



2012 Maple Syrup Business Planning Guide

Vacuum Tubing Systems

Author: Les Ober, Program Assistant Agriculture & Natural Resources
 The Ohio State University Extension, Geauga County

400 gallons syrup @ .400 gals per tap yield (1000 taps vacuum tubing system)

Receipts @ ½ \$45.00 retail ½ \$33.00 (3.00/lb bulk) \$15,600.00

<u>Expense</u>	<u>Cost/Unit</u>	<u>Per Gal./Syrup</u>		<u>Per/Season</u>		<u>Your Cost</u>
		<u>oil</u>	<u>wood</u>	<u>oil</u>	<u>wood</u>	
Variable Cost						
¹ Evaporator Fuel; Wood	\$3.50/gal fuel oil; \$200/cord wood	\$14.00	\$9.50	\$5,600.00	\$3,800.00	
Fuel (diesel/gasoline)	\$3.50/gal	\$0.50	\$0.50	\$200.00	\$200.00	
² Utilities		\$1.50	\$1.50	\$600.00	\$600.00	
³ Canning Supplies		\$4.00	\$4.00	\$1,600.00	\$1,600.00	
Repairs		\$1.25	\$1.25	\$500.00	\$500.00	
Labor* (80 hrs. operate tubing system)	\$11.00/hr	\$2.20	\$2.20	\$880.00	\$880.00	
Marketing		\$0.37	\$0.37	\$148.00	\$148.00	
⁴ Interest		\$1.65	\$1.65	\$660.00	\$660.00	
Miscellaneous		\$0.25	\$0.25	\$100.00	\$100.00	
Total Variable Cost		\$25.72	\$21.22	\$10,288.00	\$8,488.00	
Fixed Costs						
⁵ Equipment Expense		\$8.92	\$8.92	\$3,565.00	\$3,565.00	
⁶ Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$6.00	\$6.00	\$2,400.00	\$2,400.00	
Taxes						
⁷ Insurance (product liability)		\$0.50	\$0.50	\$200.00	\$200.00	
Land or tap rental						
Total Fixed Cost		\$15.42	\$15.42	\$6,165.00	\$6,165.00	
Total Cost		\$41.14	\$36.64	\$16,453.00	\$14,653.00	

				<u>oil</u>	<u>wood</u>	<u>Your Cost</u>
⁸Return above Total Cost				-\$853.00	\$947.00	
⁹Return above Variable Costs				\$5,312.00	\$7,112.00	
¹⁰Return to Labor & Management				\$1,547.00	\$3,347.00	

*Neil K. Huyler; cost of Maple Sap Production for various size operations, USDA Res. Pap. NE-712

¹Two Fuel sources: Wood, 1 cord, will process approx. 21 Gallons of Syrup. The cost of produce 1 gallon of syrup with wood is \$9.50 per gallon when a full cord of wood sells for \$200.00 per cord (Ohio cord selling in Fall 2012)

Fuel Oil costing \$3.50 in a 4x12 Evap. Rated at 140 GPH (2% sap) will burn 13gal. Oil/hr. (draw off =3.25gph syrup)
The cost to produce 1 gallon of syrup is \$14.00 per gallon.

²Utilities - Electric used to operate vacuum pump.

³Canning Supplies: 50% of the crop canned in gallon containers.
Using 2012 case lot prices for plastic containers.

⁴\$0.15/# based on Cornell University Maple Enterprise Business Summary

<u>⁵Equipment</u>	<u>Total Cost</u>	<u>Life Expectancy</u>	<u>Seasonal</u>		<u>Your Cost</u>
Tubing System (\$10.00 per tap installed)	\$10,000.00	10 yrs	\$1,000.00		
Vacuum System (Pump Extractor)	\$6,000.00	10 yrs	\$600.00		
Storage Tanks	\$4,000.00	20 yrs	\$200.00		
Evaporator 4x12	\$20,500.00	20 yrs	\$1,025.00		
Building (20 yr.)	\$10,000.00	20 yrs	\$500.00		
Filter press	\$2,000.00	20 yrs	\$100.00		
Miscellaneous	\$1,400.00	10 yrs	\$140.00		
All equipment deppreciates at 10 years except tubing it is 5 years					
Total	\$53,900.00		\$3,565.00		

<u>⁶Operator Labor no RO (Sugarhouse Mgt. \$15.00/hour)*</u>					<u>Your Cost</u>
Processing	123 hrs*		\$1,800.00		
Setup & Cleanup	20 hrs**		\$300.00		
Canning	20 hrs**		\$300.00		
Total Labor	163 hrs		\$2,400.00		

* Based on production from a 4x12 Evaporator @ 140 gallons per hour

** Based on the results of an independent poll of local maple producers.

⁷**Product liability insurance, on maple products sold, is a separate policy from the standard farm-owners policy. If the maple operation is run as a separate business (LLC, Corp, Partnership) a separate policy on the maple enterprise (including product liability) is recommended along with the standard farm-owners policy.**

⁸**Receipts minus Total Cost**

⁹**Receipts minus Variable Cost**

¹⁰**Return to labor and management is the revenue less total expenses except operator labor and management. It is a measure of the returns to the operator's labor and management.**

Resources:

The Ohio State University Department of Agricultural, Environmental, and Development Economics

<http://aede.osu.edu/Programs/FarmManagement/Budgets/maple/index.htm>

Available in Excel Spreadsheet Format

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North American Maple Syrup 2nd edition OSU Extension/NAMSC Chapter 11 Economics of Maple Syrup Production, Mr. Dave Chapeskie Ontario Ministry of Agriculture & Dr. Melvin R. Koelling Prof. Emert. Michigan State University

Maple Syrup Costs, What Does it Really Cost to Produce That gallon of Maple Syrup, Glenn Rogers Regional Farm Business Management Specialist, University of Vermont



2012 Maple Syrup Business Planning Guide Vacuum Tubing System with Reverse Osmosis¹

Author: Les Ober, Program Assistant Agriculture & Natural Resources
The Ohio State University Extension, Geauga County

400 gallons syrup @ .400 gals per tap yield (1000 taps vacuum tubing system)

Receipts @ ½ \$45.00 retail ½ \$33.00 (3.00/lb bulk)

\$15,600.00

<u>Expense</u>	<u>Cost/Unit</u>	<u>Per Gal./Syrup</u>		<u>Per/Season</u>		<u>Your Cost</u>
		<u>oil</u>	<u>wood</u>	<u>oil</u>	<u>wood</u>	
Variable Cost						
² Evaporator Fuel; Wood	\$3.50/gal fuel oil; \$200/cord wood	\$3.60	\$2.50	\$1,440.00	\$1,000.00	
Fuel (diesel/gasoline)	\$3.50/gal	\$0.50	\$0.50	\$200.00	\$200.00	
³ Utilities		\$1.50	\$1.50	\$600.00	\$600.00	
⁴ Canning Supplies		\$4.00	\$4.00	\$1,600.00	\$1,600.00	
Repairs (includes tubing repair)		\$1.25	\$1.25	\$500.00	\$500.00	
Labor* (80 hrs. operate tubing system)	\$11.00/hr	\$2.20	\$2.20	\$880.00	\$880.00	
Marketing		\$0.37	\$0.37	\$148.00	\$148.00	
⁵ Interest		\$1.65	\$1.65	\$660.00	\$660.00	
Miscellaneous		\$0.25	\$0.25	\$100.00	\$100.00	
⁶ Reverse Osmosis (RO) operation & maintence		\$2.12	\$2.12	\$848.00	\$848.00	
Total Variable Cost		\$17.44	\$16.34	\$6,976.00	\$6,536.00	
Fixed Costs						
⁷ Equipment Expense		\$12.60	\$12.60	\$5,040.00	\$5,040.00	
⁸ Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$3.04	\$3.04	\$1,215.00	\$1,215.00	
Taxes						
⁹ Insurance (Product Liability)		\$0.50	\$0.50	\$200.00	\$200.00	
Land or tap rental						
Total Fixed Cost		\$16.14	\$16.14	\$6,455.00	\$6,455.00	
Total Cost		\$33.58	\$32.48	\$13,431.00	\$12,991.00	

				<u>oil</u>	<u>wood</u>	<u>Your Cost</u>
¹⁰Return above Total Cost				\$2,169.00	\$2,609.00	
¹¹Return above Variable Costs				\$8,624.00	\$9,064.00	
¹²Return to Labor & Management				\$3,384.00	\$3,824.00	

*Neil K. Huyler; cost of Maple Sap Production for various size operations, USDA Res. Pap. NE-712

¹600 GPH RO concentrating 2% sap to 8% using the "Rule of 86", 11 gal. concentrate = 1 gal. of syrup.

²Two Fuel sources: Wood, 1 cord, will process approx. 84 Gallons of Syrup from 8% concentrate. The cost of produce 1 gallon of syrup with wood is \$2.50 per gallon when a full cord of wood sells for \$200.00 per cord (Ohio cord selling in Fall 2012)

Fuel Oil costing \$3.50 in a 4x12 Evap. Rated at 140 GPH (8% sap) will burn 13gal. Oil/hr.
The cost to produce 1 gallon of syrup is \$3.60 per gallon.

³Utilities - Electric used to operate vacuum pump.

⁴Canning Supplies: 50% of the crop canned in gallon containers.
Using 2012 case lot prices for plastic containers.

⁵\$0.15/# based on Cornell University Maple Enterprise Business Summary

⁶ Reverse Osmosis Maintance Cost - Annual Maintenance Cost (Including supplies)	\$250.00
Annual Membrane Cleaning	\$250.00
Membrane Replacement Cost (over 10yrs)	\$150.00
Total	\$650.00

<u>⁷Equipment</u>	<u>Total Cost</u>	<u>Life Expectancy</u>	<u>Seasonal</u>	<u>Your Cost</u>
Tubing (\$10.00 per Tap installed)	\$10,000.00	10 yrs	\$1,000.00	
Vacuum System (Pump Extractor)	\$6,000.00	10 yrs	\$600.00	
Storage Tanks	\$4,500.00	20 yrs	\$225.00	
Evaporator 4x12	\$20,500.00	20 yrs	\$1,025.00	
Building (20 yr.)	\$10,000.00	20 yrs	\$500.00	
Filter press	\$2,000.00	20 yrs	\$100.00	
Miscellaneous	\$1,400.00	10 yrs	\$140.00	
RO 600GPH	\$14,500.00	10 yrs	\$1,450.00	
Total	\$68,900.00		\$5,040.00	

⁸Operator Labor with RO (Sugarhouse Mgt. \$15.00/hour)*					
Processing	31 hrs*			\$465.00	
Setup & Cleanup	20 hrs**			\$300.00	
Canning	20 hrs**			\$300.00	
RO Maintenance	10 hrs**			\$150.00	
Total Labor	81 hrs			\$1,215.00	

* Based on production from a 4x12 Evaporator @ 140 gallons per hour + RO

** Based on the results of an independent poll of local maple producers.

⁹**Product liability insurance, on maple products sold, is a separate policy from the standard farm-owners policy. If the maple operation is run as a separate business (LLC, Corp, Partnership) a separate policy on the maple enterprise (including product liability) is recommended along with the standard farm-owners policy.**

¹⁰**Receipts minus Total Cost**

¹¹**Receipts minus Variable Cost**

¹²**Return to labor and management is the revenue less total expenses except operator labor and management. It is a measure of the returns to the operator's labor and management.**

Resources:

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2012 Maple Syrup Business Planning Guide Bucket System

Author: Les Ober, Program Assistant Agriculture & Natural Resources
The Ohio State University Extension, Geauga County

250 gallons syrup @ .25 gals per tap yield (1000 taps bucket system)

Receipts @ ½ \$45.00 retail ½ \$33.00 (3.00/lb bulk)

\$9,750.00

<u>Expense</u>	<u>Cost/Unit</u>	<u>Per Gal./Syrup</u>		<u>Per/Season</u>		<u>Your Cost</u>
		<u>oil</u>	<u>wood</u>	<u>oil</u>	<u>wood</u>	
Variable Cost						
¹ Evaporator Fuel; Wood	\$3.50/gal fuel oil; \$200/cord wood	\$14.00	\$9.50	\$3,500.00	\$2,375.00	
Fuel (diesel/gasoline)	\$3.50/gal	\$1.00	\$1.00	\$250.00	\$250.00	
Utilities		\$0.50	\$0.50	\$125.00	\$125.00	
² Canning Supplies		\$3.08	\$3.08	\$770.00	\$770.00	
Repairs		\$1.00	\$1.00	\$250.00	\$250.00	
Labor (120 hrs. tapping, gathering and cleanup)	\$11.00/hr	\$5.28	\$5.28	\$1,320.00	\$1,320.00	
Marketing		\$0.37	\$0.37	\$92.50	\$92.50	
³ Interest		\$1.65	\$1.65	\$412.50	\$412.50	
Miscellaneous		\$0.25	\$0.25	\$62.50	\$62.50	
Total Variable Cost		\$27.13	\$22.63	\$6,782.50	\$5,657.50	
Fixed Costs						
⁴ Equipment Expense		\$12.46	\$12.46	\$3,115.00	\$3,115.00	
⁵ Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$7.20	\$7.20	\$1,800.00	\$1,800.00	
Taxes						
⁶ Insurance (product liability)		\$0.80	\$0.80	\$200.00	\$200.00	
Land or tap rental						
Total Fixed Cost		\$20.46	\$20.46	\$5,115.00	\$5,115.00	
Total Cost		\$47.59	\$43.09	\$11,897.50	\$10,772.50	

				<u>oil</u>	<u>wood</u>	<u>Your Cost</u>
⁷ Return above Total Cost				-\$2,147.50	-\$1,022.50	
⁸ Return above Variable Costs				\$2,967.50	\$4,092.50	
⁹ Return to Labor & Management				-\$347.50	\$777.50	

*Neil K. Huyler; cost of Maple Sap Production for various size operations, USDA Res. Pap. NE-712

¹Two Fuel sources: Wood, 1 cord, will process approx. 21 Gallons of Syrup. The cost of produce 1 gallon of syrup with wood is \$9.50 per gallon when a full cord of wood sells for \$200.00 per cord (Ohio cord selling in Fall 2012)

Fuel Oil costing \$3.50 in a 4x12 Evap. Rated at 140 GPH (2% sap) will burn 13gal. Oil/hr. (draw off =3.25gph syrup)
The cost to produce 1 gallon of syrup is \$14.00 per gallon.

²Canning Supplies: 50% of the crop canned in gallon containers.
Using 2012 case lot prices for plastic containers.

³\$0.15/# based on Cornell University Maple Enterprise Business Summary

<u>⁴Equipment</u>	<u>Total Cost</u>	<u>Life Expectancy</u>	<u>Seasonal</u>	<u>Your Cost</u>
Used Buckets (Bucket lid and tap) \$9.00 tap	\$9,000.00	10 yrs	\$900.00	
Gathering tank and trailer	\$3,000.00	20 yrs	\$250.00	
Storage Tanks	\$4,000.00	20 yrs	\$200.00	
Evaporator 4x12	\$20,500.00	20 yrs	\$1,025.00	
Building (20 yr.)	\$10,000.00	20 yrs	\$500.00	
Filter press	\$2,000.00	20 yrs	\$100.00	
Miscellaneous	\$1,400.00	10 yrs	\$140.00	
Total	\$49,900.00		\$3,115.00	

<u>⁵Operator Labor (Sugarhouse Mgt. \$15.00/hour)*</u>				<u>Your Cost</u>
Processing	80 hrs*		\$1,200.00	
Setup & Cleanup	20 hrs**		\$300.00	
Canning	20 hrs**		\$300.00	
Total Labor	120 hrs		\$1,800.00	

* Based on production from a 4x12 Evaporator @ 140 gallons per hour

** Based on the results of an independent poll of local maple producers.

6Product liability insurance, on maple products sold, is a separate policy from the standard farm-owners policy. If the maple operation is run as a separate business (LLC, Corp, Partnership) a separate policy on the maple enterprise (including product liability) is recommended along with the standard farm-owners policy.

7Receipts minus Total Cost

8Receipts minus Variable Cost

9Return to labor and management is the revenue less total expenses except operator labor and management. It is a measure of the returns to the operator's labor and management.

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