Newfoundland and Labrador

Commercial Vegetable Industry

Cost of Production Data for Insular Newfoundland

Potato, Cabbage, Rutabaga and Carrot

Department of Fisheries, Forestry and Agriculture

Disclaimer

The following cost of production data was collected under the Government of Newfoundland and Labrador **Cost of Production Initiative,** conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture. It is an estimate based on information provided by producers operating in the province. The information is intended to communicate Newfoundland and Labrador industry benchmarks for comparison and business risk management. The data is not meant to be a guarantee of income, expenses or profits. The Government of Newfoundland and Labrador makes no guarantee that the data contained in this report will result in exact return to capital.

Purpose

The Department of Fisheries, Forestry and Agriculture's, Agriculture Business Development Division, is committed to providing current and relevant cost of production information on the province's agriculture industry through the **Cost of Production Initiative**. This initiative will collect production data specific to the Province of Newfoundland and Labrador, and is intended to be a useful tool for existing and prospective agriculture producers. Individualized cost of production information and services are available to participating producers. Agriculture organizations and industry experts are engaged for the province.

Objectives

Through the Cost of Production Initiative, the Agriculture Business Development Division is striving to:

- Provide financial risk management tools for vegetable producers;
- Provide relevant and accurate information on the vegetable industry;
- Promote best management practices among agriculture producers;
- Engage Newfoundland and Labrador agriculture producers to determine how the Provincial Government can provide relevant economic information to advance the industry; and
- Provide industry benchmarks that are specific to Newfoundland and Labrador.

For more information, please contact the following office:

ATTN: Cost of Production Initiative
Department of Fisheries, Forestry and Agriculture
Agriculture Business Development Division
P.O. Box 2006
Corner Brook, NL, A2H 6J8
Telephone: 709.637.2077
Fax: 709.637.2589

Assumptions

The Newfoundland and Labrador vegetable industry cost of production averages focus predominately on potato, rutabaga, carrot, and cabbage crops. The information was gathered from producers growing at least one of the four crops listed and used to develop cost of production benchmarks. The data collected was not adjusted for inflation.

The four cost of production studies contained in this document show a positive outlook with opportunity for continued growth. This report does not differentiate between the numerous varieties of vegetables grown in Newfoundland and Labrador. The information available from producers did not differentiate between varieties, and the difference in cost of production is viewed as negligible. Some producers may have a lower cost of production due to factors that may include planting crops closer together or further apart, and fertilizer or pesticide application rates that will affect cost of production.

Cost of Production Data

The limited sample size of the agriculture industry poses a significant challenge to the collection and distribution of cost of production data as confidentiality must be strictly upheld. The following data was compiled through interviews with production specialists employed with the Government of Newfoundland and Labrador, industry stakeholders, and producers.

Cost of Production Data – Potatoes

This report contains cost of production data for the Newfoundland and Labrador vegetable industry, based on data collected from the island portion of the province.

The following section examines information gathered from vegetable producers and was used to develop cost of production benchmarks.

Industry Highlights

According to Statistics Canada, as of 2016 there were 115 producers in Newfoundland and Labrador farming vegetables, 76 of which produced potatoes in addition to other vegetables. The average national consumption per year of fresh potatoes is 59.70 pounds. Taking into account the population of the province, there is a market for 15,785 tons of fresh potato (NL Statistics). According to the average production per acre figures found in this document, it would take approximately 1,948 acres to meet market demand. With current production levels of 350 acres, there is room for the current sector production to increase by approximately 1,598 acres to meet the demand for fresh potatoes.

Cost of Production Benchmarks

The six main expense categories are highlighted in Table 1 (e.g. labour and fertilizer). Other expense categories associated with the production of potatoes were grouped into Other Direct Expenses or Other Indirect Expenses. Revenue and net income information are also included in the table. The table shows a healthy net income of $0.11 per pound of potato sold, or 32.8 per cent of the overall revenue generated from potato sales, which was $0.33 per pound. The table also points out that labour cost is the highest expense, coming in at $0.07 per pound of potatoes sold, or 19.9 per cent of the total revenue generated from potato sales.

Table 1: Potato Industry Cost of Production Data

Item		Per Pound Sold	Per Acre	Percentage of Revenue
Direct Costs	Seed	$ 0.02	$ 249.77	4.71%
	Fertilizer	$ 0.03	$ 436.35	8.23%
	Labour	$ 0.07	$ 1,057.60	19.94%
	Other(Pesticide, etc.)	$ 0.03	$ 526.77	9.93%
Indirect Costs	Amortization	$ 0.03	$ 421.34	7.94%
	Repairs and Maintenance	$ 0.01	$ 191.63	3.61%
	Motor Vehicle Operating	$ 0.01	$ 209.79	3.96%
	Other (Insurance, Supplies, etc.)	$ 0.03	$ 470.45	8.87%
Total Expenses		$ 0.22	$ 3,564.22	67.21%
Revenue		$ 0.33	$ 5,303.17	100.00%
Net Income		$ 0.11	$ 1,738.95	32.79%

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Potato Production Indicators

The following table shows production indicators for the Newfoundland and Labrador potato industry. The first indicator is the average yield per acre expressed in terms of the number of pounds of potato harvested per acre; the second indicator is the average number of acres harvested as indicated by producers during the survey. Table 2 shows an average yield of 16,130 pounds per acre. The average acreage of the producers surveyed was 10.96.

Table 2: Potato Production Indicators per Farm Surveyed

	Historical Industry
Average Yield per Acre - Pounds	16,130.32
Average Number of Acres Harvested	10.96

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Margin Analysis

Table 3 examines financial indicators including average revenue, gross profit, operating profit, net income, earnings before interest, taxes, and depreciation/amortization (EBITDA), and their perspective margins. These financial indicators are defined in Appendix 1. The information in Table 3 shows a net profit margin of 32.8 per cent, an operating margin of 34.5 per cent, an

EBITDA margin of 42.4 per cent, and a gross margin of 57.2 per cent. All of these margins are positive indicators of a healthy industry sample.

Table 3: Potato Industry Margin Analysis on a per Farm Basis		
Indicator	**Value**	
Gross Profit	$	33,245.35
Gross Margin		57.2%
EBITDA	$	24,662.61
EBITDA Margin		42.4%
Operating Profit	$	20,042.96
Operating Margin		34.5%
Net Income	$	19,066.33
Net Profit Margin		32.8%
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.		

Sensitivity Analysis

This section contains a sensitivity analysis based on data from the potato industry average. A sensitivity analysis is useful for examining a situation with two variables. The profitability of a potato operation can be examined using the average yield per acre and the price per pound of potatoes in the province's vegetable industry. Based on the information collected, the following sensitivity analysis examines profitability. As indicated in Table 4, if the price is $0.30 per pound and the producer's average yield is 16,000 pounds per acre, the producer will profit $0.08 per pound sold.

Table 4 shows a historical industry average with production levels at 16,130 pounds of potatoes per acre, where the breakeven price of $0.22 per pound is required to reach profitability. This is illustrated in the table by darker bold lines.

Table 4: Historical Industry Sensitivity Analysis									
Pounds per Acre	**Price per Pound of Potato**								
(000s)	**$ 0.20**	**$ 0.225**	**$ 0.25**	**$ 0.275**	**$ 0.30**	**$ 0.325**	**$ 0.35**	**$ 0.375**	**$ 0.40**
18	($0.01)	$0.01	$0.04	$0.06	$0.09	$0.11	$0.14	$0.16	$0.19
17	($0.02)	$0.01	$0.03	$0.06	$0.08	$0.11	$0.13	$0.16	$0.18
16	($0.02)	$0.00	$0.03	$0.05	$0.08	$0.10	$0.13	$0.15	$0.18
15	($0.03)	($0.00)	$0.02	$0.05	$0.07	$0.10	$0.12	$0.15	$0.17
14	($0.03)	($0.01)	$0.02	$0.04	$0.07	$0.09	$0.12	$0.14	$0.17
13	($0.04)	($0.02)	$0.01	$0.03	$0.06	$0.08	$0.11	$0.13	$0.16
12	($0.05)	($0.02)	$0.00	$0.03	$0.05	$0.08	$0.10	$0.13	$0.15
11	($0.06)	($0.03)	($0.01)	$0.02	$0.04	$0.07	$0.09	$0.12	$0.14
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division, Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.									

Cost of Production Data – Cabbage

This report contains cost of production data for the Newfoundland and Labrador vegetable industry, based on data collected from the island portion of the province.

The following section of the report examines information gathered from vegetable producers and was used to develop cost of production benchmarks.

Industry Highlights

According to Statistics Canada, in 2016 there were 115 producers in Newfoundland and Labrador farming vegetables. The average national consumption per year of cabbage is 8.77 pounds. Taking into account the population of the province, there is a market for 2,318 tons of cabbage (NL Statistics). According to the average production per acre figures found in this document, it would take approximately 223 acres to meet market demand. With current production levels of 111 acres, there is room for the current sector production to double.

Cost of Production Benchmarks

The six main expense categories are highlighted in Table 5 (e.g. labour and fertilizer). Other expense categories associated with the production of cabbage were grouped into Other Direct Expenses or Other Indirect Expenses. Revenue and net income information are also included in the table. The table shows a healthy net income of $0.13 per pound of cabbage sold, or 29.5 per cent of the overall revenue generated from cabbage sales, which was $0.43 per pound. The table also points out that labour cost is the highest expense, coming in at $0.12 per pound of cabbage sold or 27.3 per cent of the total revenue generated from cabbage sales.

Table 5: Cabbage Industry Cost of Production Data

Item		Per Pound Sold	Per Acre	Percentage of Revenue
Direct Costs	Seed	$ 0.01	$ 231.05	2.61%
	Fertilizer	$ 0.03	$ 560.63	6.34%
	Labour	$ 0.12	$ 2,412.41	27.26%
	Other(Lime, Pesticide)	$ 0.05	$ 966.66	10.92%
Indirect Costs	Amortization	$ 0.02	$ 499.44	5.64%
	Repairs and Maintenance	$ 0.02	$ 357.37	4.04%
	Motor Vehicle Operating	$ 0.01	$ 260.43	2.94%
	Other (Insurance, Supplies, etc.)	$ 0.05	$ 954.22	10.78%
Total Expenses		$ 0.30	$ 6,242.20	70.5%
Revenue		$ 0.43	$ 8,848.68	100.00%
Net Income		$ 0.13	$ 2,606.48	29.46%

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Cabbage Production Indicators

The following table shows production indicators for the Newfoundland and Labrador cabbage industry. The first indicator is the average yield per acre expressed in terms of the number of pounds of cabbage harvested per acre; the second indicator shown in Table 6 is the average number of acres harvested as indicated by producers during the survey. Table 6 shows an average yield of 20,811 pounds per acre. The average acreage of the producers surveyed was 3.25.

Table 6: Cabbage Industry Production Indicators per Farm Surveyed	
Average Yield per Acre - Pounds	20,811.05
Average Number of Acres Harvested	3.25
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.	

Margin Analysis

Table 7 examines financial indicators including average revenue, gross profit, operating profit, net income, earnings before interest, taxes, and depreciation/amortization (EBITDA), and their perspective margins. These financial indicators are defined in Appendix 1. The information in Table 7 shows a net profit margin of 29.5 per cent, an operating margin of 31.1 per cent, an EBITDA margin of 36.8 per cent, and a gross margin of 52.9 per cent. All of these margins are positive indicators of a healthy industry sample.

Table 7: Cabbage Industry Margin Analysis on a per Farm Basis		
Indicator	**Value**	
Gross Profit	$	15,218.86
Gross Margin		52.87%
EBITDA	$	10,588.68
EBITDA Margin		36.78%
Operating Profit	$	8,963.85
Operating Margin		31.14%
Net Income	$	8,479.74
Net Profit Margin		29.46%
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.		

Sensitivity Analysis

This section contains a sensitivity analysis based on data from the cabbage industry average.

A sensitivity analysis is useful for examining a situation with two variables. The profitability of a cabbage operation can be examined using the average yield per acre, and the price per pound of cabbage in the Newfoundland and Labrador vegetable industry. Based on the information collected, the following sensitivity analysis examines profitability. Table 8 indicates if the price is $0.35 per pound and the producer's average yield is 21,000 pounds per acre, the producer will profit $0.05 per pound sold.

Table 8 shows a historical industry average with production levels at 20,811 pounds of cabbage per acre, where the breakeven price of $0.30 per pound is required to reach profitability. This is illustrated in the table by darker bold lines.

Table 8: Cabbage Industry Sensitivity Analysis

Pounds per acre (000s)	Price per pound of Cabbage								
	$ 0.25	$ 0.275	$ 0.30	$ 0.325	$ 0.35	$ 0.375	$ 0.40	$ 0.425	$ 0.45
24	$ (0.04)	$ (0.01)	$ 0.01	$ 0.04	$ 0.06	$ 0.09	$ 0.11	$ 0.14	$ 0.16
23	$ (0.04)	$ (0.02)	$ 0.01	$ 0.03	$ 0.06	$ 0.08	$ 0.11	$ 0.13	$ 0.16
22	$ (0.04)	$ (0.02)	$ 0.01	$ 0.03	$ 0.06	$ 0.08	$ 0.11	$ 0.13	$ 0.16
21	$ (0.05)	$ (0.02)	$ 0.00	$ 0.03	$ 0.05	$ 0.08	$ 0.10	$ 0.13	$ 0.15
20	$ (0.05)	$ (0.03)	$ (0.00)	$ 0.02	$ 0.05	$ 0.07	$ 0.10	$ 0.12	$ 0.15
19	$ (0.06)	$ (0.03)	$ (0.01)	$ 0.02	$ 0.04	$ 0.07	$ 0.09	$ 0.12	$ 0.14
18	$ (0.07)	$ (0.04)	$ (0.02)	$ 0.01	$ 0.03	$ 0.06	$ 0.08	$ 0.11	$ 0.13
17	$ (0.07)	$ (0.05)	$ (0.02)	$ 0.00	$ 0.03	$ 0.05	$ 0.08	$ 0.10	$ 0.13

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division, Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Cost of Production Data – Rutabaga

This report contains cost of production data for the province's vegetable industry, based on data collected from the island portion of the province.

The following section of the report examines information gathered from Newfoundland and Labrador vegetable producers and was used to develop cost of production benchmarks.

Industry Highlights

According to Statistics Canada, in 2016 there were 115 vegetable farmers in Newfoundland and Labrador. The average national consumption per year of Rutabaga is 2.14 pounds. Taking into account the population of the province, there is a market for 565 tons of rutabaga (NL Statistics). According to the average production per acre figures found in this document, it would take approximately 58.3 acres to meet market demand. Currently, producers in the province produce 160 acres of rutabaga. According to Statistics Canada, in 2018 the province produced 1,051 tons of rutabaga. Anecdotally, there is a belief that the per capita consumption of rutabaga is approximately two times as high as the consumption of the rest of Canada. Additionally, it is assumed there is very little rutabaga imported into the province, except for small amounts in the off-season.

Cost of Production Benchmarks

The six main expense categories are highlighted in Table 9 (e.g. labour and fertilizer). Other expense categories associated with the production of rutabaga were grouped into Other Direct Expenses or Other Indirect Expenses. In addition to expense data, revenue and net income information are also included in the table. The table shows a healthy net income of $0.16 per pound of rutabaga sold, or 36.7 per cent of the overall revenue generated from rutabaga sales, which was $0.42 per pound. The table also points out that labour cost is the highest expense, coming in at $0.10 per pound of rutabaga sold or 24.6 per cent of the total revenue generated from rutabaga sales.

Table 9: Rutabaga Industry Cost of Production Data

Item		Per Pound Sold	Per Acre	Percentage of Revenue
Direct Costs	Seed	$ 0.00	$ 19.09	0.23%
	Fertilizer	$ 0.03	$ 497.73	6.04%
	Labour	$ 0.10	$ 2,024.91	24.58%
	Other(Seed, Pesticide, etc.)	$ 0.05	$ 911.14	11.06%
Indirect Costs	Amortization	$ 0.02	$ 359.09	4.36%
	Repairs and Maintenance	$ 0.02	$ 294.58	3.58%
	Motor Vehicle Operating	$ 0.01	$ 174.79	2.12%
	Other (Insurance, Supplies, etc.)	$ 0.05	$ 929.82	11.29%
Total Expenses		$ 0.27	$ 5,211.16	63.27%
Revenue		$ 0.42	$ 8,236.73	100.00%
Net Income		$ 0.16	$ 3,025.57	36.73%

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Rutabaga Production Indicators

The following table shows production indicators for the Newfoundland and Labrador rutabaga industry. The first indicator is the average yield per acre expressed in terms of the number of pounds of rutabaga harvested per acre; the second indicator shown in Table 10 is the average number of acres harvested as indicated by producers during the survey. Table 10 shows an average yield of 19,396 pounds per acre. The average acreage of the producers surveyed was 8.93.

Table 10: Rutabaga Production Indicators per Farm Surveyed

	Historical Industry
Average Yield per Acre - Pounds	19,396.01
Average Number of Acres Harvested	8.93

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Margin Analysis

Table 11 examines financial indicators including average revenue, gross profit, operating profit, net income, earnings before interest, taxes, and depreciation/amortization (EBITDA), and their perspective margins. These financial indicators are defined in Appendix 1. The information in Table 11 shows a net profit margin of 36.7 per cent, an operating margin of 38.5 per cent, an EBITDA margin of 42.9 per cent, and a gross margin of 58.1 per cent. All of these margins are positive indicators of a healthy industry sample.

Table 11: Rutabaga Industry Margin Analysis on a per Farm Basis

Indicator	Value	
Gross Profit	$	42,736.93
Gross Margin		58.08%
EBITDA	$	31,552.80
EBITDA Margin		42.88%
Operating Profit	$	28,344.85
Operating Margin		38.52%
Net Income	$	27,029.15
Net Profit Margin		36.73%

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Sensitivity Analysis

This section contains a sensitivity analysis based on data from the rutabaga historical industry average.

A sensitivity analysis is useful for examining a situation with two variables. The profitability of a rutabaga operation can be examined using the average yield per acre and the price per pound of rutabaga in the Newfoundland and Labrador vegetable industry. Based on the information

collected, the following sensitivity analysis examines profitability. For example, Table 12 indicates if the price is $0.30 per pound and the producer's average yield is 20,000 pounds per acre, the producer will profit $0.03 per pound sold.

Table 12 shows a historical industry average with production levels at 19,396 pounds of rutabaga per acre, where the breakeven price of $0.27 per pound is required to reach profitability. This is illustrated in the table by darker bold lines.

Table 12: Rutabaga Industry Sensitivity Analysis

Pounds per acre (000s)	Price per pound of Rutabaga								
	$ 0.20	$ 0.225	$ 0.25	$ 0.275	$ 0.30	$ 0.325	$ 0.35	$ 0.375	$ 0.40
23	$ (0.05)	$ (0.03)	$ (0.00)	$ 0.02	$ 0.05	$ 0.07	$ 0.10	$ 0.12	$ 0.15
22	$ (0.06)	$ (0.03)	$ (0.01)	$ 0.02	$ 0.04	$ 0.07	$ 0.09	$ 0.12	$ 0.14
21	$ (0.06)	$ (0.04)	$ (0.01)	$ 0.01	$ 0.04	$ 0.06	$ 0.09	$ 0.11	$ 0.14
20	$ (0.07)	$ (0.04)	$ (0.02)	$ 0.01	$ 0.03	$ 0.06	$ 0.08	$ 0.11	$ 0.13
19	$ (0.07)	$ (0.05)	$ (0.02)	$ 0.00	$ 0.03	$ 0.05	$ 0.08	$ 0.10	$ 0.13
18	$ (0.08)	$ (0.05)	$ (0.03)	$ (0.00)	$ 0.02	$ 0.05	$ 0.07	$ 0.10	$ 0.12
17	$ (0.08)	$ (0.06)	$ (0.03)	$ (0.01)	$ 0.02	$ 0.04	$ 0.07	$ 0.09	$ 0.12
16	$ (0.09)	$ (0.06)	$ (0.04)	$ (0.01)	$ 0.01	$ 0.04	$ 0.06	$ 0.09	$ 0.11

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division, Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Cost of Production Data – Carrots

This report contains cost of production data for the Newfoundland and Labrador vegetable industry, based on data collected from the island portion of the province.

The following section of the report examines information gathered from the province's vegetable producers, and was used to develop cost of production benchmarks.

Industry Highlights

According to Statistics Canada, in 2016 there were 115 producers in Newfoundland and Labrador farming vegetables. The average national consumption per year of carrots is 15.79 per pound. Taking into account the population of the province, there is a market for 4,175 tonnes of carrot (NL Statistics). According to the average production per acre figures in this document, it would take approximately 732 acres to meet market demand. With current production levels of 170 acres, there is room for the current sector production to increase by approximately 562 acres.

Cost of Production Benchmarks

The six main expense categories are highlighted in Table 13 (e.g. labour and fertilizer). Other expense categories associated with the production of carrots were grouped into Other Direct Expenses or Other Indirect Expenses. In addition to expense data, revenue and net income information are also included in the table. The table shows a healthy net income of $0.10 per pound of carrot sold, or 20.1 per cent of the overall revenue generated from carrot sales, which was $0.51 per pound. The table indicates that labour cost is the highest expense, coming in at $0.12 per pound of carrot sold or 24.4 per cent of the total revenue generated from carrot sales.

Table 13: Carrot Industry Cost of Production Data

Item		Per Pound Sold	Per Acre	Percentage of Revenue
Direct Costs	Seed	$ 0.02	$ 252.38	4.39%
	Fertilizer	$ 0.03	$ 359.56	6.26%
	Labour	$ 0.12	$ 1,400.03	24.36%
	Other(Seed, Pesticide)	$ 0.08	$ 891.05	15.50%
Indirect Costs	Amortization	$ 0.05	$ 583.65	10.16%
	Repairs and Maintenance	$ 0.02	$ 216.84	3.77%
	Motor Vehicle Operating	$ 0.01	$ 163.59	2.85%
	Other (Insurance, Supplies, etc.)	$ 0.06	$ 722.97	12.58%
Total Expenses		$ 0.40	$ 4,590.06	79.87%
Revenue		$ 0.51	$ 5,746.96	100.00%
Net Income		$ 0.10	$ 1,156.90	20.13%

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Carrot Production Indicators

The following table shows production indicators for the Newfoundland and Labrador carrot industry. The first indicator is the average yield per acre expressed in terms of the number of pounds of carrot harvested per acre; the second indicator shown in Table 14 is the average number of acres harvested as indicated by producers during the survey. Table 14 shows an average yield of 11,356.6 pounds per acre, and the average acreage of the producers surveyed was 4.41.

Table 14: Carrot Production Indicators per Farm Surveyed	
	Historical Industry
Average Yield per Acre - Pounds	11,356.63
Average Number of Acres Harvested	4.41
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.	

Margin Analysis

Table 15 examines financial indicators including average revenue, gross profit, operating profit, net income, earnings before interest, taxes, and depreciation/amortization (EBITDA), and their perspective margins. These financial indicators are defined in Appendix 1. The information in Table 15 shows a net profit margin of 20.1 per cent, an operating margin of 22.9 per cent, an EBITDA margin of 33.1 per cent, and a gross margin of 49.5 per cent. All of these margins are positive indicators of a healthy industry sample.

Table 15: Carrot Industry Margin Analysis on a per Farm Basis		
Indicator	**Value**	
Gross Profit	$	12,541.77
Gross Margin		49.49%
EBITDA	$	8,376.64
EBITDA Margin		33.05%
Operating Profit	$	5,802.76
Operating Margin		22.90%
Net Income	$	5,101.92
Net Profit Margin		20.13%
Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division of the Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.		

Sensitivity Analysis

This section contains a sensitivity analysis based on data from the carrot historical industry average.

A sensitivity analysis is useful for examining a situation with two variables. The profitability of a carrot operation can be examined using the average yield per acre and the price per pound of carrots in the province's vegetable industry. Based on the information collected, the following

sensitivity analysis examines profitability. For example, Table 16 indicates if the price is $0.40 per pound and the producer's average yield is 14,000 pounds per acre, the producer will profit $0.03 per pound sold.

Table 16 shows a historical industry average with production levels at 11,356 pounds of carrots per acre, where the breakeven price of $0.40 per pound is required to reach profitability. This is illustrated in the table by darker bold lines.

Table 16: Carrot Industry Sensitivity Analysis

Pounds per acre (000s)	Price per pound of Carrot								
	$0.30	$0.325	$0.35	$0.375	$0.40	$0.425	$0.45	$0.475	$0.50
16	($0.06)	($0.03)	($0.01)	$0.02	$0.04	$0.07	$0.09	$0.12	$0.14
15	($0.07)	($0.04)	($0.02)	$0.01	$0.03	$0.06	$0.08	$0.11	$0.13
14	($0.07)	($0.05)	($0.02)	$0.00	$0.03	$0.05	$0.08	$0.10	$0.13
13	($0.08)	($0.06)	($0.03)	($0.01)	$0.02	$0.04	$0.07	$0.09	$0.12
12	($0.09)	($0.07)	($0.04)	($0.02)	$0.01	$0.03	$0.06	$0.08	$0.11
11	($0.11)	($0.08)	($0.06)	($0.03)	($0.01)	$0.02	$0.04	$0.07	$0.09
10	($0.12)	($0.10)	($0.07)	($0.05)	($0.02)	$0.00	$0.03	$0.05	$0.08
9	($0.14)	($0.12)	($0.09)	($0.07)	($0.04)	($0.02)	$0.01	$0.03	$0.06

Source: Information based upon data collected from the Cost of Production Initiative conducted by the Agriculture Business Development Division, Department of Fisheries, Forestry and Agriculture, Government of Newfoundland and Labrador.

Conclusion

This report examines key financial and production benchmarks that are useful when producing potato, cabbage, rutabaga and carrot in insular Newfoundland. It provides an overview of the industry average values as reported by participants and is useful as a basis for comparison with individual producer numbers. The four cost of production studies contained in this document show a positive outlook. To keep the data relevant, the continued collection of cost of production information is imperative to ensure that industry stakeholders can receive the financial statistics and indicators that the cost of production reports offer.

Statistics Canada information indicates that in 2016, the vegetable sector in the province was comprised of 115 farms with 791 acres in production. This report indicates there is financial opportunity for continued growth in the provincial vegetable sector. Net income per acre for potato, cabbage, rutabaga, and carrot is calculated to be $1,738, $2,606, $3,025, and $1,156 respectively. Based on the national consumption figures, provincial population, and current production levels displayed in the document above, there is a potential growth opportunity for another 2,272 acres in production for these vegetables provincially. Growth in the sector would increase economic opportunities and have a positive impact on food self-sufficiency, and provincial gross domestic product.

For more information or to participate in the **Cost of Production Initiative**, please contact the Agriculture Business Development Division at: 709-637-2077 or visit our website at: www.gov.nl.ca/ffa

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Appendix 1 – Definitions

Gross Profit is defined as the profit an operation makes once the cost of goods sold are deducted from gross revenue. Gross Profit = Gross Revenue – Cost of Goods Sold

Gross Margin is defined as the percentage of revenue remaining after the cost of goods sold is accounted for. Gross Margin = (Gross Profit/Gross Revenue) X 100

Earnings before Interest, Taxes, and Depreciation/Amortization (EBITDA) are defined as a method of looking at profitability without taking into account the costs of financing or accounting decisions. EBITDA = Revenue – Expenses (excluding interest, taxes, depreciation/amortization)

EBITDA Margin is defined as the percentage of revenue remaining after covering all expenses excluding interest, taxes, and depreciation/amortization.
EBITDA Margin = (EBITDA/Revenue) X 100

Operating Profit is defined as the profit generated after the cost of goods sold and operating expenses are covered. Operating profit = Gross Revenue – Expenses (excluding interest, taxes)

Operating Margin is defined as the percentage of revenue remaining after covering cost of goods sold and operating expenses. Operating Margin = (Operating Profit/Revenue) X 100

Net Income is defined as the profit left after all expenses have been accounted for. Net Income = Gross Revenue – Total Expenses

Net Profit Margin is defined as the percentage of revenue remaining after all expenses have been accounted for. Net Profit Margin = (Net Income/Revenue) X 100