

OHIO STATE UNIVERSITY EXTENSION

2017 Maple Syrup Business Planning Guide Vacuum Tubing System with Reverse Osmosis¹



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COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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

Receipts @ ½ \$50.00 retail ½ \$26.80 (2.60/lb bulk)

\$15,720.00

\$10,000 retail \$5,720 bulk

<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	\$2.00/gal fuel oil \$200/cord wood	\$1.98	\$2.50	\$800.00	\$1,000.00	
Fuel (diesel/gasoline)	2.00 per gallon	\$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 & maintenance		\$2.12	\$2.12	\$848.00	\$848.00	
Total Variable Cost		\$15.82	\$16.34	\$6,336.00	\$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		\$31.96	\$32.48	\$12,791.00	\$12,991.00	

				<u>oil</u>	<u>wood</u>	<u>Your Cost</u>
¹⁰Return above Total Cost				\$2,929.00	\$2,729.00	
¹¹Return above Variable Costs				\$9,384.00	\$9,184.00	
¹²Return to Labor & Management				\$4,144.00	\$3,944.00	

*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. 82 Gallons of Syrup from 8% concentrate. The cost to 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 2016)

Fuel oil costing \$2.00/gal. in a 3X10 oil fired Evap. rated at 100GPH (8%Concentrate) burning 9 gal of fuel oil per hour will process 9.1 gal syrup/hr
The cost of producing 1 gallon of Syrup is \$1.98 per gallon

³Utilites - Electric used to operate vacuum pump.

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

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

⁶ Reverse Osmosis Maintenance 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	\$2,800.00	20 yrs	\$225.00		
Evaporator 3X10 Oil fired	\$20,000.00	20 yrs	\$1,025.00		
Evaporator 3X10 wood fired with forced air draft					
Building (20 yr.)	\$15,000.00	20 yrs	\$500.00		
Filter press	\$3,500.00	20 yrs	\$100.00		

Miscellaneous	\$1,400.00	10 yrs	\$140.00		
RO 600GPH	\$14,000.00	10 yrs	\$1,400.00		
Total	\$72,700.00		\$4,990.00		

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**		\$200.00		
Total Labor	81 hrs		\$1,265.00		

* Based on production from a 3x10 Evaporator @ 100 gallons per hour + RO

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

⁹Product 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.

¹⁰Receipts minus Total Cost

¹¹Receipts minus Variable Cost

¹²Return 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



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