




Grain Enterprise Planning Crop Returns Calculator

What is the Crop Returns Calculator?

Downloadable Excel Calculator

Input your numbers to better understand your production costs and breakeven selling prices

Helps producers make marketing and risk management decisions



Open Wheat and Barley Markets...

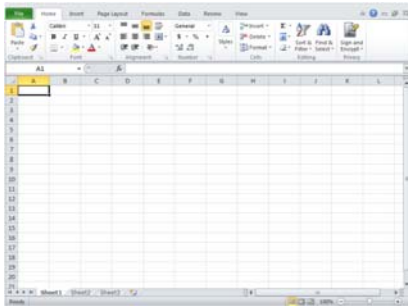
Crop Returns Calculator Assists With:

1. Calculating a farm's unit production costs
2. Calculating margins from expected prices
3. Adjusting crop mix to maximize returns
4. Determining the most appropriate land rental structures and rates
5. Determining profit based selling price targets
6. Benchmarking a farm's own costs

Crop Enterprise Break-Even and Return Spreadsheet

Variable Costs per Acre	Canola Rent	Canola-Share	Canola Own	Barley Rent	Barley Share	HRS Wheat	Peas	Other	Total
Seed	41.85	41.85	41.85	25.10	25.10	32.15	30.65	-	73,649.55
Fertilizer	109.40	109.40	109.40	81.30	81.30	77.70	77.70	-	196,550.70
Chemicals	29.25	29.25	29.25	28.30	28.30	33.60	28.30	-	62,286.50
Crop Insurance Premiums	23.47	23.47	23.47	7.95	7.95	9.79	11.66	-	34,068.41
Trucking & Marketing	7.80	7.80	7.80	11.95	11.95	13.10	14.95	-	21,580.00
Fuel, Oil & Lube	18.75	18.75	18.75	20.00	20.00	18.15	18.75	-	39,403.95
Irrigation Fuel & Power	-	-	-	-	-	-	-	-	-
Repairs - Machinery	13.60	13.60	13.60	13.10	13.10	13.10	13.10	-	27,832.50
Repairs-Buildings	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	2,085.00
Utilities & Misc	15.15	15.15	15.15	12.45	12.45	12.45	12.45	-	28,760.85
Custom work & Spec. labor	5.50	5.50	5.50	3.40	3.40	3.40	3.40	-	9,268.80
Operating Interest Paid	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	6,255.00
Paid Labor and Benefits	-	-	-	-	-	-	-	-	-
Unpaid labor	35.00	35.00	35.00	35.00	35.00	35.00	35.00	-	72,975.00
Total variable costs	303.77	258.02	303.77	242.55	206.38	252.44	249.96	-	574,716.26
Crop Share Arrangements									
Crop Share % Land Owner		33%			33%				
Fert & Chem % Land Owner		33%			33%				
Fixed Costs per Acre									
Cash Rent	45.00	-	-	45.00	-	45.00	-	-	47,205.00
Taxes, Water Rates etc.	-	-	5.00	-	-	5.00	5.00	-	4,430.00
Paid capital interest	17.02	17.02	17.02	17.02	17.02	17.02	17.02	-	35,486.70
Total Cash Fixed Costs	62.02	17.02	22.02	62.02	53.19	67.02	22.02	-	87,121.70
Other Enterprise Costs									
Depreciation	50.00	50.00	50.00	50.00	50.00	50.00	50.00	-	104,250.00
Other	-	-	-	-	-	-	-	-	-
Total Other Enterprise Costs	50.00	50.00	50.00	50.00	50.00	50.00	50.00	-	104,250.00
Total Expenses	415.79	325.04	375.79	354.57	309.57	369.46	321.98	-	766,087.96
Total Cash Expenses	330.79	240.04	290.79	269.57	224.57	284.46	236.98	-	588,862.96
Expected Value of Production									
Acres	310	433	295	306	150	433	158	-	2085
Price	13.00	13.00	13.00	5.00	5.00	7.50	8.00	-	
Yield	38.0	38.0	38.0	80.0	80.0	60.0	50.0	-	
Value of Production (\$/acre)	494.00	330.98	494.00	400.00	268.00	450.00	400.00	-	862,834.34
Contribution Margin	190.23	72.96	190.23	157.45	61.62	197.56	150.04	-	313,354.98
Gross Margin	163.21	90.94	203.21	130.43	43.43	165.54	163.02	-	293,783.08
Return to Equity and Management	78.21	5.94	118.21	45.43	(41.57)	80.54	78.02	-	116,558.08
Break-Even Selling Prices									
From Expected Contribution Margin	7.99	6.79	7.99	3.03	2.58	4.21	5.00	-	
To Cover All Costs (Ret to Eqty & Mgmt)	10.94	12.77	9.89	4.43	5.78	6.16	6.44	-	
Risk Sensitivity Table									
	UP	Down		UP	Down				
Percent Price Variance	10%	10%	Percent Yield Variance	10%	10%				
Higher Price	14.30	14.30	14.30	5.50	5.50	8.25	8.80	-	
Lower Price	11.70	11.70	11.70	4.50	4.50	6.75	7.20	-	
Higher Yield	41.8	41.8	41.8	88.0	88.0	66.0	55.0	-	
Lower Yield	34.2	34.2	34.2	72.0	72.0	54.0	45.0	-	
High Return to Equity and Management	181.95	75.45	221.95	129.43	14.71	175.04	162.02	-	297,753.29
Low Return to Equity and Management	(15.65)	(56.94)	24.35	(30.57)	(92.49)	(4.96)	2.02	-	(47,380.45)

Unique Features



- Easy to use **spread sheet format** with instructions



- Starting point for **Crop Choice\$**

Open Wheat and Barley **Markets...**



Unique Features

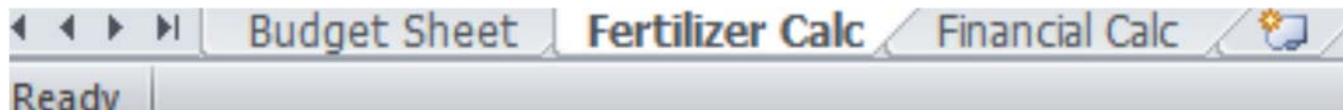
Contribution Margin
Gross Margin
Return to Equity and Management
Break-Even Selling Prices
From Expected Contribution Margin
To Cover All Costs (Ret to Eqty & Mgmt)
Risk Sensitivity Table
Percent Price Variance
Higher Price
Lower Price
Higher Yield
Lower Yield
High Return to Equity and Management
Low Return to Equity and Management

Sensitivity Analysis:

- Margin impact from changing yields and prices
- Impacts from cash rent versus crop share

Calculators for:

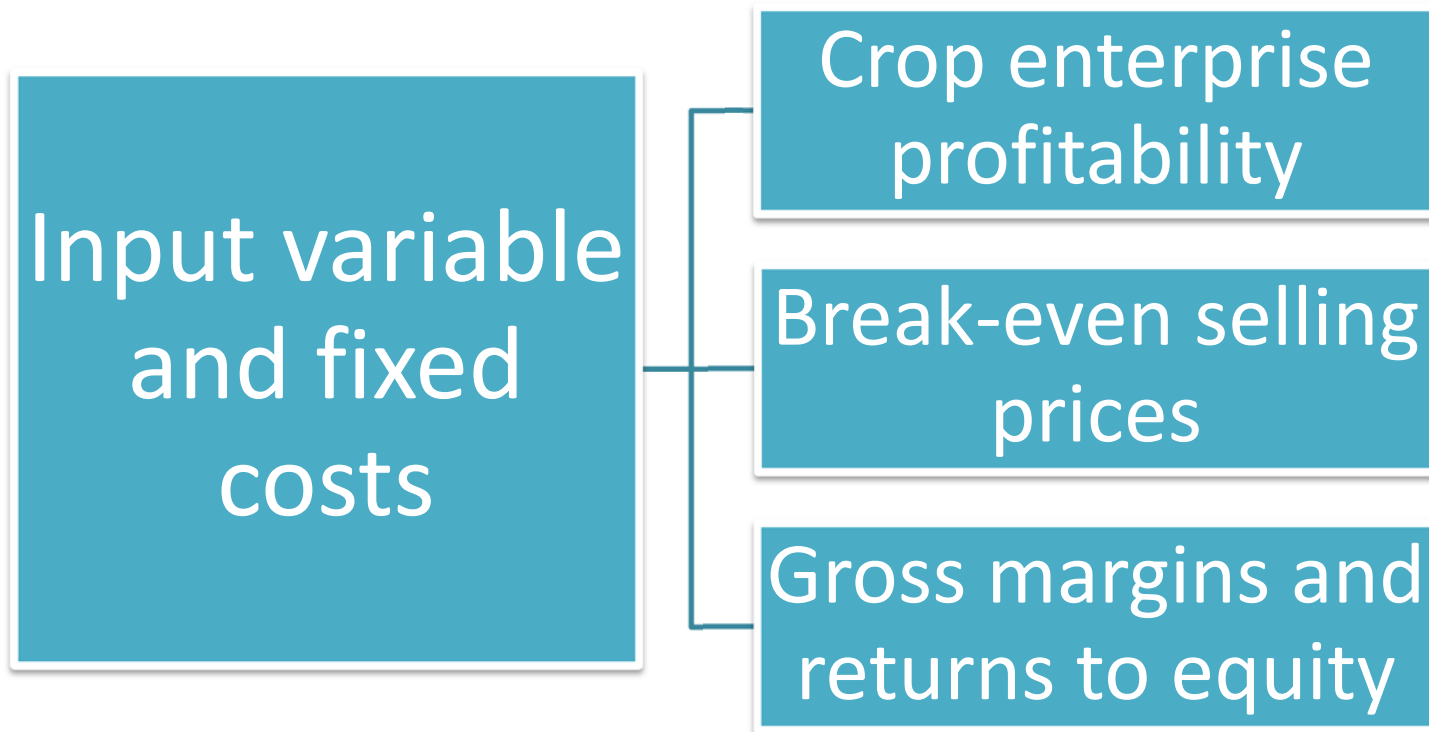
- Tweaking fertilizer costs
- Assessing impacts of additional loans



Open Wheat and Barley Markets...



How it Works



Open Wheat and Barley Markets...

Inputting Variable & Fixed Costs

Use example numbers

See how the program works

Quick useful results

Variable Costs per Acre

	Barley Rent	Barley Share
Seed	25.10	25.10
Fertilizer	81.30	81.30
Chemicals	28.30	28.30
Crop Insurance Premiums	7.95	7.95
Trucking & Marketing	11.95	11.95
Fuel, Oil & Lube	20.00	20.00
Irrigation Fuel & Power	-	-
Repairs - Machinery	13.10	13.10
Repairs-Buildings	1.00	1.00
Utilities & Misc	12.45	12.45
Custom work & Spec. labor	3.40	3.40
Operating Interest Paid	3.00	3.00
Paid Labor and Benefits		
Unpaid labor	35.00	35.00
	242.55	206.38

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Inputting your Numbers

Use your own numbers

Contribution Margin

Barley Rent Barley Share

157.45

61.62

Gross Margin

130.43

43.43

Return to Equity and Management

45.43

(41.57)

Calculate gross margins and contribution margins

Important for crop planning



Open Wheat and Barley Markets...

Inputting your Numbers



Can input any crop combination



Can input up to 8 different crops



Can input land owned and land rented

In our Example:

Canola Rent Canola-Share Canola Own Barley Rent Barley Share HRS Wheat Peas Other

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Additional Calculators

Fertilizer Cost Calculator

Table 1		Product Analysis				Result lbs /a	Select USED	Total Tonnes
Commodity	\$ / Tonne	N	P	K	S			
NH3	1100	82	0	0	0	-	0	215
Urea	650	46	0	0	0	189.6	1	0
11-51	803	11	51	0	0	76.5	1	87
Potash	628	0	0	60	0	33.3	1	38
Sulfur	451	21	0	0	24	20.8	1	24

Table 2	N	P	K	S		
Required lb/a	100	39	20	5	Acres	2500
Solved-for lb/acre	100	39	20	5	Cost per acre	\$97.51

Run the Solver to make the Solved-for lb/acre match the required lb /acre

Table 3 - Dry blend results					
Product	Urea	11-51	Potash	Sulfur	lbs/acre
Full Blend	59.2%	23.9%	10.4%	6.5%	320.2
P-K-S only Blend		58.5%	25.5%	15.9%	130.6

Click here to run
Solver



Additional Calculators

ACRES 2000

Capital Loan #1	
Loan	506,000
Interest rate	4.8%
Amortization	15
Years into Loan	2
Payment	\$48,092.40
Pmt/acre	\$24.05
Principle Payment	\$24,947.01
Principle per acre	\$12.47
Interest Payment	\$23,145.39
Interest pmt/acre	\$11.57

Depreciation Approximation	
Last year equipment value	500,000.00
Estimated Annual Rate (declining balar	15.00%
This year equipment value	425,000.00
Total Depreciation	75,000.00
Depreciation per acre	37.50

Notes on Depreciation:

- * Depreciating is **not** Amortization from your tax return.
- * Depreciation is the loss in value of the equipment from one year to the next.
- * Depreciation is not a cash cost but is an economic cost that can be included in the crop enterprise budget for calculating return to equity.

Note on principle Payments

- * Principle payments are not operating costs and should not be included in the crop margin and return calculations.
- * Principle payments imply a reduction in the liability side of the balance sheet which affects farm equity

Capital Loan #2	
Loan	199,000
Interest rate	6.2%
Amortization	5
Years into Loan	1
Payment	\$47,499.21
Pmt/acre	\$23.75
Principle Payment	\$35,161.21
Principle per acre	\$17.58
Interest Payment	\$12,338.00
Interest pmt/acre	\$6.17

Operating Loan Approximation	
Acres	2085
Loan per acre	96
Total Operating loan	200,160
Interest rate	6.0%
Interest Cost for full year	12,010
Percent of year borrowed	52%
Interest Cost (Total)	6,245
Interest (per /acre)	3.00

Crop Returns Calculator



Simple and easy to use!

- Instructions to explain calculation logic and guide user



Use this tool to calculate:

- Expected costs
- Returns and break-even



Better marketing and management decisions

Open Wheat and Barley Markets...

Case Scenario



2,085 Acres

- 1632 rented
 - 1049 Cash
 - 583 Crop share
- 453 owned

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Case Scenario

Assets

Cash	\$150,000
Inventory	\$250,000
Equipment	\$695,000
<u>Land & Bldg.</u>	<u>\$1,600,00</u>
Total Assets -	\$2,695,000

Liabilities

Operating Loan -	\$200,000
Equipment Loan -	\$199,000
<u>Land Loan -</u>	<u>\$506,000</u>
Total Liab. -	\$906,000

Net Worth - \$1,790,000

Variable Costs per Acre	Total
Seed	73,649.55
Fertilizer	196,550.70
Chemicals	62,286.50
Crop Insurance Premiums	34,068.41
Trucking & Marketing	21,580.00
Fuel, Oil & Lube	39,403.95
Irrigation Fuel & Power	-
Repairs - Machinery	27,832.50
Repairs-Buildings	2,085.00
Utilities & Misc	28,760.85
Custom work & Spec. labor	9,268.80
Operating Interest Paid	6,255.00
Paid Labor and Benefits	-
Unpaid labor	72,975.00
Total variable costs	574,716.26
Crop Share Arrangements	
Crop Share % Land Owner	
Fert & Chem % Land Owner	
Fixed Costs per Acre	
Cash Rent	47,205.00
Taxes, Water Rates etc.	4,430.00
Paid capital Interest	35,486.70
Total Cash Fixed Costs	87,121.70
Other Enterprise Costs	
Depreciation	104,250.00
Other	-
Total Other Enterprise Costs	104,250.00
Total Expenses	766,087.96
Total Cash Expenses	588,862.96

Expected Value of Production

Acres	2085
Price	
Yield	
Value of Production (\$/acre)	862,834.34

Contribution Margin	313,354.98
Gross Margin	293,783.08
Return to Equity and Management	116,558.08

Break-Even Selling Prices

From Expected Contribution Margin	
To Cover All Costs (Ret to Eqty & Mgmt)	

Risk Sensitivity Table

Percent Price Variance	
Higher Price	
Lower Price	
Higher Yield	
Lower Yield	
High Return to Equity and Management	297,753.29
Low Return to Equity and Management	(47,380.45)



Evaluate Crop Enterprise Profitability

	Canola Rent	Canola-Share	Canola Own	Barley Rent	Barley
Contribution Margin	190.23	72.96	190.23	157.45	61.62
Gross Margin	163.21	90.94	203.21	130.43	43.43
Return to Equity and Management	78.21	5.94	118.21	45.43	(41.57)

	HRS Wheat	Peas	Other	Total
Contribution Margin	197.56	150.04	-	313,354.98
Gross Margin	165.54	163.02	-	293,783.08
Return to Equity and Management	80.54	78.02	-	116,558.08

Open Wheat and Barley Markets...



Evaluate Break Even Selling Price

Break-Even Selling Prices	Canola Rent	Canola-Share	Canola Own	Barley Rent
From Expected Contribution Margin	7.99	6.79	7.99	3.03
To Cover All Costs (Ret to Eqty & Mgmt)	10.94	12.77	9.89	4.43

Break-Even Selling Prices	Rent Barley Share	HRS Wheat	Peas
From Expected Contribution Margin	2.58	4.21	5.00
To Cover All Costs (Ret to Eqty & Mgmt)	5.78	6.16	6.44

Open Wheat and Barley Markets...



Evaluate Gross Margins and Returns to Equity

	Canola Rent	Canola-Share	Canola Own
Gross Margin	163.21	90.94	203.21
Return to Equity and Management	78.21	5.94	118.21

	Barley Rent	Barley Share	HRS Wheat	Peas
Gross Margin	130.43	43.43	165.54	163.02
Return to Equity and Management	45.43	(41.57)	80.54	78.02

Open Wheat and Barley Markets...



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Crop Returns: information page

Crop Returns Spreadsheet – Crop Enterprise Analysis Tool

[What is Crop Returns?](#) | [Crop Returns Features](#) | [System requirements](#) | [Links](#) | [Feedback and Questions](#) | [Download Crop Returns](#)

Crop Returns – Downloadable Excel Spreadsheet Calculator

Crop Returns helps managers to evaluate crop enterprise profitability by calculating production costs, breakeven selling prices, gross margins, and returns to equity. It is available for free download from this web page.

What is Crop Returns?

Crop Returns is an excel spreadsheet template that calculates production costs, breakeven selling prices and expected financial returns for a grain farming enterprise. It also includes a unique and powerful fertilizer cost calculator that solves for least cost fertilizer commodities and commodity blends. The partial budget or crop enterprise model provides a framework for farmers to build a base scenario and then analyze that scenario with respect to different commodity prices or changes to production costs and expected yields. Expected profitability can be calculated using the producer's own production systems and risk sensitivity can be done using alternative price and yield scenarios.

Crop Returns Features

- Crop Returns incorporates your own production systems, and key variables such as fertilizer prices, fuel prices, expected yields, and selling prices.
- Crop Returns adds flexibility to the calculation process by allowing user inputs for operating cost items and expected production results. Breakeven selling prices contribution margin, gross margin and return to equity are some key results. All costs are shown in '\$ per acre' and 'total enterprise costs'.
- Crop Returns can assist in comparing the risks and returns from various cash rental and crop share lease arrangements.

Open Wheat and Barley Markets...

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Welcome to the Open Wheat and Barley Markets Home Page

On August 1, 2012, an Open Wheat and Barley Market became the new reality for Alberta wheat and barley growers. Alberta Agricultural and Rural Development is working to assist Alberta wheat and barley farmers in this transition, and wishes to assist these growers in making decisions to do the right things for their businesses and families. We will create awareness, provide information, knowledge and decision making tools to Alberta wheat and barley growers about the impact of the changes due to Marketing Freedom for Grain Farmer's Act. These changes will affect grain marketing and have a financial impact on their farms.

Marketing	Farm Finance	General Information
<ul style="list-style-type: none"> Crop Price Reports <ul style="list-style-type: none"> Grain prices Weekly crop market review Marketing Manual marketing information for grain, oilseeds and risk management Wheat Marketing highlights resources for wheat and durum markets, prices, protein and grading, contracts, marketing, and futures Barley Marketing highlights resources for barley markets, prices, quality, contracts, marketing, and futures Webinars 	<ul style="list-style-type: none"> Agricultural Investment Analysis AgriProfit\$ Crop Cost and Returns Profiles Agristability Program AgriWebinar The Risk Management Modules Bench Marking and Managing Risk Crop Insurance Programs Farm Business Management with High Prices Farm Management Canada Making Money – Profitability Managing Cash Flow – Liquidity Protecting Your Equity - Solvency Understand Financial Statements and Identify Sources of Farm Financial Risk 	<ul style="list-style-type: none"> Alberta Crop Report Canada-US Grain and Seed Trade Canadian International Grains Institute (CIGI) Commodity Marketing Fundamentals – FCC Webinar Contracts Exporting to the US Frequently Asked Questions Grain Contracts Grain Contracting Harvest Science Information for Grain Producers Marketing for Grain Farmers Marketing for Grain Producers New Canadian Wheat 2012 Producer Cars to ship Prairie Grain Wheat & Barley Check-Off
Up coming Events	Tools	Articles
<ul style="list-style-type: none"> You're Good. Want to be Better 9 a.m. – 3:30 p.m. Information sessions <ul style="list-style-type: none"> January 22 – Lethbridge January 23 – Bow Island January 24 – Strathmore February 5 – Spirit River February 7 – Westlock February 13 – Viking February 14 – Lacombe Call 1-800-987-6030 to Register Alberta Wheat Commission Meetings Alberta Barley Commission Meetings Alberta Canola Producer Commission Meetings Alberta Pulse Grower Commission Meetings 	<ul style="list-style-type: none"> ABA Simple Farm Ratio Analyzer Agricultural Business Analyzer AgriProfit\$ Business Analysis and Research Program AgProfit\$ Cropping Alternatives Cash Flow Analyzer Crop Returns Calculator CropChoice\$ Taking Stock – A Farm Business Planning Work Book 	<ul style="list-style-type: none"> Beware of Price Risk management Cash Flow Management and Planning Changes Made to CWB Producer Contract Processes Changes to Barley Classifications Cost of Production Helps Identify Business Strengths Forward Price or Not Grain Sale Costs Grain Storage and New Crop Returns Costs and Breaks Producer Cars and Open Market Entry Taking Advantage Thinking Strategic Risk Strategy Wheat Pricing Co

Tools

- [ABA Simple Farm Ratio Analyzer](#)
- [Agricultural Business Analyzer](#)
- [AgriProfit\\$ Business Analysis and Research Program](#)
- [AgProfit\\$ Cropping Alternatives](#)
- [Cash Flow Analyzer](#)
- [Crop Returns Calculator](#)
- [CropChoice\\$](#)
- [Taking Stock – A Farm Business Planning Work Book](#)

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Tools

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- [CropChoice\\$](#)
- [Taking Stock – A Farm Business Planning Work Book](#)

In the same section are other tools you may find useful

Next Steps

Review last year's costs and fine tune your production plan



Before and after harvest: set target selling prices



Save your analysis for reviewing next year



Consider applying your own costs into Crop Choice\$ software



Open Wheat and Barley Markets...





Open Wheat and Barley Markets... are you prepared?



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Government

Growing Forward 
A federal-provincial-territorial initiative