
2020 Cost and return benchmarks for crops and forages: brown soil zone

AgriProfit\$ business analysis and research program



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Overview

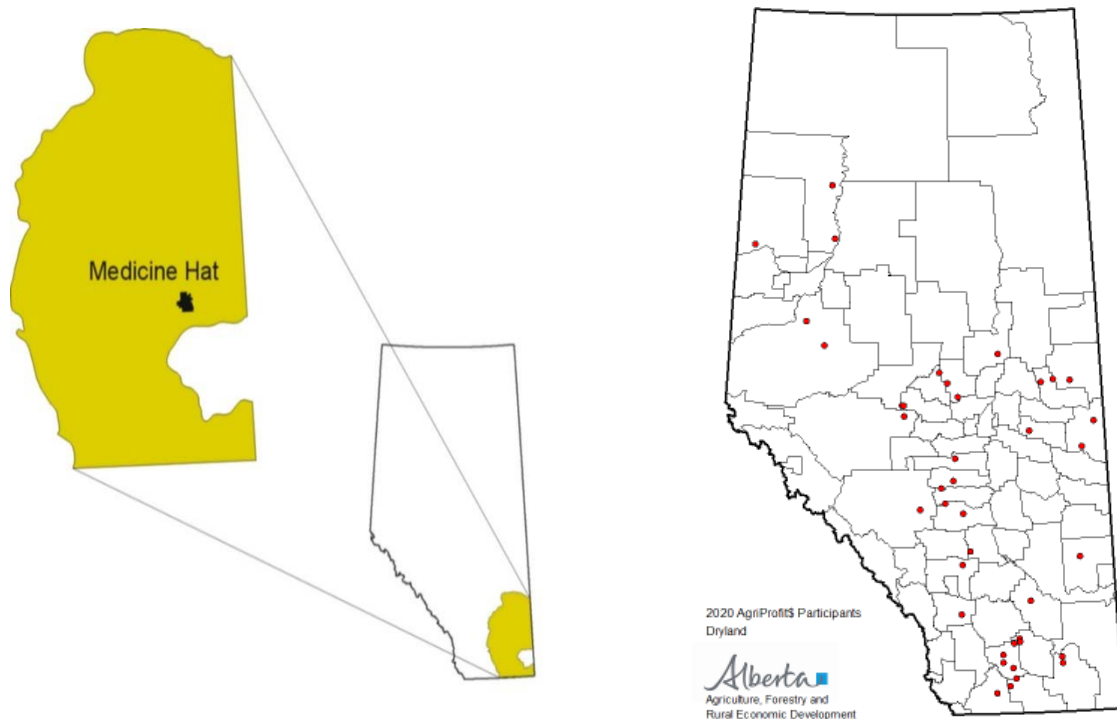
2020 Brown Soil Zone

The AgriProfit\$ Business Analysis and Research Program provides a provincial overview of costs and returns for field crops and forages. The Intergovernmental and Trade Relations Branch collects cost of production information annually from Alberta producers to generate regional and provincial benchmarks. Producer participants are critical to providing a financial representation of Alberta's cropping industry.

The AgriProfit\$ cropping benchmarks are analyzed by soil zone group, top third producers, and owned land versus rented land where available. Top third averages are calculated from fields that have the highest return to equity. Analyzing crops by owned versus rented also provides insight into differences in management.

Benchmarks allow for comparison of individual crop costs and returns to other farms in a similar production area. Benchmarks should not replace individual cropping and financial records. There is a danger of over or underestimating costs and returns if basing them on regional and provincial benchmarks and forecasts. Strategic planning is more effective when individual costs are used. Managing unit costs of production is one of the most significant strategies to ensure profitability in a mature commodity market.

The left map shows the Brown Soil Zones in Alberta. Please note that farms highlighted within these zones may contain characteristics of neighbouring soil zones. The map on the right shows the distribution of the dryland 2020 participants.



2020 Crops Enterprise Analysis

All Dryland Spring Wheat

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	411.60	510.67	7.46	7.80
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.00	.00	.00	.00
4. Government Program	.03	.02	.00	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	411.63	510.69	7.46	7.80
(B)				
1. Seed & Seed Cleaning	18.84	11.82	.34	.16
2. Fertilizer	56.45	65.99	1.02	.92
3. Chemicals	26.85	26.81	.49	.37
4. Hail / Crop Insurance & Program Premiums	10.10	14.42	.18	.20
5. Trucking & Marketing	3.42	2.08	.06	.03
6. Fuel	14.09	15.60	.26	.22
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	20.98	14.93	.38	.21
9. Repairs - Buildings	1.59	1.33	.03	.02
10. Utilities & Miscellaneous Expenses	10.88	8.35	.20	.12
11. Custom Work & Specialized Labour	.06	.00	.00	.00
12. Operating Interest Paid	8.20	10.59	.15	.15
13. Paid Labour & Benefits	26.06	14.57	.47	.20
14. Unpaid Labour	10.71	7.94	.19	.11
VARIABLE COSTS	208.22	194.42	3.77	2.71
(C)				
1. Cash/Share Rent & Land Lease	26.16	58.70	.47	.82
2. Taxes, Water Rates, Lic. & Insurance	5.88	5.07	.11	.07
3. Equipment & Buildings	25.51	29.44	.46	.41
a) Depreciation				
b) Lease Payments	13.21	.19	.24	.00
4. Paid Capital Interest	3.56	2.10	.06	.03
TOTAL CAPITAL COSTS	74.32	95.49	1.35	1.33
(D) CASH COSTS (B+C-B14-C3a)	246.32	252.53	4.47	3.51
(E) TOTAL PRODUCTION COSTS (B+C)	282.54	289.92	5.12	4.03
(F) GROSS MARGIN (A-D)	165.31	258.15	3.00	4.29
RETURN TO UNPAID LABOUR (A-E+B14)	139.80	228.71	2.53	3.88
RETURN TO INVESTMENT (A-E+C4)	132.66	222.87	2.41	3.80
RETURN TO EQUITY (A-E)	129.09	220.77	2.34	3.77
INVESTMENT				
Land	1,149.31	1673.99	20.84	29.38
Buildings	88.31	91.80	1.60	1.28
Machinery	242.57	265.29	4.40	3.69
Irr. Machinery	.00	.00	.00	.00
TOTAL	1,480.19	2,031.08	26.84	34.35
MANAGEMENT				
Yield Per Acre (Bushel)	55.16	65.47		
Expected Market Price Per Bushel	7.46	7.80		

2020 Crops Enterprise Analysis

Owned Dryland Spring Wheat

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	309.77	393.67	7.22	8.00
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.00	.00	.00	.00
4. Government Program	.05	.06	.00	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	309.82	393.73	7.22	8.00
(B)				
1. Seed & Seed Cleaning	18.85	11.42	.44	.23
2. Fertilizer	50.71	43.65	1.18	.89
3. Chemicals	27.14	28.61	.63	.58
4. Hail / Crop Insurance & Program Premiums	6.12	10.43	.14	.21
5. Trucking & Marketing	5.54	5.78	.13	.12
6. Fuel	11.04	11.43	.26	.23
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	17.73	19.74	.41	.40
9. Repairs - Buildings	2.59	2.71	.06	.06
10. Utilities & Miscellaneous Expenses	9.68	10.58	.23	.21
11. Custom Work & Specialized Labour	.00	.00	.00	.00
12. Operating Interest Paid	5.26	1.27	.12	.03
13. Paid Labour & Benefits	12.79	16.13	.30	.33
14. Unpaid Labour	11.94	13.97	.28	.28
VARIABLE COSTS	179.41	175.73	4.18	3.57
(C)				
1. Cash/Share Rent & Land Lease	.00	.00	.00	.00
2. Taxes, Water Rates, Lic. & Insurance	6.49	6.49	.15	.13
3. Equipment & Buildings	33.36	36.93	.78	.75
a) Depreciation				
b) Lease Payments	.61	.62	.01	.01
4. Paid Capital Interest	6.77	6.78	.16	.14
TOTAL CAPITAL COSTS	47.23	50.82	1.10	1.03
(D) CASH COSTS (B+C-B14-C3a)	181.34	175.63	4.23	3.57
(E) TOTAL PRODUCTION COSTS (B+C)	226.64	226.54	5.28	4.60
(F) GROSS MARGIN (A-D)	128.49	218.10	2.99	4.43
RETURN TO UNPAID LABOUR (A-E+B14)	95.12	181.16	2.22	3.68
RETURN TO INVESTMENT (A-E+C4)	89.95	173.97	2.10	3.53
RETURN TO EQUITY (A-E)	83.18	167.19	1.94	3.40
INVESTMENT				
Land	2,197.94	2,178.07	51.22	44.24
Buildings	117.94	119.00	2.75	2.42
Machinery	308.17	349.38	7.18	7.10
Irr. Machinery	.00	.00	.00	.00
TOTAL	2,624.06	2,646.45	61.15	53.75
MANAGEMENT				
Yield Per Acre (Bushel)	42.91	49.23		
Expected Market Price Per Bushel	7.22	8.00		

2020 Crops Enterprise Analysis

All Dryland Winter Wheat

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	492.81	564.77	7.22	6.96
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.00	.00	.00	.00
4. Government Program	5.80	.00	.08	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	498.60	564.77	7.30	6.96
(B)				
1. Seed & Seed Cleaning	27.65	15.38	.40	.14
2. Fertilizer	21.68	49.92	.32	.45
3. Chemicals	39.02	18.62	.57	.17
4. Hail / Crop Insurance & Program Premiums	17.84	18.65	.26	.17
5. Trucking & Marketing	3.97	.00	.06	.00
6. Fuel	13.35	4.01	.20	.04
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	19.93	29.65	.29	.27
9. Repairs - Buildings	2.23	8.39	.03	.08
10. Utilities & Miscellaneous Expenses	15.12	22.63	.22	.21
11. Custom Work & Specialized Labour	.00	.00	.00	.00
12. Operating Interest Paid	5.05	10.17	.07	.09
13. Paid Labour & Benefits	19.51	18.32	.29	.17
14. Unpaid Labour	15.92	22.32	.23	.20
VARIABLE COSTS	201.27	218.08	2.95	1.99
(C)				
1. Cash/Share Rent & Land Lease	.00	.00	.00	.00
2. Taxes, Water Rates, Lic. & Insurance	12.01	21.63	.18	.20
3. Equipment & Buildings	50.06	69.50	.73	.63
a) Depreciation	.72	.00	.01	.00
b) Lease Payments	.00	.00	.00	.00
4. Paid Capital Interest	37.54	.00	.55	.00
TOTAL CAPITAL COSTS	100.33	91.14	1.47	.83
(D) CASH COSTS (B+C-B14-C3a)	235.62	217.39	3.45	1.98
(E) TOTAL PRODUCTION COSTS (B+C)	301.60	309.21	4.42	2.81
(F) GROSS MARGIN (A-D)	262.98	347.38	3.85	4.98
RETURN TO UNPAID LABOUR (A-E+B14)	212.92	277.88	3.12	4.35
RETURN TO INVESTMENT (A-E+C4)	234.54	255.55	3.43	4.15
RETURN TO EQUITY (A-E)	197.00	255.55	2.88	4.15
INVESTMENT				
Land	3,786.03	4,800.00	55.44	43.70
Buildings	156.44	367.68	2.29	3.35
Machinery	464.80	542.21	6.81	4.94
Irr. Machinery	.00	.00	.00	.00
TOTAL	4,407.27	5,709.89	64.54	51.98
MANAGEMENT				
Yield Per Acre (Bushel)	68.29	81.15		
Expected Market Price Per Bushel	7.22	6.96		

2020 Crops Enterprise Analysis

All Dryland Feed Barley

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	428.49	538.00	5.28	5.50
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.00	.00	.00	.00
4. Government Program	.00	.00	.00	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	428.49	538.00	5.28	5.50
(B)				
1. Seed & Seed Cleaning	11.56	9.00	.12	.08
2. Fertilizer	54.29	35.00	.54	.30
3. Chemicals	30.68	25.35	.31	.22
4. Hail / Crop Insurance & Program Premiums	13.88	22.10	.14	.19
5. Trucking & Marketing	.45	.00	.00	.00
6. Fuel	12.38	14.30	.12	.12
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	17.96	11.57	.18	.10
9. Repairs - Buildings	2.97	4.29	.03	.04
10. Utilities & Miscellaneous Expenses	10.22	11.67	.10	.10
11. Custom Work & Specialized Labour	.00	.00	.00	.00
12. Operating Interest Paid	4.42	5.55	.04	.05
13. Paid Labour & Benefits	17.62	4.53	.18	.04
14. Unpaid Labour	14.40	15.99	.14	.14
VARIABLE COSTS	190.81	159.36	1.90	1.37
(C)				
1. Cash/Share Rent & Land Lease	.00	.00	.00	.00
2. Taxes, Water Rates, Lic. & Insurance	10.03	12.72	.10	.11
3. Equipment & Buildings	40.83	22.46	.41	.19
a) Depreciation				
b) Lease Payments	.00	.00	.00	.00
4. Paid Capital Interest	.00	.00	.00	.00
TOTAL CAPITAL COSTS	50.86	35.18	.51	.30
(D) CASH COSTS (B+C-B14-C3a)	186.44	156.09	1.86	1.35
(E) TOTAL PRODUCTION COSTS (B+C)	241.67	194.53	2.41	1.68
(F) GROSS MARGIN (A-D)	242.05	381.91	3.41	4.15
RETURN TO UNPAID LABOUR (A-E+B14)	201.22	359.46	3.01	3.96
RETURN TO INVESTMENT (A-E+C4)	186.82	343.47	2.86	3.82
RETURN TO EQUITY (A-E)	186.82	343.47	2.86	3.82
INVESTMENT				
Land	4,454.95	4,800.00	44.47	41.38
Buildings	99.49	113.21	.99	.98
Machinery	391.07	184.11	3.90	1.59
Irr. Machinery	.00	.00	.00	.00
TOTAL	4,945.50	5,097.31	49.37	43.94
MANAGEMENT				
Yield Per Acre (Bushel)	81.15	97.81		
Expected Market Price Per Bushel	5.28	5.50		

2020 Crops Enterprise Analysis

All Dryland Flax

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	361.46	407.50	14.69	16.30
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.87	.00	.04	.00
4. Government Program	10.94	.00	.44	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	373.27	407.50	15.17	16.30
(B)				
1. Seed & Seed Cleaning	27.91	20.00	1.13	.80
2. Fertilizer	21.29	70.00	.87	2.80
3. Chemicals	14.42	20.00	.59	.80
4. Hail / Crop Insurance & Program Premiums	29.42	26.00	1.20	1.04
5. Trucking & Marketing	2.67	.43	.11	.02
6. Fuel	14.43	17.46	.59	.70
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	15.03	12.78	.61	.51
9. Repairs - Buildings	.64	.71	.03	.03
10. Utilities & Miscellaneous Expenses	34.31	7.35	1.39	.29
11. Custom Work & Specialized Labour	.00	.00	.00	.00
12. Operating Interest Paid	6.22	14.77	.25	.59
13. Paid Labour & Benefits	19.28	13.87	.78	.55
14. Unpaid Labour	12.39	5.24	.50	.21
VARIABLE COSTS	198.01	208.60	8.05	8.34
(C)				
1. Cash/Share Rent & Land Lease	.00	.00	.00	.00
2. Taxes, Water Rates, Lic. & Insurance	10.66	11.20	.43	.45
3. Equipment & Buildings	43.92	26.08	1.79	1.04
a) Depreciation				
b) Lease Payments	.21	.00	.01	.00
4. Paid Capital Interest	31.21	.00	1.27	.00
TOTAL CAPITAL COSTS	86.00	37.28	3.50	1.49
(D) CASH COSTS (B+C-B14-C3a)	227.70	214.56	9.25	8.58
(E) TOTAL PRODUCTION COSTS (B+C)	284.02	245.88	11.54	9.84
(F) GROSS MARGIN (A-D)	145.57	192.94	5.92	7.72
RETURN TO UNPAID LABOUR (A-E+B14)	101.64	166.86	4.13	6.67
RETURN TO INVESTMENT (A-E+C4)	120.46	161.62	4.90	6.46
RETURN TO EQUITY (A-E)	89.26	161.62	3.63	6.46
INVESTMENT				
Land	4,300.00	4,300.00	174.76	172.00
Buildings	93.97	79.61	3.82	3.18
Machinery	424.97	227.61	17.27	9.10
Irr. Machinery	.00	.00	.00	.00
TOTAL	4,818.94	4,607.22	195.85	184.29
MANAGEMENT				
Yield Per Acre (Bushel)	24.61	25.00		
Expected Market Price Per Bushel	14.69	16.30		

2020 Crops Enterprise Analysis

All Dryland Liberty Link Canola

(A)	Average \$/Acres	Top 1/3	Average \$/Bushel	Top 1/3
1. Crop Sales	682.59	754.00	12.45	13.00
2. Crop Insurance Receipts	.00	.00	.00	.00
3. Miscellaneous Receipts	.01	.00	.00	.00
4. Government Program	.04	.00	.00	.00
5. Additional Revenue from Straw / Aftermath Grazing	.00	.00	.00	.00
GROSS RETURN	682.64	754.00	12.45	13.00
(B)				
1. Seed & Seed Cleaning	85.78	70.00	1.57	1.21
2. Fertilizer	127.72	76.00	2.33	1.31
3. Chemicals	44.36	61.18	.81	1.05
4. Hail / Crop Insurance & Program Premiums	11.40	35.00	.21	.60
5. Trucking & Marketing	.16	.00	.00	.00
6. Fuel	13.61	8.65	.25	.15
7. Irrigation Fuel & Electricity	.00	.00	.00	.00
8. Repairs - Machine	16.83	22.71	.31	.39
9. Repairs - Buildings	3.65	7.51	.07	.13
10. Utilities & Miscellaneous Expenses	8.62	11.44	.16	.20
11. Custom Work & Specialized Labour	.00	.00	.00	.00
12. Operating Interest Paid	10.46	27.76	.19	.48
13. Paid Labour & Benefits	17.79	4.92	.32	.08
14. Unpaid Labour	6.37	6.72	.12	.12
VARIABLE COSTS	346.75	331.89	6.33	5.72
(C)				
1. Cash/Share Rent & Land Lease	.49	.00	.01	.00
2. Taxes, Water Rates, Lic. & Insurance	8.58	7.91	.16	.14
3. Equipment & Buildings	47.14	38.62	.86	.67
a) Depreciation				
b) Lease Payments	.00	.00	.00	.00
4. Paid Capital Interest	.00	.00	.00	.00
TOTAL CAPITAL COSTS	56.21	46.54	1.03	.80
(D) CASH COSTS (B+C-B14-C3a)	349.45	333.08	6.38	5.74
(E) TOTAL PRODUCTION COSTS (B+C)	402.96	378.43	7.35	6.52
(F) GROSS MARGIN (A-D)	333.19	420.92	6.08	7.26
RETURN TO UNPAID LABOUR (A-E+B14)	286.05	382.29	5.22	6.59
RETURN TO INVESTMENT (A-E+C4)	279.68	375.57	5.10	6.48
RETURN TO EQUITY (A-E)	279.68	375.57	5.10	6.48
INVESTMENT				
Land	4,487.14	4,800.00	81.86	82.76
Buildings	100.08	107.49	1.83	1.85
Machinery	461.71	366.78	8.42	6.32
Irr. Machinery	.00	.00	.00	.00
TOTAL	5,048.93	5,274.27	92.11	90.94
MANAGEMENT				
Yield Per Acre (Bushel)	54.81	58.00		
Expected Market Price Per Bushel	12.45	13.00		

Definitions & Explanations to Accompany the Crop and Forages Enterprise Overview

I INCOME

- A Imputed Value of Production** – total of estimated yields/acre x estimated final prices
- B Crop Insurance Receipts** – added regardless of when payment is received
- C Miscellaneous Receipts** – such as patronage dividends or input rebates
- D Government Program Receipts** – allocated to all cropped acres equally
- E Straw/Aftermath Grazing Revenue** – value of straw + imputed value of grazing

II EXPENSES

- A Crop Specific Inputs** – allocated by producer to each crop as documented on the survey form
 1. **Seed**
 2. **Fertilizer**
 3. **Chemical**
 4. **Hail and Crop Insurance**
 5. **Custom Work and Specialized Labour**
 6. **Land Rent** – cash rent or crop share (converted to a cash basis)
- B Allocated Crop Inputs** – allocation ratios based on research from AFRED
 1. **Trucking and Marketing** – allocated to specific cropping acres by producer
 2. **Fuel** – Summer fallow – allocation of 0.3:1 compared to crop acres; Sugar beets – allocation of 2.96:1 compared to other irrigated crop acres
 3. **Irrigation Fuel** – allocation based on total pumping hours for each crop
 4. **Machinery Repairs** – allocated equally to all acres except summer fallow (0.3:1) and special crops (as specified by producer)
 5. **Building Repairs** – allocated to all acres equally except for special crops buildings
 6. **Operating Interest** – interest paid on operating loans allocated equally
 7. **Paid Labour** – based on allocations between crops as specified by producer
 8. **Unpaid and Operator Labour** – operator - \$10/hour, other unpaid labour - \$7.50/hour
 9. **Land Taxes** – allocated equally to all owned cropped acres
 10. **Water Rates** – allocated equally to all owned irrigated acres
 11. **Equipment Depreciation** – imputed at 8.5% for power equipment, 11% for non-power, based on current market value
 12. **Insurance and Licenses** – allocated to all cropped acres equally
 13. **Building Depreciation** – imputed at 5% on the current market value
 14. **Paid Capital Interest** – allocated to all owned cropped acres equally except summer fallow (0.25:1)

III CAPITAL INVESTMENT

- A Land** – producer estimate of bare land value for both irrigated and dryland owned acreage
- B Buildings** – allocated equally to all acreage except special crops buildings (allocated to the crop)
- C Equipment**
 1. **General Use** – allocated to all acres equally, except summer fallow (0.3:1)
 2. **Crop Specific** – allocated by producer to each crop based on percentage of use
 3. **Irrigation** – allocated according to pumping hours as specified by producer

IV SUMMARY CALCULATION

- A Gross Return** = imputed value of production + crop insurance receipts + miscellaneous receipts + government program payments + straw/grazing revenue
- B Variable Costs** = seed + fertilizer + chemicals + crop insurance + trucking and marketing + fuel + machinery and building repairs + utilities + miscellaneous overhead + custom work + operating interest + paid and unpaid labour
- C Total Capital Costs** = land rent + land taxes + water rates + insurance + depreciation + paid capital interest
- D Cash Costs** = variable costs + capital costs – unpaid labour – depreciation
- E Total Production Costs** = variable costs + total capital costs
- F Gross Margin** (returns left to cover total capital costs and operator equity) = gross return – total cash costs
- G Return to Unpaid Labour** (funds remaining after all expenses have been paid except unpaid labour) = gross return – (total production costs – unpaid labour)
- H Return to Investment** (shows the operation's ability to earn a return on its total assets) = gross return – (total production costs – paid capital interest)
- I Return to Equity** (amount remaining from operations used to provide a return to individual or shareholder equity) = gross return – total production costs