PLANNING FOR PROFIT

BRITISH COLUMBIA **Ministry of Agriculture, Food, & Fisheries**

MIXED TREE FRUIT AND TABLE GRAPE
WINTER 2002

This information is provided as a tool for projecting costs and returns for B.C. farm enterprises and as a general guide for planning individual farms. The sample budget should be used as a guide only and should not be used for business analysis without adjustments to reflect individual situations. 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 B.C. Ministry of Agriculture, Food and Fisheries. Web (http://www.agf.gov.bc.ca/busmgmt/).

Key Success Factors

- High level of horticultural training and skills to ensure high quality and high yield -
- Good site selection and preparation -
- Vigilant record keeping of all aspects of operation from production to marketing -
- Strong marketing skills - Identify and research your markets prior to planting -
- Reduce direct and indirect expenses as much as possible -

Risk Factors and Strategies

Production Risks - Disease, weed and insect control are essential to ensure high yields. Climate, topography and soil conditions will affect crop and variety options. Ensure you make selections that are suited to your area. Inexperience and lack of diligence can result in a set back or general reduction in crop yields. Adverse weather conditions, such as late spring frosts (poor fruit set), heavy rains at harvest (cherry splitting, high moisture peaches, fruit rot), and excessive summer heat (stone fruits ripen too quickly/harvest period shortened; poor red color development in apples), can reduce yields and quality. Programs available to offset production risks include NISA, crop insurance and whole farm insurance.

Handling Risks - Ensure all crops are properly harvested, packaged, stored and shipped. Improper handling will reduce the amount of your marketable product.

Price Risks - Depending upon your target market, competition from direct marketers or wholesale distributors is a constant factor. Adjustments in your production or marketing plans may be required. Providing a consistent and high quality product and ensuring your customer needs are met are vital elements in offsetting adverse effects of a competitive market place.

Market Risks - This will depend upon your marketing strategy. Direct consumer marketing has different risks than wholesale marketing. In both cases ensure the commodity mix you grow has a high demand and be aware of other new or existing producers that may impact the market. Tailor your crop decisions according to what your market will bear.

SAMPLE ENTERPRISE BUDGET AND WORKSHEET
5 ACRES OF MIXED TREE FRUIT - TABLE GRAPES

The sample enterprise budget provided should be viewed as a first approximation only. Use the column "your farm" to add, delete and adjust items to reflect your specific production situation.

Projected Income

	Area	Yield	Unit	Ave. Price	Price Range	Income	Your Farm
Cherries	1 acre	11200	lbs	1.20	1.20	13,440.00	
Apricots	0.5acre	4900	lbs	0.65	0.35 to 0.75	3,185.00	
Peaches	1 acre	15750	lbs	0.64	0.30 to 0.75	10,040.63	
Nectarines	0.5 acre	5513	lbs	1.04	0.55 to 1.20	5,719.22	
Apples	1 acre	28800	lbs	0.43	0.20 to 0.50	12,240.00	
Grapes	1 acre	10800.00	lbs	0.66	0.50 to 1.00	7,087.50	
Total Projected Income						51,712.34	

Projected Direct Expenses

Labour	Area	Quantity	Unit	Price	Expense	Your Farm
thin apples	1 acres	40	bins	10.00	400.00	
pick cherries	1 acre	14000	lbs	0.25	3,500.00	
pick cots, peach, nect,apple	3 acre	109.80	bins	18.00	1,976.40	
pick grapes	1 acre	12,000.00	lbs	0.05	600.00	
farmers market sales	5 acres	384.00	hr	8.00	3,072.00	
farmgate sales	5 acres	896.00	hr	8.00	7,168.00	
pest monitoring	5 acres	5.00	acres	75.00	375.00	
WCB & benefits		16,716.40	dollars	0.14	2,410.50	
Total labour					19,501.90	
Fertilizer	5 acres				457.02	
Pesticides	5 acres				2,649.39	
Tractor Fuel	5 acres	911.84	litres	0.50	455.92	
Tractor Oil & Lube	5 acres				68.39	
Packaging						
boxes (10 and 20lb)		4,510.00	box	0.75	3,382.50	
16lb master boxes + baskets		169.00	masters	3.25	549.25	
bags (large & small t-shirt)		4,090.00	bags	0.02	65.44	
Marketing						
market rental fees					350.00	
truck fuel		1,600.00	litres	0.60	960.00	
truck oil & lube					144.00	
advertising					300.00	
Hive Rental	5 acres	5.00	acres	50.00	250.00	
Repair & Maintenance	5 acres				2,431.59	
Irrigation		10.00	acres	55.00	550.00	
Crop Insurance	5 acres				650.00	
Total Indirect Expenses					32,765.41	

Income less Direct Expense (5 acres) ……. 18,946.94

Income less Direct Expenses (avg. per acre)) ……. 3,789.39

Projected Indirect Expenses

		Your Farm
Depreciation	**……**	
Interest	**……**	
Insurance	……	_____
Administration	……	_____
Legal/accounting fees	……	_____
other	……	_____
Total		_____

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 (prorated) between uses.

Projected Net Income

	Your Farm
Projected Income	
minus Projected Direct and Indirect Expenses	
Projected Net Income	_____

INDIVIDUAL CROP BUDGETS AND WORKSHEETS

The following income and direct expense information does not account for general farm inputs that are applied to the total farm area (e.g.. general labour and marketing costs; irrigation fees; repair & maintenance).

1. Cherries (1acre)

Income		Yield	Unit	Price	Income	Your Farm
.direct to consumer		8400	lbs	1.20	10080.00	
.wholesale		2800	lbs	1.20	3360.00	
Total Income		11200.00	lbs		13440.00	
Direct Expenses	Times Applied	Total Quantity	Unit	Price	Expense	Your Farm
.fertilizer						
nitrogen(34-0-0)	1x	100	kg	0.42	42.00	
zincsulphate(36%)	1x	16.2	kg	1.9	30.78	
magnesium sulphate	1x	18	kg	0.67	12.06	
urea	2x	10	kg	0.7	7.00	
20-20-20	4x	10	kg	2.12	21.20	
calcium chloride	2x	5	kg	1.14	5.70	
total fertilizer					118.74	
.pesticides						
rodent bait	1x	2	kg	7.07	14.14	
dormant oil	1x	26	l	1.07	27.82	
topas	1x	0.2	l	82.45	16.49	
rovral 50% WP	1x	0.61	kg	99.5	60.70	
nova 40W	2x	0.28	kg	224.11	62.75	
dipel 2X	2x	1.4	kg	71.96	100.74	
kumulus 80DF	4x	11.2	kg	3.9	43.68	
lagon 480EC	1x	0.91	l	27.04	24.61	
sevin XLR	3x	2.79	l	14.5	40.46	
round-up	3x	6	l	10.05	60.30	
prowl	1x	1.68	l	12.62	21.20	
1/2 rate Simazine WP	1x	0.75	l	15.7	11.78	
total pesticides					484.66	
.labour						
prune		72.5	hrs			
mow	5x	5	hrs			
weed spray	3x	3	hrs			
tree spray	10x	10	hrs			
tree drying	3x	1.5	hrs			
fertilize	1x	0.25	hrs			
yard pails		7	hrs			
pick		14000	lbs	0.25	3500.00	
sort/pack		35	hrs			
.10 lb boxes		910	boxes	0.75	682.50	
.bags (small t-shirt)		700	bags	0.016	11.20	
.fuel (mow,spray,dry,fert.,yard)		214	litre	0.5	107	
Total direct expenses					4904.0978	
Income less Direct Expenses		……..			8535.9022	

2. Apricots (0.5 acre)

Income		Yield	Unit	Price	Income	Your Farm
.direct to consumer		3675	lbs	0.75	2756.25	
.wholesale		1225	lbs	0.35	428.75	
Total Income		**4900**			3185	

Direct Expenses	Times Applied	Total Quantity	Unit	Price	Expense	Your Farm
.fertilizer						
nitrogen(34-0-0)	1x	50	kg	0.42	21.00	
zinc sulphate 36%	1x	8.1	kg	1.90	15.39	
magnesium sulphate	1x	9	kg	0.67	6.03	
urea	1x	2.65	kg	0.70	1.86	
calcium chloride	2x	3	kg	1.14	3.42	
total fertilizer					47.70	
.pesticides						
rodent bait	1x	1	kg	7.07	7.07	
dormant oil	1x	14.15	l	1.07	15.14	
captan 80WP	2x	1.4	kg	15.70	21.98	
dipel 2X	2x	0.7	kg	71.96	50.37	
vanguard	1x	0.15	kg	191.00	28.65	
endosulphan	2x	1.3	kg	24.80	32.24	
fixed copper	1x	0.4	kg	11.98	4.79	
round-up	3x	3	kg	10.05	30.15	
prowl	1x	0.84	l	12.62	10.60	
1/2 rate Simazine WP	1x	0.375	kg	15.70	5.89	
total pesticides					206.88	
.labour						
prune		24.25	hrs			
mow	5x	2.5	hrs			
weed spray	3x	1.5	hrs			
tree spray	8x	4	hrs			
fertilize	1x	0.25	hrs			
thinning		16.2	hrs			
yard bins in/out		1.44	hrs			
pick		14.4	bins	18.00	259.20	
sort/pack		21.6	hrs			
.10 lb boxes (for 3060lbs)		398	boxes		0.75	
.bags (small t-shirt for 1840lbs)		306	bags	0.016	4.90	
.fuel (mow,spray,dry,fert.,yard)		77.52	litres	0.50	38.76	
Total direct expenses					558.18	

Income less Direct Expenses …….. 2626.82

3. Peaches (1acre)

Income		**Yield**	**Unit**	**Price**	**Income**	**Your Farm**
.direct to consumer		11813	lbs	0.75	8859.38	
.wholesale		3937.5	lbs	0.3	1181.25	
Total Income		15750	lbs		10040.625	

Direct Expenses	**Times Applie**	**Total Quanti**	**Unit**	**Price**	**Expense**	**Your Farm**
.fertilizer						
nitrogen(34-0-0)	1x	100	kg	0.42	42	
zinc sulphate 36%	1x	16.2	kg	1.90	30.78	
magnesium sulphate	1x	18	kg	0.67	12.06	
urea	1x	5.3	kg	0.70	3.71	
calcium chloride	2x	6	kg	1.14	6.84	
total fertilizer					95.39	
.pesticides						
rodent bait	1x	2	kg	7.07	14.14	
dormant oil	1x	28.3	l	1.07	30.28	
lime sulpher	1x	71	l	4.33	307.43	
captan 80WP	2x	2.8	kg	15.70	43.96	
dipel 2X	2x	1.4	kg	71.96	100.74	
nova 40W	2x	0.28	kg	224.11	62.75	
vanguard	1x	0.3	kg	191.00	57.30	
endosulphan	2x	2.6	kg	24.80	64.48	
fixed copper	1x	0.8	kg	11.98	9.58	
round-up	3x	6	kg	10.05	60.30	
prowl	1x	1.68	l	12.62	21.20	
1/2 rate Simazine WP	1x	0.75	kg	15.70	11.78	
total pesticides					783.95	
.labour						
prune		72.5	hrs			
mow	5x	5	hrs			
weed spray	3x	3	hrs			
tree spray	10x	10	hrs			
fertilize	1x	0.25	hrs			
thinning		84.6	hrs			
yard bins in/out		4.1	hrs			
pick		41	bins	18.00	738.00	
sort/pack		61.5	hrs			
.10 lb boxes (for 9840lbs)		1280	boxes	0.75	960.00	
.bags (small t-shirt for 5910lbs)		984	bags	0.016	15.74	
.fuel (mow,spray,dry,fert.,yard)		178.8	litres	0.50	89.40	
Total expenses					2593.93	

Income less Direct Expenses …….. 7446.69

4.Nectarines (0.5acre)

Income		Yield	Unit	Price	Income	Your Farm
.direct to consumer		4134	lbs	1.20	4961.25	
.wholesale		1378	lbs	0.55	757.97	
Total Income		5512.50	lbs		5719.22	

Direct Expenses	Times Applied	Total Quantit	Unit	Price	Expense	Your Farm
.fertilizer						
nitrogen(34-0-0)	1x	50	kg	0.42	21.00	
zinc sulphate 36%	1x	8.1	kg	1.9	15.39	
magnesium sulphate	1x	9	kg	0.67	6.03	
urea	1x	2.65	kg	0.70	1.86	
calcium chloride	2x	3	kg	1.14	3.42	
total fertilizer					47.70	
.pesticides						
rodent bait	1x	1	kg	7.07	7.07	
dormant oil	1x	14.15	l	1.07	15.14	
lime sulpher	1x	35.5	l	4.33	153.72	
captan 80WP	2x	1.4	kg	15.70	21.98	
dipel 2X	2x	0.7	kg	71.96	50.37	
vanguard	1x	0.15	kg	191.00	28.65	
nova 40W	2x	0.14	kg	224.11	31.38	
endosulphan	2x	1.3	kg	24.80	32.24	
fixed copper	1x	0.4	kg	11.98	4.79	
round-up	3x	3	kg	10.05	30.15	
prowl	1x	0.84	l	12.62	10.60	
1/2 rate Simazine WP	1x	0.375	kg	15.70	5.89	
total pesticides					391.97	
.labour						
prune		36.25	hrs			
mow	5x	2.5	hrs			
weed spray	3x	1.5	hrs			
tree spray	10x	5	hrs			
fertilize	1x	0.25	hrs			
thinning		42.3	hrs			
yard bins in/out		1.44	hrs			
pick		14.4	bins	18.00	259.20	
sort/pack		21.6	hrs			
.10 lb boxes (for 3440lbs)		448	boxes	0.75	336.00	
.bags (small t-shirt for 2072lbs)		345	bags	0.02	5.52	
.fuel (mow,spray,dry,fert.,yard)		85.52	litres	0.50	42.76	
Total expenses					1038.87	

Income less Direct Expenses …….. 4680.35

5.Apples (1acre)

Income		Yield	Unit	Price	Income	Your Farm
.direct to consumer		21600	lbs	0.5	10800	
.wholesale		7200	lbs	0.2	1440	
Total Income		28800	lbs		12240	

Direct Expenses	Times Applied	Total Quantity	Unit	Price	Expense	Your Farm
.fertilizer						
nitrogen(34-0-0)	1x	100	kg	0.42	42.00	
zinc sulphate 36%	1x	16.2	kg	1.9	30.78	
magnesium sulphate	1x	18	kg	0.67	12.06	
urea	2x	4.2	kg	0.7	2.94	
20-20-20	1x	3.6	kg	2.12	7.63	
calcium chloride	2x	4.2	kg	1.14	4.79	
total fertilizer					100.20	
.pesticides						
rodent bait	1x	2	kg	7.07	14.14	
dormant oil	1x	18.2	l	1.07	19.47	
fixed copper	1x	1.6	kg	11.98	19.17	
dithane	4x	9.6	kg	9.86	94.66	
foray	2x	3.2	l	26.8	85.76	
nova 40W	2x	0.28	kg	224.11	62.75	
zolone	2x	1.62	l	26.4	42.77	
ATS (thinning)	1x	1.6	l	0.87	1.39	
sevin XLR	1x	1.8	l	14.5	26.10	
NAA 5.2%	1x	0.10	kg	62.74	6.27	
round-up	3x	6.0	l	10.05	60.30	
prowl	1x	1.68	l	12.62	21.20	
1/2 rate Simazine WP	1x	0.75	kg	15.7	11.78	
total pesticides					465.76	
.labour						
prune		40.3	hrs			
mow	5x	5	hrs			
weed spray	3x	3	hrs			
tree spray	12x	12	hrs			
fertilize	1x	0.25	hrs			
thinning		40	bins	10	400.00	
yard bins in/out		4	hrs			
pick		40	bins	18	720.00	
sort/pack		40	hrs			
.20 lb boxes (for 18000lbs)		1170	boxes	0.75	877.50	
.large t-shirt bags (for 10800lbs)		1080	bags	0.016	17.28	
.fuel (mow,spray,dry,fert.,yard)		194	litres	0.5	97.00	
Total expenses					2677.74	

Income less Direct Expenses …….. 9562.26

6. Grapes (1acre)

Income		Yield	Unit	Price	Income	Your Farm
.direct to consumer		8100	lbs			
-farmgate		6075	lbs	0.5	3037.5	
-farmers' market		2025	lbs	1.00	2025.00	
.wholesale		2700	lbs	0.75	2025.00	
Total Income		18900.00	lbs		7087.50	

Direct Expenses	Times Applied	Total Quantity	Unit	Price	Expense	Your Farm
.pesticides						
rodent bait		2	kg	7.07	14.14	
cymbush (l)	2x	0.2	l	82.90	16.58	
sevin xlr (l)	1x	2.3	l	14.50	33.35	
nova WP	3x	0.42	kg	224.11	94.13	
kumulus 80DF	3x	8.4	kg	3.90	32.76	
round-up	1x	2	l	10.05	20.10	
gramoxone	2x	4.4	l	23.89	105.12	
total pesticides					316.17	
.fertilizer						
nitrogen(34-0-0)		100	kg	0.42	42.00	
20-20-20	1x	2.5	kg	2.12	5.30	
total fertilizer					47.30	
.labour						
canopy management		99.8	hrs			
mow		5	hrs			
weed spray		3	hrs			
foliar spray		8	hrs			
fertilize		0.25	hrs			
yard bins in/out		4	hrs			
pick		12000	lbs	0.05	600.00	
sort/pack		40	hrs			
.20 lb boxes (for 6075lbs)		304	boxes	0.75	228.00	
.16lb Master boxes(4baskets)		169	masters	3.25	549.25	
.small t-shirt bags for 2025lbs)		675	bags	0.016	10.80	
.fuel (mow,spray,dry,fert.,yard)		162	litres	0.50	81.00	
Total expenses					1832.52	

Income less Direct Expenses …….. 5254.98

Cash Flow Timing

The table below indicates the monthly flow of income and indirect expenses. It is assumed that crops are sold sold from the farm with limited storage (i.e. less than 7 days).

	J	F	M	A	M	J	J	A	S	O	N	D
% Income						4	23	33	20	20		
% Expenses			5	6	5	10	22	19	18	11	2	2

SENSITIVITY ANALYSIS OF TOTAL PRODUCTION INCOME MARGIN

Profitability is strongly influenced by market prices and yield. The tables below illustrate the changes to income as prices and yield vary.

Price vs Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	22422.94	27594.17	32765.41	37936.64	43107.88

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	22422.94	27594.17	32765.41	37936.64	43107.88

SENSITIVITY ANALYSIS OF INDIVIDUAL CROP INCOME

1. Cherries (1acre)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	5847.90	7191.90	8535.90	9879.90	11223.90

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	5175.90	6519.90	8535.90	10551.90	11895.90

2. Apricots(0.5 acres)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	1989.82	2308.32	2626.82	2945.32	3263.82

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	1830.57	2149.07	2626.82	3104.57	3263.82

3. Peaches(1 acre)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	5438.57	6442.63	7446.69	8450.76	9956.85

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	4936.54	5940.60	7446.69	8952.79	9956.85

4. Nectarines(0.5acres)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	3536.50	6186.17	4680.35	5252.27	5824.19

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	3250.54	3822.46	4680.35	5538.23	6110.15

5. Apples (1acre)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	7114.26	8338.26	9562.26	10786.26	12010.26

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	6502.26	7726.26	9562.26	11398.26	12622.26

6. Grapes(1acre)

Price vs. Income less Direct Expenses

	80% of Target Price	90% of Target Price	Target Price	110% of Target Price	120% of Target Price
Income less Direct Expenses	3837.48	4546.23	5254.98	5963.73	6672.48

Yield vs. Income less Direct Expenses

	75% of Target Yield	85% of Target Yield	Target Yield	115% of Target Yield	125% of Target Yield
Income less Direct Expenses	3483.10	4191.85	5254.98	6318.10	7026.85

Investment Capital Replacement Costs

Buildings	$50,000
Cooler	$10,000
Tractor	$15,000
Implements	
…mower, tillers	$8,000
…sprayers	$8,000
…fertilizer spreader	$2,300
…loader & attachments	$7,000
Harvest equipment	$1,600
Hand trucks/dolleys	$250
Tables, scales, display equip.	$800
Canopies	$600
Truck & trailer	$15,000
Small tools & equipment	$7,000
Irrigation System	$11,250
Planting costs	$19,253
Total	$81,053

Labour Required for Established Production (hours)

Operator Labour	Cherries	Apricots	Peaches	Nectarines	Apples	Grapes	Overhd
Pruning tree fruits)	72.5	24.25	72.5	36.25	40.33		
Canopy management grapes)						99.8	
Mow	5	2.5	5	2.5	5	5	
Weed spray	3	1.5	3	1.5	3	3	
Tree/vine spray or dry	11.5	4	10	5	12	8	
Fertilize	0.25	0.25	0.25	0.25	0.25	0.25	
Yarding bins etc.	7	1.44	4.1	1.44	4	4	
Thin		16.2	84.6	42.3			
Sort/Pack	35	21.6	61.5	21.6	40	40	
Irrigate crops							56
General Maintenance							260
Farmgate sales							1120
Farmers' Market sales							384
Total operator:2642.41hrs	134.25	71.74	240.95	110.84	104.58	160.05	1820
Hired Labour	**Cherries**	**Apricots**	**Peaches**	**Nectarines**	**Apples**	**Grapes**	**Overhd**
Picking or pick & thin (apples)	350	21.6	61.5	21.6	100	40	
Farmgate sales							896
Farmers Market sales							384
Total hired:1874.7hrs	350	21.6	61.5	21.6	100	40	1280
Total: 4517 hrs	**484.25**	**93.34**	**302.45**	**132.44**	**204.58**	**200.05**	**3100**

References:

BCMAFF Tree Fruit Production Guide - for commercial growers
BCMAFF/OVTFA. Replanting for the Future: Final Report. June 1999.
BCMAFF. Orchard Replant/Industry Revitalization Consultation: Background Papers 1 to 4.
BCMAFF web site http://www.agf.gov.bc.ca

Contributors:

The following people contributed to the preparation of this factsheet:
- Irene Bevandick, P - Ag - Contractor, Kelowna -
- Howard Joynt, P - Ag - , BCMAFF, Vernon, B - C -
- tree fruit and grape growers

General Farm Assumptions

The following assumptions were made in calculating the sample budget:

Income & Expenses

- Projected income and expenses are based on 5 acres of production from 10acre total farm area -

Crop information

- Crops grown: 1 acre cherries; 0 - 5 acres apricots;0 - 5 acres nectarines; 1 acre peaches; 1 acre high density apples; 1 acre table grapes; Each planting is a mixture of early to late season varieties.
- All crops are established plantings at full production -
- Length of harvest/sales season: 16weeks
- Yields noted for each crop are marketable yields and not total yields - Typical losses are: 20% for cherries and apricots; 10% peaches, nectarines, and apples; 10% grapes.

Marketing Information

- Market: 75% direct to the consumer sales (50% farmgate sales and 50% from farmers market sales); 25% wholesaled to local produce stores/fruit stands or small independent packinghouses.
- Price: farmgate and farmers' market prices are the same for any given crop; wholesale prices are generally 50% of the farmgate and farmers' market prices, except for cherries where all prices are the same.
- Marketing fuel Costs (fuel required to get product to farmers' markets and wholesale markets) are estimated at 100L/wk x 16wks x $0.60/L . Oil & lube costs are assumed at 15% of fuel costs.

Labour Requirements

- Sales from the farmgate and farmers' market completed by the operator and one hired helper - Hired labour needs for farmgate sales is calculated at 16wks x 7days/wk x 8hrs/day. Operator labour required for farmergate sales is 16wks x7days/wk x10hrs/day. Hired labour for farmers' market sales is calculated at 16wks x 3days/wk x 8hrs/day Operator labour needs for farmers' market sales is the same as the hired labour requirements.
- Labour requirements (operator) for irrigating calculated at 1hr/day x 7days/wk x 8wks (56hrs)
- Labour requirements (operator) for general maintenance calculated at 5hrs/wk x 52wks

Equipment Costs

- Tractor fuel cost are calculated as follows: no - of tractor hours x 8L/hr fuel consumption x $0 - 50/L fuel price -
- Oil and lube costs are assumed at 15% of fuel costs -
- Repair and Maintenance costs are calculated at 3% of investment capital replacement costs
- Investment capital replacement costs are for a 10 acre farm with 5 acres in production -
- Harvest equipment replacement costs include ladders, bins, pails, wooden boxes, plastic lugs/handi-packs, picking bags, etc.
- Irrigation Costs are based on $2250/acre x 5 acres production -

Individual Crop Assumptions

1. Cherry Assumptions (1 acre)

1. Mixed variety planting of early to late season varieties.
2. Planting density: 10ft x 15ft (290 trees/acre)
3. Average length of harvest season: 7weeks.
4. Tractor hours:

mow:	5 x 1hr	(5hrs)
weed spray:	3 x 1hr	(3hrs)
tree spray:	10 x 1hrs	(10hrs)
tree drying:	3 x 0.5hrs	(1.5hrs)
fertilize:	1 x 0.25hrs	(0.25hrs)
yard pails:	2000lbs/hr; 7hrs	
total:	26.75	hrs

5. Total picked yield: 14000 lbs;10lbs/pail; 1400 pails;
7. Pruning labour: 15min/tree x 290trees; 72.5hrs total
8. Picking labour: $0.25/lb ($3500); 40lbs/hr; 350hrs total.
9. Yarding pails in/out: 2000lbs/hr; 7hrs.
10. Sort/Pack: 400lbs/hr; 35hrs
11. Hired labour: picking
12. Packaging: 3/4 direct to consumer (6300lbs) and all wholesale (2800lbs) in 910 x 10lb boxes; 1/4 direct to consumer (2100lbs) in 700 small t-shirt bags (average 3lbs/bag).
13. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; stake/plant 35hrs/acre;	$0.00
tractor fuel for prep/plant:	3 tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$12.00
trees:	$8.22 x 290 trees	$2,383.80
total costs:		$2,470.80

2. Apricot Assumptions (0.5acres)

1. Mixed variety planting of early to late season varieties.
2. Planting density: 15ft x 15ft (194 trees/acre)
3. Average length of harvest season: 3weeks.
4. Tractor hours:
   - mow: 5 x 0.5hrs (2.5hrs)
   - weed spray: 3 x 0.5hrs (1.5hrs)
   - tree spray: 8 x 0.5hrs(4hrs)
   - fertilize: 1 x 0.25hrs(0.25hrs)
   - yard bins: 1hr/10 bins (4250lbs) 1.44hrs
   - *total:* 9.69 hrs
5. Total picked yield: 6125lbs; 425 lbs/bin; 14.4 bins.
6. Pruning labour: 15 min/tree x 97trees; 24.25hrs total.
7. Thinning labour: 10mins/tree; 16.2hrs total
8. Picking labour: $18.00/bin x 14.4bins($259); 1.5hr/bin; 21.6hrs total
9. Yarding bins in/out: 10bins/hr; 1.44hrs total
10. Sort/Pack: 1.5hr/bin;21.6hrs; includes assembly and filling of boxes;
11. Hired labour: picking
12. Packaging: 3/4 direct to consumer (2756lbs) and all wholesale (1225lbs) in 398 x 10lb boxes; 1/4 direct to consumer (919lbs) in 306 small t-shirt bags (average 3lbs/bag).

13. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; stake/plant 15hrs/acre;	$0.00
tractor fuel for prep/plant:	3 tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$12.00
trees:	$8.22 x 97 trees	$797.34
total costs:		$884.34

3. Peach Assumptions (0.5acres)

1. Mixed variety planting of early to late season varieties.
2. Planting density: 10ft x 15ft (290 trees/acre)
3. Average length of harvest season: 6weeks.
4. Tractor hours:
   - mow: 5 x 1hrs (5hrs)
   - weed spray: 3 x 1hrs (3hrs)
   - tree spray: 10 x 1hrs(10hrs)
   - fertilize: 1 x 0.25hrs(0.25hrs)
   - yard bins: 1hr/10 bins (4250lbs) 4.1hrs
   - *total:* 22.35 hrs
5. Total picked yield: 17500lbs; 425lbs/bin; 41 bins.
6. Pruning labour: 15 min/tree x 290trees; 72.5hrs total.
7. Thinning labour: 17.5mins/tree; 84.6hrs total.
8. Picking labour: $18.00/bin x 41bins($738); 1.5hr/bin; 61.5hrs total
9. Yarding bins in/out: 10bins/hr; 4.1hrs total
10. Sort/Pack: 1.5hr/bin; 61.5hrs; includes assembly and filling of boxes;
11. Hired labour: picking
12. Packaging: 3/4 direct to consumer (8860lbs) and all wholesale (3938lbs) in 1280 x 10lb boxes; 1/4 direct to consumer (2953lbs) in 984 small t-shirt bags (average 3lbs/bag).
13. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; stake/plant 35hrs/acre;	$0.00
tractor fuel for prep/plant:	3 tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$12.00
trees:	$8.22 x 290 trees	$2,383.80
total costs:		$2,470.80

4. Nectarine Assumptions (0.5acres)

1. Mixed variety planting of early to late season varieties.
2. Planting density: 10ft x 15ft (290 trees/acre)
3. Average length of harvest season: 3 weeks.
4. Tractor hours:

mow:	5 x 0.5hrs	(2.5hrs)
weed spray:	3 x 0.5hrs	(1.5hrs)
tree spray:	10 x 0.5hrs	(5hrs)
fertilize:	1 x 0.25hrs	(0.25hrs)
yard bins:	1hr/10 bins (4250lbs)	1.44hrs
total:	10.69 hrs	

5. Total picked yield: 6125lbs; 425 lbs/bin; 14.4 bins.
6. Pruning labour: 15 min/tree x 145trees; 36.25hrs total.
7. Thinning labour: 17.5min/tree; 42.3hrs total.
8. Picking labour: $18.00/bin x 14.4bins($259); 1.5hr/bin; 21.6hrs total
9. Yarding bins in/out: 10bins/hr; 1.44hrs total 21.6
10. Sort/Pack: 1.5hr/bin; 21.6hrs; includes assembly and filling of boxes;
11. Hired labour: picking
12. Packaging: 3/4 direct to consumer (3100lbs) and all wholesale (1378lbs) in 448 x 10lb boxes;
    1/4 direct to consumer (1034lbs) in 345 small t-shirt bags (average 3lbs/bag).
13. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; stake/plant 20hrs/acre;	$0.00
tractor fuel for prep/plant:	3 tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$12.00
trees:	$8.22 x 145 trees	$1,191.90
total costs:		$1,278.90

5. Apple Assumptions (1 acres)

1. Mixed variety slender spindle planting of early to late season varieties.
2. Planting density: 3ft x 12ft (1210 trees/acre)
3. Average length of harvest season: 6 weeks.
4. Tractor hours:
   - mow: 5 x 1hrs(5hrs)
   - weed spray: 3 x 1hrs (3hrs)
   - tree spray: 12 x 1hrs (12 hrs)
   - fertilize: 1 x 0.25hrs
   - yard bins: 40bins @ 10bins/hr (4hrs)
   - *total:* 24.25 hrs
5. Total picked yield: 40bins/acre; 800lbs/bin.
6. Pruning labour: 2min/tree x 1210trees; 40.33hrs total.
7. Thinning labour: $10.00/bin x 40bins ($400.00) OR about 40hrs/acre.
8. Picking labour: $18.00 x 40 bins($720.00); 1.5hr/bin; 60hrs total.
9. Yarding bins in/out: 10bins/hr; 4hrs total
10. Sort/Pack: 1 bin/hr;40hrs; includes assembly and filling of boxes;
11. Hired labour: thinning and picking.
12. Packaging: 3/4 direct to consumer(16200lbs) and all wholesale(7200lbs) in 1170 x 20lb boxes;
    1/4 of direct to consumer(5400lbs) in 1080 large t-shirt bags (average 5lbs/bag).
13. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; trench planting rows 8hrs/acre; stake/plant 64hrs/acre;	$0.00
	pound posts 4hrs x $50/hr; 16hrs operator labour install wire;	$200.00
tractor fuel for prep/plant:	11tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$44.00
trees:	$7.79/tree x 1210 trees	$ 9,425.90
posts & wire:	12 rows x 302ft. with 3 x 12.5 gauge high tensile support wires to tie tree to;	
	24 x 10ft 4-5inch pressure treated end posts @ $7.25/post	$ 174.00
	156 x 8ft 3-4 inch pressure treated support posts @ $3.15/post	$ 491.40
	posts are placed every 25ft within the row;	
	3 rolls of wire (3750ft/roll) x $78.50/row	$ 235.50
	36 wire tighteners x 2.50 each	$ 90.00
	3 x 1210 metal tree ties x 0.10 each	$ 363.00
total costs:		$ 10,779.80

6. Grape Assumptions(1 acre)

1. Mixed variety planting of early to late season varieties.
2. Planting density: 6ft x 10ft (726 vines/acre)
3. Average length of harvest season: 6weeks.
4. Tractor hours:

mow:	5 x 1hr (5hrs)	
weed spray:	3 x 1hr (3hrs)	
foliar spray:	8 x 1hr (8hrs)	
fertilize:	1 x 0.25hrs (0.25hrs)	
yard bins:	3000lbs/hr; 4hrs	
total:	20.25 hrs	

5. Total picked yield: 12000lbs;
6. Canopy management

pruning:	3 min/vine x 726vines;	36.3 hrs
tying:	3 min/vine x 726vines;	36.3 hrs
sucker/shoot thin:	1 min/vine x 726 vines; 12hrs	12.1 hrs
bunch thin:	1 min/vine x 726 vines; 12hrs	12.1 hrs
girdle:		3 hrs
total:		99.8 hrs

7. Picking labour: $0.05/lb x 12000lbs ($600); 300lbs/hr; 40hrs total.
8. Sort/Pack: 300 lbs/hr; 40hrs; includes assembly and filling of boxes;
9. Yarding: 3000 lbs/hr; 4hrs;
10. Hired labour: picking
11. Packaging: all of wholesale(2700lbs) in 169 x 16lb Masters (large box with 4x4lb baskets)
    3/4 of direct to consumer (farmgate sales of 6075lbs) in 304 x 20lb boxes.
    1/4 of direct to consumer (farmers' market sales of 2025lbs) in 675 small t-shirt bags (average 3lbs/bag).
12. Planting labour/capital costs (previously planted to forage or annual crop):

labour:	irrigation installation 1hr x $75/hr trench; 20hrs operator labour install:	$75.00
	site prep. 3hrs/acre; trench planting rows 1hr/acre; planting 40hrs/acre;	$0.00
	pound posts 4hrs x $50/hr; 16hrs operator labour install wire;	$0.00
tractor fuel for prep/plant:	4tractor hrs x 8L/hr fuel consumption x $0.50/L fuel cost;	$16.00
vines:	$2.50 x 726vines	$1,815.00
posts & wire:	12 rows x 363ft. with two top wires to support canopy and two lower wires spaced 18inches apart to tie vines to; two top wires attached to crossarms.	
	24 x 10ft 4-5inch pressure treated end posts @ $7.25/post	$174.00
	156 x 8ft 3-4 inch pressure treated support posts @ $3.15/post	$491.40
	posts are placed every 25ft within the row;	
	180 x 2ft crossarms; use 45 x 8ft 3-4inch pressure treated posts @ $3.15/post	$141.75
	4.6 rolls of wire (3750ft/roll) x $78.50/row; 4 strands/row	$361.10
	48 wire tighteners x 2.50 each; 1 tightener/strand	$120.00
total costs:		$3,103.25