



PLANNING FOR PROFIT



Ministry of Agriculture,
Food, & Fisheries

MIXED VEGETABLE AND BERRY CROPS SMALL SCALE OPERATION - 5 ACRES

WINTER 2002

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. Each farm should develop their own budget to reflect specific production goals, costs and market prices.

Information regarding financial planning and other enterprise budgets may be viewed at the B.C. Ministry of Agriculture, Food and Fisheries website (<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.

Market

Vegetables and berry crop grown on small acreages can be marketed in a number of ways. Most growers tend to sell either direct to the consumer or wholesale directly to local fruit stands or small produce stands. Direct to the consumer sales generally requires a fair amount of labour input for sales and marketing. Sales can be completed from the farmgate or at Farmers' Markets.

Competition from other direct marketers is a constant factor. Looking for markets outside your local growing area may be a means of avoiding the local price wars and making sufficient return on your inputs.

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 can reduce yields and quality. Programs available to offset production risks include NISA 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 VEGETABLE & BERRY CROPS

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

	Yield	Unit	Average Price**	Income Year 1	Income Year 2	Income Year 3
Sweet corn(1acre)	900	doz	\$3.25	\$2,925	\$2,925	\$2,925
Winter Squash(0.5acre)	5,000	lbs	\$0.36	\$1,813	\$1,813	\$1,813
Pumpkins(0.5acre)	7,000	lbs	\$0.18	\$1,225	\$1,225	\$1,225
Spinach(0.5acre)	5,000	lbs	\$1.75	\$8,750	\$8,750	\$8,750
Salad Greens(0.25acre)	3,000	lbs	\$3.50	\$10,500	\$10,500	\$10,500
Cauliflower(0.25acre))	2,400	heads	\$1.75	\$4,200	\$4,200	\$4,200
Strawberries(1acre)	8,000	lbs	\$1.19	\$0	\$9,500	\$9,500
Raspberries(1acre)	5,500	lbs	\$2.20	<u>\$0</u>	<u>\$0</u>	<u>\$12,100</u>
Total				\$29,413	\$38,913	\$51,013

**weighted average

Projected Direct Expenses

	Quantity	Unit	Price	Expense Year 1	Expense Year 2	Expense Year 3
Labour						
.transplant cauliflower	6	hours	\$8.00	\$48	\$48	\$48
.weeding	120	hours	\$8.00	\$960	\$960	\$960
.pick corn,squash,pump.,caul.	66.5	hours	\$8.00	\$532	\$532	\$532
.pick strawberries	4000	lbs	\$0.40		\$1,600	\$1,600
.pick raspberries	5500	lbs	\$0.80			\$4,400
.pick/wash/bag (spin./greens)	233.33	hours	\$8.00	\$1,867	\$1,867	\$1,867
.sorting strawberries	120	hours	\$8.00		\$960	\$960
.shoot removal (rasp.)	18	hours	\$8.00	\$144	\$144	\$144
.*farmers' market sales	312	hours	\$8.00	\$2,496	\$2,496	\$2,496
.wages less WCB/benefits				\$6,047	\$8,607	\$13,007
.*WCB & benefits			0.1442	\$872	\$1,241	\$1,876
.*pest monitoring	5	acres	\$75.00	<u>\$375</u>	<u>\$375</u>	<u>\$375</u>
Total labour costs				\$7,294	\$10,223	\$15,257
Seeds						
.Vegetable seed				\$499	\$499	\$499
.Cover Crop seed	112.5	kg	0.55	\$62	\$62	\$62
Hive Rental	2	hives	50.00	\$100	\$100	\$100
Fertilizer						
.14-16-10(straw.,rasp.)	185	kg	0.43	\$80	\$80	\$80
.11-52-0(cover crop)	75	kg	0.53	\$40	\$40	\$40
.34-0-0 (c.c.,corn,caul.,berries)	186	kg	0.42	\$78	\$78	\$78
.0-0-60(cover crop)	75	kg	0.35	\$26	\$26	\$26
	Quantity	Unit	Price	Expense	Expense	Expense

Pesticides				Year 1	Year 2	Year 3
.Dipel(cauliflower)	0.13	kg	\$71.96	\$9	\$9	\$9
.Dipel(rasp)	0.25	kg	\$71.96			\$18
.Endosulphan (straw.)	3.2	kg	\$24.80	\$79	\$79	\$79
.Rovral (straw.)	2.4	kg	\$99.50	\$239	\$239	\$239
.Captan Supra (straw.)	2.4	kg	\$15.70	\$38	\$38	\$38
.Simazine (rasp,straw.)	0.54	kg	\$15.70	\$8	\$8	\$8
.Gramoxone (rasp.)	0.5	litres	\$23.89	\$12	\$12	\$12
.Devrinol (straw)	0.4	kg	\$38.30	\$15	\$15	\$15
Tractor Fuel		litres	\$0.50	\$334	\$330	\$334
Tractor Oil & lube				\$50	\$49	\$50
Packaging						
.Berry traypacks		traypacks	\$1.25	\$0	\$500	\$1,188
.Bags-large	6800	bags	\$0.02	\$109	\$109	\$109
.Bags-small	11000	bags	\$0.02	\$185	\$185	\$185
*Marketing						
.market rental fees				\$350	\$350	\$350
.truck fuel	1950	litres	\$0.60	\$1,170	\$1,170	\$1,170
.truck oil & lube				\$176	\$176	\$176
.advertising				\$100	\$100	\$100
*Repair&Maintenance				\$3,713	\$3,713	\$3,713
*Irrigation	10	acres	\$55.00	\$550	\$550	\$550
TOTAL				\$15,315	\$18,740	\$24,484

Income less Direct Expenses(5acres production) \$14,097 \$20,173 \$26,528
Income less Direct Expenses(per acre basis) \$2,819 \$4,035 \$5,306

* inputs are for the total farm/production area and are not crop specific

Projected Indirect Expenses

Depreciation
Interest
Insurance
Administration
Legal/accounting
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 appropriately (prorated) between uses.

Projected Net Income

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 (eg. general labour costs; general marketing costs; irrigation fees; repair&maintenance.)

1. Cover Crop (3 acres)

Income	Yield	Unit	Price	Income	Your Farm
Total Income				0.00	_____

Direct Expenses	Quantity	Unit	Price	Expense	Your Farm
.fall rye	112.5	kg	\$0.55	\$62	_____
.fertilizer					_____
11-52-0	75	kg	\$0.53	\$40	_____
34-0-0	75	kg	\$0.42	\$32	_____
0-0-60	75	kg	\$0.35	\$26	_____
.labour					_____
soil prep spring & fall	14	hrs			_____
broadcast seed/fert.	3	hrs			_____
disc in seed	1.5	hrs			_____
.fuel(soil prep;disc)	124	litres	\$0.50	\$62	_____
Total direct expenses				\$221	_____
Income less Direct Expenses				-\$221	_____

2. Sweet Corn (1 acre)

Income	Yield	Unit	Price	Income	Your Farm
.direct to consumer	675	doz	\$3.50	\$2,363	_____
.wholesale	225	doz	\$2.50	<u>\$563</u>	_____
Total Income				\$2,925	_____

Direct Expenses	Quantity	Unit	Price	Expense	Your Farm
.seeds	8	lbs	\$11.70	\$94	_____
.fertilizer(34-0-0)	50	kg	\$0.42	\$21	_____
.labour					_____
planting corn	8	hrs			_____
weeding	20	hrs	\$8.00	\$160	_____
fertilizing	1	hrs			_____
cultivating	2.25	hrs			_____
picking-hired	9	hrs	\$8.00	\$72	_____
picking - labour	9	hrs			_____
. Bags(large t-shirt)	2000	bags	\$0.016	\$32	_____
.fuel(cult.;pick)	54	litres	\$0.50	<u>\$27</u>	_____
Total direct expenses				\$406	_____
Income less Direct Expenses				\$2,519	_____

3. Winter Squash (0.5 acre)

Income	Yield	Unit	Price	Income
.direct to consumer	3750	lbs	\$0.40	\$1,500
.wholesale	1250	lbs	\$0.25	<u>\$313</u>
Total Income				\$1,813

Your Farm

Direct Expenses	Quantity	Unit	Price	Expense
.seeds	2.375	lbs	\$28.36	\$67
.labour				
planting squash	2	hrs		
weeding	10	hrs	\$8.00	\$80
cultivating	1.5	hrs		
picking-hired	3.125	hrs	\$8.00	\$25
picking-operator	3.125	hrs		
. Bags(large t-shirt)	1000	bags	\$0.016	\$16
.fuel (cult.;pick)	24.48	litres	\$0.50	<u>\$12</u>
Total expenses				\$201

Your Farm

Income less Direct Expenses				\$1,612
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4. Pumpkins (0.5 acre)

Income	Yield	Unit	Price	Income
.direct to consumer	5250	lbs	\$0.20	\$1,050
.wholesale	1750	lbs	\$0.10	<u>\$175</u>
Total Income				\$1,225

Your Farm

Direct Expenses	Quantity	Unit	Price	Expense
.seeds	0.908	lbs	\$82.40	\$75
.labour				
planting squash	2	hrs		
weeding	10	hrs	\$8.00	\$80
cultivating	1.5	hrs		
picking-hired	4.375	hrs	\$8.00	\$35
picking -operator	4.375	hrs		
. Bags(large t-shirt)	1400	bags	\$0.016	\$22
.fuel(cult.;pick)	29.52	litres	\$0.50	<u>\$15</u>
Total expenses				\$227

Your Farm

Income less Direct Expenses				\$998
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5. Spinach (0.5 acre)

Income	Yield	Unit	Price	Income
.direct to consumer	3750	lbs	\$2.00	\$7,500
.wholesale	1250	lbs	\$1.00	<u>\$1,250</u>
Total Income				\$8,750

Your Farm

Direct Expenses	Quantity	Unit	Price	Expense
.seeds	90000	seeds	3.55/50000	\$6
.labour				
planting spinach	4	hrs		
weeding	4	hrs	\$8.00	\$32
pick/wash/bag - hired	83.33	hrs	\$8.00	\$667
pick/wash/bag - op.	83.33	hrs		
. Bags(small)	5000	bags	\$0.017	\$84
.fuel	0	litres	\$0.50	<u>\$0</u>
Total expenses				\$789

Your Farm

Income less Direct Expenses				\$7,961
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6. Salad Greens (0.25acre)

Income	Yield	Unit	Price	Income
.direct to consumer	2250	lbs	\$4.00	\$9,000
.wholesale	750	lbs	\$2.00	\$1,500
Total Income				\$10,500

Your Farm

Direct Expenses	Quantity	Unit	Price	Expense
.seeds	1.2	lbs	\$145.35	\$174
.labour				
planting greens	4	hrs		
weeding	2	hrs	\$8.00	\$16
pick/wash/bag -hired	150	hrs	\$8.00	\$1,200
pick/wash/bag -op.	150	hrs		
. Bags(small)	6000	bags	\$0.017	\$101
.fuel	0	litres	\$0.50	<u>\$0</u>
Total expenses				\$1,491

Your Farm

Income less Direct Expenses				\$9,009
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8. Strawberries (1 acre)

Income	Yield	Unit	Price	Income Year 1	Income Year 2	Income Year 3
. U-pick	4000	lbs	\$1.00	\$0	\$4,000	\$4,000
. Ready-picked direct	2000	lbs	\$1.75	\$0	\$3,500	\$3,500
. Ready-picked wholesale	2000	lbs	\$1.00	<u>\$0</u>	<u>\$2,000</u>	<u>\$2,000</u>
Total Income				\$0	\$9,500	\$9,500
Direct Expenses	Quantity	Unit	Price	Expense Year 1	Expense Year 2	Expense Year 3
14-16-10	150	kg	\$0.43	\$65		
34-0-0	25	kg	\$0.42	\$11		
.Rovral	2.4	kg	\$99.50	\$0	\$239	\$239
.Captan Supra (kg)	2.4	kg	\$15.70	\$0	\$38	\$38
.Endosulphan(kg)	3.2	kg	\$24.80	\$0	\$79	\$79
.Simazine(kg)	0.3	kg	\$15.70	\$0	\$5	\$5
.Devrinol(kg)	0.4	kg	\$38.30	\$0	\$15	\$15
.labour						
establishment labour	44	hrs				
weeding	40	hrs	\$8.00	\$320	\$320	\$320
fertilizer application	2	hrs				
spraying	7	hrs				
cultivating (inter-row)	8	hrs				
mowing post harvest	1	hrs				
picking	4000	lbs	\$0.40	\$0	\$1,600	\$1,600
sorting -hired	120	hrs	\$8.00	\$0	\$960	\$960
sorting - operator	120	hrs				
supervisor(u-pick)	80	hrs				
. packaging	400	traypacks	\$1.25	\$0	\$500	\$500
.fuel(spray;mow)		litres	\$0.50	<u>\$24</u>	<u>\$36</u>	<u>\$36</u>
Total expenses				\$419	\$3,792	\$3,792
Income less Direct Expenses				-\$419	\$5,708	\$5,708

9. Raspberries (1 acre)

Income	Yield	Unit	Price	Income Year 1	Income Year 2	Income Year 3
.direct to consumer	4125	lbs	2.50	\$0	\$0	\$10,313
.wholesale	1375	lbs	1.30	<u>\$0</u>	<u>\$0</u>	<u>\$1,788</u>
Total Income				\$0	\$0	\$12,100

Direct Expenses	Quantity	Unit	Price	Expense Year 1	Expense Year 2	Expense Year 3
.fertilizer						
14-16-10	35	kg	0.43	\$15	\$15	\$15
34-0-0	25	kg	0.42	\$11	\$11	\$11
.Dipel 2X(kg)	0.25	kg	71.96			\$18
.Simazine(kg)	0.24	kg	15.80	\$4	\$4	\$4
.Gramoxone(l)	0.5	litre	23.89	\$12	\$12	\$12
.labour						
establishment labour	85					
pruning/bundling/repairs	120	hrs				
shoot removal	18	hrs	8.00	\$0	\$0	\$144
spraying	3.5	hrs				
cultivating	8	hrs				
weeding	30	hrs	8.00	\$240	\$240	\$240
picking	5500	lbs	0.80			\$4,400
sorting/supervising	120	hrs				
. packaging	550	traypacks	1.25			\$688
.fuel(spray;cultivate)		litres	0.50	58	42	46
Total expenses				\$339	\$323	\$5,577

Income less Direct Expenses				-\$339	-\$323	\$6,523
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SENSITIVITY ANALYSES OF TOTAL PRODUCTION INCOME MARGIN

Profitability is strongly influenced by market prices and yield. The tables below illustrate the changes to the margin of *income less direct expenses* 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	\$16,326	\$21,427	\$26,528	\$31,629	\$36,731

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	16,485	20,502	26,528	32,554	36,571

SENSITIVITY ANALYSIS OF INDIVIDUAL CROP INCOME

1. Sweet Corn (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	\$1,934	\$2,227	\$2,519	\$2,812	\$3,104

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	\$1,814	\$2,096	\$2,519	\$2,943	\$3,225

2. Winter Squash (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	\$1,249	\$1,431	\$1,612	\$1,793	\$1,974

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	\$1,169	\$1,346	\$1,612	\$1,878	\$2,055

3. Pumpkins (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	\$753	\$876	\$998	\$1,121	\$1,243

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	\$706	\$823	\$998	\$1,173	\$1,290

4. Spinach (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	\$6,211	\$7,086	\$7,961	\$8,836	\$9,711

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	\$5,961	\$6,761	\$7,961	\$9,161	\$9,961

5. Salad Greens

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	\$6,909	\$7,959	\$9,009	\$10,059	\$11,109

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	\$6,709	\$7,238	\$9,009	\$10,388	\$11,308

6. Cauliflower

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	\$2,613	\$3,033	\$3,453	\$3,873	\$4,293

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	\$2,513	\$2,889	\$3,453	\$4,017	\$4,393

7. Strawberries

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	\$3,808	\$4,758	\$5,708	\$10,031	\$10,981

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	\$4,406	\$4,927	\$5,708	\$6,489	\$7,010

8. Raspberries (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	\$4,103	\$5,313	\$6,523	\$12,971	\$14,520

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	\$4,770	\$5,471	\$6,523	\$7,575	\$8,276

Cash Flow Timing

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

	J	F	M	A	M	J	J	A	S	O	N	D
% Income	0	0	0	0	16	34	21	9	14	6	0	0
% Direct Expenses	0	3	2	2	12	27	28	9	7	7	0	3

Labour Required for Total Production Area (hours)

	Sweet Corn	Squash and Pumpkins	Spinach and Greens	Cauliflower	Strawberries*	Raspberries*
Operator labour						
Plant/propagate crops	8	4	8	18		
Cover crop						
.Soil Prep. spring&fall	6	4	3	1		
.broadcast seed/fertilizer	1	1	0.75	0.25		
.disc in seed	0.5	0.5	0.375	0.125		
Pruning/bundling						120
Transplanting				6		
Cultivating crops	2.25	3		0.5	8	8
Fertilizer application	1				2	2
Spraying				1.5	7	3.5
Picking or pick/wash/bag	9	7.5	233.33	50		
Supervise pickers/u-pick					160	
Sorting					120	120
Farmgate sales	10				80	30
Farmers' Market sales						
Irrigating crops						
General Maintenance						
Total operator:2037.1hrs	37.75	20	245.455	77.375	377	283.5
Hired labour	Sweet Corn	Squash and Pumpkins	Spinach and Greens	Cauliflower	Strawberries*	Raspberries*
Transplanting				6		
Weeding	20	20	6	4	40	30
Shoot Removal						18
Picking or pick/wash/bag	9	7.5	233.33	50	100	550
Sorting					120	
Farmers' Market sales						
Total hired: 1525.8hrs	29	27.5	239.33	60	260	598
Total labour: 3563hrs	66.75	47.5	484.785	137.375	637	881.5
* for established plantings						

Investment Capital Replacement Costs

Item	Amount
Buildings	\$50,000
Tractor	\$15,000
Implements	
..... Tillers	\$8,000
..... Mower	\$2,000
..... Sprayer	\$2,000
Rototiller	\$500
Single row precision planter	\$150
Washing equipment	\$4,000
Bins/totes etc.	\$750
Hand trucks/dolleys	\$250
Canopies	\$600
Tables,scales,display equip.	\$800
Vehicles(truck/trailer)	\$15,000
Small Tools & Equipment	\$5,000
Cooler	\$10,000
Planting costs (straw./rasp)	\$4,174
Irrigation System	\$6,000
Total	\$123,756

References:

- BCMAFF Berry Production Guide - for commercial growers
- BCMAFF Vegetable Production Guide - for commercial growers
- .Oregon State University - Commercial Vegetable Production Guides - North Willamette Research & Extension

Contributors:

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- Irene Bevandick, P.Ag., contractor, Kelowna.
- Howard Joynt, P.Ag., Farm Management Specialist, BCMAFF, Vernon.
- Vegetable and berry growers

General Farm Assumptions

The following assumptions were made in calculating the sample budget:

1. Income & Expenses:

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

2. Planting Information:

- Crops grown: 1acre sweet corn; 0.5acre winter squash; 0.5 acre pumpkins; 0.5 acre spinach; 0.25 acre salad greens; 0.25 acre cauliflower; 1 acre established strawberries; 1 acre established raspberries.
- Planting equipment:single row, push-type "Rightway TM" precision seeder for direct seeded crops.
- All fertilizer is applied by hand and then cultivated into the soil .
- Cover crop (fall rye) planted in the fall (September) after harvest of annual crops - Time to work in crop residues and prepare soil for seeding is 3hr/acre. Fertilizer and seed is broadcasted by hand (1hr/acre) and then disced into the soil (1hr/acre). In the spring the cover crop is worked back into the soil and the land is prepared for planting (3hr/acre). Nutrients applied to cover crop will be subsequently be released to food crop. The only annual crops requiring additional fertilizer are sweet corn and cauliflower.

3. Marketing Information:

Market: 75% direct to the consumer sales (mostly farmers market sales with some farmgate sales).

40% of raspberries, 25% of strawberries, 65% of corn, and 75% of the other crops are sold at the farmers' markets. Farmgate sales account for 35% of raspberries, the u-pick strawberries (50% of crop), and 10% of the corn. 25% of all crops are wholesaled to local fruit stands or produce stores.

Price: farmgate and farmers' market prices ("direct to consumer") of ready-picked produce are the same for a given crop while wholesale prices are generally 50% of the "direct to consumer" prices.

Marketing Fuel Costs (fuel required to get product to markets) are estimated at 75L/wk x 26 wks x \$0.60/L

4. Labour requirements:

- Sales from farmgate completed by operator alone while sales at farmers' market completed with operator and one part-time(half-time) helper. The labour needed for farmers' market sales is 1.5x8hrs/dayx3days/wkx26wks. Labour required (operator) for farmgate sales is calculated at 4hr/day x 20days (80hrs) for strawberries (u-pick), 1hr/day x 30days (30hrs) for raspberries, and 2hrs/wk x 5 wks (10hrs) for corn.
- Labour requirements (operator) for irrigating calculated at 2hrs/day x 7days/wk x 8wks (112hrs).
- Labour requirements (operator) for general maintenance calculated at 5hrs/wk x 52wks (260hrs).

5. Equipment Costs:

- Tractor Fuel Costs are calculated as follows: no. of tractor hours x 8L/hr consumption x \$0.50/L price.
- Oil & lube costs are assumed at 15% of fuel costs.
- Repair and Maintenance costs are calculated at 3% of investment capital replacement costs.
- Investment Capital replacements costs are for a 10acre farm with 5 acres in production.

Individual Crop Assumptions

1. Cover crop Assumptions (3 acres):

1. Planting rate: 37.5kg fall rye/acre x 3 acres = 112 kg total requirements
2. Seeding: all seed and fertilizer is broadcasted by hand; labour required here is 1hr/acre;
2. Tractor hours: 3hrs/acre soil prep in fall; 1hr/acre discing in seed; 3hrs/acre soil prep in spring;

fall field prep: 3 hrs/acre x 1 acre (after corn)	3 hrs
1 hrs/acre x 2 acres (after all other annual crops)	2 hrs
disc in seed: 0.5 hr/acre x 3 acres	1.5 hrs
spring field prep: 3 hrs/acre x 3 acre	<u>9 hrs</u>
total:	15.5 hrs
3. Cover crop is used as a green manure (ie.nutrient/organic matter source) with no direct income gained

2. Sweet Corn Assumptions (1 acre):

1. Planting density: row spacing 42inches; seed spacing 8 inches.
2. Tractor hours: 3 x 0.75hrs(2.25hrs) cultivating; 0.25hr/1hr picking x 18hrs picking(4.5hrs); 6.75hrs total.
3. Fertilizer applied by hand when plants 8 to 12 inches tall (1hr); 50kg of 34-0-0.
4. Picking labour: 1hr/50 doz; 18hr for 900doz; 50% of labour is hired.
5. Hired labour: weeding and picking.
6. Packaging: large t-shirt bags; 0.5doz/bag ; \$16.00/1000 bags.

3. Winter Squash Assumptions (0.5 acre):

1. plant a variety of winter squashes including hubbard, acorn, delicata, spaghetti, buttercup and butternut.
2. planting density: 4.75lbs/acre average for all varieties (range of 3 to 6.5lbs/acre).
3. Average seed cost: \$28.36/lb.
4. Tractor hours: 3 x 0.5hrs(1.5hrs) cultivating; 0.25hr/1hr picking x 6.25hrs(1.56hrs) picking; 3.06hrs total.
5. Picking labour: 1hr/800lbs squash; 6.25hrs for 5000lbs; 50% of labour is hired.
6. Hired labour: weeding and picking.
7. Packaging: large t-shirt bags; 5 lbs/bag ; \$16.00/1000 bags.

4. Pumpkin Assumptions (0.5acre):

1. Plant a variety of medium sized pumpkins including Jack of All trades, Connecticut Field, small sugar and Aspen.
2. Planting density: row spacing 20 ft; 6 seeds/hill; hill spacing 3ft; 1200ft/lb of seed; 0.908 lbs total seed.
3. Average seed cost: \$20.60 per 0.25 lb.
4. Tractor hours: 3 x 0.5hrs (1.5hr) cultivating; 0.25hr/1hr picking x 8.75hrs(2.2hrs); 3.69hrs total.
5. Picking labour: 1hr/800lbs pumpkins; 8.75hrs for 7000lbs; 50% of picking labour is hired.
6. Hired labour: weeding and picking.
7. Packaging: large t-shirt bags; 5 lbs/bag ; \$16.00/1000 bags.

5. Spinach Assumptions (0.5 acre):

1. Plant every two weeks from as early as the soil can be worked until mid to late May. Later plantings not successful where there is intense summer heat. Plant again in late July to provide a fall and early spring crop.
2. Planting density: row spacing 2 ft; seed spacing 1 inch; 4 lbs/acre (45 000 seeds/lb or 180,000 seeds/acre).
3. Average seed cost: \$3.55 per 50 000 seeds; need 90 000 seeds for 0.5 acre.
4. Bag weight: 1 lb (454gm).
5. Pick/wash/bag labour: 30 bags (30lbs) per hour; 166.67 hrs for 5000lbs; 50% of labour is hired.
6. Hired labour: weeding and pick/wash/bag.
7. Spinach is cut above the crown, washed, and then bagged by hand. Plants will regrow enough for a second harvest in 7 to 10 days.
8. Packaging: small clear plastic bags; 1 lbs/bag ; \$16.00/950 bags.

6. Salad Greens Assumptions (0.25 acre):

1. Plant every two weeks from as early as the soil can be worked until mid to late May. Later plantings not successful where there is intense summer heat.
2. Planting density: row spacing 2 ft; seed spacing 0.5 inch; 4.8lbs/acre.
3. Plant Mesclun Mix .
4. Average seed cost: 145.35/lb
5. Bag weight: 0.5lbs (225gm).
6. Pick/wash/bag labour: 20 bags (10lbs/3kg) per hour; 300 hrs for 3000lbs; 50% of labour is hired.
7. Hired labour: weeding and pick/wash/bag .
8. Greens are cut above the crown, washed, and then bagged by hand. Plants will regrow enough for a second harvest in 7 to 10 days.
9. Packaging: small clear plastic bags; 0.5 lbs/bag ; \$16.00/950 bags.

7. Cauliflower Assumptions (0.25 acre):

1. Late season cauliflower started outdoors in propogating beds/flats. Labour required to care for young plants includes: 1hr seeding; 0.5/day x 30days watering; 2hrs to sort & prepare for transplanting; 18hrs total. Young plants are set out in the field 30 days after seeding. Transplanting is completed in 6 hours by operator and one hired person.
2. Planting density: row spacing 42 inches; plant spacing 15 inches.(2489 plants/0.25acre maximum plant no.).
3. Average seed cost: \$20.62/1000 seeds; purchase 4000 seeds to allow for losses.
4. Picking labour: 100hrs for 2400 x 2.5lb heads; 50% of labour is hired.
5. Tractor hours: 6hrs. transplant; 2 x 0.25hr (0.5hr) cultivate; 3 x 0.5hr(1.5hr) spray; 0.25hr x 100hrs (25hrs) . pick/prep.
6. Hired labour: transplanting, weeding, pick/prep.
7. Packaging: large t-shirt bags; 1 head/bag ; \$16.00/1000 bags.

8. Strawberry Assumptions(1 acre):

1. 50% u-pick and 50% ready picked for established planting..

2. Tractor hours(hrs/acre):	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
site prep:	3 x 1		
furrow planting rows:	1 x 1		
weed spray:	2 x 1	2 x 1	2 x 1
insect/fung. Spray		5 x 1	5 x 1
mow:	_____	<u>1 x 2</u>	<u>1 x 2</u>
<i>Total:</i>	6	9	9

3. Tillering and weeds between the rows are controlled with a walk behind rototiller. (8hrs total).
4. Hand weeding is done in the spring and fall (40hrs total).
5. Sprays: 5 fungicide (2 x 1.2kg Rovral; 3 x 0.8kg CaptanSupra); 2 insecticide (2 x 1.6kg Endosulphan) applied with fungicides; 2 herbicides (1 x 0.4kg Devrinol early spring; 1x0.3 Simazine post harvest).
6. Fertilizer is hand applied (2hrs); 25kg x 34-0-0 early spring; 150kg x 14-16-10 after plants mowed down.
7. Sorting labour: 12hrs/day x 20days (240hrs); 50% of labour is hired.
8. Supervisor labour: 4hrs/day x 20 days for u-pick and 4hrs/day x 20days for pickers (160 hrs total).
9. Hired labour: weeding, picking and sorting.
10. Total hours picking: 4000lbs/40lbs per hour (100hrs).
11. Packaging costs: 400 traypacks (10lb capacity); \$1.25/traypack.
12. Planting costs/labour:

plants: \$0.075/plant x 17424plants (0.5ft x 5 ft planting density) =	\$1306.80
labour: site prep 3 hrs/acre; furrow planting rows 1hr/acre; plant 40hrs/acre	<u>\$0.00</u>
all completed by the operator.	

total costs: \$1,306.80

13. Two years to full production

9. Raspberry Assumptions(1 acre):

1. Tractor hours(hrs/acre):	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
site prep:	3 x 1		
furrow planting rows:	1 x 1		
weed spray:	1 x 2.5	1 x 2.5	1 x 2.5
insect/fung. Spray			1 x 1
cultivate	<u>8 x 1</u>	<u>8 x 1</u>	<u>8 x 1</u>
<i>Total:</i>	14.5	10.5	11.5

2. Shoot Removal is done using a weed-wacker; 18hrs hired labour needed.

3. No cover crop is grown between the rows. Weeds are kept in check by light cultivating once/wk x 8wks.

4. Weeding is done once by hand 3-4weeks following shoot removal. 30hrs hired labour needed.

5. Fertilizer is hand applied (2hrs). 35kg x 14-16-10 in early spring; 25kg x 34-0-0 one month later.

6. Sorting/picker supervising is done as one task by operator; 4hrs/day x 30days (120hrs total).

7. Hired labour: shoot removal, weeding, picking.

8. Total hours picking: 5500lbs/10lbs per hour (550hrs).

9. Packaging costs: 550 traypacks (10lb capacity); \$1.25/traypack.

10. Planting costs/labour:

plants: \$0.75/plant x 1742plants (2.5ft x 10ft planting density)	\$1,306.50
posts & wire: 12 rows x 363ftlong x 10ft wide;	
24 x 10ft 4-5inch pressure treated end posts @ \$6.70/post;	\$160.80
156 x 8ft 3-5inch pressure treated support posts @ \$4.00/post;	\$624.00
4 wires/row (2 top & 2 nurse); 4.65rolls (3750ft/roll) x \$78.50/roll	\$365.03
48 wire tighteners @ 2.50 each;	\$120.00
labour: site prep. 3 hrs/acre;furrow planting rows 1hr/acre;plant 40hrs/acre	\$0.00
all completed by the operator.	
irrigation installation 1hr x \$75/hr trench; 20hrs operator labour install;	\$75.00
pound posts 4hrs x \$50/hr; 16 hrs operator labour install wire;	\$200.00
tractor fuel for site prep: 4hrs x 8L/hr fuel consumption x \$0.50/L fuel cost;	<u>\$16.00</u>
total costs:	\$2,867.33

11. Three years to full production.