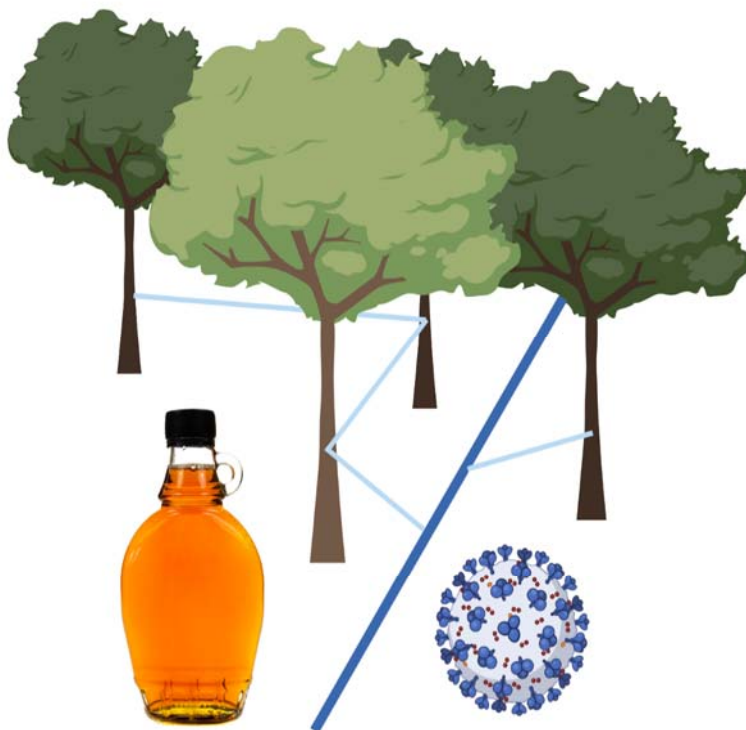


# 2020 Northeast Maple Business Benchmark

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University of Vermont Extension



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## Acknowledgements

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### Contents

Introduction.....	3
Terms and Definitions .....	4
Participant Overview .....	7
Land Use .....	7
Productivity .....	8
Investments .....	9
Expenses .....	11
Cost of Production, Ratios and Comparisons .....	14
Top Performers.....	17
Market Channel.....	18

### Learn More About the Northeast Maple Benchmark Project

For more information about participating in the NE Maple Benchmark go to the UVM Extension Agricultural Business website: [https://www.uvm.edu/extension/agriculture/agriculture\\_business\\_management](https://www.uvm.edu/extension/agriculture/agriculture_business_management)

For previous Maple Benchmark reports please visit the resource library at:

[www.maplemanager.org](http://www.maplemanager.org)

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## Introduction

The 2020 production season began just as the Covid-19 pandemic was emerging across the United States. For many, the onset of sap flows in March 2020 offered the routine activity of getting into the woods and sugar-houses by themselves or with family despite the major disruptions impacting community life. For others businesses with larger workforces, however, those early weeks of sap production presented a need for new processes and uncertainty in order to successfully collect sap and process syrup. It was not an easy time for many producers. Most states quickly enacted “essential industry” provisions that enabled agricultural and forestry operations to remain active assuming their workers were healthy and willing to report to work. Lingering policy and regulatory issues facing maple producers presented themselves as well. The overlapping and sometimes conflicting definitions of maple enterprises between agricultural, forestry and commercial food processing complicated quick decisions about emergency loans, paycheck protection programs and USDA direct payment eligibility.

As the harvest season began many direct marketing companies and agri-tourism destinations felt the disruption immediately. Numerous farmer’s markets and other food events to promote and sell maple products were cancelled. Tourist traffic was halted and the traditional maple open house weekends and festivals were unable to occur. Thankfully by summer 2020, many business owners and markets places were able to adapt with rapid shifts to online pre-orders, curbside pick-up and safely spaced markets.

United States maple crop production statistics published by the National Agricultural Statistics Service in 2020 showed a stable to slightly larger than 2019 in most regions. The total U.S. 2020 crop grew to 4,372,000 (~48.7 million pounds), a 4.6% increase from the prior year.

By fall 2020 the United States Department of Agriculture deployed phase 1 and phase 2 of the Corona Virus Food Assistance Program (CFAP). Direct payments were calculated based on the volume and value of sap because USDA programs provide support to the agricultural component of the enterprises (US agricultural policy and the IRS view maple “syrup” as commercial food processing not farming). This 2020 UVM Maple Benchmark report does not list the government payments received as production-based income in order to preserve an undistorted analysis of the maple enterprises without outside income sources.

Many businesses faced short term cash flow challenges but the syrup held in inventory had real value once market channels resumed activity and the inventory was converted to cash. By the end of 2020, the maple industry at large recognized strong market growth predominantly through grocers and retail store sales. The “stay at home”, “school from home” and “work at home” era increased people’s time for cooking and family meals. The historic cooked breakfast was back and no longer restricted to weekends only. This represented a significant shift from recent years where industry leaders were advocating for alternative maple uses and worked to break the mindset that maple could only be used on pancakes. Domestic syrup demand continued to grow in 2021 with annual growth rate at +20%. This trend does not presume that all maple businesses bounced back from Covid-19 unharmed. It does underscore, for better or worse, the inevitability that marketers and small businesses must always be prepared to adapt to a changing market environment.

The 2020 Northeast Maple Business Benchmark report documents the eight year of financial record analysis for commercial syrup producers. The project includes maple producers in Vermont, Maine, New Hampshire and Massachusetts. Participants had to generate at least \$100,000 in annual gross sales to be included in the study. Tap counts for this year's participant businesses ranged from 6,500 taps to 60,000 taps.

The 2020 study group is a small sample of the entire Northeast maple industry. The methods for this project and our reported observations, however, can compel maple business managers to think about their particular business situations. Maple managers can use the cost analysis methods presented here to analyze their own business and then assess the changes in their individual performance from year to year.

## Terms and Definitions

**Cost of Production (COP):** Calculated by adding annual variable operating costs, fixed costs, accrued expenses, depreciation and value of unpaid labor. Certain fixed expenses, capital assets and depreciation have been pro-rated to reflect the allocation of this expense to the “maple enterprise” versus other business activities. Depreciation cost is obtained by dividing the purchase price of capital assets by an average life span. No consideration is given to depreciation taken for tax purposes or estimated salvage values in this report.

The “cost of production” section of this report includes three different cost of production calculations. All cost of production calculations exclude any payments made towards real estate ownership. The “full economic cost of production” includes both owner draws and any residual unpaid owner labor and management. Unpaid labor is valued at \$22.00 per hour.

COP from Operations: Includes variable costs, fixed costs (excluding loans), capital expenses and owner compensation.

COP with Depreciation: Includes COP from Operations and depreciation. It does not include owner draws or unpaid labor/management.

Full Economic COP: Includes COP with Depreciation, owner draws and the value of unpaid labor/management.

**Bulk Producers:** These producers sell 90% or more of their gross sales to bulk buyers.

**Intermediate Assets:** Equipment, machinery and improvements that have a useful life of more than a one year. Long term real estate assets were not included in this analysis.

**Investment (Asset @ Cost):** Investment refers to the cash value for the purchase of intermediate assets in use by the business. Participants reported the cash cost at the time of purchase. In some cases, a Fair Market Value estimate was used to value assets and/or calculate depreciation when cost basis records were not available.

**Long Term Assets:** Long term assets include buildings and improvements with a lifespan greater than 20 years. Real estate values were not included in this project (nor was cash payments or debt service related to real estate).

**Median:** The mid-point of a range of data with an equal number of data points below and above the median.

**Net Returns to Real Estate:** Accrual adjusted income, less operating expenses, less depreciation, less value of owner unpaid labor. Principal and interest on real estate payments are not included.

**Production-Based Income:** Sales, plus inventory adjustments, plus accounts payable/receivable adjustments at the end of the year. Inventory valuations were based on expected sale prices given the product form (package size) at the end of the year. Inventory of bulk syrup intended for re-packing to retail was valued at bulk prices. Retail packaged inventory was valued at conservative retail prices and/or discounted.

**Sales:** Cash receipts received from January 1st – December 31<sup>st</sup>. For certain indicators “production based income” replaces sales.

**Top Profit Group:** This is the group of producers that demonstrated a Return on Assets that is equal to or above the group average. Return on Assets is calculated as “net farm income ÷ intermediate assets.”

**Unpaid Owner Labor:** Owners estimated the number of hours contributed to essential operating activities for the following categories: sugar bush, sugarhouse time, packing/canning, sales, marketing, distribution and office time. Each hour was valued at \$22 per hour.

**Variable and Fixed Costs:** These are the costs associated with annual operation of the business. These operating expenses include interest payment associated with debt service but not the principal portion. The following “capital activity” items are not included in our variable or fixed cost categories: principal portion of debt payments (cash expenses), capital expenses (cash expenses), depreciation (non-cash) and value of unpaid labor (non-cash).

**Wholesale/Retail:** Producers that sell less than 90% of total sales to bulk buyers. Other sales channels include a mix of business to business and direct sales to customers.

## Participant Overview

Thirteen producers completed financial analysis for the 2020 calendar year.

### Tap Number

- 5,000 - 8,499 taps: 2 producers
- 8,500 - 14,999 taps: 3 producers
- 15,000 taps and over: 8 producers

### Fuel

- 9 producers use oil
- 4 producers use wood, wood chips or wood pellets

### Market Channels

- 7 producers are categorized as “Bulk” (90% or more of sales from Bulk Sales)
- 6 producers are categorized as “Retail/Wholesale” mix
- This group benchmark includes a mix of certified organic producers on non-organic producers

## Land Use

Table 1: Financial Measures Per Acre

	Range		Average	Median
	Low	High		
<b>Taps Per Acre</b>	45	69	57	56
<b>Gallons Syrup Per Acre</b>	16	52	32	32
<b>Pounds of Syrup Per Acre</b>	178	579	351	356
<b>Production Based Income Per Acre (Gross)</b>	\$476	\$1,966	\$1,010	\$920
<b>Net Returns Per Acre</b>	-\$331	\$280	\$11	\$1

## Productivity

The tables below demonstrate the productivity averages for a small group of UVM Benchmark participants. The participants included in the UVM group do change from year to year. USDA National Agricultural Statistics Service reported the following average yield for key states in 2020: VT produced is 0.361 gallons of syrup per tap (~4.02 pounds), Maine produced 0.299 gallons of syrup per tap (~3.33 pounds) and New Hampshire produced 0.291 gallons per tap (3.24 pounds per tap).<sup>1</sup>

Table 2: Productivity Per Tap - 2020

	Range		Average	Median
	Low	High		
<b>Taps (#)</b>	6,500	67,100	20,979	18,100
<b>Gallons Per Tap</b>	0.25	0.79	0.48	0.47
<b>Pounds Per Tap<sup>2</sup></b>	2.8	8.8	5.3	5.2

Table 3: Productivity Per Tap from 2014 - 2020, UVM Benchmark Participants

	UVM Average					
	2014	2015	2016	2017	2019	2020
<b>Gallons Per Tap</b>	0.38	0.40	0.51	0.42	0.45	0.48
<b>Pounds Per</b>	4.3	4.4	5.6	4.7	4.9	5.4

<sup>1</sup> USDA NASS Northeastern Region. 2020. "Maple Syrup Report". Available online at: [https://www.nass.usda.gov/Statistics\\_by\\_State/New\\_England\\_includes/Publications/Current\\_News\\_Release/2020/Maple%20Syrup%202020.pdf](https://www.nass.usda.gov/Statistics_by_State/New_England_includes/Publications/Current_News_Release/2020/Maple%20Syrup%202020.pdf)

<sup>2</sup> The conversion factor of 11.138 lbs. = 1 gallon syrup was used when actual records were not available.

<sup>3</sup> The conversion factor of 11.138 lbs. = 1 gallon syrup was used when actual records were not available.

Production yield averages are shown in Figure 1 and demonstrate that the participants in this study have higher production yields compared to the national average. The table presents the average of the entire study group, the “above average” group reflects only the producers whose yield is greater than 0.48 gallons (5.3 lbs.) per tap and the “below average” group reflects only the producers whose yield is below 0.48 gallons (5.3 lbs.) per tap.

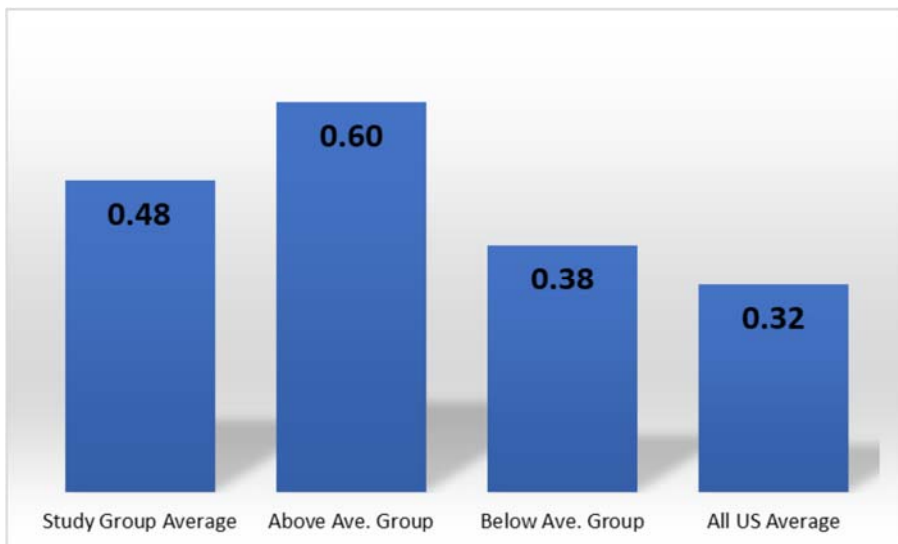


Figure 1: Production Yields in 2020 (gallons per tap)

## Investments

Participating businesses invested an average of \$47 per tap for machinery, equipment, buildings and improvements utilized within the maple enterprise. The investment results do not include the capital investment in forest land. Due to the complexity of prior property purchases at different points in time, differences in real estate valuation and difference in appreciation factors across regions, the investment tables below only include intermediate asset investment related to the maple production enterprise.

Table 4: Investment Per Tap (cost basis valuation, see definitions)

	Range		Average	Median
	Low	High		
<b>Asset @ Cost Per Tap</b>	\$24	\$74	\$47	\$44

Table 5: Investment Per Tap for Tap Size Groups

Taps	Range		Average	Median
	Low	High		
<b>5,000 – 8,499</b>	\$27	\$44	\$36	\$36
<b>8,500 – 14,999</b>	\$63	\$74	\$68	\$67
<b>15,000 +</b>	\$24	\$57	\$41	\$40

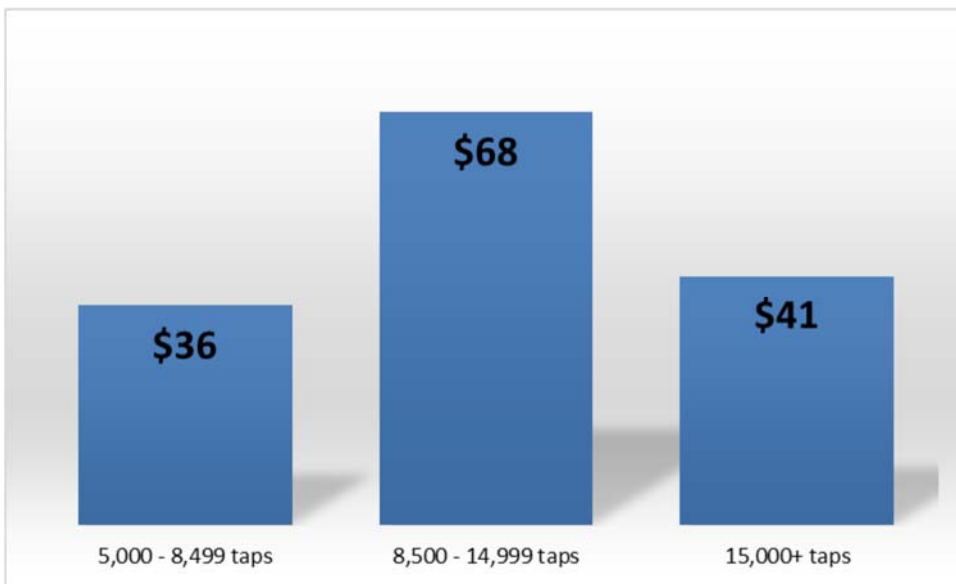


Figure 2: Investment Level for Three Size Classes (2020), Dollars per tap

The average yield for the entire group is 0.48 gallons per tap or 5.3 pounds per tap in 2020. The “Above Average” group in Table 6 includes all participants with over 0.48 gallons per tap. In 2020 the above average yield producers have a higher average investment level compared to the below average yield producers.

Table 6: Investment Levels Based on Yield

	Average Investment
<b>Above Average Yield Producers</b>	\$56 Per Tap
<b>Below Average Yield Producers</b>	\$39 Per Tap

New maple businesses must access significant capital to establish and outfit an enterprise at commercial scale. The following guidance can be used to estimate complete a start-up investment that includes purchasing forested property. Using a tap density of 55 taps per acre the following real estate values can be added to the investment benchmarks reported in Table 5: \$1,000 per acre = \$18 per tap; \$1,500 per acre = \$27 per tap; \$2,000 per acre = \$36 per tap; \$2,500 per acre = \$45 per tap and \$3,000 per acre = \$55 per tap.

Table 7 below provides an estimated benchmark for overall capital needed to establish a 5,000 – 20,000 tap enterprise at various forest land valuations. These calculations do not include working capital needed for labor or operating expenses prior to cash inflows. Owners should factor-in their individual working capital needs over the first 18 months of operation.

Table 7: Estimated Start-Up Capital for at Various Real Estate Value

Taps	Intermediate Assets	Full Start-Up Per Tap Forest Land \$1,000/A	Full Start-Up Per Tap Forest Land \$2,000/A	Full Start-Up Per Tap Forest Land \$3,000/A
<b>Scenario 1</b>	\$50	\$68	\$86	\$105
<b>Scenario 2</b>	\$60	\$78	\$96	\$115
<b>Scenario 3</b>	\$70	\$88	\$106	\$125



## Expenses

Tables 8 – Table 12 report a summary of key expenses. This is not a complete list of all the expense categories present in the full cost of production. This section shows a category for “Labor (paid)” and “All Labor (including unpaid labor)” to show the difference between cash based expenses for employees and the full cost of owner labor. The “variable cost total” and the “fixed cost total” do not include the value of unpaid labor<sup>4</sup>. The results for the full costs of production are provided in Tables 13-15.

## Depreciation

The aging and incremental loss of value to business assets (depreciation) is a significant expense that maple producers must monitor and plan for. For this cost analysis the “tax based” depreciation, as allowed by IRS tax code, is not utilized because this often overstates or accelerates the depreciation expense. For this study business assets are depreciated according to the straight-line method using purchase price and standard lifespans for each item.

In 2020 depreciation ranged from low of 4% to a high of 36% of production-based income (See Table 11). The average depreciation was 18% of production-based income.

Table 8: Key Expenses: Per Gallon (All Producers)

	Range		Average	Median
	Low	High		
Fuel (Evaporator Only) <sup>5</sup>	\$0.48	\$2.03	\$0.94	\$0.87
Labor (Paid)	\$0.29	\$30.32	\$5.73	\$1.80
All Labor (including unpaid Labor)	\$0.30	\$35.42	\$10.95	\$7.15
Electric	\$0.02	\$1.20	\$0.64	\$0.73
Supplies	\$0.74	\$5.42	\$2.49	\$2.60
<b>Variable Cost Total</b>	<b>\$3.17</b>	<b>\$52.96</b>	<b>\$15.14</b>	<b>\$11.51</b>
<b>Fixed Cost Total</b>	<b>\$1.70</b>	<b>\$29.50</b>	<b>\$8.96</b>	<b>\$7.51</b>
<b>Depreciation</b>	<b>\$1.17</b>	<b>\$8.87</b>	<b>\$5.54</b>	<b>\$5.75</b>

<sup>4</sup> If one were to sum variable cost+ fixed cost + depreciation from the tables in this section it will add up to the “Cost of Production with Depreciation” in Table 14 (with minor rounding discrepancies). This COP does not include the value of unpaid labor. See Table 15 for the full economic COP.

<sup>5</sup> Operators using harvested cordwood or chips report no cash expense for fuel, these operations have increased labor or equipment related expenses related to firewood production. Data points for \$0 fuel expense were removed from average or median cost to show a usable metric for those that do manage a direct expense for fuel purchase.

Table 9: Key expenses Per Pound (All Producers)

	Range		Average	Median
	Low	High		
Fuel (Evaporator Only) <sup>6</sup>	\$0.04	\$0.18	\$0.08	\$0.08
Labor (Paid)	\$0.03	\$2.72	\$0.51	\$0.16
All Labor (including unpaid Labor) <sup>7</sup>	\$0.03	\$3.18	\$0.98	\$0.64
Electric	\$0.01	\$0.64	\$0.11	\$0.07
Supplies	\$0.07	\$0.49	\$0.22	\$0.23
Variable Cost Total	\$0.28	\$4.75	\$1.36	\$1.03
Fixed Cost Total	\$0.15	\$2.65	\$0.81	\$0.67
Depreciation	\$0.10	\$0.80	\$0.50	\$0.52

Table 10: Key Expenses Per Tap (All Producers)

	Range		Average	Median
	Low	High		
Fuel (Evaporator Only) <sup>8</sup>	\$0.25	\$1.15	\$0.54	\$0.46
Labor (Paid)	\$0.15	\$14.15	\$3.01	\$0.94
All Labor (including unpaid Labor)	\$0.24	\$16.52	\$5.05	\$3.78
Electric	\$0.01	\$0.78	\$0.32	\$0.34
Supplies	\$0.27	\$3.53	\$1.42	\$1.20
Variable Cost Total	\$1.64	\$24.71	\$7.83	\$7.50
Fixed Cost Total	\$0.88	\$13.76	\$4.82	\$3.24
Depreciation	\$0.60	\$6.99	\$3.03	\$3.02

<sup>6</sup> See Footnote #5

<sup>7</sup> The value of unpaid labor has been calculated based on the number of owner hours worked multiplied by \$22 per hour value.

<sup>8</sup> See Footnote #5

Table 11: Key Expenses Expressed as a Percent of Production-Based Income

	Range		Average	Median
	Low	High		
Fuel (Evaporator Only)	1%	7%	3%	2%
Labor (Paid)	1%	35%	13%	7%
All Labor (including unpaid Labor)	1%	61%	27%	27%
Electric	0%	4%	2%	2%
Supplies	2%	20%	8%	8%
Variable Cost Total	13%	62%	40%	42%
Fixed Cost Total	7%	54%	25%	21%
Depreciation	4%	36%	18%	18%

Table 12: Bulk Producers Only, Key Expenses Per Pound

	Range		Average	Median
	Low	High		
Fuel (Evaporator Only)	\$0.04	\$0.18	\$0.10	\$0.09
Labor (Paid)	\$0.03	\$0.87	\$0.31	\$0.14
All Labor (including unpaid Labor)	\$0.03	\$1.03	\$0.61	\$0.64
Electric	\$0.01	\$0.64	\$0.14	\$0.05
Supplies	\$0.07	\$0.49	\$0.22	\$0.23
Variable Cost Total	\$0.28	\$1.43	\$0.84	\$0.69
Fixed Cost Total	\$0.15	\$1.19	\$0.66	\$0.67
Depreciation	\$0.19	\$0.80	\$0.58	\$0.63

## Cost of Production, Ratios and Comparisons

The cost of production (COP) analysis offers the opportunity to assess the costs of particular activity levels within the business by including cash-based and non-cash expenses. This report provides three separate COP metrics including: a) COP from Operations, b) COP with Depreciation and c) Full Economic COP which includes non-cash expenses and the opportunity cost of unpaid owner-family labor.

The COP from Operations in Table 13 shows an average of \$2.16 per pound for the entire study group. The median measure is also provided as an alternative “central point of tendency” to reconcile the large range from low-to-high within each metric reported. This calculation offers a close comparison (not exact) to actual cash costs (not including debt principal) and the revenue needed to break-even on cash flow.

Table 13: Cost of Production from Operations (see “Terms and Definitions”)

	Range		Average	Median
	Low	High		
<b>COP (Operations) Per Tap</b>	\$2.52	\$38.47	\$12.65	\$11.01
<b>COP (Operations) Per Gallon</b>	\$4.87	\$82.46	\$24.11	\$19.14
<b>COP (Operations) Per Pound</b>	\$0.44	\$7.40	\$2.16	\$1.72
<b>COP (Operations) Per Acre</b>	\$144	\$1,723	\$682	\$665

In Table 14 and Table 15 one sees the addition of non-cash expenses that are significant over the lifetime of the business and are expenses that are required to calculate the profitability of the business. Depreciation and unpaid labor combine to contribute over 30% of total economic costs. Despite being potentially overlooked as a non-cash expense, these major cost factors are a reminder that labor efficiency and well planned investments have a large influence on cost control.

Table 14: Cost of Production with Depreciation

	Range		Average	Median
	Low	High		
<b>COP with Depreciation Per Tap</b>	\$6.94	\$41.50	\$15.68	\$14.03
<b>COP with Depreciation Per Gallon</b>	\$13.38	\$88.96	\$29.65	\$23.64
<b>COP with Depreciation Per Pound</b>	\$1.20	\$7.99	\$2.66	\$2.12
<b>COP with Depreciation Per Acre</b>	\$396	\$1,859	\$848	\$769

Table 15: Full Economic Cost of Production

	Range		Average	Median
	Low	High		
<b>Full Economic Cost of Production (COP) Per Tap</b>	\$9.29	\$43.88	\$18.19	\$17.18
<b>Full Economic Cost of Production (COP) Per Gallon</b>	\$18.06	\$94.05	\$35.79	\$29.26
<b>Full Economic Cost of Production (COP) Per Pound</b>	\$1.62	\$8.44	\$3.21	\$2.63
<b>Full Economic Cost of Production (COP) Acre</b>	\$524	\$1,965	\$996	\$995

Table 16: Ratios for All Producers

	Range		Average	Median
	Low	High		
<b>Production Based Income ÷ Investment</b>	19%	77%	41%	41%
<b>Net Returns to Real Estate ÷ Investment<sup>9</sup></b>	-12%	10%	0%	0%
<b>Unpaid Labor ÷ Production Based Income</b>	0%	59%	16%	17%
<b>Depreciation ÷ Production Based Income</b>	4%	36%	18%	18%

It is important for readers to be aware that the study group has shifted from 2015-2019. Certain individuals have entered the project while others are no longer participating. The most significant change occurs with the 2019 analysis year. In 2019, the project shifted to multiple states in the Northeast and larger tap scale maple enterprises. Table 17 below indicates a notable increase in the median tap count for 2019 and 2020 compared to the previous years. Readers should also consider that fluctuations in annual yield and market price have significant impact on annual gross sales levels that will influence any metrics based on production based income.

Table 17: Comparisons of Ratios for 2015 - 2020

	Averages (no group analysis 2018)				
	2015	2016	2017	2019	2020
<b>Production Based Income ÷ Investment</b>	37%	47%	30%	40%	41%
<b>Net Returns to Real Estate ÷ Investment</b>	0%	9%	3%	6%	0%
<b>Unpaid Labor ÷ Production Based Income</b>	29%	24%	33%	20%	16%
<b>Depreciation ÷ Production Based Income</b>	24%	18%	25%	16%	18%
<b>Tap Count (Median reported in this row)</b>	6,600	6,000	7,300	12,140	18,100
<b>Tap Count (Average reported in this row)</b>	7,909	7,391	7,838	18,760	20,979
<b>Gallons Per Tap</b>	0.40	0.51	0.42	0.45	0.48

Net returns were lower in 2020 compared to 2019. As seen in Table 18, both the large and smaller scale groups included participants that show large negative net returns. These calculations do not include the off-farm income received through the USDA CFAP1 and CFAP 2 government payments received. In many cases the CFAP payments ensured positive cash flow, contributing on up to \$15,000 - \$20,000 for every 10,000 taps.

<sup>9</sup> Net Returns to Real Estate includes all operating costs, depreciation and full economic cost of unpaid labor and management.

Table 18: Net Returns to Asset Investment for Tap Size Groups

Taps	Range		Average	Median
	Low	High		
Less than 15,000 Taps	-12.0%	9.1%	2.2%	4.8%
15,000 Taps and Larger	-10.2%	9.7%	-1.6%	-3.7%

Results in Table 19 indicate that larger scale operations do not necessarily have a lower cost of production as often assumed through the economies-of-scale effect. This result from a small group benchmark is likely impacted by the different market channels and different business models observed within the 2020 participants. The 15,000+ tap group includes businesses that pursue a mixed market channel plan, selling via retail, wholesale and bulk outlets. The increased costs of running a retail business show up in these figures. The one to two businesses in this small group with very high costs can pull the group average up significantly. This effect is seen in the 15,000 tap size class in Table 19 with the presence of two large retail enterprises. A more detailed look at cost of production related to market channels is provided in Table 23.

Table 19: Full Economic Cost of Production Per Pound for Tap Size Groups

Taps	Range		Average	Median
	Low	High		
5,000 – 8,499	\$2.63	\$6.74	\$4.68	\$4.68
8,500 – 14,999	\$1.62	\$1.91	\$1.81	\$1.89
15,000 +	\$1.82	\$8.44	\$3.37	\$2.89

## Top Performers

The following tables show the financial performance for producers that achieved above average profits for this study group. Profitability was measured using “Net Returns ÷ Investment.” The average profit level for the entire group in 2020 was 0% and the Top Profit Group included participants that demonstrated greater than 0% to 9.7% “Net Returns ÷ Investment.”

Table 20: Average Full Economic Cost of Production Top Profit vs. Full Group (Per Pound)

Taps	Top Profit Group	Full Group
	<i>Per Pound</i>	<i>Per Pound</i>
5,000 – 8,499	\$2.63	\$4.68
8,500 – 14,999	\$1.81	\$1.81
15,000 +	\$4.11	\$3.37

Table 21: Average Full Economic Cost of Production Top Profit vs. Full Group (Per Gallon)

	<b>Top Profit Group</b>	<b>Full Group</b>
<b>Taps</b>	<i>Per Gallon</i>	<i>Per Gallon</i>
<b>5,000 – 8,499</b>	\$29.26	\$52.14
<b>8,500 – 14,999</b>	\$20.14	\$20.14
<b>15,000 +</b>	\$45.72	\$37.51

Table 22: Average Full Economic Cost of Production Top Profit vs. Full Group (Per Tap)

	<b>Top Profit Group</b>	<b>Full Group</b>
<b>Taps</b>	<i>Per Tap</i>	<i>Per Tap</i>
<b>5,000 – 8,499</b>	\$15.05	\$17.53
<b>8,500 – 14,999</b>	\$14.13	\$14.13
<b>15,000 +</b>	\$23.45	\$19.87

Cost of production is measured in different ways. The per gallon or per pound unit of measure will relate costs to the yield produced (Table 20,21) and provide easy reference back to market prices. The per-tap unit of measure (Table 22) relates costs to maple resource management, regardless of yield. A “per tap” measure offers an alternative calculation for year-to-year cost management that is not prone to distortion from changes in annual yields.

In 2020, the Top Profit Group does not demonstrate lower costs than the Full Group consistently for all measures and all size classes. As seen in previous maple benchmark study years, cost management alone is not necessarily linked directly to profitability. The capacity to maximize revenue or prices has a strong influence on business profitability.

## Market Channel

Previous sections of this report demonstrate there is not always a clear and direct relationship between full cost of production with business scale or full cost of production with business profitability. Looking at market channels in this small group (13 businesses), however, we see two trends worth discussion. Producers identified as “Retail/Wholesale” recorded higher costs per pound and costs per gallon compared to “Bulk Only” producers with lower costs. This higher cost trend for “Retail/Wholesale” has been observed consistently in recent years.

Both market channel groups included businesses that were not profitable when measured by Net Returns (see Table 18), but more “Bulk Only” businesses showed negative returns in 2020 compared to other study years. In 2020, the average “Retail/Wholesale” net return to investment was positive while the average net return for “Bulk Only” producers was negative. This result might foreshadow a future problem for the U.S. maple industry at large. Large scale enterprises, with above average yields are not necessarily profitable when market prices edge towards \$2.00 - \$2.20 per pound.

In general, the managed pricing system observed in Quebec is mirrored by U.S. buyers with adjustments that reconcile US-CAD currency exchange rates. The first half of 2020 was marked by a very strong US dollar. This directly results in downward pricing pressure on U.S. producers in order for distribution of US syrup to remain price competitive with imports. Cost of production research in 2020 finds an average cost of \$2.41 per pound for this cohort of bulk syrup producers. The dynamics of Canadian imports and currency volatility stand as a major factor that will influence maple profitability.

Table 23: Full Economic Cost of Production and Market Channel

Market Channel		Range		
		Low	High	Average
<b>Bulk</b>	Pound	\$1.62	\$3.07	<b>\$2.41</b>
	Gallon	\$18.06	\$34.15	<b>\$26.83</b>
	Tap	\$9.36	\$21.23	<b>\$15.70</b>
	Acre	\$524	\$1,189	<b>\$899</b>
	% of PBI	72%	122%	<b>100%</b>
<b>Average Profit Margin</b>				<b>-1 %</b>
<b>Retail/ Wholesale</b>	Pound	\$1.82	\$8.44	\$4.14
	Gallon	\$20.22	\$94.05	\$46.17
	Tap	\$9.29	\$43.88	\$21.08
	Acre	\$554	\$1,966	\$1,108
	% of PBI	73%	136%	98%
<b>Average Profit Margin</b>				<b>1.5 %</b>

## Learn More About the Northeast Maple Benchmark Project

For more information about participating in the NE Maple Benchmark go to the UVM Extension Agricultural Business website:

[https://www.uvm.edu/extension/agriculture/agriculture\\_business\\_management](https://www.uvm.edu/extension/agriculture/agriculture_business_management)

For previous Maple Benchmark reports please visit the resource library at: [www.maplemanager.org](http://www.maplemanager.org)