Cost of Production

Strawberries

Manitoba

Manitoba

Guidelines For Estimating

Strawberry U-Pick Production Costs

The following budget estimates the cost of producing Strawberries in Manitoba. General Manitoba Agriculture recommendations are assumed in using fertilizers and chemical inputs. These figures provide an economic evaluation of the crops and estimated yields required to cover all costs. Costs include labour, investment and depreciation, but do not include management costs, nor do they necessarily represent the average cost of production in Manitoba.

These budgets may be adjusted by putting in your own figures. As a producer you are encouraged to calculate your own costs of production for various crops. On each farm, costs and yields differ due to soil type, climate and agronomic practices.

The Farm Machinery Custom and Rental Rate Guide is also available to help determine machinery costs.

This tool is available as an Excel worksheet at:

Contact Us
For more information, contact a Farm Management Specialist.

- manitoba.ca/agriculture
- mbfarmbusiness@gov.mb.ca
- 1-844-769-6224

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Strawberry - Cost of Production Summary
Based on 20 acres

		Establishment[1]	Picking Years		
		Cost $/acre	Cost /acre	Cost/lb	Your Cost
	Operating Costs				
A	Establishment cost (amortized)[1]	–	$3,722.09	–	
	Seed & Treatment	$2,240.00	–	$0.6893	
	Fertilizer	$179.86	$170.16	$0.0315	
	Pesticide	$120.00	$266.00	$0.0493	
	Fuel	$54.66	$48.52	$0.0090	
	Irrigation	$15.96	$63.84	$0.0118	
	Machinery Operating & Lease	$25.00	$25.00	$0.0046	
	Labour - hired	$1,066.00	$1,734.00	$0.3211	
	Crop Insurance (Establishment only)	$64.80	–	–	
	Hail Insurance	$280.00	$280.00	$0.0519	
	Land Taxes	$20.00	$20.00	$0.0037	
	Miscellaneous Cost	$578.26	$578.26	$0.1071	
	Rental and Custom Charges	$0.00	$0.00	$0.0000	
	Repairs & Maintenance Cost	$378.26	$378.26	$0.0700	
	Interest on Operating	$351.60	$255.01	$0.0472	
	Total Operating Costs	**$5,374.39**	**$7,541.14**	**$1.3965**	
B.	**Fixed Costs**				
	Land Costs	$327.65	$327.65	$0.0607	
	Machinery Costs	$2,949.88	$2,949.88	$0.5463	
	Storage & Irrigation Costs	$2,153.66	$2,153.66	$0.3988	
	Total Fixed Costs	**$5,431.18**	**$5,431.18**	**$1.0058**	
C.	**Total Costs**	**$10,805.57**	**$12,972.32**	**$2.4023**	
	Estimated Farmgate				
	Price per Unit		**$5.00**		
	Target Yield per acre (lbs)		**5,400**		
	Gross Revenue / acre		**$27,000.00**		
	Operating Expense Ratio		**28%**		
	Marginal Returns				
	Over Operating Costs		$19,458.86		
	Over Total Costs (Net Profit)		**$14,027.68**		
	Breakeven Price ($ Per lb.)				
	Operating Costs		**$1.40**		
	Over Fixed Costs		**$1.01**		
	Over Total Costs		**$2.40**		
	Breakeven Yield (lbs)				
	Over Operating Costs		**1,508**		
	Over Fixed Costs		**1,086**		
	Over Total Costs		**2,594**		
	Breakeven Yield Risk Ratio		**2.08**		
	(Yield per acre/BE Yield)				

1. The cost of establishing the crop of $10805.57, includes the pre plant and planting years, was amortized over $3722.09

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Strawberry Planting

	Transplanting Rate (plants/ac)	Plant Cost (per plant)	Cost per Acre
Strawberry Plants	8,000	$0.28	$2,240

Fertilizer

Fertilizer Type	Bulk Price $/tonne	Actual Nutrient $/lb
Nitrogen: (urea) 46-0-0	$900	$0.89
Phosphorus: 11-52-0	$1,250	$0.90
Potash: 0-0-60	$650	$0.49
Sulphur: 20.5-0-0-24	$850	$0.85

Amount of Actual Pounds of Elements Applied Per Acre

	Nitrogen		Phosphorus		Potash		Sulphur		Total
Crop	lbs	$/acre	lbs	$/acre	lbs	$/acre	lbs	$/acre	$/acre
Strawberry Planting	70	$31.98	100	$109.04	30	$14.74	15	$24.10	$179.86
Strawberry Picking	150	$125.58	20	$21.81	30	$14.74	5	$8.03	$170.16

Crop Protection

	Weed Control $/ac	Disease Control $/ac	Insect Control $/ac	Total Cost $/ac
Planting	$120	$0	$0	$120.00
Picking	$180	$80	$6	$266.00

Note:

Pre-emergent burn off is not included in weed control costs.

Chemical costs do not include year end rebates or bundling discounts.

Disease Control costs do not include custom application costs.

Crop Rotations and Yields

Crop Rotation and Yields	Year	lbs/acre
Planting Year	1	
1st Picking	2	6,600
2nd Picking	3	5,500
3rd Picking	4	4,000
Total Yield (lbs/acre)		**16,100**
Average Yield (lbs/acre)		**5,367**
Market Price per Pound		**$5.00**

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Operating Costs

Interest Rate on Operating	7.00%
Land Taxes ($/acre)	$20.00
Labour rate ($/hour)	$20.00
Machinery Operating ($/acre)	$25.00
Cost per round bale of straw	$70.00
Fuel Cost ($/litre)	$1.10

Field Fuel Usage

Operation	Times Over	Width Feet	Speed MPH	Tractor HP	Fuel Per Acre	Capacity Ac/Hr	Time Hr./Ac.	Maint & Lub
Planting	1	5	1	50	$20.63	0.50	2.00	2.06
Cultivate	3	5	5	50	$12.38	2.50	1.20	1.24
Spray	1	25	4	50	$1.03	10.00	0.10	0.10
Straw Spreading	1	5	2	100	$20.63	1.00	1.00	2.06
Total Establishment Field Operation Fuel Costs ($/acre)					**$54.66**			
Straw removal	1	5	5	50	$4.13	2.50	0.40	0.41
Spray	5	25	4	50	$5.16	10.00	0.50	0.52
Mowing	1	5	5	50	$4.13	2.50	0.40	0.41
Rototilling	2	5	3	50	$13.75	1.50	1.33	1.38
Fertilizer	2	40	7	50	$0.74	28.00	0.07	0.07
Straw Spreading	1	5	2	100	$20.63	1.00	1.00	2.06
Total Picking Field Operation Fuel Costs ($/acre)					**$48.52**			

Irrigation Cost

Irrigation Fuel Costs	Establishment	Picking
Inches water applied	3	12
Hours/acre for 1" of water	4	4
Hourly pumping costs	$1.33	$1.33
Total Cost ($/acre)	**$15.96**	**$63.84**

Labour Cost

	Hours Required per Acre							
	Weed Control	De-blossoming	Irrigation	Straw Spreading	Field Operation	U-Pick Operation	Total Hours	Total ($/acre)
Establishment	30	8	6	5	4.3	0	**53.3**	**$1,066.00**
Picking	30	0	6	5	3.7	42	**86.7**	**$1,734.00**

Miscellaneous Cost

Plant (total $)		$750.00
Advertising (total $)		$500.00
Utilities (total $)		$1,150.00
Pails/Baskets ($/each)	$0.75	**$805.05**
Straw bales per acre	3	**$2,100.00**
Other Costs ($/acre)	$17.75	**$177.50**
Washrooms (total $)		$300.00
Total Miscellaneous Cost ($/10 acres)		**$5,782.55**
Total Miscellaneous Cost ($/acre)		**$578.26**

Repairs & Maintenance Cost

% rate of investment	1.50%
Total Repair & Maintenance Costs	$378.26

Rental and Custom Charges

Rental & Custom Charges	Seeding	Application	Harvest	General	Total
Establishment	-	-	-	-	$0.00
Picking	-	-	-	-	$0.00

Crop & Hail Insurance

	Crop Insurance
Establishment	$65
Hail Insurance	$280.00

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Fixed Costs

Land			
Average Land Value		$5,000	
Strawberry Acres		10	
Owned Land Equity		30%	
Land Financed		70%	
Land Opportunity Cost		1.50%	
Land cost ($/acre)			
Finance Rate & Term	6.00%	20	Years
Principal & Interest Cost		$305.15	
Owned Land Opportunity Cost		$22.50	
Total Cost		**$327.65**	
Strawberry Establishment			
Establishment cost ($/acre)		$10,806	
Strawberry Acres		10	
Establishment Equity		10%	
Establishment Financed ($9,725 per acre)		90%	
Establishment Opportunity Cost (Investment Rate)		1.50%	
Establishment cost ($/acre)			
Finance Rate & Term	7.000%	3	Years
Principle & Interest Cost		$3,705.88	
Owned Land Opportunity Cost		$16.21	
Total Cost		**$3,722.09**	
Total Debt ($/acre)		**$33,399.40**	

Machinery			
Total Investment ($/acre)	$14,018		
Residual Value (End of Useful Life)	25%		
Useful Life (years)	15		
Owned Equipment Equity	20%		
Equipment Financed	80%		
Machinery Opportunity Cost	1.50%		
Machinery Cost ($/acre)			
Finance Rate & Term	7.00%	7	Years
Principal & Interest Cost	$2,080.79		
Machinery Depreciation Cost	$700.88		
Owned Machinery Opportunity Cost	$168.21		
Total Cost	**$2,949.88**		
Storage & Irrigation			
Total Investment Storage ($/ac)	$8,200		
Total Investment Irrigation ($/ac)	$3,000		
Residual Value (End of Useful Life)	25%		
Useful Life Storage (years)	20		
Useful Life Irrigation (years)	15		
Owned S & I Equity	20%		
S & I Financed	80%		
S & I Opportunity Cost	1.50%		
Storage & Irrigation Cost ($/acre)			
Finance Rate & Term	7.00%	7	Years
Principal & Interest Cost	$1,662.56		
Storage Depreciation Cost	$307.50		
Irrigation Depreciation Cost	$150.00		
Owned S & I Opportunity Cost	$33.60		
Total Cost	**$2,153.66**		

Storage & Irrigation

	Market Value	Strawberry Usage %	Strawberry Allocation
Storage Shed	$60,000	90%	$54,000
Cooler	$10,000	100%	$10,000
Booth	$3,000	100%	$3,000
Miscellaneous	$15,000	100%	$15,000
Irrigation Equipment	$30,000	100%	$30,000
Storage & Irrigation TOTAL	**$118,000**		**$112,000**
Storage & Irrigation Total per acre	**$11,800**		**$11,200**

Equipment Inventory and Current Values

Power Equipment	Market Value	Strawberry Usage %	Strawberry Allocation
Tractor - 50 HP	$60,000	100%	$60,000
Tractor - 100 HP	$100,000	33%	$33,000
	$0	0%	$0
	$0	0%	$0
Total Inventory	**$160,000**		**$93,000**

Harvest Equipment	Market Value	Strawberry Usage %	Strawberry Allocation
	$0	0%	$0
	$0	0%	$0
	$0	0%	$0
	$0	0%	$0
Total Inventory	**$0**		**$0**

Seeding & Tillage	Market Value	Strawberry Usage %	Strawberry Allocation
Planter	$5,000	100%	$5,000
Rotovator	$8,000	90%	$7,200
Cultivator	$1,500	90%	$1,350
	$0	0%	$0
	$0	0%	$0
Total Inventory	**$14,500**		**$13,550**

Spraying & Misc.	Market Value	Strawberry Usage %	Strawberry Allocation
Sprayer - 25 ft	$10,000	100%	$10,000
Straw spreader	$39,500	25%	$9,875
Fertilizer Spreader	$40,000	25%	$10,000
Mower	$5,000	75%	$3,750
	$0	0%	$0
Total Inventory	**$94,500**		**$33,625**

Owned Equipment TOTAL	**$252,175**		**$140,175**
Owned Equipment TOTAL / acre	**$25,217.50**		**$14,018**

Leased Equipment Inventory and Current Values

Seeding, Tillage, Spraying etc	Annual Lease	Strawberry Usage %	Strawberry Allocation
	$0	0%	$0
	$0	0%	$0
	$0	0%	$0
Lease Equipment TOTAL	**$0**		$0
Leased Equipment TOTAL / acre	**$0**		**$0**

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Strawberry Production in Manitoba

The projected strawberry production costs in this publication have been prepared to assist you in developing your own production costs.

The capital and cash input costs associated with growing strawberries in Manitoba are substantial. Detailed planning is necessary when budgeting for capital expenditures and also for the annual operating costs. The importance of good financial planning is evident by noting the large capital required for 1 acre of strawberries is significant.

Commercial strawberry production in Manitoba has been an important part of diversification in the province. The majority of the strawberry farms are on a U-Pick basis; but custom picking of the crop has increased over the past few years.

Strawberries are an intensely managed crop that require precise timing. Yield and quality achieved during the short 3 - 4 week picking season hinge on timely management practices of the previous year, as well as care and maintenance before picking. Growers entering the industry need these basic requirements: (1) suitable land with adequate drainage and shelterbelts, (2) access to an adequate quantity and quality of water for irrigation, (3) financial resources that permit a significant level of investment on infrastructure and input costs, (4) the ability to apply intensive management skills to the crop in a precisely timed manner, (5) the ability to determine market potential, and (6) the willingness to accept risk.

It is advised that new growers should proceed on a small but graduated scale. A complete assessment of the customer base and marketing opportunities needs to be completed prior to planting the first crop of strawberries.

Other Assumptions

Fuel Costs: Includes fuel used for field work, trucking in inputs and trucking out production.

Machinery Operating Costs: Includes costs for maintenance, repairs, licenses and insurance.

Crop Insurance:
Establishment coverage is available through MASC.
Hail insurance coverage insured value based on MASC Risk Areas 2, 5, 6, & 12.

Other Costs: Includes overhead expenses - hydro, telephone, accounting, buildings, supplies and insurance, etc.

Land Taxes: The average cost based on land tax assessment and mill rates of a sample of municipalities growing crops less provincial tax rebate.

Interest On Operating: Interest charges on operating costs are calculated at 7% for six months.

Land Cost:
Based on approximate average land values. Budget assumed 70% financed at 6% for 20 years, plus 1.5% land equity opportunity cost. Budget can be used to estimate cashflow by removing investment cost.
P&I Cost (based on $35,000 Mortgage) = $3,051 payments per year) / 10 acres = $305.15/acre)
Investment = (Total Investment x Owned Equity %) x Investment Rate % (eg. (($5,000 x 30%) x 1.5%) = $22.50/acre)

Machinery Cost:
Based on approximate average machinery values. Budget assumed 80% financed at 7% for 7 years, depreciation costs over 15 years with a 25% residual value, plus 1.5% machinery equity opportunity cost. Budget can be used to estimate cashflow by removing depreciation and investment cost.
P&I Cost (based on $201,740 Loans) = $20,808 payments per year) / 10 acres = $2080.79/acre)
Depreciation (Useage Cost) = (Total Investment - Residual Value) / Years Useful Life (eg. ($14017.5 - ($14017.5 x 25%)) / 15 = $700.88/acre)
Investment = (Total Investment x Owned Equity %) x Investment Rate % (eg. ($14017.5 x 20%) x 1.5%) = $168.21/acre)

Depreciation Cost = $\frac{\text{Original Cost - Salvage Value}}{\text{Useful Life}}$

Investment Cost = $\frac{\text{Original Cost + Salvage Value}}{2}$ x Investment Rate

Estimated Farmgate Values:
Target crop prices are based on $5 value per pound sold.
Target crop yields are based on historical yield from Manitoba crop average of 5,367 lbs/ac.

Plant Costs:
Plant cost based on Prairie Fruit Growers Association member plant discount price.

Miscellaneous Costs:
Includes: plant costs, advertising, utilities, pails/baskets, portable washrooms, and rental & custom charges.

Profitability, Breakeven & Risk Analysis Formulas:
Gross Revenue = Price per unit x Yield per acre (eg. picking years: $5.00/lbs x 5400lbs/ac = $27000.00/ac)
Net Profit = Gross Revenue - Total Cost (eg. picking years: $27000.00 gross revenue - $12972.32 total cost = $14027.68 per acre)
Operating Expense Ratio = (Operating Cost / Gross Revenue) x 100 (eg. picking years: $7541.14 operating expense / $27000.00 total cost = 27.9%)
Breakeven Price = Cost / Target Yield (eg. picking years: $12972.32 / 5400 lbs = $2.40 per lbs)
Breakeven Yield = Cost / Price per Unit (eg. picking years: $12972.32 / $5.00 lbs = 2594.0 lbs)
Breakeven Yield Risk Ratio = (Yield per Acre / Breakeven Yield) x 100 (eg. picking years: 5400 lbs/ac / 2594.0 bu BE = 208%)

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