## OHIO STATE UNIVERSITY EXTENSION

# 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>	Cost/Unit	Per Gal.	/Syrup	Per/Sea	ason_	Your Cost
		<u>oil</u>	wood	<u>oil</u>	wood	
Variable Cost						
<sup>1</sup> 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	
<sup>2</sup> Utilities		\$1.50	\$1.50	\$600.00	\$600.00	
³Canning 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	
⁴Interest		\$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						
⁵Equipment Expense		\$8.92	\$8.92	\$3,565.00	\$3,565.00	
Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$6.00	\$6.00	\$2,400.00	\$2,400.00	
Taxes						
<sup>7</sup> Insurance (product liablity)		\$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>	wood	Your Cost
*Return above Total Cost			-\$853.00	\$947.00	
PReturn above Variable Costs			\$5,312.00	\$7,112.00	
<sup>10</sup> Return to Labor & Management			\$1,547.00	\$3,347.00	

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

<sup>1</sup>Two Fuel sources: Wood, 1 cord, will process approx. 21 Gallons of Syrup. The cost ot 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.

<sup>2</sup>Utilities - Electric used to operate vacuum pump.

<sup>3</sup>Canning 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>	Total Cost	Life Expectancy	Seasonal	Your Cost
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	
Miscellanous	\$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	

Operator Labor no RO (Sugarhouse Mgt	. \$15.00/hour)*		Ţ,	Your Cost
Processing	123 hrs*	\$1,800.00		
Setup & Cleanup	20 hrs**	\$300.00		
Canning	20 hrs**	\$300.00		

Total Labor	163 hrs		\$2,400.00	

<sup>\*</sup> Based on production from a 4x12 Evaporator @ 140 gallons per hour

<sup>7</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.

\*Receipts minus Total Cost

#### 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

### Les Ober, Program Assistant, Agriculture & Natural Resources

The Ohio State University Extension, Geauga County, 15269 Claridon Troy Road, P.O. Box 387, Burton, OH 44021 440-834-4656 ober.10@osu.edu

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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<sup>\*\*</sup> Based on the results of an independent poll of local maple producers.

<sup>&</sup>lt;sup>9</sup>Receipts minus Variable Cost

<sup>&</sup>lt;sup>10</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.

## OHIO STATE UNIVERSITY EXTENSION

# 2012 Maple Syrup Business Planning Guide Vacuum Tubing System with Reverse Osmosis<sup>1</sup>



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 @ 1/2 \$45.00 retail 1/2 \$33.00 (3.00/lb bulk)

\$15,600.00

<u>Expense</u>	Cost/Unit	Per Gal	./Syrup	Per/Sea	ason_	Your Cost
		<u>oil</u>	wood	<u>oil</u>	wood	
Variable Cost						
<sup>2</sup> 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	
<sup>3</sup> Utilities		\$1.50	\$1.50	\$600.00	\$600.00	
⁴Canning 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	
⁵Interest		\$1.65	\$1.65	\$660.00	\$660.00	
Miscellaneous		\$0.25	\$0.25	\$100.00	\$100.00	
<sup>6</sup> 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						
<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						
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>	wood	Your Cost
<sup>10</sup> Return above Total Cost	\$2,169.00	\$2,609.00	
<sup>11</sup> Return above Variable Costs	\$8,624.00	\$9,064.00	
<sup>12</sup> Return to Labor & Management	\$3,384.00	\$3,824.00	

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

<sup>2</sup>Two Fuel sources: Wood, 1 cord, will process approx. 84 Gallons of Syrup from 8% concentrate. The cost ot 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.

<sup>4</sup>Canning 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

Feverse 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

<sup>7</sup> Equipment	Total Cost	Life Expectancy	Seasonal	Your Cost
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	
Miscellanous	\$1,400.00	10 yrs	\$140.00	

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

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

RO 600GPH	\$14,500.00	10 yrs	\$1,450.00	
Total	\$68,900.00		\$5,040.00	

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

<sup>\*</sup> Based on production from a 4x12 Evaporator @ 140 gallons per hour + RO

#### Resources:

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

 ${\it http://aede.osu.edu/Programs/FarmManagement/Budgets/maple/index.htm} \ Available in Excel Spreadsheet Format$ 

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<sup>\*\*</sup> Based on the results of an independent poll of local maple producers.

<sup>&</sup>lt;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>&</sup>lt;sup>10</sup>Receipts minus Total Cost

<sup>&</sup>lt;sup>11</sup>Receipts minus Variable Cost

<sup>&</sup>lt;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.

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

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## **OHIO STATE UNIVERSITY EXTENSION**

# 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 @ 1/2 \$45.00 retail 1/2 \$33.00 (3.00/lb bulk)

\$9,750.00

<u>Expense</u>	Cost/Unit	Per Gal./Syrup		Per/Season		Your Cost
		oil	wood	oil	wood	
Variable Cost						
<sup>1</sup> 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	
<sup>2</sup> 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	
³Interest		\$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						
4Equipment Expense		\$12.46	\$12.46	\$3,115.00	\$3,115.00	
5Operator Labor (Sugarhouse Mgt.)	\$15.00/hr	\$7.20	\$7.20	\$1,800.00	\$1,800.00	
Taxes						
6Insurance (product liablity)		\$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>	Your Cost
7Return above Total Cost	-\$2,147.50	-\$1,022.50	
Return above Variable Costs	\$2,967.50	\$4,092.50	
9Return to Labor & Management	-\$347.50	\$777.50	

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

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.

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

4Equipment	Total Cost Life Expectancy		Seasonal	Your Cost
Used Buckets (Bucket lid and tap) \$9.00 tap	\$9,000.00	10 yrs	\$900.00	
Gathering tank and trailor	\$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	
Miscellanous	\$1,400.00	10 yrs	\$140.00	
Total	\$49,900.00		\$3,115.00	

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

<sup>&</sup>lt;sup>1</sup>Two Fuel sources: Wood, 1 cord, will process approx. 21 Gallons of Syrup. The cost ot 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)

<sup>&</sup>lt;sup>2</sup>Canning Supplies: 50% of the crop canned in gallon containers. Using 2012 case lot prices for plastic containers.

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.
- 6 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.
- **7Receipts minus Total Cost**
- 8 Receipts 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.

#### Resources:

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