

*AgriProfit\$*

**2012**

**Cost and Return Benchmarks  
for Crops and Forages**

**Irrigated Soil Zone**

*Alberta*   
Government



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# OVERVIEW

## 2012 Irrigated Soil Zone

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

*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 risk of over or underestimating costs and returns if basing them on regional 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.

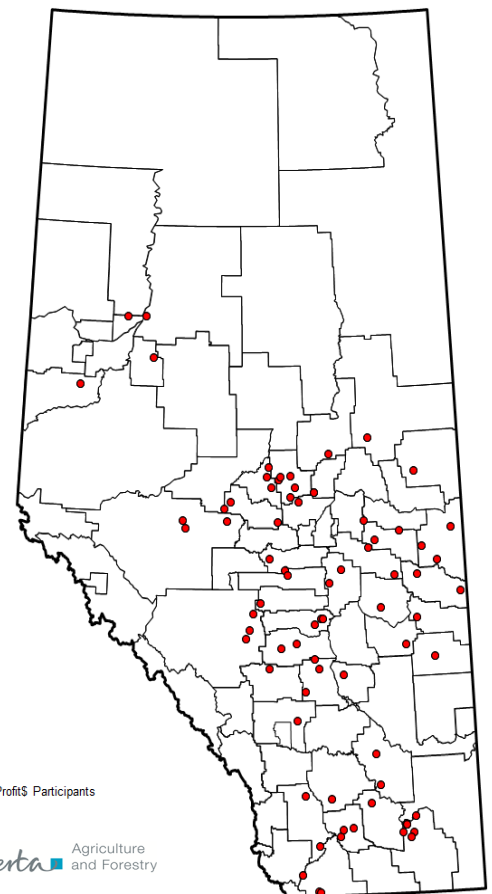
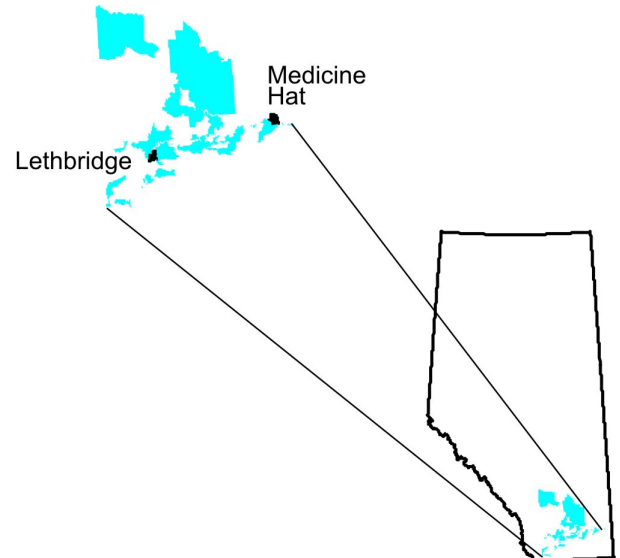
The top map shows the Irrigated Soil Zone in Alberta; this is the grouping method used for this study. Please note that farms highlighted within these zones may contain characteristics of neighbouring soil zones. The map on the bottom shows the distribution of the 2012 participants.

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2012 AgriProfit\$ Participants

Alberta Agriculture and Forestry

## 2012 Crop Enterprise Analysis

*AgriProfit\$*

**Crop:** Spring Wheat - All  
**Soil Zone:** All - Irrigated  
**Unit:** Bushel

		----- \$/Acre -----		---- \$/Bushel ----		
		Average	Top 1/3	Average	Top 1/3	
<b>(A)</b>	1. Crop Sales	451.21	--	7.89	--	
	2. Crop Insurance Receipts	180.14	--	3.15	--	
	3. Other Receipts	13.09	--	0.23	--	
	<b>Gross Receipts</b>	<b>644.44</b>	<b>0.00</b>	<b>11.26</b>	<b>0.00</b>	
<b>(B)</b>	<b>Cost Items</b>					
	1. Seed	24.12	--	0.42	--	
	2. Fertilizer	110.03	--	1.92	--	
	3. Chemical	35.62	--	0.62	--	
	4. Hail/Crop Insurance Premium	25.69	--	0.45	--	
	5. Trucking and Marketing	59.47	--	1.04	--	
	6. Fuel	34.11	--	0.60	--	
	7. Irrigation Fuel and Electricity	16.80	--	0.29	--	
	8. Repairs - Machinery	62.32	--	1.09	--	
	9. Repairs - Buildings	5.75	--	0.10	--	
	10. Utilities and Miscellaneous	28.23	--	0.49	--	
	11. Custom Work	18.47	--	0.32	--	
	12. Operating Interest Paid	0.64	--	0.01	--	
	13. Paid Labour	5.09	--	0.09	--	
	14. Unpaid Labour	16.50	--	0.29	--	
	<b>Variable Costs</b>	<b>442.84</b>	<b>0.00</b>	<b>7.74</b>	<b>0.00</b>	
<b>(C)</b>	1. Cash/ Share Land Rent	118.01	--	2.06	--	
	2. Taxes, Water Rates, License & Ins.	16.40	--	0.29	--	
	3. Equipment and Building:	a) Depreciation	75.72	--	1.32	--
		b) Lease Payments	5.41	--	0.09	--
	4. Paid Capital Interest	3.20	--	0.06	--	
	<b>Capital Costs</b>	<b>218.75</b>	<b>0.00</b>	<b>3.82</b>	<b>0.00</b>	
<b>(D)</b>	<b>Cash Costs</b>	<b>569.36</b>	--	<b>9.95</b>	--	
<b>(E)</b>	<b>Total Production Costs</b>	<b>661.58</b>	--	<b>11.56</b>	--	
	<b>Gross Margin</b>	<b>75.08</b>	--	<b>1.31</b>	--	
	<b>Return to Unpaid Labour</b>	<b>(0.64)</b>	--	<b>(0.01)</b>	--	
	<b>Return to Investment</b>	<b>(13.95)</b>	--	<b>(0.24)</b>	--	
	<b>Return to Equity</b>	<b>(17.14)</b>	--	<b>(0.30)</b>	--	

**Investment**

Buildings	302.58	--
Machinery	416.14	--
Irrigation Machinery	290.79	--
<b>Total (incl. Land)</b>	<b>3050.23</b>	--

**Management**

Average Yield	(Bushel/acre)	57.21	--
Expected Market Price	(\$/Bushel)	7.89	--

## 2012 Crop Enterprise Analysis

*AgriProfit\$*

**Crop:**        *Soft Wheat - All*  
**Soil Zone:** *All - Irrigated*  
**Unit:**        *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----		
		Average	Top 1/3	Average	Top 1/3	
<b>(A)</b>	1. Crop Sales	749.58	--	7.86	--	
	2. Crop Insurance Receipts	72.09	--	0.76	--	
	3. Other Receipts	282.78	--	2.97	--	
	<b>Gross Receipts</b>	<b>1104.45</b>	<b>0.00</b>	<b>11.58</b>	<b>0.00</b>	
<b>(B)</b>	<b>Cost Items</b>					
	1. Seed	22.79	--	0.24	--	
	2. Fertilizer	84.91	--	0.89	--	
	3. Chemical	32.24	--	0.34	--	
	4. Hail/Crop Insurance Premium	28.78	--	0.30	--	
	5. Trucking and Marketing	0.00	--	0.00	--	
	6. Fuel	23.98	--	0.25	--	
	7. Irrigation Fuel and Electricity	4.79	--	0.05	--	
	8. Repairs - Machinery	32.15	--	0.34	--	
	9. Repairs - Buildings	12.04	--	0.13	--	
	10. Utilities and Miscellaneous	32.79	--	0.34	--	
	11. Custom Work	51.52	--	0.54	--	
	12. Operating Interest Paid	0.00	--	0.00	--	
	13. Paid Labour	10.90	--	0.11	--	
	14. Unpaid Labour	18.40	--	0.19	--	
<b>Variable Costs</b>	<b>355.28</b>	<b>0.00</b>	<b>3.73</b>	<b>0.00</b>		
<b>(C)</b>	1. Cash/ Share Land Rent	155.66	--	1.63	--	
	2. Taxes, Water Rates, License & Ins.	16.89	--	0.18	--	
	3. Equipment and Building:	a) Depreciation	49.08	--	0.51	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	10.32	--	0.11	--	
<b>Capital Costs</b>	<b>231.94</b>	<b>0.00</b>	<b>2.43</b>	<b>0.00</b>		
<b>(D)</b>	<b>Cash Costs</b>	<b>(B+C-B14-C3a)</b>	<b>519.75</b>	<b>--</b>	<b>5.45</b>	<b>--</b>
<b>(E)</b>	<b>Total Production Costs</b>	<b>(B+C)</b>	<b>587.22</b>	<b>--</b>	<b>6.16</b>	<b>--</b>
	<b>Gross Margin</b>	<b>(A-D)</b>	<b>584.70</b>	<b>--</b>	<b>6.13</b>	<b>--</b>
	<b>Return to Unpaid Labour</b>	<b>(A-E+B14)</b>	<b>535.63</b>	<b>--</b>	<b>5.62</b>	<b>--</b>
	<b>Return to Investment</b>	<b>(A-E+C4)</b>	<b>527.55</b>	<b>--</b>	<b>5.53</b>	<b>--</b>
	<b>Return to Equity</b>	<b>(A-E)</b>	<b>517.23</b>	<b>--</b>	<b>5.42</b>	<b>--</b>

**Investment**

Buildings	237.16	--
Machinery	298.15	--
Irrigation Machinery	133.93	--
<b>Total (incl. Land)</b>	<b>2014.07</b>	<b>--</b>

**Management**

Average Yield	(Bushel/acre)	95.37	--
Expected Market Price	(\$/Bushel)	7.86	--

## 2012 Crop Enterprise Analysis

*AgriProfit\$*

**Crop:**        *Soft Wheat - Rent*  
**Soil Zone:** *All - Irrigated*  
**Unit:**        *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----	
		Average	Top 1/3	Average	Top 1/3
<b>(A)</b>	1. Crop Sales	722.25	--	7.80	--
	2. Crop Insurance Receipts	92.91	--	1.00	--
	3. Other Receipts	269.89	--	2.91	--
	<b>Gross Receipts</b>	<b>1085.05</b>	<b>0.00</b>	<b>11.72</b>	<b>0.00</b>
<b>(B)</b>	<b>Cost Items</b>				
	1. Seed	22.29	--	0.24	--
	2. Fertilizer	100.77	--	1.09	--
	3. Chemical	30.73	--	0.33	--
	4. Hail/Crop Insurance Premium	29.36	--	0.32	--
	5. Trucking and Marketing	0.00	--	0.00	--
	6. Fuel	23.98	--	0.26	--
	7. Irrigation Fuel and Electricity	4.74	--	0.05	--
	8. Repairs - Machinery	32.15	--	0.35	--
	9. Repairs - Buildings	12.04	--	0.13	--
	10. Utilities and Miscellaneous	32.79	--	0.35	--
	11. Custom Work	51.41	--	0.56	--
	12. Operating Interest Paid	0.00	--	0.00	--
	13. Paid Labour	10.90	--	0.12	--
	14. Unpaid Labour	18.40	--	0.20	--
	<b>Variable Costs</b>	<b>369.56</b>	<b>0.00</b>	<b>3.99</b>	<b>0.00</b>
<b>(C)</b>	1. Cash/ Share Land Rent	200.63	--	2.17	--
	2. Taxes, Water Rates, License & Ins.	6.66	--	0.07	--
	3. Equipment and Building: a) Depreciation	38.27	--	0.41	--
	b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	1.76	--	0.02	--
	<b>Capital Costs</b>	<b>247.31</b>	<b>0.00</b>	<b>2.67</b>	<b>0.00</b>
<b>(D)</b>	<b>Cash Costs (B+C-B14-C3a)</b>	<b>560.20</b>	<b>--</b>	<b>6.05</b>	<b>--</b>
<b>(E)</b>	<b>Total Production Costs (B+C)</b>	<b>616.87</b>	<b>--</b>	<b>6.66</b>	<b>--</b>
	<b>Gross Margin (A-D)</b>	<b>524.85</b>	<b>--</b>	<b>5.67</b>	<b>--</b>
	<b>Return to Unpaid Labour (A-E+B14)</b>	<b>486.58</b>	<b>--</b>	<b>5.26</b>	<b>--</b>
	<b>Return to Investment (A-E+C4)</b>	<b>469.94</b>	<b>--</b>	<b>5.08</b>	<b>--</b>
	<b>Return to Equity (A-E)</b>	<b>468.18</b>	<b>--</b>	<b>5.06</b>	<b>--</b>

**Investment**

Buildings	237.16	--
Machinery	298.15	--
Irrigation Machinery	0.00	--
<b>Total (incl. Land)</b>	<b>535.32</b>	<b>--</b>

**Management**

Average Yield (Bushel/acre)	92.59	--
Expected Market Price (\$/Bushel)	7.80	--

## 2012 Crop Enterprise Analysis

*AgriProfit\$*

**Crop:** Sugar Beets - All  
**Soil Zone:** All - Irrigated  
**Unit:** Tonne

		----- \$/Acre -----		----- \$/Tonne -----		
		Average	Top 1/3	Average	Top 1/3	
<b>(A)</b>	1. Crop Sales	1578.04	--	55.10	--	
	2. Crop Insurance Receipts	24.70	--	0.86	--	
	3. Other Receipts	0.22	--	0.01	--	
	<b>Gross Receipts</b>	<b>1602.97</b>	<b>0.00</b>	<b>55.97</b>	<b>0.00</b>	
<b>(B)</b>	<b>Cost Items</b>					
	1. Seed	144.97	--	5.06	--	
	2. Fertilizer	88.00	--	3.07	--	
	3. Chemical	12.72	--	0.44	--	
	4. Hail/Crop Insurance Premium	59.01	--	2.06	--	
	5. Trucking and Marketing	114.41	--	3.99	--	
	6. Fuel	56.44	--	1.97	--	
	7. Irrigation Fuel and Electricity	29.37	--	1.03	--	
	8. Repairs - Machinery	85.33	--	2.98	--	
	9. Repairs - Buildings	10.95	--	0.38	--	
	10. Utilities and Miscellaneous	50.89	--	1.78	--	
	11. Custom Work	82.61	--	2.88	--	
	12. Operating Interest Paid	1.23	--	0.04	--	
	13. Paid Labour	37.50	--	1.31	--	
	14. Unpaid Labour	44.06	--	1.54	--	
<b>Variable Costs</b>	<b>817.49</b>	<b>0.00</b>	<b>28.54</b>	<b>0.00</b>		
<b>(C)</b>	1. Cash/ Share Land Rent	105.93	--	3.70	--	
	2. Taxes, Water Rates, License & Ins.	30.00	--	1.05	--	
	3. Equipment and Building:	a) Depreciation	116.19	--	4.06	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	17.90	--	0.63	--	
<b>Capital Costs</b>	<b>270.02</b>	<b>0.00</b>	<b>9.43</b>	<b>0.00</b>		
<b>(D)</b>	<b>Cash Costs</b>	<b>(B+C-B14-C3a)</b>	<b>927.26</b>	<b>--</b>	<b>32.38</b>	<b>--</b>
<b>(E)</b>	<b>Total Production Costs</b>	<b>(B+C)</b>	<b>1087.51</b>	<b>--</b>	<b>37.97</b>	<b>--</b>
	<b>Gross Margin</b>	<b>(A-D)</b>	<b>675.71</b>	<b>--</b>	<b>23.59</b>	<b>--</b>
	<b>Return to Unpaid Labour</b>	<b>(A-E+B14)</b>	<b>559.52</b>	<b>--</b>	<b>19.54</b>	<b>--</b>
	<b>Return to Investment</b>	<b>(A-E+C4)</b>	<b>533.36</b>	<b>--</b>	<b>18.62</b>	<b>--</b>
	<b>Return to Equity</b>	<b>(A-E)</b>	<b>515.46</b>	<b>--</b>	<b>18.00</b>	<b>--</b>

**Investment**

Buildings	417.46	--
Machinery	754.81	--
Irrigation Machinery	335.66	--
<b>Total (incl. Land)</b>	<b>4637.49</b>	<b>--</b>

**Management**

Average Yield	(Tonne/acre)	28.64	--
Expected Market Price	(\$/Tonne)	55.10	--

## 2012 Crop Enterprise Analysis

*AgriProfit*®

**Crop:** Sugar Beets - Own  
**Soil Zone:** All - Irrigated  
**Unit:** Tonne

		----- \$/Acre -----		----- \$/Tonne -----		
		Average	Top 1/3	Average	Top 1/3	
<b>(A)</b>	1. Crop Sales	1604.13	--	55.10	--	
	2. Crop Insurance Receipts	43.95	--	1.51	--	
	3. Other Receipts	0.09	--	0.00	--	
	<b>Gross Receipts</b>	<b>1648.18</b>	<b>0.00</b>	<b>56.61</b>	<b>0.00</b>	
<b>(B)</b>	<b>Cost Items</b>					
	1. Seed	147.37	--	5.06	--	
	2. Fertilizer	114.69	--	3.94	--	
	3. Chemical	12.25	--	0.42	--	
	4. Hail/Crop Insurance Premium	63.83	--	2.19	--	
	5. Trucking and Marketing	91.31	--	3.14	--	
	6. Fuel	68.00	--	2.34	--	
	7. Irrigation Fuel and Electricity	41.50	--	1.43	--	
	8. Repairs - Machinery	87.43	--	3.00	--	
	9. Repairs - Buildings	8.17	--	0.28	--	
	10. Utilities and Miscellaneous	57.17	--	1.96	--	
	11. Custom Work	81.82	--	2.81	--	
	12. Operating Interest Paid	2.18	--	0.07	--	
	13. Paid Labour	47.98	--	1.65	--	
	14. Unpaid Labour	58.00	--	1.99	--	
	<b>Variable Costs</b>	<b>881.69</b>	<b>0.00</b>	<b>30.29</b>	<b>0.00</b>	
<b>(C)</b>	1. Cash/ Share Land Rent	0.00	--	0.00	--	
	2. Taxes, Water Rates, License & Ins.	46.55	--	1.60	--	
	3. Equipment and Building:	a) Depreciation	147.81	--	5.08	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	29.87	--	1.03	--	
	<b>Capital Costs</b>	<b>224.22</b>	<b>0.00</b>	<b>7.70</b>	<b>0.00</b>	
<b>(D)</b>	<b>Cash Costs</b>	<b>900.11</b>	--	<b>30.92</b>	--	
<b>(E)</b>	<b>Total Production Costs</b>	<b>1105.91</b>	--	<b>37.99</b>	--	
	<i>Gross Margin</i>	<b>748.07</b>	--	<b>25.70</b>	--	
	<i>Return to Unpaid Labour</i>	<b>600.26</b>	--	<b>20.62</b>	--	
	<i>Return to Investment</i>	<b>572.13</b>	--	<b>19.65</b>	--	
	<i>Return to Equity</i>	<b>542.27</b>	--	<b>18.63</b>	--	

**Investment**

Buildings	417.46	--
Machinery	849.27	--
Irrigation Machinery	597.22	--
<b>Total (incl. Land)</b>	<b>7432.13</b>	--

**Management**

Average Yield	(Tonne/acre)	29.11	--
Expected Market Price	(\$/Tonne)	55.10	--



**DEFINITIONS AND ALLOCATIONS**

**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 AAFRD
  - 1. **Irrigation to Dryland Ratio** – allocated to crops at a 3:1 ratio
  - 2. **Trucking and Marketing** – allocated to specific cropping acres by producer
  - 3. **Fuel** – Summerfallow – allocation of 0.3:1 compared to crop acres; Sugar beets – allocation of 2.96:1 compared to other irrigated crop acres
  - 4. **Irrigation Fuel** – allocation based on total pumping hours for each crop
  - 5. **Machinery Repairs** – allocated equally to all acres except summerfallow (0.3:1) and special crops (as specified by producer)
  - 6. **Building Repairs** – allocated to all acres equally except for special crops buildings
  - 7. **Operating Interest** – interest paid on operating loans allocated equally
  - 8. **Paid Labour** – based on allocations between crops as specified by producer
  - 9. **Unpaid and Operator Labour** – operator - \$10/hour, other unpaid labour - \$7.50/hour
  - 10. **Land Taxes** – allocated equally to all owned cropped acres
  - 11. **Water Rates** – allocated equally to all owned irrigated acres
  - 12. **Water Rates** – allocated equally to all owned irrigated acres
  - 13. **Equipment Depreciation** – imputed at 8.5% for power equipment, 11% for non-power, based on current market value

- 14. **Insurance and Licenses** – allocated to all cropped acres equally
- 15. **Building Depreciation** – imputed at 5% on the current market value
- 16. **Paid Capital Interest** – allocated to all owned cropped acres equally except summerfallow (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 summerfallow (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