

PLANNING FOR PROFIT



**BRITISH
COLUMBIA**

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Pears Central Axe (389 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.

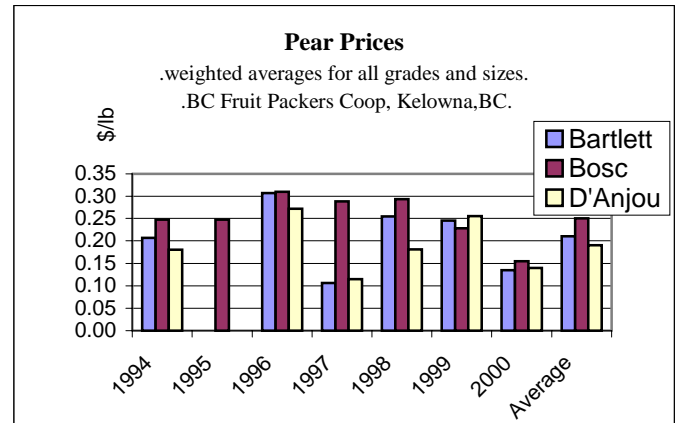
Market Factors

Pear production is limited in the Okanagan Valley with most producers belonging to local packinghouse cooperatives. Distribution and marketing is done through the packinghouses and B.C. Tree Fruits.

Only fresh market pears 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 pears is influenced by global supply and demand. Current world supply is in a surplus. The demand for pears, and in particular Bartletts, is declining.

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



Risk Factors & Strategies

Price Fluctuations in prices which are influenced by the global marketplace are the largest risk factor. Producers are competing with low cost producers from other regions of the world. Global oversupply results in dramatic price declines. Use conservative prices when developing budgets.

Production Horticultural skills must be at a high level, with different varieties having different demands. 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 and frost damage are a constant threat.

Financial Capital inputs including land, equipment, irrigation systems, and trees are substantial. Equipment sharing, land leasing, and reducing labour input costs can offset the financial risk. Crop insurance, whole farm insurance, and NISA are risk management tools to consider

Assumptions- Pears Central Axe (389 trees/acre)

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 Pears in the Okanagan Valley. Total farm size of 20 acres
- Production of 500 lbs/acre in year 3 and full production of 32,000 lbs/acre (32 bins) in year 9. Fruit is shipped to the local packinghouse cooperative and marketed through B.C. Tree Fruits.
- 5/8 inch caliper trees are planted 8 feet apart in rows 14 feet apart (389 trees/acre) at a cost of \$8.50/tree. There is a 3% tree mortality rate, with these trees being replaced in the second year.
- 80% of the total yield (Fancy grades or better) attains price returns at a target price of \$0.20/lb.
- Crop Insurance is calculated at 1.2%/tree x 389 trees x \$16.00.
- Building and machinery repair and maintenance costs are estimated at 3% of replacement value for one acre (includes the R & M of 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 following tasks with a tractor: mowing (4X in year 1; 5X in years 2 to 9; 0.75 hr each); weed spraying (4X for year 1; 3X for years 2-8; 0.75 hr each); tree spraying (4 X in year 1 to 2; 12X in year 3 to 9; 0.5 hr each); ground fertilizing (3 X in year 1; 2X in year 2; 1X in year 3 to 9; 0.25 hrs each); bin hauling (0.05,0.25,0.8,1.5,2.3, 2.8, and 3.2 hrs for years 3 to 9, respectively).
- Marketing costs are bin hauling charges (\$3.89/bin for empties in and full out) and not packinghouse administration fees.

Key Success Factors

- High level of horticultural training & skills to produce high quality and high yields.
- Reduce direct and indirect expenses as much as possible. Hire out as little of the labour inputs as possible (eg.,prune yourself)
- Plant more than one variety to offset price fluctuations. Also different varieties have different yield potentials, with D'Anjou pears historically yielding more than Bartlett or Bosc.

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.

	Yield (lb)	Contribution margin*
Low	16,000	(267)
Average	22,400	1,013
Target	25,600	1,653
High	32,000	2,933

*\$0.20/lb

	Price(\$/lb)	Contribution margin*
Low	0.11	(651)
Average	0.19	1,397
Target	0.20	1,653
High	0.27	3,445

*25,600 lbs

Cash Flow Timing

The table below indicates the monthly flow of income and direct expenses. . It assumed that the fruit once delivered to the packinghouse is put into storage and packed and shipped according to market demands and fruit quality. A complete Projected Cash Flow should include indirect expenses, capital sales and purchases,

Month	J	F	M	A	M	J	J	A	S	O	N	D
%Income		30					30		20		20	
%Direct Expenses			20	10	10	25	10		23	2		

Note: income assumptions \$0.04/lb advance at picking (Sept); \$0.04 /lb advance in Nov.; 50%-prorated advance in Feb; pool close in July (30%)
expense assumptions: 20% prune; 15% thin; 22% harvest; 2% crop insurance; 40% pesticides, nutrients, etc.

Bartletts: advance \$0.04 at picking (Aug/Sept); advance \$0.04 in Nov.; pool close in January (60%)

One Acre Enterprise Budget and Worksheet

Pears Central Axe (389 trees/acre)

The sample enterprise budget provided 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 planting	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9 (full prod'n)	Your Estimate
Projected Income	** 80% of the total yield attains price returns at a target price of \$.20/lb									
Yield (lb/acre)	0	0	500	2,500	8,000	15,000	23,000	28,000	32,000	_____
Marketable Yield (80%)	0	0	400	2,000	6,400	12,000	18,400	22,400	25,600	_____
Total Projected Income	0	0	80	400	1,280	2,400	3,680	4,480	5,120	_____
Projected Direct Expenses										
Trees *	3,307	99	0	0	0	0	0	0	0	_____
Irrigation System*/Tax	1,550	50	50	50	50	50	50	50	50	_____
IPM charges	50	75	75	75	75	75	75	75	75	_____
Soil Amend/Rodent Bait	384	14	14	14	14	14	14	14	14	_____
Kumulus 80DF	11	11	11	11	11	11	11	11	11	_____
Fixed copper	8	8	8	8	8	8	8	8	8	_____
Insecticides	0	0	377	377	261	261	261	261	261	_____
Herbicides	146	96	96	96	96	96	96	96	96	_____
Fertilizers	85	85	40	53	53	53	53	53	53	_____
Foliar nutrients	19	19	30	30	30	30	30	30	30	_____
Hive Rental	0	0	100	100	100	100	100	100	100	_____
Crop Insurance				75	75	75	75	75	75	_____
Bldg.& Machinery R&M	337	337	337	337	337	337	337	337	337	_____
Fuel, oil & lube	105	39	52	53	55	59	65	65	66	_____
Marketing (bin hauling)	0	0	2	10	31	58	89	109	124	_____
Labour										
-Plant/Prune/Train/Gen.	2,524	222	334	296	517	793	1,088	1,253	1,474	_____
-Harvest (incl. Yarding)	0	0	10	54	173	325	497	605	692	_____
Total Direct Expenses	8,525	1,055	1,537	1,639	1,887	2,344	2,850	3,141	3,467	_____
Contribution Margin (gross income less direct expense)	-8,525	-1,055	-1,457	-1,239	-607	56	830	1,339	1,653	_____

* 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 the level of output and are typically associated with inputs used in more than one enterprise and must be allocated appropriately (prorated) between uses.

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

Labour Requirements—Pears Central Axe (389 trees/acre)

	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Machine Labour Hours/acre
Person Labour Hours/acre										
Land clear/prep	60.0									Land clear/prep
Irrigation install	20.0									
Survey, stake, plant ,paint	42.9									...stump removal 5
Pruning	3.2	9.7	19.5	25.9	32.4	45.4	58.4	64.8	77.8	
Training	9.7	9.7	9.7	0.0	0.0	0.0	0.0	0.0	0.0	
Thinning	0.0	0.0	0.0	0.0	12.8	24.0	36.8	44.8	51.2	...ground ripping 3
Picking	0.0	0.0	0.5	5.0	16.0	30.0	46.0	56.0	64.0	
Yarding bins	0.0	0.0	0.1	0.3	0.8	1.5	2.3	2.8	3.2	
Mow/spray/fertilize	8.8	8.5	11.3	11.3	11.3	11.3	11.3	11.3	11.3	Irrigation install (trenching) 1

Hired labour is required for land clearing and preparation, irrigation installation, planting, pruning, hand thinning, and harvesting. Land clearing and preparation assumes: 5 hr of machine time at \$50/hr for stump removal; 3 hrs of machine time at \$125.00/hr for ground ripping; 60 hrs of labour at \$10/hr for tree cutting, wood bucking & removal, debris removal & burning, and cultivation. Planting assumes: 4 hrs of labour for surveying and staking site and 3 min/tree x 2 people at \$10/hr for planting and painting trunks. Irrigation installation assumes 1 hr at \$75/hr for trenching and 20 hrs at \$10/hr for system installation. Labour costs for pruning are based on \$10/hr. Thinning costs were calculated using a variety average of \$16/bin and a range of \$7.50/bin for Bosc, \$10/bin for D'Anjou, and \$30/bin for Bartlett. Costs for harvesting are based on: \$18.00/bin or an equivalent of \$9/hr (2 bin/hr); \$10/hr x 10 bins/hr for yarding bins in and out of orchard. WCB and benefits are detailed separately and total 14.3% (2.85% WCB; 7.45% CPP & EI; 4% vacation pay)

Buildings and Machinery Replacement Cost (20 acres)

Buildings	\$40,000
Tractors	50,000
Implements	
...mower, tiller, ripper, blade	11,500
...sprayers	17,500
...loader & attachments	7,000
...fertilizer spreader	2,300
Girette	10,000
Small Tools & Equipment	16,500
Irrigation System	45,000
Supplies (bins,etc.)	1,000
Farm vehicles	25,000
Total	225,800

Alternative Production Practices

Planting pears at higher densities with dwarfing rootstocks is possible, although trees may be hard to come by and are generally very expensive. Results include higher yields at earlier and a reduction of years to full orchard establishment. Growers may also consider growing a greater variety of crops to help reduce overall farm risk.

For More Information

References:

- Tree Fruit Production Guide, BCMAFF
- Pears – Central Axe. 389 trees/acre – Okanagan Valley. Spring 1999. Planning for Profit. BCMAFF
- Farm Business Management web site. <http://fbminet.ca/bc>
- BCMAFF web site. <http://www.agf.gov.bc.ca>
- BCMAFF Infobasket <http://infobasket.gov.bc.ca>
- FBMinet-BC <http://fbminet.ca/bc>

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