What would your regular farm labor do with time now spent on syrup if you dropped the maple enterprise?
14. Does the maple enterprise affect your management of the dairy?
15. Would it ever be desirable to continue the maple enterprise even though your return per hour on regular labor is less than you are paying them now?
16. What are the weak points in your maple enterprise?
17. How could you increase your return from maple?
18. What are the long-term plans for maple syrup on your farm?