



# PLANNING FOR PROFIT



BRITISH COLUMBIA

Ministry of Agriculture,  
Food and Fisheries

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## Super Spindle Apples (1742 trees/acre) – Okanagan Valley

This information is a tool to project costs and returns for B.C. farm enterprises and is a general guide to plan individual farm operations.

This sample budget should be used as a guide only and should not be used for business analysis. Each farm should develop their own budget to reflect their production goals, costs and market prices.

Information regarding financial planning and other enterprise budgets may be downloaded from the internet at <http://fbminet.ca/bc> or obtained from your local office of the B.C. Ministry of Agriculture, Food and Fisheries.

### Market Factors

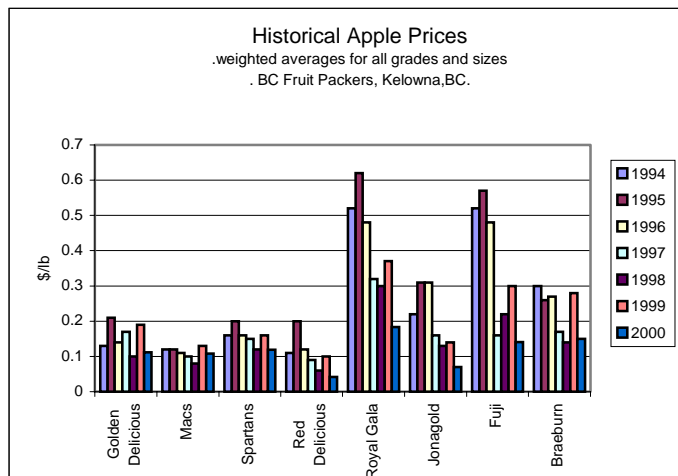
Apple production is well suited to the Okanagan Valley with most producers belonging to local Packinghouse cooperatives. Marketing is done through B.C. Tree Fruits. Only fresh market apples graded as Fancy or better provide a price return. Commercial or Cull grades destined for processing markets do not pay growers any returns.

The market for apples is influenced by global supply and demand. Current world supply is in a surplus. The demand for traditional apples is losing favour to the newer apple varieties. All apple variety prices are currently in a downward trend.

The potential for direct marketing is limited, although price returns per pound are generally greater than packinghouse returns.

### Key Success Factors

- Planting high densities of 1,200 to 2,000 trees/acre
- Research varieties and make choices based on market returns, growth requirements, & costs.
- High level of horticultural training & skills
- Good site selection and preparation.



### Risk Factors & Strategies

Price Fluctuations in prices which are influenced by the global marketplace are the largest risk factor. Producers must be very conservative in assessing price returns when establishing financial plans.

Production Horticultural skills must be at a high level to attain yield projections. Inexperience and lack of diligence can cause a set back or general reduction in yield. Fireblight infections, scab, powdery mildew, insect and rodent damage can cause substantial losses. Excellent weed control, nutrition, and soil preparation in addition to proper irrigation are essential to ensure low tree mortality and high yields. Hail damage is a constant threat as are sunburn and poor colour development during very hot summers and harvest periods.

Financial Capital inputs including land, equipment, irrigation systems, trees and support systems are substantial. Equipment sharing or leasing, land leasing, and replant grants can offset the financial risk. Note that cash flow is important to assess due to the time lag to full production. Crop insurance, whole farm insurance, and NISA are risk management tools to consider.

## Assumptions: Super Spindle Apples (1742 trees/acre) – Okanagan Valley

The sample budget reflects standard practices in the area and does not represent any particular farm. The budget is based on interviews with producers, packinghouse staff, and BCMAFF specialists plus information from local nurseries and agricultural suppliers.

- 1 acre of apples (no variety specified) in the Okanagan Valley / Total farm size of 20 acres.
- 0.5 inch caliper feathered trees planted @ 2.5 ft. by 10 ft. (1742 trees/ac) at a cost of \$7.79 per tree. 3% are replanted in year 2. The trees require a support system consisting of pressure treated posts spaced every 25 ft. (145- 8 ft. posts & 24- 10 ft end posts), 3 high tensile wires (3 x 3750 ft rolls) and wire tree ties (3 per tree).
- Production of 8000 lbs (8 bins) is attained in year 2, one year after planting, and full production of 36,000 lbs (45 bins) is attained by year 6. Fruit is shipped to a local packinghouse cooperative and marketed through B.C. Tree Fruits.
- 85% of the total yield is marketable (Fancy grades or better) with returns targeted at a price of \$0.25/lb.
- Per acre repair and maintenance costs are estimated at 3% of replacement value for buildings, tractors, implements, farm vehicles and irrigation system.
- Fuel costs are calculated on the basis of a standard 8L/hr fuel consumption, \$0.50/L fuel cost, and the time/acre required to complete the tasks with a tractor.
- Marketing costs only includes bin hauling charges (3.89/bin for empties in + full out) and not packinghouse administration fees.
- There is a variable amount of labour associated with equipment set-up and maintenance, purchasing supplies, organizing picking crews, general administration, etc. Due to the high cost variability, these operations are not accounted for in this sample budget, but are important parts of any farm operation.

## Sensitivity Analysis

The profitability of an operation will be strongly influenced by prices and marketable yield. The table below illustrates the changes to contribution margin as prices and yield vary in the full production year.

	Marketable Yield (lb)	Contribution Margin*
<b>Low</b>	17,000	4,250
<b>Average</b>	23,800	5,950
<b>Target</b>	30,600	<b>7,650</b>
<b>High</b>	34,000	8,500

\*\$0.25/lb

	Price(\$/lb)	Contribution Margin*
<b>Low</b>	0.15	998
<b>Average</b>	0.20	2,528
<b>Target</b>	0.25	<b>4,058</b>
<b>High</b>	0.30	5,588

\*30,600 lbs

## Cash Flow Timing \*

The table below indicates the monthly flow of income and direct expenses. A complete Projected Cash Flow should include indirect expenses, capital sales and purchases, loans and personal expenses.

Month	J	F	M	A	M	J	J	A	S	O	N	D
% Income		40		15		10		5		30		
% Expense			20	15	10	25	5			25		

\*Income Assumptions: fruit shipped to packinghouse and stored until sold.

\*\$0.08/lb advance Oct; 50%-prorated advance Feb; 20%-prorated advance April; 20%-prorated advance June; 5% pool close Aug.

## One Acre Enterprise Budget and Worksheet

### Super Spindle Apple Production - 2.5' x 10' — 1742 trees/acre

These projections should be viewed as a first approximation only. Use the column “Your Estimate,” to add, delete and adjust items to reflect your specific production situation.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Your Estimate
<b>Projected Income</b>	planting						
Yield (lb./acre)	0	8,000	16,000	24,000	32,000	36,000	_____
Marketable yield (85% FCY+) lb.**	0	6,800	13,600	20,400	27,200	30,600	_____
<b>Total Projected Income**</b>	<b>0</b>	<b>1,700</b>	<b>3,400</b>	<b>5,100</b>	<b>6,800</b>	<b>7,650</b>	_____
** 85% of the total yield attains price returns at a target price of \$0.25/lb							
<b>Projected Direct Expenses</b>							
Trees (1/2" feathered)*	13,570	407					_____
Soil amendments (ie. peat)	1,046						_____
Support system*	1,508						_____
Irrigation system*/tax	1,550	50	50	50	50	50	_____
Pest monitoring charges	50	75	75	75	75	75	_____
Rodent Bait (kg)	14	14	14	14	14	14	_____
Insecticides		171	171	171	171	171	_____
Fungicides	84	204	204	204	204	204	_____
Herbicides	146	96	96	96	96	96	_____
Thinning sprays		33	33	33	33	33	_____
Nitrogen (34-0-0 & CaN03)	77	77	40	53	53	53	_____
Phosphorus (11-52-0)	36	36	0	0	0	0	_____
Foliar nutrients	39	71	71	71	71	71	_____
Hive rental		50	50	50	50	50	_____
Crop insurance		75	75	75	75	75	_____
Machinery R&M	297	297	297	297	297	297	_____
Fuel, Oil & lube	132	59	61	66	70	72	_____
Bin hauling	0	39	78	117	156	175	_____
Labour—plant, prune, train, general	3,459	307	615	1,088	1,230	1,300	_____
Labour—harvest (incl. yarding)		190	380	570	760	855	_____
<b>Total Direct Expenses</b>	<b>22,008</b>	<b>2,251</b>	<b>2,310</b>	<b>3,030</b>	<b>3,405</b>	<b>3,592</b>	_____
<b>Contribution Margin</b>	<b>-22,008</b>	<b>-551</b>	<b>1,090</b>	<b>2,070</b>	<b>3,395</b>	<b>4,058</b>	_____

\* May be viewed as a capital item.

### Calculation of Projected Net Income

To assess net income, **indirect expenses** must be subtracted from income. Indirect expenses do not vary with level of output and are typically associated with inputs used in more than one enterprise and must be allocated appropriately (prorated) between uses.

<b>Projected Income</b>	.....
<b>Less Projected Direct Expenses</b>	- .....
<b>= Projected Contribution Margin</b>	= .....
<b>Less Projected Indirect Expenses</b>	
Depreciation (e.g., buildings and equipment)	- .....
Interest	- .....
Other Indirect Expenses (e.g., operator labour)	- .....
<b>= Projected Net Income</b>	.....

## Labour Requirements—Super Spindle Apples (1742 trees/acre)

Person Hours—Labour (hours/acre)	Year	Year	Year	Year	Year	Year	Machine Hours - Labour (hours/acre)
	1	2	3	4	5	6	
Land clearing & preparation	60						Land clearing & preparation
Irrigation Installation	20						...stump removal
Survey/Stake/Plant/Support System	99						5.0
Pruning	15	15	29	58	58	58	...ground ripping
Thinning	4	10	20	30	40	45	3.0
Mow, spray, fertilize*	11	13	12	12	12	12	Irrigation install (trenching)
Harvest							1.0
...picking		15	30	45	60	68	Support system (post pounding)
...yarding bins in/out		1	2	3	4	5	4.0
<b>TOTAL</b>	208	53	93	148	174	187	

\*operations often done by grower

- Land clearing & prep (10 hrs); planting (8 hrs); mowing (4X in year 1; 5X in years 2 to 6; 0.75 hr each); weed spraying (4X in year 1; 3X in year 2 to 6; 0.75 hr each); tree spraying (8X in year 1; 12X in year 2 to 6; 0.5 hr each); ground fertilizing (3X in year 1 to 2; 1X in years 3 to 6; 0.25 hr each); bin hauling (1,2,3,4,4.5 hrs in years 2 to 5, respectively).
- Hired labour is required for land clearing, irrigation installation, planting, pruning, hand thinning, and harvesting. WCB and benefits are detailed separately and are rated at 14.3% of labour costs (WCB 2.85%; CPP 4.3%; EI. 3.15%; vacation pay 4%).

### Alternative Production Practices

Growers may choose to plant benchgrafts or sleeping eyes instead of feathered trees to reduce costs. Using benchgrafts or sleeping eyes will delay production by one year and reduce planting costs, however there is greater tree mortality risk with benchgraft and sleeping eye plantings.

### Buildings and Machinery Replacement Cost ( 20 acres)

Buildings	\$40,000
Tractor (Power Machinery)	50,000
Implements	
..mower, tiller, blade, ripper	11,500
...sprayers	17,500
...loader & attachments	7,000
...fertilizer spreader	2,300
Small tools & equipment	16,500
Irrigation System	45,000
Supplies (bins, boxes, etc.)	1,000
Farm vehicles	25,000
<b>Total</b>	<b>215,800</b>

### For More Information

#### References

- BCMAFF web site <http://www.agf.gov.bc.ca>
- BCMAFF Infobasket <http://infobasket.gov.bc.ca>
- BCMAFF Tree Fruit Production Guide
- Assessing the Economic Impact and Establishment Cost of Replanting Orchards. Nov.1999. BCMAFF
- Horticultural Management for Slender Spindle and Super Spindle Orchards. 1996. Okanagan Valley Tree Fruit Authority.
- Farm Business Management web site. <http://fbminet.ca/bc>

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