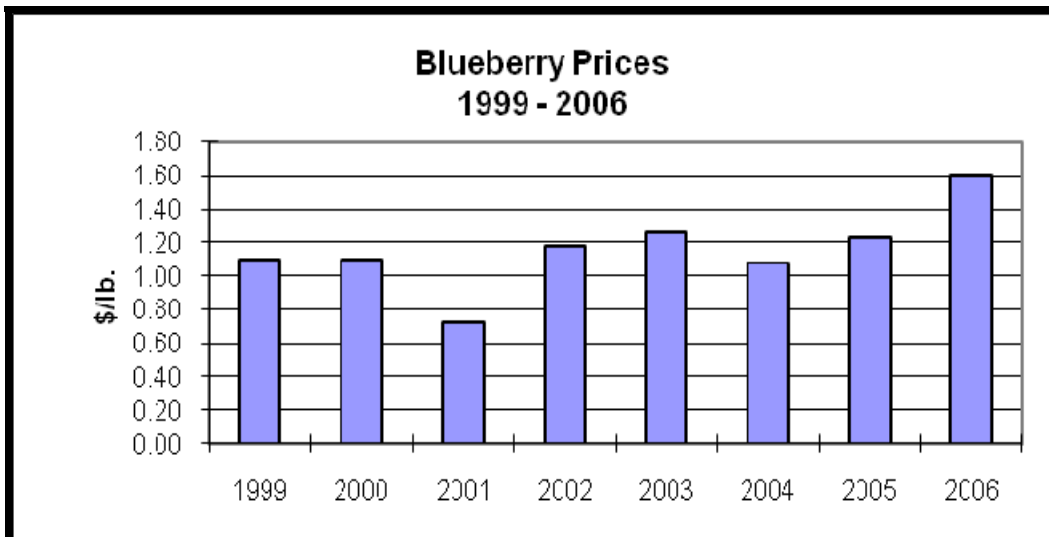


## Blueberry Production Hand Harvested Establishment to Full Production Fraser Valley

This information is a resource to project costs and returns for British Columbia farm enterprises and is a general guide to plan individual farm operations. This budget should be used as a guide only. Each farm should develop their own budget to reflect specific production goals, costs and market prices.

Information regarding financial planning and other enterprise budgets may be viewed at the B.C. Ministry of Agriculture and Lands website (<http://www.agf.gov.bc.ca/busmgmt/>) and their information portal, InfoBasket (<http://www.infobasket.gov.bc.ca>).

### HISTORICAL PRICES



*Prices shown are an average of annual berry prices in the fresh, processed and roadside markets.  
Source: BC Ministry of Agriculture and Lands Annual Horticultural Statistics reports.*

### KEY FACTORS AFFECTING PROFITABILITY

Key factors affecting profitability include:

- Labour costs in all functions of establishment and full production including planting, production, harvesting, operator wage for machinery operations, and driver for marketing.
- Prices of blueberries for each market. Note that blueberry prices have been increasing, however, there are significant acreages being planted around the world so there may be a price correction in coming years.
- Costs of supplies such as fertilizer, pesticides and chemical.

## SAMPLE REVENUE AND EXPENSE BUDGET INFORMATION

This budget summarizes the revenue and expenses for a model farm operation at this location. These statements show the profit or loss of the farm business and are prepared on an accrual basis.

- **Revenue** is the revenue generated from the berry sales in the fresh wholesale sector.
- **Direct expenses** are those costs that can readily be identified with items produced by the business. Examples are labour, fertilizer, irrigation, fuel, and machinery repair costs.
- **Contribution Margin** equals Revenue less Direct Expenses or the amount left over to contribute to indirect expenses.
- **Indirect Costs** are items such as operating interest, interest on long term debt, depreciation on building and equipment, land taxes, interest on loans, land taxes, land rental, general/office overhead and insurance.
- **Net Farm Income** equals Revenue less all Direct and Indirect Costs. This is the amount left to pay principle payments and living expenses and can be used to review return on equity and return on investment for the business.

## ASSUMPTIONS

The following assumptions were made in calculating the revenue and expense budget.

### Revenue & Expenses

- Farm size is 40 acres.
- Projected income and expenses are based on current market prices.
- Prices in the budgets are \$1.31 per pound fresh (wholesale), 1.02 processed, and 1.76 fresh farm gate.
- Production yields ( pounds per acre) are as follows:

Land Prep	Planting	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
0	0	0	4,000	7,000	10,000	11,000	12,000	13,000

- **Berry sales for the operation are allocated as follows:**

Market	% of annual sales
Fresh (wholesale)	70%
Processed	25%
Fresh Farm Gate	5%

- Labour cost included in the budget is for paid labour required over and above owner operator labour.
- Off-farm income and living expenses are not included in the budget.
- Irrigation infrastructure and water source are in place prior to planting. Irrigation costs in budget are for the system within the crop.
- Harvest Methods include hand picked only.
- Land is free of nematodes and generally suited for blueberry production - preplant fumigation is not required.
- Labour pay rates include:
  - Manual labour cost (including payroll taxes and benefits) is \$12/hour.
  - Machine operator costs ( gross payroll costs) are \$18/hour.
- Marketing and hauling costs includes cost of truck rental, fuel and driver wage.

							\$/acre
<b>Driver wage</b>	6.5	hrs /acre	X	18.00	\$/hr	-	\$117.00
<b>Truck rental</b>	2,300	\$/month	÷	30.00	acres/month		\$76.67
<b>Fuel cost for truck</b>	6.5	hrs/acre	X	10	litres/hour	X \$1/litre	\$ 65.00

- Labour costs at Land Prep and Planting Years::

					Land prep. Year 0 \$/acre	Planting Year One \$/acre
<b>Production Labour</b>						
Planting		24	hrs	\$ 12		\$288
Pruning		0	hrs	\$ 12	\$0	\$0
Post/wire/trellis		32	hrs	\$ 12	\$0	\$384
Hand fertilizing		3	hrs	\$ 12	\$0	\$36
<b>Total Production Labour</b>					0	<b>\$708</b>
<b>Machine Labour</b>	Apps	Hr/acre		Wage		
Spraying	1 x	0.2		\$ 18	\$4	\$11
Site preparation	1 x	4.0		\$ 18	\$72	\$0
Mowing	0 x	0.2		\$ 18	\$0	\$11
Disking	1 x	0.5		\$ 18	\$9	\$0
Rototilling	1 x	0.7		\$ 18	\$12	\$0
Subsoiling	1 x	0.5		\$ 18	\$9	\$0
Bedmaking	0 x	1.0		\$ 18	\$0	\$18
Planting	0 x	4.0		\$ 18	\$0	\$72
Install Posts & Wires	0 x	8.0		\$ 18	\$0	\$72
Apply sawdust	1 x	1.0		\$ 18	\$18	\$18
Fertilizing	1 x	0.2		\$ 18	\$4	\$0
Grass seeding	0 x	0.5		\$ 18	\$0	\$9
<b>Total Machine Labour</b>						<b>\$211</b>

- Labour Costs at Full Production:

						\$/acre
<b>Production Labour</b>	does not include equipment operator					
Pruning	1	55	\$ 12.00	per hour		660
<b>Total Production Labour</b>						<b>\$660</b>
<b>Machine Labour</b>	# of apps	Hrs/acre	Operator wage			
Spraying	8.0	0.2	\$ 18.00	per hour		29
Mowing	10.0	0.2	\$ 18.00	per hour		36
Apply Sawdust	0.33	1.0	\$ 18.00	per hour		6
Fertilizing	3.00	0.2	\$ 18.00	per hour		11
<b>Total Machine Labour</b>						<b>\$82</b>
<b>Harvest</b>						
<b>Machine harvesting</b>	# of apps	Acres/hr	# of persons	Wage		
driver	1	3	1.1	\$ 18.00		59
laborer	1	3	2.25	\$ 12.00		81
<b>Hand harvest</b>						
harvest	9,750	lbs	0.6832	\$/lb		6,661
<b>Total Harvest Cost</b>						<b>\$6,802</b>

- Fertilizer and Pesticides Costs at Full Production:

<b>Fertilizers &amp; Pesticides</b>	<b>Qty</b>	<b>Unit</b>	<b>Price</b>	<b>Unit</b>	<b>Value</b>
5 - 20 - 25	160.00	kg	\$ 0.62	/kg	415
Captan 75 DF (2x)	0.80	kg	\$ 18.11	/kg	14
Decis	0.05	litre	\$ 109.00	/litre	5
Ferbam	3.75	kg	\$ 20.90	/kg	78
Funginex (2x)	1.20	litre	\$ 45.40	/litre	54
Topas	0.20	litre	\$ 94.50	/litre	19
Velpar	1.00	kg	\$ 112.50	/kg	113
Copper	1.50	kg	\$ 10.76	/kg	32
Sawdust (every 3rd year)	9.00	units	\$ 38.00	/unit	195

- Revenues at Full Production (13,000 pound yield):

	<b>% of production</b>	<b>Qty</b>	<b>Unit</b>	<b>Price</b>	<b>Unit</b>	<b>Value</b>
Fresh (wholesale)	70%	9,100	lbs	\$ 1.31	/lb	<b>\$ 11,921</b>
Processed	25%	3,250	lbs	\$ 1.02	/lb	<b>\$ 3,307</b>
Fresh Farm Gate	5%	650	lbs	\$ 1.76	/lb	<b>\$ 1,144</b>
						<b>\$16,372</b>

**BLUEBERRY ESTABLISHMENT BUDGET – HAND HARVESTED – FRASER VALLEY  
YEAR ZERO- LAND PREP AND YEAR ONE - PLANTING**

					Land Prep Year 0	Planting Year 1	Your Estimate
<b>TOTAL REVENUE</b>					<b>0</b>	<b>0</b>	
<b>ESTABLISHMENT EXPENSES</b>	<b>Application</b>	<b>Quantity</b>	<b>Price</b>	<b>Unit</b>			
Plants		1,300	\$2.40	plants		\$3,121	
Cover crop						\$116	
Drainage					\$1,000		
Irrigation					\$1,200		
Trellis						\$1,100	
<b>DIRECT EXPENSES</b>							
<b>Fertilizers &amp; Pesticides</b>							
5 - 20 - 25	1.5 x	160.00	\$0.62	kg	\$0	\$148	
Copper spray	1 x	1.50	\$10.76	kg	\$0	\$16	
Roundup	1 x	0.70	\$11.84	litre	\$8	\$8	
Sawdust	1 x	9.00	\$38.00	units	\$1,062	\$590	
<b>Fuel Cost</b>					<b>\$66</b>	<b>\$110</b>	
<b>Machinery R &amp; M</b>					<b>\$200</b>	<b>\$200</b>	
<b>Sampling</b>					<b>\$80</b>	<b>\$0</b>	
<b>Irrigation</b>					<b>\$58</b>	<b>\$115</b>	
<b>Production Labor</b>							
Planting		24	hrs	\$ 12	\$0	<b>\$288</b>	
Pruning		0	hrs	\$ 12	\$0	\$0	
Post/wire/trellis		32	hrs	\$ 12	\$0	\$384	
Hand fertilizing		3	hrs	\$ 12	\$0	\$36	
<b>Machine labor</b>	<b>Apps</b>	<b>Hr/acre</b>		<b>Wage</b>			
Spraying	1 x	0.2		\$ 18	\$4	\$11	
Site preparation	1 x	4.0		\$ 18	\$72	\$0	
Mowing	0 x	0.2		\$ 18	\$0	\$11	
Disking	1 x	0.5		\$ 18	\$9	\$0	
Rototilling	1 x	0.7		\$ 18	\$12	\$0	
Subsoiling	1 x	0.5		\$ 18	\$9	\$0	
Bedmaking	0 x	1.0		\$ 18	\$0	\$18	
Planting	0 x	4.0		\$ 18	\$0	\$72	
Install Posts & Wires	0 x	8.0		\$ 18	\$0	\$72	
Apply sawdust	1 x	1.0		\$ 18	\$18	\$18	
Fertilizing	1 x	0.2		\$ 18	\$4	\$0	
Grass seeding	0 x	0.5		\$ 18	\$0	\$9	
<b>TOTAL EXPENSES</b>					<b>\$3,801</b>	<b>\$6,443</b>	

**SUMMARY OF BLUEBERRY PRODUCTION REVENUE AND EXPENSES – HAND HARVESTED - ESTABLISHMENT TO FULL PRODUCTION - FRASER VALLEY**

					Propagation			Hand Harvested					
REVENUE			Price	Unit	Land Prep	Planting	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
	Yield (lb/acre)				0	0	0	4,000	7,000	10,000	11,000	12,000	13,000
Fresh (wholesale)	70% of yield		\$ 1.31		-	-	-	3,668	6,419	9,170	10,087	11,004	11,921
Processed	25% of yield		\$ 1.02		-	-	-	1,018	1,781	2,544	2,798	3,053	3,307
Fresh Farm Gate	5% of yield		\$ 1.76		-	-	-	352	616	880	968	1,056	1,144
<b>TOTAL REVENUE</b>					-	-	-	<b>5,038</b>	<b>8,816</b>	<b>12,594</b>	<b>13,853</b>	<b>15,113</b>	<b>16,372</b>
<b>ESTABLISHMENT EXPENSES</b>													
	Quantity	Price	Unit		<b>2,200</b>	<b>3,121</b>	<b>116</b>	<b>1,100</b>					
	Plants	1,300	2.40	plants		3,121							
	Cover crop						116						
	Drainage				1,000								
	Irrigation				1,200								
	Trellis							1,100					
<b>DIRECT EXPENSES</b>													
<b>Fertilizers &amp; Pesticides</b>					<b>1,070</b>	<b>763</b>	<b>329</b>	<b>482</b>	<b>1,233</b>	<b>672</b>	<b>926</b>	<b>926</b>	<b>926</b>
<b>Fuel Cost</b>					<b>66</b>	<b>110</b>	<b>79</b>	<b>56</b>	<b>112</b>	<b>118</b>	<b>63</b>	<b>63</b>	<b>63</b>
<b>Machinery R &amp; M</b>					<b>200</b>	<b>200</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>93</b>	<b>93</b>	<b>93</b>
<b>Hive Rentals</b>					4	\$65	hive	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>
<b>Irrigation/Water</b>						\$115	/acre	<b>58</b>	<b>115</b>	<b>115</b>	<b>115</b>	<b>115</b>	<b>115</b>
<b>Bird control</b>								200	200	200	200	200	200
<b>Sampling</b>								80	80	80	80	80	80
<b>IPM</b>								55	55	55	55	55	55
<b>Labor: Contract</b>													
	Planting	56	\$12.00	hr		672							
	Harvesting		0.68	/lb	-	-	-	2,733	4,782	6,832	5,636	6,149	6,661
	Machine labor (non harvest)		\$18.00	hr	127	211	151	68	94	76	82	82	82
	Machine labor (harvest)										140	140	140
	Pruning				-	-	120	480	540	600	660	660	660
	Hand fertilizing				-	36	36	-	-	-	-	-	-
	Total Contract Labour				<b>127</b>	<b>919</b>	<b>307</b>	<b>3,281</b>	<b>5,416</b>	<b>7,508</b>	<b>6,518</b>	<b>7,031</b>	<b>7,543</b>
<b>Marketing</b>								<b>133</b>	<b>175</b>	<b>217</b>	<b>231</b>	<b>245</b>	<b>259</b>
<b>TOTAL EXPENSES</b>					<b>3,801</b>	<b>5,227</b>	<b>1,343</b>	<b>5,818</b>	<b>7,702</b>	<b>9,281</b>	<b>8,541</b>	<b>9,068</b>	<b>9,594</b>
<b>CONTRIBUTION MARGIN</b>					<b>(3,801)</b>	<b>(5,227)*</b>	<b>(1,343)</b>	<b>(781)</b>	<b>1,113</b>	<b>3,313</b>	<b>5,312</b>	<b>6,045</b>	<b>6,778</b>

\* The total expenses for the planting year in this summary budget is \$5,227 budget and the total expense for the planting year in the establishment budget is \$ 6,443. The difference of \$1,216 is the trellis and cover crop expenses that are allocated to year 2 and years 3 expenses.

## SENSITIVITY ANALYSIS OF CONTRIBUTION MARGIN

Profitability is strongly influenced by market prices and production yield. The following tables illustrate the resulting contribution margin at full production as price and production levels yields vary.

Price (\$/lb.)	Yield (lb./acre)			
	8,000	10,000	13,000	15,000
0.96	713	1,579	2,878	3,744
1.11	1,913	3,079	4,828	5,994
1.26	3,113	4,579	6,778	8,244
1.41	4,313	6,079	8,728	10,494
1.56	5,513	7,579	10,678	12,744
1.71	6,713	9,079	12,628	14,994

## CASH FLOW TIMING

The table below indicates the monthly flow of income and expenses. It is assumed that the crop is sold out of the field with limited or no storage. A complete Projected Cash Flow should include indirect expenses, capital sales and purchases, loans and personal expenses.

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
%Inc			10		10		10	30	10			30	100
%Ex		10	10	15	5		25	30			5		100

## INVESTMENT CAPITAL REPLACEMENT COSTS

The following equipment and buildings would be required to produce berries on a 30 acre operation. Thus, the start up investment for the operation would include the market value of machinery, building and land (purchase or rental costs) and should be reviewed as part of the return on assets and return on investment.

Item	Replacement Cost
Buildings	\$27,500
Nets	\$70,000
Power Machinery	\$20,350
Field Machinery	\$11,550
Vehicle	\$25,000
Irrigation	\$25,000
<b>Total</b>	<b>\$179,400</b>

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