BUILDING BUSINESS SUCCESS

A Hazelnut Planning Tool for the Fraser Valley

10 Acres **Spring 2017**

The **BUILDING BUSINESS SUCCESS** enterprise budget series were 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, monitoring and reviewing the whole farm business. 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 only a guide and is not intended as an in depth study of the cost of production for this industry. Interpretation and utilization of this information is the responsibility of the user. If assistance is required to develop your individual budget, consult your own accountant, lawyer or an agrologist to address your specific circumstance. 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 at the Ministry website or obtained from a local B.C. Ministry of Agriculture office.

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Overview of the Financial Planning Process

Research Enterprise Options

- Develop enterprise mix options

Key Factors for Success

- Personal traits
- Production & risk factors
- Market price analysis
- Required capital investment
- Assumptions and enterprise budget
- Indirect costs
- Labour costs
- Sensitivity analysis
- Financial analysis

Financial Statement Development

- Identify the specific costs and revenues for products at your farm location
- Income Statement
- Cash Flow Statement
- Balance Sheet

Monitor Performance and Update Enterprise Budget

- Identify key performance benchmarks
- Develop a system for timely review and response

Growing Forward 2
A federal-provincial-territorial initiative

British Columbia

Canada

Background and Assumptions for 10 Acre Orchard

Farm Size
Ten acres.

Tree Planting
Trees are planted in year one and take five to six years to reach 50% of target yields. Full production capacity is typically achieved by year 11. Planting of 100 trees per acre, with equipment, including an auger and truck, takes two people approximately eight hours. Prior to planting, site preparation may include levelling, fertilizer, lime, soil drainage and irrigation infrastructure.

Returns
Returns are for labour provided by the farm operator and reflect the difference between the incremental revenues and incremental costs associated with the hazelnut operation.

Marketing
This industry is open and allows growers to market their own processed product ,or, to sell it through a processor. This budget assumes selling through a processor. If a grower wishes to direct market, for example, at a famers' market, additional resources like time and primary processing capacity would be necessary. Direct marketing may increase revenue potential

Transport of Hazelnuts
Transportation is necessary whether selling to a processor or direct marketing to a farmer's market or other outlet. This budget assumes either a half ton or one ton truck would be required. Typically, the hazelnuts are put in totes for transporting.

Storage Cost
On farm storage capacity is necessary for both direct marketing and selling to a processor.

Labour
Labour is needed for initial planting, spring cleanup, pruning, grass and weed management and for harvesting. Within this document, it is assumed that the majority of labour will be performed by the farm owner. The estimated returns are shown as a Gross Margin on total Direct Expenses, which for comparison is viewed as a gross return to labour. This amount is then available to cover labour costs and other indirect expenses on the farm.

Market Price and Processing Costs
Prices and processing costs are based on values from Oregon. It is important to check the market prices and the processing costs in your area.

Interest Rates and Opportunity Cost
The capital needed can be provided in many ways. There is a cost associated with the use of all capital assets. It can include direct costs such as interest on loans or the opportunity cost (returns lost) of not using the capital in another enterprise or investment. This enterprise budget estimates a single 'opportunity cost' of capital which includes, but is not limited to, interest on loans.

Assumptions
Trees are planted in year one and are fully productive at year 11. There may be some production by year three, however, it is best to assume that it will not be economic until year five. Target yields are set at 2,500 lbs (1,133kg) per acre, with prices at $1.50/lb. Prices are conjectured from Oregon values. Key risks include tree yield and prices. Annually, labour will be needed for pruning, fertilizing, flailing and harvesting tasks. Equipment will include, a tractor, flail mower, auger, sweeper/ harvester, leveler, sprayer, totes and hand tools. Custom harvesting may be an alternative, however, this budget assumes that all equipment is owned.

Key Factors for Success

1. A passion for working with nut crops.
2. Marketing that includes an excitement about your nut product and an eagerness to share it with others.
3. Diligent agronomy and cropping practices.
4. Business management skills to closely monitor costs and compare to budget projections.

Market Factors

1. Sales can be at the retail level (direct from farm or at a farmers' market), wholesale to processor markets or wholesale to brokers. Retail prices > whole sale prices > broker prices.
2. Typically, the highest value market for hazelnuts is the snack food industry. This market demands the highest quality nuts.
3. Adding value to products may consist of on farm shelling of high quality nuts to sell as a snack food, or, processing of lower grade nuts into diced, ground, sliced or slivered products. There may also be opportunities for products like roasted nuts or cold pressed hazelnut oil.

Production Risk Factors

1. A key factor in hazelnut production is appropriate soils. Soil pH level needs to be tested and lime may be needed to manage soil chemistry. Hazelnuts will grow best in well-drained, deep, fertile, moist loam to sandy loam soil with good aeration and a soil pH of 6 to 7. Avoid soils with a pH below 5.
2. The site will need to be level and clear of rocks that may damage equipment.
3. Disease - obtaining the correct tree cultivar is very important as Eastern Filbert Blight has killed older orchards. New hazelnut varieties which are disease-resistant and recommended for BC planting include: Jefferson; Yamhill; Wepster; and pollinizer trees- Gamma, Eta, Theta. Nurseries can provide seedlings.
4. Predation - some wildlife (deer, squirrels, mice) may consume nuts and/or damage trees.

Required Capital Investment

Capital costs required for the enterprise will vary between farms depending on existing infrastructure like buildings and machinery at time of start-up and the intended type of marketing. The total required capital investment is also used to determine the depreciation and opportunity cost expense for the farm business.

See the sensitivity analysis for more information on the impact of capital costs on your return to labour hours.

Required Capital Investment	1 Acre	10 Acres
Trees - 100 per acre @$12 each Lime- if needed $1,000/ acre	$1,200 $1,000	$12,000 $10,000
Site specific preparation costs -Land leveling for hills -irrigation –drip or broadcast	$500/ acre Irrigate- $1,000/ acre	$15,000
Tractor—> A 30 hp (used or new) tractor assumed for the10 acre budget	$15,000	$29,000
Flail mower	$3,000	$3,000
Small tools, totes, sprayer	$1,500	$3,000
Sweeper/harvester ($6k), leveler ($2.5k), auger ($1K)	$10,500	$11,000
Truck (new or used), larger truck assumed for 10 acre budget	$25,000	$35,000
Building	$ 10,000	$10,000
TOTAL	**$68,700**	**$128,000**
TOTAL without truck, building or site prep costs	**$32,200**	**$68,000**

Costs Related to Capital Investment

	1 Acre	10 Acres
Capital Investment	$68,700	$128,000
Repair and maintenance - 3%	**$2,061**	**$3,840**
Depreciation– 5%		
Buildings - 20 years	$500	$ 500
Equipment - 15 years	$1,600	$3,200
Total Depreciation	**$2,100**	**$3,700**
Opportunity cost - 5%	**$3,435**	**$6,400**

Enterprise Budget– Hazelnut

Income					
Product	**Acre**	**Yield– at 5-6**	**7-10 yrs**	**11+ yrs**	**Comment**
Hazelnuts (assume $1.50/ lb; for annual yield)	1 acre	1,250 lb (566kg)	2,000 lb (907kg)	2,500 lb (1,133kg)	2,500 lb Target

Direct Expenses/ acre- vary with # acres planted

Item	**Quantity**	**Cost**	**1 Acre**	**10 Acres**
Site Prep/ level	Acre	$500	$500	$5,000
Fertilizer	Chicken	$100	$100	$1,000
Lime	Depends	$50	$50	$500
Weeding	Annual	$100	$100	$1,000
Flail/ brush	Annual	$40	$40	$400
Harvesting	lb	$0.20	$500	$5,000
Total Direct Production Expenses	**Annual**	**-**	**$1,290**	**$12,900**
Gross Margin (Income - Direct Expenses)			**$2,460**	**$24,600**

Indirect Expenses - general		
Item	**1 Acre**	**10 Acre**
Accounting/ legal	fixed	$1,000
Bank charges	fixed	$240
Insurance	$100	$1,000
Property tax farm status	$100	$1,000
Utilities	$100	$1,000
Repairs	$100	$1,000
Truck expense	$100	$1,000
Office & Telephone	$60	$600
Tools & equipment	$50	$500
Total General Direct Expenses	**$610**	**$7,340**
Gross Return to Labour (Gross Margin - Direct Expenses– General)	**$1,850**	**$17,260**
Gross Return to Labour (per hour, for 10 acres)	**$26.55**	

**** Estimated at 1 acre of 65 hours per year in production and related time, therefore 650 hours for 10 acres.***

Labour Costs– Per Acre

Hours Labour Required– 1 Acre	
Task	**Hours**
Tree planting – 2 people - one time operation	16
Water / checking	4
Flail / brushing	32
Sweeping / harvesting	1
Marketing / Sales	4
General Activity	8
Total Labour	65

Summary and Returns to Labour– 10 Acres

Income – 10 Acre (Gross)	$37,500
Direct Expenses (Acre)	$12,900
Direct Expenses/General	$7,340
Gross Margin (Return to Labour)	**$17,260**
Gross Return per Labour Hour (650 hours)	**$26.55**
Depreciation and Opportunity Cost	$10,100

Cash Flow Timing

It is important to recognize that all operating costs are incurred before any revenue is received. Financing arrangements to cover expenses, prior to receiving revenues, need to be planned. These expenses can be self-financed, via a line of credit through your financial institution, credit terms with suppliers, or, a combination of these methods.

No yield is expected during the first four years. During years five to six, yields are 50% of the target, by years seven to ten, yields increase to 80% of capacity and full production is expected at year 11. Hazelnut trees have the capacity to produce for over 50 years.

Crops are sold in the fall and payment will be received typically within two months of the crop sale. If one is selling their crop directly to customers, in the fall, then immediate cash sales are attained, however, if the nut product is processed into a specialty product, then higher prices can be realized.

Benchmarks for Evaluating Production Performance

All businesses have critical performance measures that drive the profitability of the operation. For a hazelnut orchard operation, the following represent the critical benchmarks:

Average Nut Yield per Tree
Meeting the target yields of nuts per tree is critical in achieving revenue projections. Related expenses such as fertilizer, water, flailing and totes are based on the number of acres and trees. Wildlife and other pests can also impact yields. The greater the average yield per tree, the lower these costs are on a per kilogram basis.

It is vital to select a cultivar, for the site, which is disease resistant, productive and meets the market demand. Nurseries and other growers can help provide advice. Some nut tree trials are underway in the Fraser Valley to better understand potential yields.

Disease and Pests
It is important to source appropriate seedlings that are disease resistant. Annually tree pollination can be impacted by wind and other climate factors. Orchard management is critical to prevent and contain disease as well as limit other pest factors.

Gross margin per acre
This is the key profitability benchmark as it is the value that can be most influenced through farm management practices. Higher margins correspond to greater profitability.

Benchmark Worksheet

Benchmark	Planned-1 Acre	Actual 1	Actual 2	Actual 3	Actual 4	Actual 5	Actual 6
Average Yield per Acre; price $1.50/lb	2,500 lbs or 1,133 kg						
Direct costs	$1,290						
Indirect costs	$750						
Direct Labor hours	65						
Gross Margin/acre	$2,460						

Sensitivity Analysis

Sensitivity analysis is used to review the change and risks in the operation's gross margin and/or gross return. Farm Direct Marketers are price setters. Changes in costs can often be recovered in the price.

Capital requirements vary between farms. Gross Return to labour will be impacted by the level of capital required. Table 1 includes the scale difference of acres with capital investment.

1. Different Capital Requirements

Level of Capital Requirements Necessary	Average Capital – 1 Acre	Average Capital – 10 Acres
All Buildings and Equipment	$68,700	$128,000
All Buildings and Equipment less truck, building, site costs	$32,200	$68,000

2. Impact of Average Prices on Gross Margin/ acre

Yield/ acre	1000 lbs	1500 lbs	Target 2000 lbs	2500 lbs
$1.50/lb= Revenue/ acre	$1,500	$2,250	$3,000	$3,750
Gross Margin /acre	$210	$960	$1,710	$2,460
$1.75/lb= Revenue/ acre	$1,750	$2,625	$3,500	$4,375
Gross Margin/ acre	$460	$1,335	$2,210	$3,085
Assumed cost/acre	$1,290	$1,290	$1,290	$1,290

3. Impact of Labour Efficiency on Gross Returns to Labour

Labour Efficiency	Gross Return to Labour / Hour
10% more than Estimated Labour	$23.90
Estimated Labour Requirements	$26.55
10% less than Estimated Labour	$29.21

Worksheet to Compare Actual to Planned Performance

Income		Planned Performance		Actual Performance		Difference $$
Product	**Target lbs and price**	**Revenue Total**	**Revenue/ Acre**	**Revenue Total**	**Revenue/ Acre**	
Hazelnuts– 1 Acre						
Hazelnuts– 10 Acres						
Total						
Direct Expenses—Vary per # of acres						
Item		**Expense**	**Expense / acre**	**Expense**	**Expense / acre**	
Tree Seedlings						
Fertilizer						
Lime						
Weeding						
Flail/ Brush						
Harvesting						
Total Direct Production Expenses						
Gross Margin (Revenue - Direct Expenses						
Indirect Expenses—General						
Item						
Accounting/ legal						
Bank Charges						
Insurance						
Property tax						
Utilities						
Repairs						
Truck expenses						
Office, telephone						
Tools & supplies						
Total Direct Expenses—General						
Gross Return to Labour (Gross Margin—indirect expenses						

Considerations for Developing Your Farm Business

Start-up
Direct markets take time to develop. For hazelnuts, consider starting with smaller acre plantings and expand to full production as markets develop. The same approach can be used if you are considering other enterprises.

Capital Costs
Depending on what commodities you choose to produce, identify any capital requirements (listed on page four) that you need to acquire and add to the estimate of capital costs on page eight. If some of the equipment is available from other sources (i.e. borrow from neighbor) then include any associated costs.
General capital costs need to be allocated to the commodities you choose to produce.
Calculate the repair and maintenance, depreciation and opportunity cost associated with level of capital assets needed. This value will be paid from the gross return to labour estimated on page nine.

Labour Efficiency
The efficiency of the farm operation impacts the returns received for the time spent operating the farm. Labour efficiency should be a consideration in planning your farm layout and the equipment used on the farm.

Farm Tax Status
The operation of a farm enterprise may be eligible for farm class status. Eligibility should be confirmed with BC Assessment.