

# Cranberry Bog Establishment and Cost of Production in Nova Scotia



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# Objectives

Individuals interested in cranberry production have:

- a guide to the development of a plan
- an understanding of the costs associated with the establishment and operation of a bog.

# Why?

- Planning - Beginning Farmers and Expanding Farmers
- Diversification for current operation (transitioning farmers)

# Methods and Procedures

Information gathered through economic reports from:

- other cranberry growing regions in Canada,
- online and printed resources,
- discussions with Nova Scotia growers, specialists and agribusinesses.

# Overview of Bog Establishment

- Site selection
- Wetland bog
- Upland bog
- NS varieties



# Assumptions

- Year 1 is pre-planting year
- All loans borrowed at fixed rate of 5.5% for 25 years
- Land preparation costs - a pasture state prior to planting
- Cost of land excluded from analysis
- Land is cleared with 2% or less slope
- Accounting, legal, office, general maintenance not included
- Approximately 10” of sand used - more if no peat moss used
- Large farms use wet harvest - small farms use dry harvest

# Year 1 Pre-Planting Year

	Large Farm	Small Farm
Establishment Costs	Cost/Acre	Cost/Acre
Construction of Pond	\$5,160	\$5,160
Irrigation and Pump House	\$7,090	\$7,090
Heavy Equipment @ \$115/hr	\$9,840	\$9,840
Sand – 1400 yards @ \$4/yard	\$5,600	\$5,600
Peat Moss – 475 yards @ \$12/yard	\$5,700	\$5,700
Other Miscellaneous	\$4,000	\$4,000
<b>Total Establishment Costs</b>	<b>\$37,390</b>	<b>\$37,390</b>
<b>Fixed Costs</b>		
Interest and Depreciation Tractor and Equipment	\$872	\$224
Taxes (land)	\$28	\$28
<b>Total Fixed Costs</b>	<b>\$900</b>	<b>\$252</b>
<b>Total Cost for Pre-Planting Year</b>	<b>\$38,290</b>	<b>\$37,642</b>

# Year 2 Planting Year

<b>Establishment Costs</b>	<b>Large Farm (Cost/Acre)</b>	<b>Small Farm (Cost/Acre)</b>
Planting Costs	\$1,500	\$1,500
Vines – 2 Tonnes @ \$4000/tonne	\$8,000	\$8,000
Fertilizer	\$1,440	\$1,440
Pesticides	\$435	\$435
Labour	\$495	\$495
<b>Total Establishment Costs</b>	<b>\$11,870</b>	<b>\$11,870</b>
<b>Fixed Costs</b>		
Interest and Depreciation Tractor and Equipment	\$872	\$224
Taxes (land)	\$28	\$28
<b>Total Fixed Costs</b>	<b>\$900</b>	<b>\$252</b>
<b>Total Cost for Planting Year</b>	<b>\$12,770</b>	<b>\$12,122</b>

# Year 3 First Harvest Year

Variable Costs	Large Farm (Cost/Acre)	Small Farm (Cost/Acre)
Fertilizer	\$1,440	\$1,440
Pesticides	\$435	\$435
Bees @ \$125/hive	\$250	\$250
Purchases	\$158	\$158
Labour	\$825	\$825
Maintenance & Repair	\$105	\$105
Fuel/Oil/Electricity	\$570	\$570
Pruning	\$100	
Sanding	\$1,500	\$1,000
Tissue Sampling	\$22	\$22
Consulting Fees	\$45	\$150
Labour - Harvest	\$165	\$255
<b>Total Variable Expenses</b>	<b>\$5,440</b>	<b>\$5,120</b>
<b>Total Fixed Expenses</b>	<b>\$900</b>	<b>\$252</b>
<b>Total Expenses</b>	<b>\$6,340</b>	<b>\$5,372</b>

# Year 4 and Beyond

- Costs are the same as Year 3, with the following exceptions:
  - Pruning, for **large farms**, is done every other year and,
  - Sanding is done every three years for **large and small farms**.
- Year 7 should produce a **full yield** for both large and small farms.

# Establishment Cost Summary

Establishment Costs for Small and Large Farms	Cost/Acre
<b>Annual Costs</b>	
Pre-planting Costs – Year 1	\$37,390
Planting Costs – Year 2	\$11,870
<b>Total Cost of Establishment</b>	<b>\$49,260</b>
Compounded Interest	\$4,766
<b>Compounded Amount</b>	<b>\$54,026</b>
Interest Rate	5.5%
Term	25
<b>Annual Payment</b>	<b>\$4,028</b>

# Revenue

- Revenue = price x quantity
- For this analysis - \$80/barrel (high)  
\$40/barrel (low)
- After Year 7 - yield should stabilize,  
(major factor affecting revenue is price)

# Contribution Margin

	Large Farm	Small Farm
Price/Barrel	Average Contribution Margin Per Acre	Average Contribution Margin Per Acre
\$40/Barrel	\$2,335	\$1,457
\$50/Barrel	\$4,085	\$2,957
\$60/Barrel	\$5,835	\$4,457
\$70/Barrel	\$7,585	\$5,957
\$80/Barrel	\$9,335	\$7,457

# Breakeven Year

Financing	Farm Size	Price/Barrel		
		\$40	\$60	\$80
No	Large Farm	> 25 years	> 25 years	11 years
	Small Farm	> 26 years	> 25 years	12 years
Yes	Large Farm	Never	16 years	19 years
	Small Farm	Never	18 years	25 years

# Resources

**NSDA –  
Business Development and Economics**  
<http://www.gov.ns.ca/agri/bde/>

**AgraPoint**  
<http://www.agrapoint.ca>