Fruit and Vegetable Analysis Tool
Fruit and Vegetable Farm Direct Marketing Analysis (Alberta Agriculture)

			Vegetables									Fruits		
			Beans	Cabbage	Carrots	Cucumbers	Lettuce	Onions	Peas	Potato	Total	Strawberries	Total	Total Farm P/L
Acreage (1/10ths)			0.2	0.5	0.5	0.5	0.1	0.2	0.2	1.5	3.7	1	1	
%Acreageby Crop		% Crop Acreage	5%	14%	14%	14%	3%	5%	5%	41%		100%		
Total Revenue	Units	$/Acre Revenue	$ 8,063.39	$ 5,507.85	$ 21,378.98	$ 6,153.13	$ 16,800.22	$ 3,212.27	$ 5,952.46	$ 9,547.89		7779.23		
	Total		$ 8,063.39	$ 5,507.85	$ 21,378.98	$ 6,153.13	$ 16,800.22	$ 3,212.27	$ 5,952.46	$ 9,547.89	$ 76,616.19	$ 7,779.23	$ 7,779.23	$ 84,395.42
Variable Expenses														
Production Expenses	Seed		293.09	112.43	44.53	144.53	624.62	129.79	248.16	694.36	$ 2,291.51	704.00	$ 704.00	
	Chemical		0.00	11.76	1.41	0.00	0.00	0.00	0.00	0.00	$ 13.17	0.00	$ -	
	Fertilizer		30.07	123.29	3.45	88.06	64.84	15.19	21.97	55.78	$ 402.65	36.49	$ 36.49	
	Packaging		131.68	0.00	127.19	120.80	115.09	19.07	171.68	104.92	$ 790.43	292.64	$ 292.64	
	Custom Work		11.76	0.00	1.28	0.00	58.45	0.00	29.95	18.48	$ 119.92	0.00	$ -	
	Irrigation		55.64	9.20	4.30	20.70	75.88	18.34	36.03	95.07	$ 315.16	74.19	$ 74.19	
	Land Rental		214.31	268.02	24.58	256.88	0.00	358.39	441.32	908.46	$ 2,471.96	168.99	$ 168.99	
	Production Expenses		$ 736.55	$ 524.70	$ 206.74	$ 630.97	$ 938.88	$ 540.78	$ 949.11	$ 1,877.07	$ 6,404.80	$ 1,276.31	$ 1,276.31	$ 7,681.11
	Production Margin		$ 7,326.84	$ 4,983.15	$ 21,172.24	$ 5,522.16	$ 15,861.34	$ 2,671.49	$ 5,003.35	$ 7,670.82	$ 70,211.39	$ 6,502.92	$ 6,502.92	$ 76,714.31
Operating Expenses														
	Trucking		$ 147.72	$ 33.66	$ 11.51	$ 64.03	$ 190.69	$ 60.28	$ 99.56	$ 264.95	$ 872.40	$ 31.04	$ 31.04	
	R&M Buildings		$ 39.96	$ 28.21	$ 100.87	$ 40.82	$ 56.37	$ 38.63	$ 50.00	$ 120.28	$ 475.14	$ 48.81	$ 48.81	
	R&M Machinery		$ 160.19	$ 46.98	$ 126.23	$ 68.42	$ 280.42	$ 71.45	$ 162.82	$ 283.50	$ 1,200.01	$ 241.49	$ 241.49	
	Fuel, Oil, & Lube		$ 107.45	$ 79.12	$ 324.27	$ 110.26	$ 139.02	$ 104.47	$ 128.78	$ 318.52	$ 1,311.89	$ 137.72	$ 137.72	
	Advertising		$ 48.60	$ 18.50	$ 109.34	$ 28.53	$ 114.02	$ 26.50	$ 72.77	$ 110.94	$ 529.20	$ 50.35	$ 50.35	
	Travel		$ 32.82	$ 13.41	$ 9.53	$ 19.82	$ 38.12	$ 17.44	$ 23.94	$ 68.05	$ 223.13	$ 60.14	$ 60.14	
	Farmers Market Booth Fees		$ 24.34	$ 24.58	$ 6,172.98	$ 33.10	$ 55.32	$ 31.37	$ 52.15	$ 95.19	$ 6,489.03	$ 23.44	$ 23.44	
	Total Operating Expenses		$ 561.08	$ 244.46	$ 6,854.73	$ 364.98	$ 873.96	$ 350.14	$ 590.02	$ 1,261.43	$ 11,100.80	$ 592.99	$ 592.99	$ 11,693.79
	Net Operating Profit/Loss (Per Crop)		$ 6,765.76	$ 4,738.69	$ 14,317.51	$ 5,157.18	$ 14,987.38	$ 2,321.35	$ 4,413.33	$ 6,409.39	$ 59,110.59	$ 5,909.93	$ 5,909.93	$ 65,020.52
Labour Expenses			5%	14%	14%	14%	3%	5%	5%	41%		100%		
	Paid Labour		$ 1,428.12	$ 1,232.18	$ 3,338.97	$ 1,809.87	$ 884.51	$ 1,750.73	$ 1,454.17	$ 4,791.27	$ 16,689.82	$ 3,791.49	$ 3,791.49	$ 20,481.31
	UnPaid Labour		$ 1,453.86	$ 184.05	$ 1,054.06	$ 413.94	$ 3,175.04	$ 366.83	$ 1,592.59	$ 2,419.04	$ 10,659.41	$ 2,190.29	$ 2,190.29	$ 12,849.70
	Total Labour Expenses		$ 2,881.98	$ 1,416.23	$ 4,393.03	$ 2,223.81	$ 4,059.55	$ 2,117.56	$ 3,046.76	$ 7,210.31	$ 27,349.23	$ 5,981.78	$ 5,981.78	$ 33,331.01
	Profit/Loss after Paid Labour		$ 5,337.64	$ 3,506.51	$ 10,978.54	$ 3,347.31	$ 14,102.87	$ 570.62	$ 2,959.16	$ 1,618.12	$ 42,420.77	$ 2,118.44	$ 2,118.44	$ 44,539.21
	Profit/Loss after Total Labour		$ 3,883.78	$ 3,322.46	$ 9,924.48	$ 2,933.37	$ 10,927.83	$ 203.79	$ 1,366.57	-$ 800.92	$ 31,761.36	-$ 71.85	-$ 71.85	$ 31,689.51
	Contribution Margin		$ 3,883.78	$ 3,322.46	$ 9,924.48	$ 2,933.37	$ 10,927.83	$ 203.79	$ 1,366.57	-$ 800.92	$ 31,761.36	-$ 71.85	-$ 71.85	$ 31,689.51
Fixed Expenses														
		Depreciation %	5%	14%	14%	14%	3%	5%	5%	41%		100%		
	Operating Interest		$ 223.70	$ 19.17	$ 20.72	$ 43.12	$ 689.01	$ 38.21	$ 357.61	$ 365.16	$ 1,756.70	$ 205.32	$ 205.32	
	Depreciation - Buildings	Total $ Invested	$ 154.52	$ 22.79	$ 2,682.11	$ 38.18	$ 573.74	$ 35.40	$ 338.90	$ 293.32	$ 4,138.96	$ 90.93	$ 90.93	
	Depreciation - Machinery	Total $ Invested	$ 196.40	$ 130.44	$ 972.27	$ 188.72	$ 444.01	$ 179.55	$ 302.24	$ 608.40	$ 3,022.03	$ 112.81	$ 112.81	
	Small Tools		$ 160.09	$ 14.04	$ 36.00	$ 42.03	$ 431.00	$ 29.42	$ 213.00	$ 286.87	$ 1,212.45	$ 209.74	$ 209.74	
	Land Taxes		$ 38.57	$ 5.50	$ 4.52	$ 12.09	$ 73.40	$ 10.95	$ 35.88	$ 64.76	$ 245.67	$ 64.31	$ 64.31	
	Vehicle Registration		$ 56.51	$ 38.97	$ 27.17	$ 57.33	$ 68.01	$ 55.18	$ 67.79	$ 166.01	$ 536.97	$ 73.68	$ 73.68	
	Insurance		$ 63.73	$ 31.21	$ 119.08	$ 46.51	$ 156.55	$ 44.27	$ 107.59	$ 166.49	$ 735.43	$ 53.32	$ 53.32	
	Office Supplies		$ 64.58	$ 44.04	$ 17.16	$ 64.75	$ 65.24	$ 60.71	$ 64.68	$ 187.28	$ 568.44	$ 97.59	$ 97.59	
	Utilities - Heating		$ 57.17	$ 44.61	$ 125.08	$ 65.70	$ 55.83	$ 62.56	$ 64.35	$ 183.36	$ 658.66	$ 78.35	$ 78.35	
	Utilities - Power		$ 44.64	$ 3.45	$ 310.73	$ 7.62	$ 145.87	$ 6.86	$ 75.10	$ 71.96	$ 666.23	$ 40.52	$ 40.52	
	Utilities - Phone		$ 69.35	$ 6.14	$ 65.04	$ 13.11	$ 213.25	$ 12.15	$ 109.10	$ 111.78	$ 599.92	$ 70.24	$ 70.24	
	Professional Fees		$ 54.80	$ 27.24	$ 82.07	$ 42.16	$ 70.71	$ 40.55	$ 54.09	$ 135.15	$ 506.77	$ 84.28	$ 84.28	
	Total Fixed Expenses		$ 1,184.06	$ 387.60	$ 4,461.95	$ 621.32	$ 2,986.62	$ 575.81	$ 1,790.33	$ 2,640.54	$ 14,648.23	$ 1,181.09	$ 1,181.09	$ 15,829.32
	Gross Margin		$ 3,050.64	$ 3,088.09	$ 9,116.91	$ 2,538.95	$ 8,958.96	-$ 157.07	$ 217.38	-$ 2,539.74	$ 24,274.12	-$ 1,049.20	-$ 1,049.20	$ 23,224.92

Fruit and Vegetable Direct Market Cost of Production Definitions

Yearly Revenue

- Revenue is broken down by each Vegetable or Fruit crop grown. In each instance, the total quantity and price received should be used to calculate the total revenue for each Vegetable or Fruit crop.
- In addition, quantity and price are also used for calculating the Farm Gate, Farmers Market and Wholesale revenue.
- When analyzing Revenue numbers, keep in mind any production/environmental issues and price changes as these impact (increase or decrease) farm profitability.
- The summary page can mask crops which are not profitable, therefore each crop should be analyzed separately.

Production Expenses

- A breakdown of Production Expenses specific to each crop is best for accurate analysis.
- Lumping production costs together masks crop profitability and minimizes the amount of analysis that can be completed.
- Seed, Chemical and Fertilizer are specific to each crop and the cost for each can easily be calculated. Packaging cost are usually crop specific due to crop variance in packaging requirements.
- Custom work, Insurance, Irrigation and other costs can be calculated based on the percentage of each crop grown. Reviewing production costs on a yearly basis can provide insight into changing profitability and aid managing production costs for each crop.

Production Margin

- Production Margin is calculated in the following manner: Production Margin = Yearly Revenue – Production Expenses.
- Review Production Margin for each crop to ensure that each crop is producing a profit at this stage. If a crop is not profitable and extenuating circumstances do not exist, consider why that crop is being grown. Crops with a higher Production Margin are essential for overall farm profitability.

Operating Expenses

- These are expenditures that the farm incurs throughout the production year; however, they are not directly associated with the production of the crop.
- The total cost for each category collected should be determined for each crop based on the acreage percentage of each crop grown. This is then rolled into the Total Operating Expense for each crop. Carefully look at the change in Operating Expenses for each year. Analysing Operating Expenses for differences between years can help explain why farm profitability has increased or decreased. For example, an increase in fuel or major repair to a piece of equipment could have a major impact on perating expenses. Understanding these changes can be very important, particularly if asked by a financial institution.

Labour Expenses

- Labour Expenses are divided into two categories; paid (actual salaries paid to employees) and unpaid (an estimate of dollars invested by owners for which they are not paid).
- Paid labour is based on the actual total wages paid and then divided among the crops based on acreage percentage, unless a higher percentage of labour than other crops.
- Unpaid labour is based on hours estimated to complete various tasks on the farm. An average cost of $15.00 per hour to calculate the cost for unpaid labour was used, and this cost was then divided amongst the crops based on acreage percentage, unless a crop requires a higher percentage of labour than other crops. The unpaid labour was factored into the calculations as there is value for this management.

Total Variable Expenses

- Total Variable Expenses = Production Expenses + Operating Expenses + Labour (Paid and Unpaid) Expenses.
- All these expenses are what it costs throughout the year to grow and sell the produce. These expenses should be monitored for fluctuations and analysed to determine why changes occurred. Critical monitoring of Variable Expenses will aid in profitability if production/marketing issues arise.

Fruit and Vegetable Direct Market Cost of Production Definitions (continued)

Contribution Margin

- Contribution Margin = Total Revenue – Variable Expenses (Total Production Expenses – Total Operating Expenses – Total Labour (Paid and Unpaid)).
- This calculation will determine how much the farm is able to contribute toward Fixed Expenses. If the Contribution Margin in a given year is negative, then either Revenue needs to increase or expenses need to decrease for farm profitability to be maintained. Monitoring specific crop revenue for each year provides a picture on which crop(s) are positively and negatively affecting Contribution Margin. Crops returning a negative Contribution Margin should be carefully assessed to determine if continued production of that specific crop is financially wise. Without analysis of Contribution Margin, production of a non-profitable crop could continue.

Fixed Expenses

- There are three categories of Fixed Expenses; they are Operating Interest, Depreciation of Machinery and Depreciation of Buildings.
- Operating Interest includes all interest paid to Financial Institutions for production of goods for sale. This total expense is then divided between crops based on an acreage percentage. Depreciation for Machinery and Buildings is based on values collected for each year and then a 10% straight line depreciation is utilized and divided amongst each crop based on an acreage percentage. These expenses are totalled to determine the Total Fixed Expenses for the operation.

Gross Margin

- Gross Margin is calculated for a farm to determine revenue remaining after all out-of-pocket expenses are deducted.
- The calculation is as follows: Gross Margin = Total Revenue – Variable Expenses – Fixed Expenses (not including Building and Machinery depreciation).
- A positive Gross Margin means there is money left over to pay management and also for future capital expenditures. If this value is negative then the farm is not able to cover the production, operating and labour expense needed for production of the produce to be sold. If Gross Margin is increasing it is important for producers to analyze the numbers to determine why so the farm can continue to improve. Likewise if Gross Margin is declining it is equally important to analyze the numbers so corrective actions can be taken. Disregarding changes in Gross Margin could be detrimental to the overall farming operation.