

AgriProfit\$

**2015
Cost and Return Benchmarks
for Crops and Forages**

Brown Soil Zone

Alberta 
Government



TABLE OF CONTENTS

2015 Brown Soil Zone

OVERVIEW.....	1
CROPS	
Spring Wheat	2
Roundup Ready Canola	5
FORAGES	
Alfalfa/Grass Hay.....	6
DEFINITIONS AND ALLOCATIONS.....	9

OVERVIEW

2015 Brown Soil Zone

The *AgriProfit\$* Business Analysis and Research Program provides a provincial overview of costs and returns for field crops and forages. The Economics Section 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.

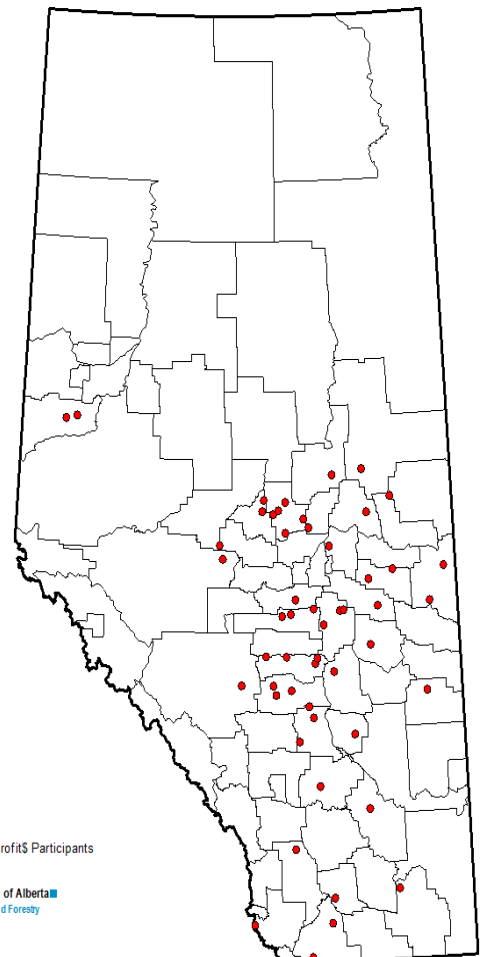
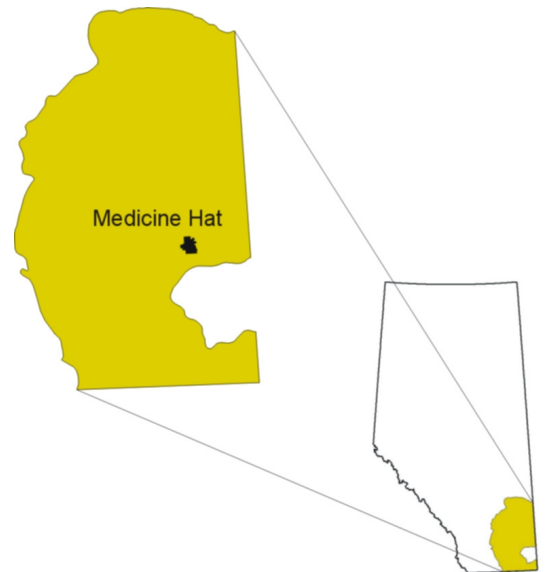
The top map shows the Brown Soil Zone in Alberta; this is the grouping method used for this study. Please note that farms highlighted within these zones may contain characteristics of neighbouring soil zones. The map on the bottom shows the distribution of the 2015 participants.

Questions or Comments:

Rawlin Thangaraj
Production Crop Economist
Alberta Agriculture and Forestry
Phone: (780) 422-4056 Fax: (780) 427-5220
Email: rawlin.thangaraj@gov.ab.ca

Acknowledgements:

Farmer Participants, Pauline Van Biert, Shukun Guan, Guangzhi Liu, Lorraine Kohlman, Anatoliy Oginsky, Philippa Rodrigues and Interviewers



2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Spring Wheat - All*
Soil Zone: *Brown - Dryland*
Unit: *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----	
		Average	Top 1/3	Average	Top 1/3
(A)	1. Crop Sales	266.59	275.37	6.68	6.72
	2. Crop Insurance Receipts	5.40	0.00	0.14	0.00
	3. Other Receipts	6.56	6.56	0.16	0.16
	Gross Receipts	278.55	281.93	6.98	6.88
(B)	Cost Items				
	1. Seed	10.25	10.25	0.26	0.25
	2. Fertilizer	50.34	50.34	1.26	1.23
	3. Chemical	29.79	30.00	0.75	0.73
	4. Hail/Crop Insurance Premium	13.40	13.40	0.34	0.33
	5. Trucking and Marketing	0.34	0.34	0.01	0.01
	6. Fuel	21.71	21.71	0.54	0.53
	7. Irrigation Fuel and Electricity	0.00	0.00	0.00	0.00
	8. Repairs - Machinery	28.98	28.98	0.73	0.71
	9. Repairs - Buildings	2.92	2.92	0.07	0.07
	10. Utilities and Miscellaneous	5.61	5.61	0.14	0.14
	11. Custom Work	0.00	0.00	0.00	0.00
	12. Operating Interest Paid	0.00	0.00	0.00	0.00
	13. Paid Labour	0.00	0.00	0.00	0.00
	14. Unpaid Labour	10.59	10.59	0.27	0.26
	Variable Costs	173.93	174.14	4.36	4.25
(C)	1. Cash/ Share Land Rent	14.74	0.00	0.37	0.00
	2. Taxes, Water Rates, License & Ins.	8.15	9.87	0.20	0.24
	3. Equipment and Building: a) Depreciation	56.96	56.96	1.43	1.39
	b) Lease Payments	0.00	0.00	0.00	0.00
4. Paid Capital Interest	0.00	0.00	0.00	1.63	
	Capital Costs	79.85	66.83	2.00	3.26
(D)	Cash Costs (B+C-B14-C3a)	186.23	173.43	4.67	5.86
(E)	Total Production Costs (B+C)	253.78	240.98	6.36	7.51
	Gross Margin (A-D)	92.32	108.50	2.31	1.02
	Return to Unpaid Labour (A-E+B14)	35.36	51.54	0.89	(0.37)
	Return to Investment (A-E+C4)	24.77	40.95	0.62	1.00
	Return to Equity (A-E)	24.77	40.95	0.62	(0.63)

Investment

Buildings	233.67	233.67
Machinery	450.70	450.70
Irrigation Machinery	0.00	0.00
Total (incl. Land)	2126.47	2684.37

Management

Average Yield (Bushel/acre)	39.89	41.00
Expected Market Price (\$/Bushel)	6.68	6.72

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Spring Wheat - Own*
Soil Zone: *Brown - Dryland*
Unit: *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----		
		Average	Top 1/3	Average	Top 1/3	
(A)	1. Crop Sales	274.30	--	6.69	--	
	2. Crop Insurance Receipts	0.00	--	0.00	--	
	3. Other Receipts	6.56	--	0.16	--	
	Gross Receipts	280.86	0.00	6.85	0.00	
(B)	Cost Items					
	1. Seed	10.25	--	0.25	--	
	2. Fertilizer	50.34	--	1.23	--	
	3. Chemical	30.00	--	0.73	--	
	4. Hail/Crop Insurance Premium	13.40	--	0.33	--	
	5. Trucking and Marketing	0.34	--	0.01	--	
	6. Fuel	21.71	--	0.53	--	
	7. Irrigation Fuel and Electricity	0.00	--	0.00	--	
	8. Repairs - Machinery	28.98	--	0.71	--	
	9. Repairs - Buildings	2.92	--	0.07	--	
	10. Utilities and Miscellaneous	5.61	--	0.14	--	
	11. Custom Work	0.00	--	0.00	--	
	12. Operating Interest Paid	0.00	--	0.00	--	
	13. Paid Labour	0.00	--	0.00	--	
	14. Unpaid Labour	10.59	--	0.26	--	
Variable Costs	174.14	0.00	4.25	0.00		
(C)	1. Cash/ Share Land Rent	0.00	--	0.00	--	
	2. Taxes, Water Rates, License & Ins.	9.87	--	0.24	--	
	3. Equipment and Building:	a) Depreciation	56.96	--	1.39	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	0.00	--	0.00	--	
Capital Costs	66.83	0.00	1.63	0.00		
(D)	Cash Costs	173.43	--	4.23	--	
(E)	Total Production Costs	240.98	--	5.88	--	
	Gross Margin	107.43	--	2.62	--	
	Return to Unpaid Labour	50.47	--	1.23	--	
	Return to Investment	39.88	--	0.97	--	
	Return to Equity	39.88	--	0.97	--	

Investment

Buildings	233.67	--
Machinery	450.70	--
Irrigation Machinery	0.00	--
Total (incl. Land)	2684.37	--

Management

Average Yield	(Bushel/acre)	41.00	--
Expected Market Price	(\$/Bushel)	6.69	--

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Spring Wheat - Rent*
Soil Zone: *Brown - Dryland*
Unit: *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----		
		Average	Top 1/3	Average	Top 1/3	
(A)	1. Crop Sales	246.68	--	6.66	--	
	2. Crop Insurance Receipts	19.34	--	0.52	--	
	3. Other Receipts	6.56	--	0.18	--	
	Gross Receipts	272.58	0.00	7.36	0.00	
(B)	Cost Items					
	1. Seed	10.25	--	0.28	--	
	2. Fertilizer	50.34	--	1.36	--	
	3. Chemical	29.25	--	0.79	--	
	4. Hail/Crop Insurance Premium	13.40	--	0.36	--	
	5. Trucking and Marketing	0.34	--	0.01	--	
	6. Fuel	21.71	--	0.59	--	
	7. Irrigation Fuel and Electricity	0.00	--	0.00	--	
	8. Repairs - Machinery	28.98	--	0.78	--	
	9. Repairs - Buildings	2.92	--	0.08	--	
	10. Utilities and Miscellaneous	5.61	--	0.15	--	
	11. Custom Work	0.00	--	0.00	--	
	12. Operating Interest Paid	0.00	--	0.00	--	
	13. Paid Labour	0.00	--	0.00	--	
	14. Unpaid Labour	10.59	--	0.29	--	
Variable Costs	173.39	0.00	4.68	0.00		
(C)	1. Cash/ Share Land Rent	52.83	--	1.43	--	
	2. Taxes, Water Rates, License & Ins.	3.70	--	0.10	--	
	3. Equipment and Building:	a) Depreciation	56.96	--	1.54	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	0.00	--	0.00	--	
Capital Costs	113.49	0.00	3.06	0.00		
(D)	Cash Costs	219.33	--	5.92	--	
(E)	Total Production Costs	286.87	--	7.75	--	
	Gross Margin	53.26	--	1.44	--	
	Return to Unpaid Labour	(3.70)	--	(0.10)	--	
	Return to Investment	(14.29)	--	(0.39)	--	
	Return to Equity	(14.29)	--	(0.39)	--	

Investment

Buildings	233.67	--
Machinery	450.70	--
Irrigation Machinery	0.00	--
Total (incl. Land)	684.37	--

Management

Average Yield	(Bushel/acre)	37.04	--
Expected Market Price	(\$/Bushel)	6.66	--

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Roundup Ready Canola - All*
Soil Zone: *Brown - Dryland*
Unit: *Bushel*

		----- \$/Acre -----		---- \$/Bushel ----		
		Average	Top 1/3	Average	Top 1/3	
(A)	1. Crop Sales	455.80	--	10.75	--	
	2. Crop Insurance Receipts	0.00	--	0.00	--	
	3. Other Receipts	6.56	--	0.15	--	
	Gross Receipts	462.36	0.00	10.90	0.00	
(B)	Cost Items					
	1. Seed	50.00	--	1.18	--	
	2. Fertilizer	54.62	--	1.29	--	
	3. Chemical	35.00	--	0.83	--	
	4. Hail/Crop Insurance Premium	26.50	--	0.63	--	
	5. Trucking and Marketing	0.34	--	0.01	--	
	6. Fuel	21.71	--	0.51	--	
	7. Irrigation Fuel and Electricity	0.00	--	0.00	--	
	8. Repairs - Machinery	28.98	--	0.68	--	
	9. Repairs - Buildings	2.92	--	0.07	--	
	10. Utilities and Miscellaneous	5.61	--	0.13	--	
	11. Custom Work	0.00	--	0.00	--	
	12. Operating Interest Paid	0.00	--	0.00	--	
	13. Paid Labour	0.00	--	0.00	--	
	14. Unpaid Labour	10.59	--	0.25	--	
Variable Costs	236.27	0.00	5.57	0.00		
(C)	1. Cash/ Share Land Rent	11.82	--	0.28	--	
	2. Taxes, Water Rates, License & Ins.	8.41	--	0.20	--	
	3. Equipment and Building:	a) Depreciation	56.96	--	1.34	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	0.00	--	0.00	--	
Capital Costs	77.19	0.00	1.82	0.00		
(D)	Cash Costs	245.92	--	5.80	--	
(E)	Total Production Costs	313.46	--	7.39	--	
	Gross Margin	216.45	--	5.10	--	
	Return to Unpaid Labour	159.49	--	3.76	--	
	Return to Investment	148.90	--	3.51	--	
	Return to Equity	148.90	--	3.51	--	

Investment

Buildings	233.67	--
Machinery	450.70	--
Irrigation Machinery	0.00	--
Total (incl. Land)	2211.64	--

Management

Average Yield	(Bushel/acre)	42.40	--
Expected Market Price	(\$/Bushel)	10.75	--

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Alfalfa/Grass Hay - All*
Soil Zone: *Brown - Dryland*
Unit: *Tonne*

		----- \$/Acre -----		----- \$/Tonne -----	
		Average	Top 1/3	Average	Top 1/3
(A)	1. Crop Sales	222.81	262.66	302.57	400.74
	2. Crop Insurance Receipts	0.00	0.00	0.00	0.00
	3. Other Receipts	11.66	28.93	15.84	44.14
	Gross Receipts	234.47	291.59	318.41	444.88
(B)	Cost Items				
	1. Seed	7.43	0.00	10.09	0.00
	2. Fertilizer	0.00	0.00	0.00	0.00
	3. Chemical	0.00	0.00	0.00	0.00
	4. Hail/Crop Insurance Premium	1.46	4.11	1.98	6.27
	5. Trucking and Marketing	0.00	0.00	0.00	0.00
	6. Fuel	15.71	13.45	21.33	20.52
	7. Irrigation Fuel and Electricity	0.00	0.00	0.00	0.00
	8. Repairs - Machinery	16.70	13.69	22.68	20.89
	9. Repairs - Buildings	1.52	0.68	2.06	1.05
	10. Utilities and Miscellaneous	5.46	3.17	7.41	4.84
	11. Custom Work	37.35	3.39	50.72	5.17
	12. Operating Interest Paid	1.64	2.03	2.23	3.10
	13. Paid Labour	1.09	1.35	1.48	2.06
	14. Unpaid Labour	13.93	14.27	18.91	21.78
	Variable Costs	102.28	56.16	138.90	85.68
(C)	1. Cash/ Share Land Rent	31.37	0.00	42.60	0.00
	2. Taxes, Water Rates, License & Ins.	4.74	3.68	6.43	5.61
	3. Equipment and Building: a) Depreciation	17.72	13.86	24.07	21.15
	b) Lease Payments	0.00	0.00	0.00	0.00
	4. Paid Capital Interest	3.90	10.96	5.29	43.48
	Capital Costs	57.73	28.50	78.39	70.24
(D)	Cash Costs (B+C-B14-C3a)	128.36	56.52	174.31	112.99
(E)	Total Production Costs (B+C)	160.01	84.65	217.29	155.92
	Gross Margin (A-D)	106.11	235.07	144.10	331.89
	Return to Unpaid Labour (A-E+B14)	88.39	221.21	120.03	310.74
	Return to Investment (A-E+C4)	78.36	217.89	106.41	332.44
	Return to Equity (A-E)	74.46	206.94	101.12	288.96

Investment

Buildings	55.47	26.73
Machinery	171.17	145.71
Irrigation Machinery	0.00	0.00
Total (incl. Land)	1388.57	2922.44

Management

Average Yield (Tonne/acre)	0.74	0.66
Expected Market Price (\$/Tonne)	302.57	400.74

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Alfalfa/Grass Hay - Own*
Soil Zone: *Brown - Dryland*
Unit: *Tonne*

		----- \$/Acre -----		----- \$/Tonne -----		
		Average	Top 1/3	Average	Top 1/3	
(A)	1. Crop Sales	218.88	--	332.06	--	
	2. Crop Insurance Receipts	0.00	--	0.00	--	
	3. Other Receipts	26.02	--	39.47	--	
	Gross Receipts	244.90	0.00	371.53	0.00	
(B)	Cost Items					
	1. Seed	18.93	--	28.72	--	
	2. Fertilizer	0.00	--	0.00	--	
	3. Chemical	0.00	--	0.00	--	
	4. Hail/Crop Insurance Premium	3.72	--	5.65	--	
	5. Trucking and Marketing	0.00	--	0.00	--	
	6. Fuel	14.55	--	22.07	--	
	7. Irrigation Fuel and Electricity	0.00	--	0.00	--	
	8. Repairs - Machinery	15.15	--	22.99	--	
	9. Repairs - Buildings	1.09	--	1.65	--	
	10. Utilities and Miscellaneous	4.12	--	6.26	--	
	11. Custom Work	4.38	--	6.65	--	
	12. Operating Interest Paid	1.84	--	2.79	--	
	13. Paid Labour	1.22	--	1.86	--	
	14. Unpaid Labour	14.11	--	21.40	--	
Variable Costs	79.13	0.00	120.05	0.00		
(C)	1. Cash/ Share Land Rent	0.00	--	0.00	--	
	2. Taxes, Water Rates, License & Ins.	5.49	--	8.32	--	
	3. Equipment and Building:	a) Depreciation	15.74	--	23.88	--
		b) Lease Payments	0.00	--	0.00	--
	4. Paid Capital Interest	9.93	--	15.06	--	
Capital Costs	31.16	0.00	47.27	0.00		
(D)	Cash Costs	80.44	--	122.04	--	
(E)	Total Production Costs	110.29	--	167.31	--	
	Gross Margin	164.46	--	249.50	--	
	Return to Unpaid Labour	148.72	--	225.62	--	
	Return to Investment	144.54	--	219.28	--	
	Return to Equity	134.61	--	204.22	--	

Investment

Buildings	40.70	--
Machinery	158.08	--
Irrigation Machinery	0.00	--
Total (incl. Land)	3159.72	--

Management

Average Yield	(Tonne/acre)	0.66	--
Expected Market Price	(\$/Tonne)	332.06	--

2015 Crop Enterprise Analysis

AgriProfit\$

Crop: *Alfalfa Grass Hay - Rent*
Soil Zone: *Brown - Dryland*
Unit: *Tonne*

		----- \$/Acre -----		----- \$/Tonne -----	
		Average	Top 1/3	Average	Top 1/3
(A)	1. Crop Sales	225.35	--	286.60	--
	2. Crop Insurance Receipts	0.00	--	0.00	--
	3. Other Receipts	2.39	--	3.04	--
	Gross Receipts	227.74	0.00	289.64	0.00
(B)	Cost Items				
	1. Seed	0.00	--	0.00	--
	2. Fertilizer	0.00	--	0.00	--
	3. Chemical	0.00	--	0.00	--
	4. Hail/Crop Insurance Premium	0.00	--	0.00	--
	5. Trucking and Marketing	0.00	--	0.00	--
	6. Fuel	16.46	--	20.93	--
	7. Irrigation Fuel and Electricity	0.00	--	0.00	--
	8. Repairs - Machinery	17.70	--	22.51	--
	9. Repairs - Buildings	1.80	--	2.28	--
	10. Utilities and Miscellaneous	6.32	--	8.03	--
	11. Custom Work	58.64	--	74.58	--
	12. Operating Interest Paid	1.51	--	1.92	--
	13. Paid Labour	1.00	--	1.28	--
14. Unpaid Labour	13.81	--	17.57	--	
	Variable Costs	117.24	0.00	149.10	0.00
(C)	1. Cash/ Share Land Rent	51.63	--	65.67	--
	2. Taxes, Water Rates, License & Ins.	4.25	--	5.41	--
	3. Equipment and Building: a) Depreciation	19.00	--	24.17	--
	b) Lease Payments	0.00	--	0.00	--
4. Paid Capital Interest	0.00	--	0.00	--	
	Capital Costs	74.89	0.00	95.24	0.00
(D)	Cash Costs (B+C-B14-C3a)	159.31	--	202.61	--
(E)	Total Production Costs (B+C)	192.13	--	244.35	--
	Gross Margin (A-D)	68.43	--	87.03	--
	Return to Unpaid Labour (A-E+B14)	49.43	--	62.86	--
	Return to Investment (A-E+C4)	35.61	--	45.29	--
	Return to Equity (A-E)	35.61	--	45.29	--

Investment

Buildings	65.01	--
Machinery	179.62	--
Irrigation Machinery	0.00	--
Total (incl. Land)	244.63	--

Management

Average Yield (Tonne/acre)	0.79	--
Expected Market Price (\$/Tonne)	286.60	--

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 AF
 - 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