

Vinifera Wine Grapes – Establishment to Full Production Vancouver and the Gulf Islands

10 Acres

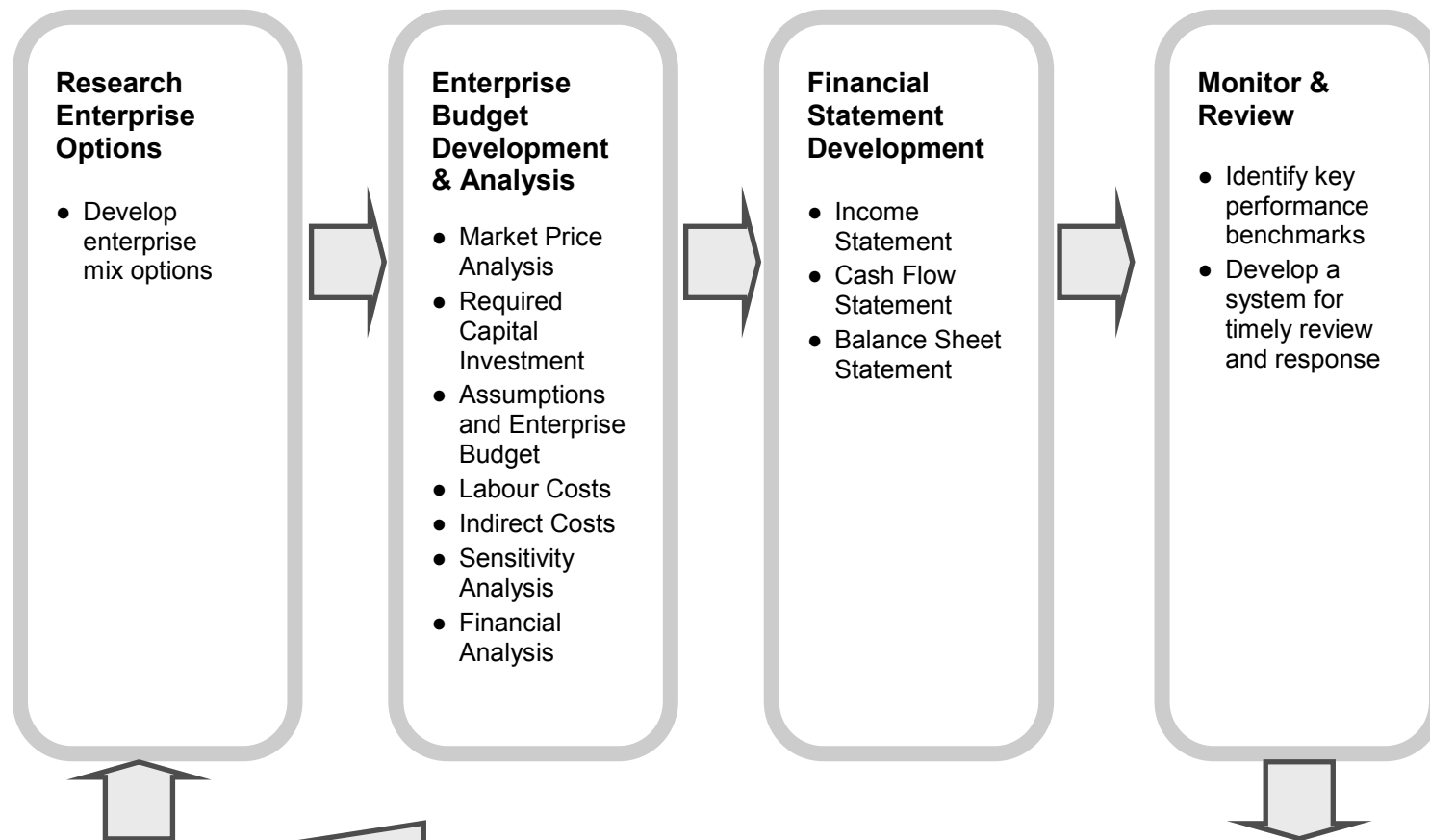
Fall 2014

The **BUILDING BUSINESS SUCCESS** enterprise budget series was developed to provide information to assist producers in projecting costs and returns for British Columbia farm enterprises. These budgets are one part of the overall financial planning process that assists in decision making and in monitoring and reviewing the whole farm business. This factsheet consists of the following sections: Overview of the Financial Planning Process, Assumptions, Required Capital Investment, Indirect Expenses, Labour costs, Enterprise Budget, Cashflow and Net Farm Income summary, Sensitivity Analysis, Key Success Factors, Risk Assessment and Financial Analysis.

This information is provided as a tool for projecting costs and returns for specific farm enterprises and as a general guide for preparing individual financial plans. This sample budget is based on prevailing costs and prices at time of publication, and will be different for each farm. Producers should develop their own budget to reflect individual production goals, costs and market prices. Additional financial planning information and farm enterprise budgets can be found [online](#) or from a local B.C. Ministry of Agriculture office.



Overview of the Financial Planning Process



It is assumed that a new vineyard is being established and planted in year one, and that the economic life is 25 years, with a five year establishment phase and 20 years of full production. Input costs used were derived from local Vancouver Island and Okanagan suppliers. Although vineyards on Vancouver Island vary greatly, this vineyard is approximately 12 acres in total area, with 10 acres in production. Headlands, clearances, building sites, and any other non-productive lands are not used to calculate the per acre values. While the capital and other requirements to establish an estate winery are not addressed in this analysis, a 10 acre vineyard could yield sufficient annual grape tonnage to support a viable estate winery producing 2,500 cases (utilizing 40 tons of grapes at an industry standard yield of 635 liters of wine per ton).

Planting Density/ Trellis System

This vineyard is planted at a spacing of 5 ft. (in row) by 8 ft. (between rows) resulting in a density of 1,089 vines/acre.

Most Vancouver Island Vineyards are planted using the Vertical Shoot Position (VSP) canopy system with a few vineyards using a split canopy such as the Geneva double curtain system. While this system of trellising maximizes sun exposure of the canopy it does require additional expenditure on catch wires and will promote canopy vigor which requires additional labour in canopy management. The example vineyard uses a vertical canopy system and is cane pruned and tying of the canes to the fruiting wire at a height of 50 cm.

High tensile galvanized steel wire is used for fruiting and foliage catch wires. Heavy 12.5 gauge wire is used to support the fruit load and three sets of a lighter 14 gauge non-movable catch wires are used to contain the canopy as it grows. Chains are used to secure the catch wires to the end posts and staples or hooks are used to fasten them to the row posts. Pressure treated 10 ft., 5-6 in. diameter wooden posts are used with a typical box end construction, with lighter 4-5 in. 8 ft. posts spaced on 20 ft. centers within the rows.

Site Characteristics/ Crop Protection

The site selected for this vineyard is considered to be low to moderately fertile soil and requires soil conditioning to reach a neutral soil ph of 7. Trace mineral fertilizer is broadcast prior to planting, and annually at 100 lb. per acre. Generally no other foliar or liquid fertilizer is required. Due to heavy winter precipitation the majority of vineyards are tile drained and deep tilled to improve soil structure prior to planting. Consultation with a soils specialist is strongly recommended to evaluate potential vineyard sites within the Coastal Region of B.C.

Powdery mildew is controlled by canopy management and fungicide applications. Depending on site and varieties planted, a mix of synthetic sprays may be required for bunch rot. However it is important to determine the spray program for each situation. More information can be found in the 2010 Best Practices Guide for Grapes for British Columbia Growers available from the BC Wine Grape Council. <http://www.bcwgc.org/best-practices-guide>

Bird Netting/ Deer Fencing

Both bird netting and deer fencing are necessary on Vancouver Island. A majority of the vineyards use 6 ft. page wire with a single top strand of barbed wire for deer fencing. Side netting is used in this budget starting in year three at a cost of \$1,980/acre. While less effective, if bird pressure is not high, it is an easier system to install and remove saving annual labour costs. If overhead bird netting is used, an additional 2-10' posts per row would be required at 100 foot intervals to support the overhead nets, with an additional 16 support wires and strainers required to support the system.

Marketing

It is imperative to ***establish a market for your grapes before investing in a new planting***. Consult with wineries and other potential buyers and markets. Income projections in this budget are based on a market price of \$2,200 per short ton which reflects an established price for good quality wine grapes on Vancouver Island. Prices will vary depending on variety, quality and other factors. It is important to assess the risk factors associated with expected returns from marketing wine grapes.

Varietal Selection/ Yield

Varietal choice is based on several factors including site location, personal preference, grower experience, variety trial recommendations, and market demand. Choosing the varieties to plant is a key decision and requires detailed analysis.

Projected yields are based on Wine Island Growers membership survey data and reflect good horticulture and management practices. Production in this vineyard starts in year three at 2.0 tons/acre, with yields of 3.5 tons/acre in year four and 4.0 tons/acre at maturity (years 5-25). While this level of production is achievable with efficient vineyard and canopy management, it should be noted that yield and quality is influenced by variety, site, seasonal weather conditions and

This section provides details of the buildings and equipment investment required to begin and efficiently operate this 10 acre vineyard enterprise. Farm machinery and equipment may be purchased new or used, thus the values of these capital items will vary between operations.

Depreciable capital assets are expensed over their useful lives and is accounted for as an amortization expense shown in the net farm income projection on page 8. Depending on the asset and the preference of the manager there are several acceptable methods of determining amortization, the most common is straight - line.

Capital costs of land, housing, clearing, road building, water development, power installation, utilities construction and landscape improvements are not included in this enterprise analysis. The costs of improvements, equipment and machinery are solely for the vineyard enterprise.

**Vines and Trellising are shown here as capital items, but may be direct costs for income tax purposes in a replant situation. Consult with a qualified tax advisor.*

Capital Investment		
Buildings - machine shed/ storage	\$	20,000
Machinery/Equipment/Truck	\$	68,000
Deep Tillage/Ripping	\$	6,000
Land Drainage	\$	60,000
Irrigation	\$	19,920
Perimeter fence 6'	\$	12,830
Bird Netting	\$	19,800
Vines (1,089/acre @\$3.50/vine) *	\$	38,115
Trellising *	\$	51,335
Total Capital Investment	\$	296,000



Indirect (Fixed) Expenses

The indirect (fixed) expenses for this 10 acre vineyard budget are shown in the table to the right. These are included mainly as an example to illustrate that the contribution margin from the vineyard enterprise should be sufficient to cover these as well as other costs such as interest on debt, depreciation, operator labour, etc. This is shown in the Whole Farm Net Income section on page 8. Indirect expenses vary from farm to farm and should be adjusted to reflect your specific situation.

Indirect (fixed) Expenses	Sample farm	Your farm
Accounting & legal	\$ 900	
Bank charges	\$ 600	
Insurance	\$1,500	
Property Taxes/Licenses	\$1,200	
Utilities	\$1,000	
Unallocated R & M	\$1,000	
Auto expenses	\$1,994	
Office supplies	\$ 308	
Telephone & postage	\$ 742	
Small tools & supplies	\$ 500	
Total Indirect Expenses	\$9,745	

summarized in the tables below. Labour costs are based on \$10.25/hr. for a field worker (\$11.03 total) and \$20.00/hr. (\$21.51/hr. total) for a machine operator. While these hours may be manageable if spread over a whole year, they will be concentrated at certain times of the year resulting in potential challenges in getting labour. Access to good, skilled labour is an important component in producing consistent yields of high quality wine grapes.

Note: It is assumed that the owner is being paid from profits but it is still worthwhile to record all hours of work and to calculate the return (per hour) on operator labour at year end.

Labour Rates				
	Base Salary	EI	CPP	Total/Hour
Field Worker	\$10.25	\$0.51	0.2683	\$11.03
Machine Operator	\$20.00	\$0.99	0.5236	\$21.51

Labour Rates				
	Base Salary	EI	CPP	Total/Hour
Field Worker	\$10.25	\$0.51	0.2683	\$11.03
Machine Operator	\$20.00	\$0.99	0.5236	\$21.51

Labour Cost Analysis Yr 1 (Planting)				
Machine	Operation	hr./ac.		# of appl
	Fungicide Spraying	1.0		1
0.00	Weed Spraying	0.5		2
3.30	Plowing	2.0		1
1.67	Rototilling	0.0		0
3.30	Mowing	2.5		5
4.50	Disc	0.7		2
Cultivating & Mowing		5.3		
Pesticide Spraying		1.5		
Total Machine		6.8		\$ 147.05
Production	Operation	hr./ac.		# of appl
	Planting	90.8		1
	Budding & Suckering	0.0		0
	Back Pac Weeding	0.0		0
	1st Vine Clipping	18.2		0
	2nd Vine Clipping	18.2		0
	3rd Vine Clipping	18.2		0
	Topping/Hedging	9.1		0
	Leaf Thinning	9.1		0
	Fruit Thinning	9.1		0
	Bird Netting (on)	4.5		0
	Bird Netting (off)	4.5		0
	Total Production	90.8		\$ 1,000.58
Harvest	Operation	hr./ac.		
Total Harvesting		0.0		0
				\$ -
Total Labour Cost				\$ 1,147.64

Labour Cost Analysis Yr 2				
Machine	Operation	hr./ac.		# of appl
	Fungicide Spraying	1.5		3
0.00	Weed Spraying	1.5		3
		0.0		0
1.67	Rotovate	0.0		0
3.30	Disc	0.0		0
4.50	Mowing	1.9		5
Cultivating & Mowing		1.9		
Pesticide Spraying		3.0		
Total Machine		4.9		\$ 105.56
Production	Operation	hr./ac.		# of appl
	Winter Pruning	3.6		1
	Budding & Suckering	9.1		0
	Back Pac Weeding	0.0		0
	1st Vine Clipping	18.2		1
	2nd Vine Clipping	18.2		0
	3rd Vine Clipping	18.2		0
	Topping/Hedging	9.1		0
	Leaf Thinning	9.1		0
	Fruit Thinning	9.1		0
	Bird Netting (on)	4.5		0
	Bird Netting (off)	4.5		0
	Total Production	21.8		\$ 240.14
Harvest	Operation	hr./ac.		
Total Harvesting		0.0		0
				\$ -
Total Labour Cost				\$ 345.70

Field Worker		\$10.25	\$0.51	0.27	\$11.03
Machine Operator		\$20.00	\$0.99	0.52	\$21.51
Machine					
Ground Speed Km/hr	Operation	hr./ac.		# of appl	
	Fungicide Spraying	6.6		13	
	Weed Spraying	1.5		3	
1.67	Rotovate	0.0		0	
3.30	Disc	0.0		0	
4.50	Mowing	1.9		5	
Cultivating & Mowing		1.9			
Pesticide Spraying		8.1			
Total Machine		10.0			\$ 214.76
Production	Operation	hr./ac.		# of appl	
Feb, Mar	Winter Pruning & Tying cane	18.2	\$ 200.12	1	
April,	Clippings & Trellis Repair	0.0	\$ -	1	
M,J,J,A,S	Back Pac Weeding	0.0	\$ -	0	
May June	Budding, Suckering	0.00	\$ -	1	
July	1st Vine Clipping	9.08	\$ 100.06	1	
Aug	2nd Vine Clipping	9.08	\$ 100.06	1	
Aug	Topping/Hedging	0.00	\$ -	1	
Sept	Leaf Thinning	0.00	\$ -	1	
Sept	Fruit Thinning	0.00	\$ -	1	
Sept	Bird Netting (on)	9.1	\$ 100.06	1	
Oct	Bird Netting (off)	9.1	\$ 100.06	1	
Total Production		54.5	\$ 600.35		\$ 600.35
Harvest	Operation	hr./ac.			
Oct	Hand Harvesting	40.0	\$ 441.03		\$441.03
Oct	Tractor Harvest	4.0	\$ 86.05		\$ 86.05
Total Labour Cost					\$ 1,342.19

Field Worker		\$10.25	\$0.51	0.27	\$11.03
Machine Operator		\$20.00	\$0.99	0.52	\$21.51
Machine					
Ground Speed Km/hr	Operation	hr./ac.		# of appl	
	Fungicide Spraying	6.6		13	
	Weed Spraying	1.5		3	
1.67	Rotovate	0.0		0	
3.30	Disc	0.0		0	
4.50	Mowing	1.9		5	
Cultivating & Mowing		1.9			
Pesticide Spraying		8.1			
Total Machine		10.0			\$ 214.76
Production	Operation	hr./ac.		# of appl	
Feb, Mar	Winter Pruning & Tying cane	36.3	\$ 400.23	1	
April,	Clippings & Trellis Repair	36.3	\$ 400.23	1	
M,J,J,A,S	Back Pac Weeding	0.0	\$ -	0	
May June	Budding, Suckering	18.15	\$ 200.12	1	
July	1st Vine Clipping	18.15	\$ 200.12	1	
Aug	2nd Vine Clipping	18.15	\$ 200.12	1	
Aug	Topping/Hedging	18.15	\$ 200.12	1	
Sept	Leaf Thinning	9.08	\$ 100.06	1	
Sept	Fruit Thinning	9.08	\$ 100.06	1	
Sept	Bird Netting (on)	9.1	\$ 100.06	1	
Oct	Bird Netting (off)	9.1	\$ 100.06	1	
Total Production		181.5	\$ 2,001.17		\$ 2,001.17
Harvest	Operation	hr./ac.			
Oct	Hand Harvesting	40.0	\$ 441.03		\$441.03
Oct	Tractor Harvest	4.0	\$ 86.05		\$ 86.05
Total Labour Cost					\$ 2,743.01

Labour Cost Analysis Yr 5 +				
	Base Salary	EI	CPP	Total/Hour
Field Worker	\$10.25	\$0.51	0.27	\$11.03
Machine Operator	\$20.00	\$0.99	0.52	\$21.51
Machine				
Ground Speed Km/hr	Operation	hr./ac.		# of appl
	Fungicide Spraying	6.6		13
	Weed Spraying	1.5		3
1.67	Rotovate	0.0		0
3.30	Disc	0.0		0
4.50	Mowing	1.9		5
Cultivating & Mowing		1.9		
Pesticide Spraying		8.1		
Total Machine		10.0		\$ 214.76
Production	Operation	hr./ac.		# of appl
Feb, Mar	Winter Pruning & Tying cane	90.8	\$ 1,000.58	1
April,	Clippings & Trellis Repair	36.3	\$ 400.23	1
M,J,J,A,S	Back Pac Weeding	0.0	\$ -	0
May June	Budding, Suckering	36.30	\$ 400.23	1
July	1st Vine Clipping	36.30	\$ 400.23	1
Aug	2nd Vine Clipping	36.30	\$ 400.23	1
Aug	Topping/Hedging	18.15	\$ 200.12	1
Sept	Leaf Thinning	9.08	\$ 100.06	1
Sept	Fruit Thinning	9.08	\$ 100.06	1
Sept	Bird Netting (on)	9.1	\$ 100.06	1
Oct	Bird Netting (off)	9.1	\$ 100.06	1
Total Production		290.4	\$ 3,201.87	\$3,201.87
Harvest	Operation	hr./ac.		

The table below summarizes the projected contribution margins for the first 10 years of the vinifera wine grape planting. These income and expenses provide a general indication of the financial requirements in establishing and producing Vinifera wine grapes. The contribution margin must provide funds for overhead, interest, and other fixed costs as well as for living expenses, loan principal repayment, and return to management and investment.

This enterprise budget information is intended to be used as a planning tool for those interested in developing a new wine grape planting. It is important to assess these for specific situations and expectations of yields, prices and input costs.

Contribution Margin Summary											
Vinifera Grape Production Vancouver Island & Coastal BC Fall 2014 (\$/Acre)											
INCOME	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Total Income/acre			\$ 4,400	\$ 7,700	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 64,900
											\$ -
DIRECT EXPENSES											\$ -
Vines, Planting and Trellis											\$ -
Plants, Bamboo and Covers	\$ 4,008										\$ 4,008
VSP Trellis	\$ 5,134										\$ 5,134
Irrigation (trickle)	\$ 1,992										\$ 1,992
Bird Netting (Side)			\$ 1,980								\$ 1,980
Deep Tillage & Drainage	\$ 6,600										\$ 6,600
Perimeter Deer Fence	\$ 1,283										\$ 1,283
Plant Nutrients											\$ -
Lime	\$ 300										\$ 300
Fertilizer											\$ -
5-20-27	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 57	\$ 570
											\$ -
Pesticides	\$ 29	\$ 55	\$ 343	\$ 343	\$ 343	\$ 343	\$ 343	\$ 343	\$ 343	\$ 343	\$ 2,826
											\$ -
Machinery Operation	\$ 250	\$ 224	\$ 278	\$ 278	\$ 271	\$ 271	\$ 271	\$ 271	\$ 271	\$ 271	\$ 2,656
											\$ -
Machine & General Labour	\$ 1,148	\$ 346	\$ 815	\$ 2,216	\$ 3,417	\$ 3,417	\$ 3,417	\$ 3,417	\$ 3,417	\$ 3,417	\$ 25,024
Harvest Labour			\$ 527	\$ 527	\$ 527	\$ 527	\$ 527	\$ 527	\$ 527	\$ 527	\$ 4,217
											\$ -
Contract & Custom	\$ 5,400	\$ -	\$ 300	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,700
											\$ -
Equipment Rentals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
											\$ -
Other Supplies & Services	\$ -	\$ -	\$ 485	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 485
											\$ -
Total Direct Expenses/acre	\$ 26,200	\$ 682	\$ 4,785	\$ 3,421	\$ 4,614	\$ 4,614	\$ 4,614	\$ 4,614	\$ 4,614	\$ 4,614	\$ 62,773
Contribution Margin/acre	\$ (26,200)	\$ (682)	\$ (385)	\$ 4,279	\$ 4,186	\$ 4,186	\$ 4,186	\$ 4,186	\$ 4,186	\$ 4,186	\$ 2,127
CM Per 10 acres	\$ (261,999)	\$ (6,817)	\$ (3,850)	\$ 42,792	\$ 41,857	\$ 41,857	\$ 41,857	\$ 41,857	\$ 41,857	\$ 41,857	\$ 21,266
Cumulative Margin (acre)	\$ (26,200)	\$ (26,882)	\$ (27,267)	\$ (22,987)	\$ (18,802)	\$ (14,616)	\$ (10,430)	\$ (6,245)	\$ (2,059)	\$ 2,127	

is important to note that most operating costs are incurred before income is received. For this sample farm, there is no inflow of cash until October when the crop is sold to the winery. The annual indirect expenses (see page 3) are allocated equally across the 12 months. Net cash flow is positive for the year. The use of an operating loan or other sources of cash is required to meet cash operating needs through the production season.

Debt servicing, owner/manager salary, and personal expense needs are not included in these cash flow projections.

Year 5- 10 Acre Vineyard Cash Flow - Gross Revenue (\$8,800/acre)													
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
OUTFLOW													
Direct Expenses													
Pesticide				\$3,428									\$3,428
Fertilizer				\$570									\$570
Hired Field Labour		\$5,003	\$5,003	\$4,002	\$2,001	\$2,001	\$4,002	\$6,004	\$3,002	\$5,411			\$36,429
Hired Tractor Operator				\$334	\$334	\$334	\$334	\$334	\$334	\$1,004			\$3,008
Fuel & Lube				\$350	\$350	\$350	\$350	\$350	\$350	\$350			\$2,447
Repair & Maintenance				\$37	\$37	\$37	\$37	\$37	\$37	\$37			\$261
Indirect Expenses	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$812	\$9,745
Total Cash Outflow	\$812	\$5,815	\$5,815	\$9,533	\$3,534	\$3,534	\$5,535	\$7,536	\$4,535	\$7,614	\$812	\$812	\$55,888
INFLOW													
Grape Sales										\$88,000			\$88,000
Monthly Net Cash Flow	(\$812)	(\$5,815)	(\$5,815)	(\$9,533)	(\$3,534)	(\$3,534)	(\$5,535)	(\$7,536)	(\$4,535)	\$80,386	(\$812)	(\$812)	\$32,112



Owner/Manager Compensation

Consideration should be considered for compensation paid to the owner/manager for activities beyond the required machine, production and harvesting labour included in the direct expenses for this budget. These may include operator labour, marketing, hiring, record keeping, planning, and decision making. It is a salary for management activities that need to be conducted by the owner/manager or hired out. The ability of the farm to provide a return to management will be impacted by debt servicing and other priority expenses.

For this vineyard operation, it is assumed that an annual salary of \$12,000 or \$1,200 per acre is paid to the owner. This amount is shown in the Net Farm Income projections on page 8.

This section shows the projected net farm income for an average full production year for a 10 acre vineyard. This information is based on discussion and consensus with growers, but as each situation is unique it is strongly recommended that an individual farm budget be prepared.

This budget does not include any amounts for debt servicing, paying compensation to the owner/management, living expenses or other costs. Any additional costs for these items would have to be paid for from Net Farm Income.

NET FARM INCOME WORKSHEET						
10 Acre Vineyard Vancouver Island (Average Full Production Year)						
Income		Vineyard	Per Ton	%	Your Farm Estimates	
	Yield	40.0 tons				
	Price					
	4.0 /Ac. \$2,200 /ton	\$88,000				
TOTAL		\$88,000	\$ 2,200			
Direct Expenses						
	Plant Nutrients	\$ 570	\$ 14.25	1.2%		
	Pesticides	\$ 3,428	\$ 85.71	7.4%		
	Machinery Operation	\$ 2,708	\$ 67.70	5.9%		
	Labour Machine & General	\$34,166	\$ 854.16	74.0%		
	Harvest	\$ 5,271	\$ 131.77	11.4%		
	Contract & Custom Work	\$ -	\$ -			
	Equipment Rentals	\$ -	\$ -			
	Other Supplies & Services	\$ -	\$ -			
Total Direct Expenses		\$46,143	\$ 1,153.59	100.0%		
CONTRIBUTION MARGIN		\$41,857	\$ 1,046.41			
Indirect Expenses (Fixed Costs)						
	Accounting & Legal	\$ 900	\$ 22.50			
	Bank Charges	\$ 600	\$ 15.00			
	Property Insurance	\$ 1,500	\$ 37.50			
	Property Taxes, Licenses, etc.	\$ 1,200	\$ 30.00			
	Utilities	\$ 1,000	\$ 25.00			
	Unallocated Repairs & Maintenance	\$ 1,000	\$ 25.00			
	Auto Expenses	\$ 1,994	\$ 49.86			
	Office Supplies	\$ 308	\$ 7.70			
	Telephone & Postage	\$ 742	\$ 18.56			
	Small Tools & Supplies	\$ 500	\$ 12.50			
Total Indirect (Fixed) Expenses		\$ 9,745	\$ 243.61			
Net Return over Expenses <i>(Contribution Margin minus Total Indirect Expenses)</i>						
		\$32,112	\$ 802.80			
	Depreciation (Equipment & Buildings)	\$14,623	\$ 365.59			
	Salary for Manager/Owner	\$12,000	\$ 300.00			
Net Farm Income *		\$ 5,489	\$ 137.22			

This sensitivity analysis illustrates the changes in the gross income and the contribution margin (income less direct expenses) that results from price, production level and labour cost fluctuations.

Market price for wine grapes on Vancouver Island is highly variable ranging from \$0.80 - \$1.35/lb (\$1,600 to \$2,700/ton). The larger capacity wineries will purchase quality grapes. The first two tables show the impact of price and yield changes on gross revenue and the contribution margin per acre from the base assumption price of \$2,200/ton and 4.0 ton/acre yields.

Labour costs are 74% of the direct expenses for this enterprise (net farm income table). Summer canopy management is the most variable of the labour costs incurred in the vineyard. The third table below shows the change in contribution margin relative to a change in hours from the projected canopy management labour in year five of 145 hours per acre for budding, suckering, three passes of vine clipping, canopy topping, leaf stripping and fruit thinning. Labour requirements for winter pruning, tying down canes, vine trash removal, harvesting and bird netting will vary less from year to year in an established vineyard with experienced field workers.

It is important to assess the risks associated with these variables for individual situations and expectations.

Established Vineyard Gross Revenue/Acre Sensitivity Analysis					
Price/ Yield (tons)	1.0	2.0	3.0	4.0	Your Gross
\$1,600	\$1,600	\$3,200	\$4,800	\$6,400	
\$2,200	\$2,200	\$4,400	\$6,600	\$8,800	
\$2,700	\$2,700	\$5,400	\$8,100	\$10,800	

Established Vineyard Contribution Margin/Acre Sensitivity Analysis					
Price/ Yield (tons)	1.0	2.0	3.0	4.0	Your Yield
\$1,600	-\$3,014	-\$1,414	\$186	\$1,786	
\$2,200	-\$2,414	-\$214	\$1,986	\$4,186	
\$2,700	-\$1,914	\$786	\$3,486	\$6,186	
\$3,000	-\$1,614	\$1,386	\$4,386	\$7,386	

Effect of Canopy Labour in Established Vineyard on Contribution Margin/Acre @ \$2,200/ton (\$1.10/pound) Full Production Year						
Average Yield						
Hrs/Acre	2.5 tons	3.0 tons	3.5 tons	4.0 tons	4.5 tons	5.0 tons
120	\$1,436	\$2,436	\$3,436	\$4,436	\$5,436	\$6,436
130	\$1,336	\$2,336	\$3,336	\$4,336	\$5,336	\$6,336
140	\$1,236	\$2,236	\$3,236	\$4,236	\$5,236	\$6,236
145	\$1,186	\$2,186	\$3,186	\$4,186	\$5,186	\$6,186
150	\$1,136	\$2,136	\$3,136	\$4,136	\$5,136	\$6,136
160	\$1,036	\$2,036	\$3,036	\$4,036	\$5,036	\$6,036
170	\$936	\$1,936	\$2,936	\$3,936	\$4,936	\$5,936

the profitability of the operation.

For this type of operation, the key is to identify and develop measures to monitor the parts of the business that are critical to generating a profit at the end of the year. These include at least the following:

On the revenue side

- Yield and quality. The challenge is to select varieties that will most likely achieve the quality and level of production and maximize income.
- Price. Minor differences in the projected price has a significant impact on income and profitability. The sensitivity analysis shows that a 27% decline in price results in a 57% drop in the contribution margin, leaving little to cover indirect costs, depreciation and return to owner/manager.
- Marketability. It is imperative that your grapes are of sufficient quality to meet market requirements to generate the price to keep profitable.

On the cost side

- Labour. This is by far the largest cost on this vineyard. Certainly the amount and productivity of hired labour must be monitored. However, owner/operator labour should also be recorded as should the timing, during the year, when these hours of labour are needed. Peak labour requirements are high and intense. With these kinds of records, the producer can make good decisions about optional practices or the use of equipment that will reduce future labour use.
- Maintain efficient production practices and manage pests, diseases and other production risks.
- The level of investment in depreciable assets on a per acre basis has a significant impact on overall profitability. With a higher level of investment in depreciable assets, particularly if financed through loans, a smaller vineyard will have a higher per unit cost structure resulting in greater financial risk. Capital investment in depreciable assets on your farm should be evaluated in terms of operational requirements and the farm's ability to withstand various sources of risk. Consider options such as leasing and custom work.

The bottom line...

This budget was based on the assumption that the owner operator is the proprietor or part of a family partnership. People should enjoy their business and most probably do. However, if you can't pay yourself, the fun won't last forever. At some point it may not be enjoyable anymore. So, develop goals, set targets, and make money so the business continues to provide a return to management.



Investment Analysis– Business Planning

Whole Farm Business Plan

Before investing in a new wine grape planting, it is recommended that investors develop a whole farm business plan to reflect their own situation and assessment of a vineyard's potential financial feasibility and associated risks.

Fundamental questions to ask in this process include:

- Is there a market for my grapes?
- Is it technically feasible (e.g. site suitability, labor, resources, etc.)?
- Is it economically sound?
- Is it financially feasible?

The B.C .Ministry of Agriculture's Farm Business Advisory Services Program provides support for farm business planning.

- [Farm Business Advisory Services Program](#)

management, a risk is defined as a possible event or circumstance that can have negative influences on the enterprise in question; in this case a new 10 acre vinifera wine grape planting on Vancouver Island.

There are critical success factors that make an investment profitable. The financial projections in this study assume good management and outcomes supporting a profitable and successful venture. Assessing the various sources of risk, their severity or impact, and the probability of occurrence is important in developing strategies to mitigate and manage risk. This section discusses potential sources of risk on the vineyard and ideas on the process to evaluate them in preparing a risk management plan as part of an overall farm business plan and financial projections.

Risk impacting a vinifera wine grape enterprise can come from numerous sources; both internal and external. They all could potentially have an impact on the key variables of price, yield and costs (including labour), and the contribution margin projections for the vineyard. The following list of factors is intended as a guideline to ask questions for specific vineyards and is not exhaustive.

Markets/marketing	Varietal Selection	Grape Quality
Contract Requirements	Weather/Climate	Financial
Crop Protection	Soil	Business
Land Suitability	Disease	Supply of Grapes
Water	Production methods	Political
Crop Protection	Labour	Government Policy
Pest Control	Environment	Taxation

As each location and situation varies, it is important that an individual risk assessment be conducted. To assist in establishing the sources of risk for individual operations, take each factor and identify potential issues within them that would result in some degree of risk impacting the financial projections. From that, assess what the level of impact and probability of occurrence would be. Then determine the level of control you have and identify potential options to manage or mitigate the risks. As an example, consider the use of production insurance to cover the risks of vine and crop losses. It is one of many strategies that farm managers can incorporate into their risk plan.

Another area of risk is price. Looking at the range of prices for wine grapes both within and between varieties points to a significant degree of risk. Strategies and production practices to secure markets and produce a good volume of high quality grapes that are in demand need to be established to meet the projected revenues in the vineyard.

It can also be useful to rank the risks into those with high impact and high probability and those with low probability and low impact. This can help in putting a focus on managing those of greatest likelihood of occurrence and impact on the success of the vineyard.

This assessment will help in making a more informed decision on whether or not to invest in a vinifera wine grape planting as well as in managing towards a profitable vineyard enterprise.

Additional information on managing risk and government risk management programs are available online:

- [Business Risk Management Programs](#), B.C. Ministry of Agriculture
- [Farm Business Risk Assessment Profile](#), B.C. Ministry of Agriculture
- [Risk Choices](#), Alberta Agriculture

	Increase Price by 10 % and Use Target Production Yield	Decrease Price by 10 % and Use Target Production Yield	Use Target Production Yield and Target Price
Gross Margin			

4. Return on Assets (ROA) This is the return generated from the operation's assets. The value indicates the productivity of the assets and how well these assets are managed. ROA is determined as:

$$\frac{(\text{Net Income plus annual interest charges})}{\text{Assets}}$$

	Sample Farm	Your Farm
Net Income		
Annual Interest Charges		
Value of Total Assets		
Return on Assets		

5. Return on Equity (ROE) This is the return generated from the assets that are owned by the owner, not all assets. This measures the profit earned for each dollar owner has invested in the operation. ROE is determined as:

$$\frac{(\text{Net Income})}{\text{Owner Equity}}$$

	Sample Farm	Your Farm
Net Income		
Value of Total Assets		
Value of Total Liabilities		
Value of Owner Equity (Value of Total Assets less Value of Total Liabilities)		
Return on Owner Equity		