

# OHIO STATE UNIVERSITY EXTENSION

## 2017 Maple Syrup Business Planning Guide Vacuum Tubing System with Reverse Osmosis<sup>1</sup>



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

\$15,720.00

<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>	
<b>Variable Cost</b>						
<sup>2</sup> 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	
<sup>3</sup> Utilities		\$1.50	\$1.50	\$600.00	\$600.00	
<sup>4</sup> 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	
<sup>5</sup> Interest		\$1.65	\$1.65	\$660.00	\$660.00	
Miscellaneous		\$0.25	\$0.25	\$100.00	\$100.00	
<sup>6</sup> Reverse Osmosis (RO) operation & maintenance		\$2.12	\$2.12	\$848.00	\$848.00	
<b>Total Variable Cost</b>		<b>\$15.82</b>	<b>\$16.34</b>	<b>\$6,336.00</b>	<b>\$6,536.00</b>	
<b>Fixed Costs</b>						
<sup>7</sup> Equipment Expense		\$12.60	\$12.60	\$5,040.00	\$5,040.00	
<sup>8</sup> Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$3.04	\$3.04	\$1,215.00	\$1,215.00	
Taxes						
<sup>9</sup> Insurance (Product Liability)		\$0.50	\$0.50	\$200.00	\$200.00	
Land or tap rental						
<b>Total Fixed Cost</b>		<b>\$16.14</b>	<b>\$16.14</b>	<b>\$6,455.00</b>	<b>\$6,455.00</b>	

<b>Total Cost</b>		<b>\$31.96</b>	<b>\$32.48</b>	<b>\$12,791.00</b>	<b>\$12,991.00</b>	
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				<u>oil</u>	<u>wood</u>	<u>Your Cost</u>
<b><sup>10</sup>Return above Total Cost</b>				<b>\$2,929.00</b>	<b>\$2,729.00</b>	
<b><sup>11</sup>Return above Variable Costs</b>				<b>\$9,384.00</b>	<b>\$9,184.00</b>	
<b><sup>12</sup>Return to Labor &amp; Management</b>				<b>\$4,144.00</b>	<b>\$3,944.00</b>	

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

<sup>1</sup>600 GPH RO concentrating 2% sap to 8% using the "Rule of 86", 11 gal. concentrate = 1 gal. of syrup.

<sup>2</sup>Two 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

<sup>3</sup>Utilites - Electric used to operate vacuum pump.

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

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

<sup>6</sup> 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><sup>7</sup>Equipment</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		
<b>Total</b>	<b>\$72,700.00</b>		<b>\$4,990.00</b>		

<b><sup>8</sup>Operator Labor with RO (Sugarhouse Mgt. \$15.00/hour)*</b>					
Processing	31 hrs*		\$465.00		
Setup & Cleanup	20 hrs**		\$300.00		
Canning	20 hrs**		\$300.00		
RO Maintenance	10 hrs**		\$200.00		
<b>Total Labor</b>	<b>81 hrs</b>		<b>\$1,265.00</b>		

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

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

<sup>9</sup>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.

<sup>10</sup>Receipts minus Total Cost

<sup>11</sup>Receipts minus Variable Cost

<sup>12</sup>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



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