AgriProfit$

Cost and Return Benchmarks for Dryland Forages

Alberta 2004-08

Government of Alberta
Agriculture and Rural Development

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OVERVIEW

Crop and Forage Benchmarks: 2004-2008

The *AgriProfit$* Business Analysis and Research Program collects annual, real farm cost of production information from Alberta producers. These participants provide a valuable economic and financial representation of Alberta's cropping industry. The Economics Branch uses *AgriProfit$* data to produce these provincial field and forage crop costs and returns (or benchmarks).

AgriProfit$ benchmarks allow for economic and financial comparisons of various field and forage crops. Benchmarks are a point of reference only. They should not replace individual cropping and financial management information as there is a danger of over or underestimating individual costs and returns. Strategic planning is far 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 industry.

In the Crops and Forage Enterprise Analyses take a look at the following relationships:

- Seed, Fertilizer and Chemical (SFC) costs to total Variable Costs
  (Expand your profit driver focus beyond SFC and yield response.)
- Other Variable Costs (OVC, not including SFC) to total Variable Costs
  (OVC can have significant implications on overall costing, yield response and profitability.)
- Total Production Costs (TPC) per unit and Expected Market Price per unit
  (TPC > Price = Loss, TPC < Price = Profit)
  **Knowing TPC/unit is key for making profitable production & marketing decisions.*
- Depreciation cost differences between crops and soil zone regions
  Capital costs, Fixed costs or Overheads are a burden for many farm businesses.
- Contribution Margin (CM) for comparing crop choices
  (Gross Revenue **(A)** less Variable Costs **(B)** divided by the unit)
  CM represents the amount a particular crop contributes to enterprise fixed costs and a return to management & equity.

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Forage Enterprise Analysis

Dryland Alfalfa Hay

Acres Cropped: 131.15

Enterprises: 55

			Total $	$/Acre	$/Tonne
(A)	1. Crop Sales - Imputed Value of Production		13,755.50	104.89	51.73
	2. Crop Insurance Receipts		.00	.00	
	3. Miscellaneous Receipts		.00	.00	
	4. Government Program		.00	.00	
	5. Additional Revenue from Straw / Aftermath Grazing		364.66	2.78	
	GROSS RETURN		**14,120.16**	**107.67**	**53.10**
(B)	1. Seed & Seed Cleaning		43.36	.33	
	2. Fertilizer Rates: 1N 3P 1K 1S		304.88	2.32	
	3. Chemicals		.00	.00	
	4. Hail / Crop Insurance & Program Premiums		261.71	2.00	
	5. Trucking & Marketing		58.01	.44	
	6. Fuel		906.02	6.91	
	7. Irrigation Fuel & Electricity		.00	.00	
	8. Repairs - Machine		697.00	5.31	
	9. Repairs - Buildings		71.45	.54	
	10. Utilities & Miscellaneous Expenses		797.24	6.08	
	11. Custom Work & Specialized Labour		343.60	2.62	
	12. Operating Interest Paid		74.23	.57	
	13. Paid Labour & Benefits	(43.07 hours)	673.28	5.13	
	14. Unpaid Labour	(68.69 hours)	686.51	5.23	
	VARIABLE COSTS		**4,917.29**	**37.49**	**18.49**
(C)	1. Cash/Share Rent & Land Lease		1,144.20	8.72	
	2. Taxes, Water Rates, Lic. & Insurance		529.49	4.04	
	3. Equipment & Building a) Depreciation		1,438.58	10.97	
	b) Lease Payments		44.83	.34	
	4. Paid Capital Interest		653.40	4.98	
	TOTAL CAPITAL COSTS		**3,810.50**	**29.06**	**14.33**
(D)	**CASH COSTS**	**(B+C-B14-C3)**	**6,602.70**	**50.35**	**24.83**
(E)	**TOTAL PRODUCTION COSTS**	**(B+C)**	**8,727.79**	**66.55**	**32.82**
(F)	**GROSS MARGIN**	**(A-D)**	**7,517.46**	**57.32**	**28.27**
	RETURN TO UNPAID LABOUR	**(A-E+B14)**	**6,078.88**	**46.35**	**22.86**
	RETURN TO INVESTMENT	**(A-E+C4)** 4.8 %	**6,045.77**	**46.10**	**22.74**
	RETURN TO EQUITY	**(A-E)**	**5,392.37**	**41.12**	**20.28**

INVESTMENT			
Land	108,500.11	827.33	
Buildings	3,163.69	24.12	
Machinery	13,116.91	100.02	
Irr. Machinery	.00	.00	
TOTAL	**124,780.72**	**951.47**	
MANAGEMENT			
Yield Per Acre (Tonne)		2.03	
Expected Market Price Per Tonne		51.73	

Crops Enterprise Analysis

Dryland Alfalfa/Grass Hay

Acres Cropped: 85.13

Enterprises: 374

			Total $	$/Acre	$/Tonne
(A)	1. Crop Sales - Imputed Value of Production		8,382.03	98.46	60.40
	2. Crop Insurance Receipts		13.26	.16	
	3. Miscellaneous Receipts		3.20	.04	
	4. Government Program		.00	.00	
	5. Additional Revenue from Straw / Aftermath Grazing		454.84	5.34	
	GROSS RETURN		**8,853.33**	**104.00**	**63.80**
(B)	1. Seed & Seed Cleaning		6.64	.08	
	2. Fertilizer Rates: 9N 5P 3K 2S		552.61	6.49	
	3. Chemicals		31.96	.38	
	4. Hail / Crop Insurance & Program Premiums		114.80	1.35	
	5. Trucking & Marketing		25.52	.30	
	6. Fuel		663.98	7.80	
	7. Irrigation Fuel & Electricity		.00	.00	
	8. Repairs - Machine		708.90	8.33	
	9. Repairs - Buildings		45.52	.53	
	10. Utilities & Miscellaneous Expenses		525.23	6.17	
	11. Custom Work & Specialized Labour		255.59	3.00	
	12. Operating Interest Paid		69.03	.81	
	13. Paid Labour & Benefits	(23.83 hours)	343.10	4.03	
	14. Unpaid Labour	(82.24 hours)	818.71	9.62	
	VARIABLE COSTS		**4,161.58**	**48.89**	**29.99**
(C)	1. Cash/Share Rent & Land Lease		1,058.52	12.43	
	2. Taxes, Water Rates, Lic. & Insurance		283.50	3.33	
	3. Equipment & Building a) Depreciation		1,655.90	19.45	
	b) Lease Payments		61.63	.72	
	4. Paid Capital Interest		364.90	4.29	
	TOTAL CAPITAL COSTS		**3,424.44**	**40.23**	**24.68**
(D)	**CASH COSTS**	**(B+C-B14-C3)**	**5,111.42**	**60.04**	**36.83**
(E)	**TOTAL PRODUCTION COSTS**	**(B+C)**	**7,586.02**	**89.11**	**54.66**
(F)	**GROSS MARGIN**	**(A-D)**	**3,741.91**	**43.96**	**26.96**
	RETURN TO UNPAID LABOUR	**(A-E+B14)**	**2,086.02**	**24.50**	**15.03**
	RETURN TO INVESTMENT	**(A-E+C4)** 2.8 %	**1,632.21**	**19.17**	**11.76**
	RETURN TO EQUITY	**(A-E)**	**1,267.31**	**14.89**	**9.13**

INVESTMENT			
Land	40,655.78	477.58	
Buildings	3,392.34	39.85	
Machinery	15,255.96	179.21	
Irr. Machinery	.00	.00	
TOTAL	**59,304.08**	**696.64**	
MANAGEMENT			
Yield Per Acre (Tonne)		1.63	
Expected Market Price Per Tonne		60.40	

Forage Enterprise Analysis

Dryland Grass Hay

Acres Cropped: 84.71

Enterprises: 89

			Total $	$/Acre	$/Tonne
(A)	1. Crop Sales - Imputed Value of Production		4,758.89	56.18	58.99
	2. Crop Insurance Receipts		507.71	5.99	
	3. Miscellaneous Receipts		.00	.00	
	4. Government Program		.00	.00	
	5. Additional Revenue from Straw / Aftermath Grazing		116.74	1.38	
	GROSS RETURN		**5,383.34**	**63.55**	**66.73**
(B)	1. Seed & Seed Cleaning		95.94	1.13	
	2. Fertilizer Rates: 17N 3P 2K 1S		851.05	10.05	
	3. Chemicals		150.77	1.78	
	4. Hail / Crop Insurance & Program Premiums		80.20	.95	
	5. Trucking & Marketing		96.31	1.14	
	6. Fuel		560.81	6.62	
	7. Irrigation Fuel & Electricity		.00	.00	
	8. Repairs - Machine		508.03	6.00	
	9. Repairs - Buildings		87.34	1.03	
	10. Utilities & Miscellaneous Expenses		531.89	6.28	
	11. Custom Work & Specialized Labour		632.05	7.46	
	12. Operating Interest Paid		258.97	3.06	
	13. Paid Labour & Benefits	(21.37 hours)	248.63	2.94	
	14. Unpaid Labour	(61.16 hours)	606.89	7.16	
	VARIABLE COSTS		**4,708.89**	**55.59**	**58.37**
(C)	1. Cash/Share Rent & Land Lease		665.08	7.85	
	2. Taxes, Water Rates, Lic. & Insurance		327.35	3.86	
	3. Equipment & Building a) Depreciation		1,371.47	16.19	
	b) Lease Payments		37.45	.44	
	4. Paid Capital Interest		722.16	8.53	
	TOTAL CAPITAL COSTS		**3,123.52**	**36.87**	**38.72**
(D)	**CASH COSTS**	**(B+C-B14-C3)**	**5,854.05**	**69.11**	**72.56**
(E)	**TOTAL PRODUCTION COSTS**	**(B+C)**	**7,832.40**	**92.46**	**97.08**
(F)	**GROSS MARGIN**	**(A-D)**	**(470.70)**	**(5.56)**	**(5.83)**
	RETURN TO UNPAID LABOUR	**(A-E+B14)**	**(1,842.17)**	**(21.75)**	**(22.83)**
	RETURN TO INVESTMENT	**(A-E+C4)** -2.9 %	**(1,726.90)**	**(20.39)**	**(21.40)**
	RETURN TO EQUITY	**(A-E)**	**(2,449.06)**	**(28.91)**	**(30.36)**

INVESTMENT			
Land	43,384.03	512.16	
Buildings	6,209.34	73.30	
Machinery	10,895.67	128.63	
Irr. Machinery	.00	.00	
TOTAL	**60,489.04**	**714.09**	
MANAGEMENT			
Yield Per Acre (Tonne)		.95	
Expected Market Price Per Tonne		58.99	

Forage Enterprise Analysis

Dryland Greenfeed

Acres Cropped: 69.89

Enterprises: 98

			Total $	$/Acre	$/Tonne
(A)	1. Crop Sales - Imputed Value of Production		6,014.13	86.05	53.22
	2. Crop Insurance Receipts		324.24	4.64	
	3. Miscellaneous Receipts		.00	.00	
	4. Government Program		.00	.00	
	5. Additional Revenue from Straw / Aftermath Grazing		269.84	3.86	
	GROSS RETURN		**6,608.21**	**94.55**	**58.48**
(B)	1. Seed & Seed Cleaning		564.64	8.08	
	2. Fertilizer Rates: 30N 10P 4K 3S		1,207.53	17.28	
	3. Chemicals		339.78	4.86	
	4. Hail / Crop Insurance & Program Premiums		319.99	4.58	
	5. Trucking & Marketing		34.87	.50	
	6. Fuel		1,235.63	17.68	
	7. Irrigation Fuel & Electricity		.00	.00	
	8. Repairs - Machine		630.57	9.02	
	9. Repairs - Buildings		27.65	.40	
	10. Utilities & Miscellaneous Expenses		511.27	7.32	
	11. Custom Work & Specialized Labour		364.19	5.21	
	12. Operating Interest Paid		38.15	.55	
	13. Paid Labour & Benefits	(20.99 hours)	274.15	3.92	
	14. Unpaid Labour	(77.16 hours)	751.68	10.76	
	VARIABLE COSTS		**6,300.10**	**90.15**	**55.75**
(C)	1. Cash/Share Rent & Land Lease		519.06	7.43	
	2. Taxes, Water Rates, Lic. & Insurance		308.33	4.41	
	3. Equipment & Building a) Depreciation		1,566.46	22.41	
	b) Lease Payments		63.90	.91	
	4. Paid Capital Interest		223.45	3.20	
	TOTAL CAPITAL COSTS		**2,681.20**	**38.36**	**23.73**
(D)	**CASH COSTS**	**(B+C-B14-C3)**	**6,663.16**	**95.34**	**58.97**
(E)	**TOTAL PRODUCTION COSTS**	**(B+C)**	**8,981.30**	**128.51**	**79.48**
(F)	**GROSS MARGIN**	**(A-D)**	**(54.95)**	**(.79)**	**(.49)**
	RETURN TO UNPAID LABOUR	**(A-E+B14)**	**(1,621.41)**	**(23.20)**	**(14.35)**
	RETURN TO INVESTMENT	**(A-E+C4)** -3.5 %	**(2,149.64)**	**(30.76)**	**(19.02)**
	RETURN TO EQUITY	**(A-E)**	**(2,373.09)**	**(33.96)**	**(21.00)**

INVESTMENT

Land	42,702.49	611.02
Buildings	4,838.60	69.23
Machinery	13,509.88	193.31
Irr. Machinery	.00	.00
TOTAL	**61,050.97**	**873.56**

MANAGEMENT

Yield Per Acre (Tonne)	1.62
Expected Market Price Per Tonne	53.22

Crops Enterprise Analysis

Dryland Grain Silage

Acres Cropped: 92.82

Enterprises: 226

			Total $	$/Acre	$/Tonne
(A)	1. Crop Sales - Imputed Value of Production		18,757.40	202.08	33.97
	2. Crop Insurance Receipts		516.33	5.56	
	3. Miscellaneous Receipts		7.20	.08	
	4. Government Program		.00	.00	
	5. Additional Revenue from Straw / Aftermath Grazing		341.97	3.68	
	GROSS RETURN		**19,622.91**	**211.40**	**35.54**
(B)	1. Seed & Seed Cleaning		1,046.44	11.27	
	2. Fertilizer Rates: 50N 15P 9K 4S		2,900.28	31.25	
	3. Chemicals		850.68	9.16	
	4. Hail / Crop Insurance & Program Premiums		482.11	5.19	
	5. Trucking & Marketing		41.60	.45	
	6. Fuel		1,469.04	15.83	
	7. Irrigation Fuel & Electricity		.00	.00	
	8. Repairs - Machine		715.61	7.71	
	9. Repairs - Buildings		116.74	1.26	
	10. Utilities & Miscellaneous Expenses		734.03	7.91	
	11. Custom Work & Specialized Labour		2,443.85	26.33	
	12. Operating Interest Paid		166.58	1.79	
	13. Paid Labour & Benefits	(31.89 hours)	394.12	4.25	
	14. Unpaid Labour	(98.85 hours)	987.39	10.64	
	VARIABLE COSTS		**12,348.48**	**133.03**	**22.37**
(C)	1. Cash/Share Rent & Land Lease		1,278.70	13.78	
	2. Taxes, Water Rates, Lic. & Insurance		338.35	3.65	
	3. Equipment & Building a) Depreciation		2,072.92	22.33	
	b) Lease Payments		52.27	.56	
	4. Paid Capital Interest		749.00	8.07	
	TOTAL CAPITAL COSTS		**4,491.23**	**48.38**	**8.13**
(D)	**CASH COSTS**	**(B+C-B14-C3)**	**13,779.40**	**148.45**	**24.96**
(E)	**TOTAL PRODUCTION COSTS**	**(B+C)**	**16,839.71**	**181.42**	**30.50**
(F)	**GROSS MARGIN**	**(A-D)**	**5,843.51**	**62.95**	**10.58**
	RETURN TO UNPAID LABOUR	**(A-E+B14)**	**3,770.59**	**40.62**	**6.83**
	RETURN TO INVESTMENT	**(A-E+C4)** 4.4 %	**3,532.20**	**38.05**	**6.40**
	RETURN TO EQUITY	**(A-E)**	**2,783.20**	**29.98**	**5.04**

INVESTMENT			
Land	57,106.38	615.22	
Buildings	3,530.26	38.03	
Machinery	19,568.39	210.81	
Irr. Machinery	.00	.00	
TOTAL	**80,205.03**	**864.06**	
MANAGEMENT			
Yield Per Acre (Tonne)		5.95	
Expected Market Price Per Tonne		33.97	

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

FREQUENCY AND CUMULATIVE FREQUENCY DISTRIBUTION

Why use distribution charts?

Distribution charts organize data into pictures, which increases our understanding of the mean (average) and variability of an event. Frequency distribution relates the percentage (or number) of observations that fall into a specific range. Cumulative frequency distribution displays the same information, but expresses it as a rate of change or dispersion. A steeper slope means greater rate of change or less variability. A more gradual slope implies a slower rate of change or more variability. Frequency distribution records the number of items within the intervals, whereas cumulative frequency also illustrates how many observations lie above or below certain values.

Top Third versus the Average:

The Top Third benchmarks apply another layer of analysis when compared to the total group. Top Third averages are calculated from the fields that have the highest return to equity. Looking at the top third provides insight and encourages discussion of differences in management.

Note: In this discussion, dryland spring wheat illustrates the important messages for all of the following crop and forage frequency distribution charts. There may be minor differences in numbers due to rounding.

Yield Distribution:

Between 2004 and 2008, the provincial dryland spring wheat yield average is 44 bushels per acre and 53 bushels per acre for the Top Third producers. While the mean is important, the added consideration of variability ultimately sets the stage for good decision-making and management choices. The first pair of charts provides a better understanding of yield variability. In any given year, in any given location throughout the province producers experience a range of growing conditions that are outside of their control from crop failures to bumper crops.

- The minimum is less than 10 bu/ac and the maximum is over 80 bu/ac
- 50% of all spring wheat fields yield less than the mean (44 bu/ac)
- If yields were distributed normally, then we would expect 50% of top third spring wheat fields to yield less than 53 bu/ac

Note: Alfalfa/Grass Hay observations come from a mixture of fields that have been in production for a range of years. The Top Third analysis is picking up differences in management intensity, and likely a higher percentage of younger stands as well.

Profitability Distribution:

Return to Equity (R2E) and Contribution Margin (CM) can be used to compare the profitability of one crop versus another or farm enterprises in the same industry. **R2E** is the amount remaining from operations that provides a return to the individual or shareholder equity. **CM** is the return over variable costs, which are a combination of variable cash and non-cash (unpaid labour) costs. CM is the best single indicator of profitability at the individual field level and it is used to compare and select crops to

grow regardless of the fields being owned or rented. The first objective in setting up a crop plan is to select crops with a positive contribution margin; this will identify the most profitable crop mix over the long term.

Profitability is shown by unit of production for both per acre and per bushel, but per bushel highlights the yield response. Approximately:

- 54% of the spring wheat fields had a positive R2E on a per acre basis
- 58% of the spring wheat fields had a positive R2E on a per bushel basis
- 77% of the spring wheat fields had a positive CM on a per acre basis
- 80% of the spring wheat fields had a positive CM on a per bushel basis

Cost Distribution:

Managing unit costs of production is one of the most significant strategies to ensure profitability in a mature commodity industry. Therefore, understanding cost distributions provides a basis for cost control and managing yield by dollar invested. Just like in the previous Enterprise Analyses, the following frequency charts provide another look at these important costing relationships.

Crop producers have a tendency to narrowly focus on seed, fertilizer and chemical costs (**SFC**) and yield response. But, other variable costs (**OVC**) also have significant implications on overall costing, yield response and ultimately profitability. These charts intend to expand the profit driver focus beyond SFC and yield response.

Cost distributions are shown for both per acre and per bushel units of production. The per bushel charts highlight the yield response as noted by the differences in slope in the Cumulative Frequency charts (per acre is steeper and per bushel is spread out).

- SFC and OVC account for about 50% of the total Variable Costs each
  Therefore, overlooking the significance of OVC can be costly and lead to flawed cropping plans.

It is important to look at **Cash Costs** for individual field analysis (as an indication of cash flow pressure points). Cash costs include all cash expenses accrued to the production of that crop. **Total Production Costs** are important when assessing all crops together for an overall enterprise analysis; relaying the longer term cost efficiency of each crop and the combined crop mix. Total production costs include the non-cash elements of unpaid (contributed) labour and depreciation, in addition to cash costs.

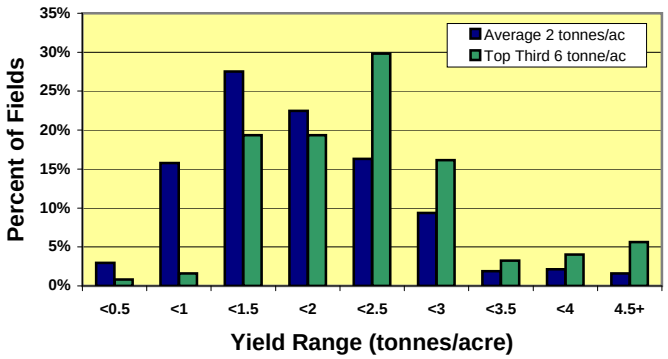
- If all spring wheat fields were at the mean price of $4.57/bu, then 75% of the fields are covering their cash costs and 60% of the fields are covering their total production costs. *In the long run, the best mix of crops would cover total production costs and give a positive net return per acre.*

Conclusion:

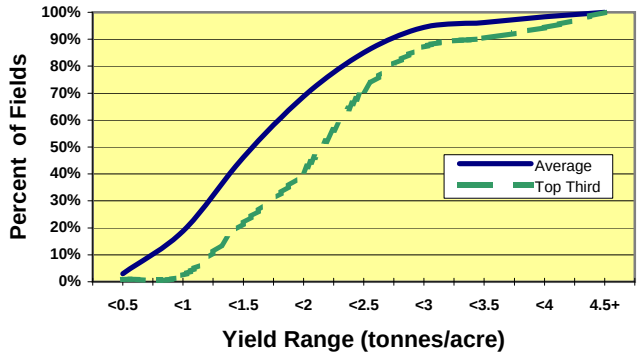
Understanding these concepts in *AgriProfit$* and evaluating historical performance on a per unit of production (i.e. per bushel) basis can be very useful for other Alberta Agriculture and Rural Development applications. For example, **CropChoice$** is a tool on www.agriculture.gov.ab.ca that combines traditional crop planning with the ability to measure the riskiness of your plan. Producers can then creatively evaluate potential risk management strategies.

Alberta - Dryland Alfalfa/Grass Hay: 2004-08

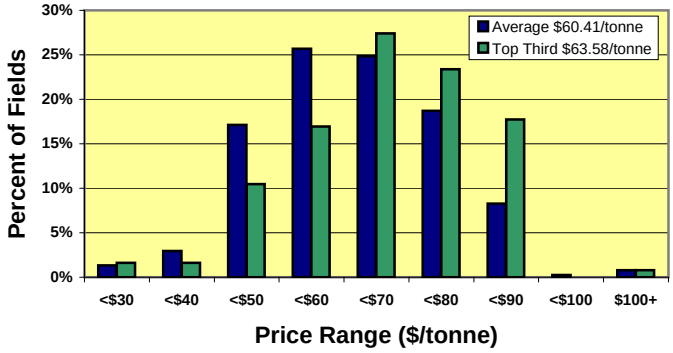
Frequency Distribution: Yield



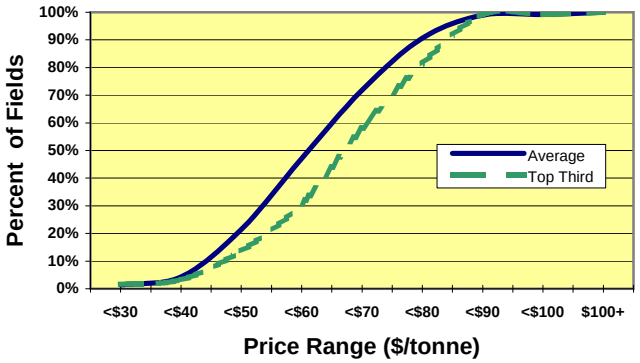
Cumulative Frequency: Yield



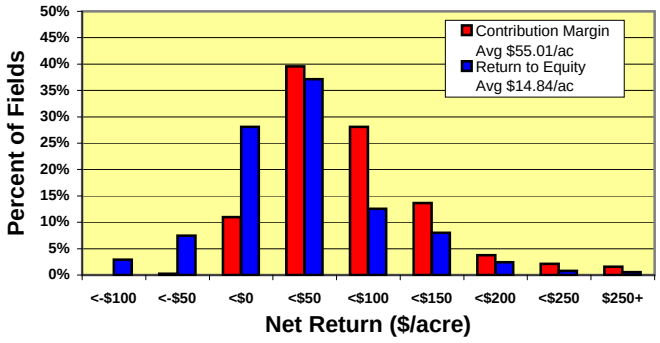
Frequency Distribution: Price



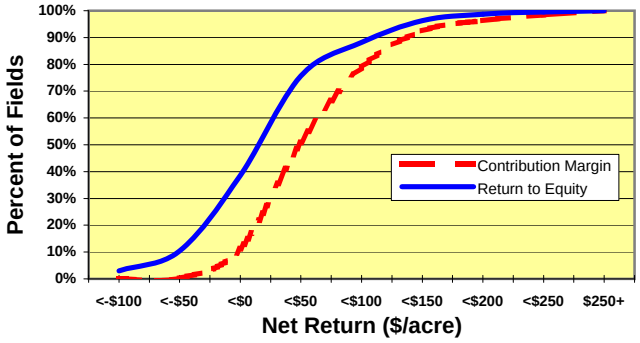
Cumulative Frequency: Price



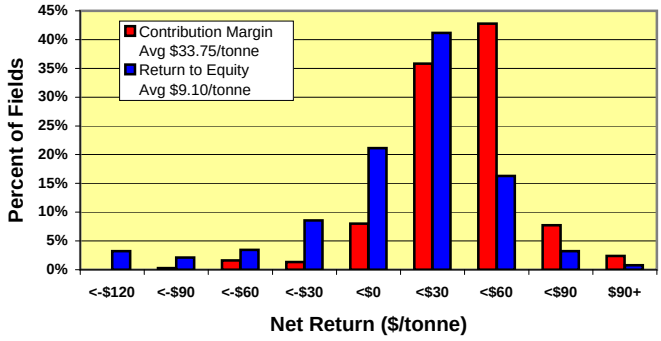
Frequency Distribution: Profitability/Acre



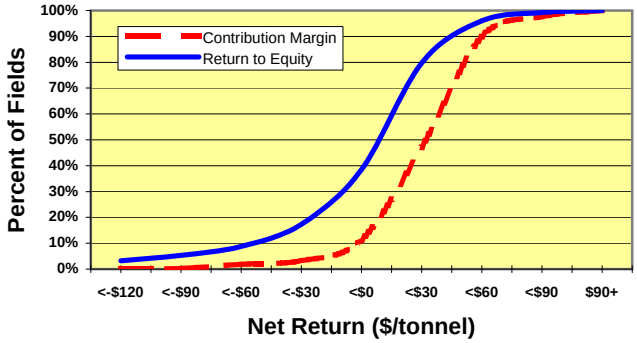
Cumulative Frequency: Profitability/Acre



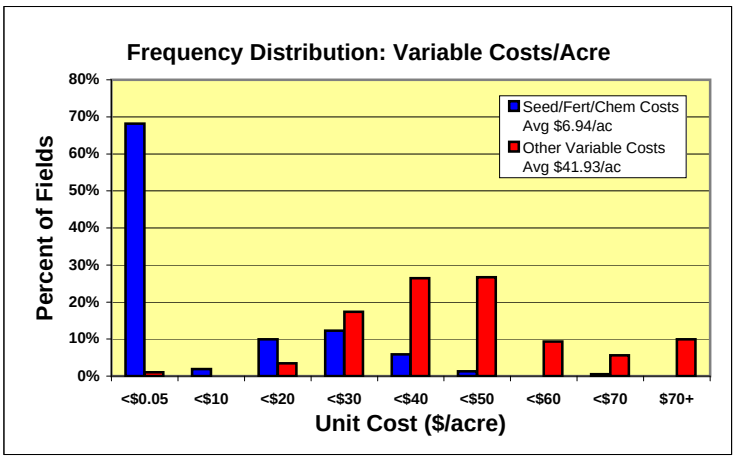
Frequency Distribution: Profitability/Tonne

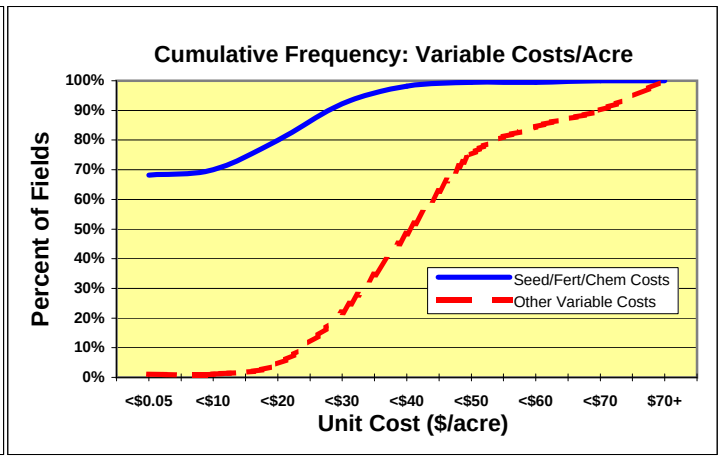


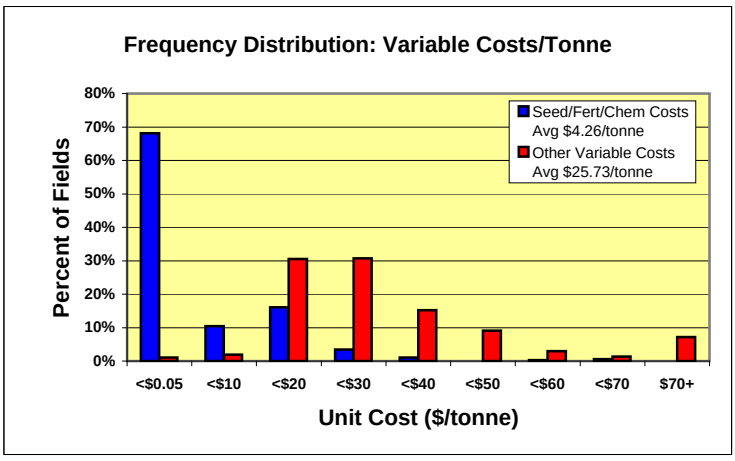
Cumulative Frequency: Profitability/Tonne

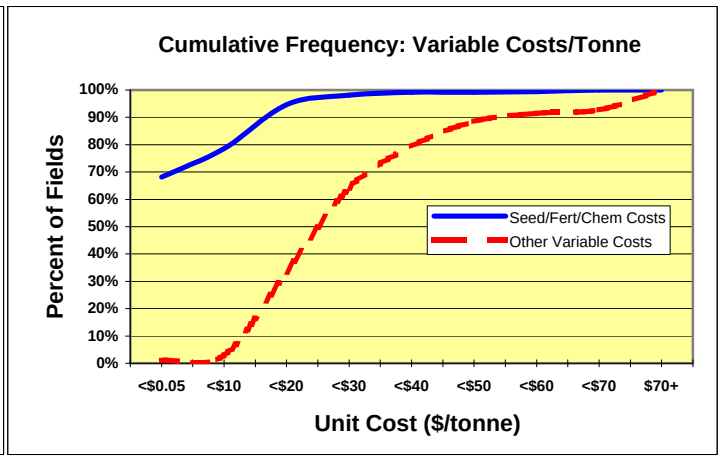


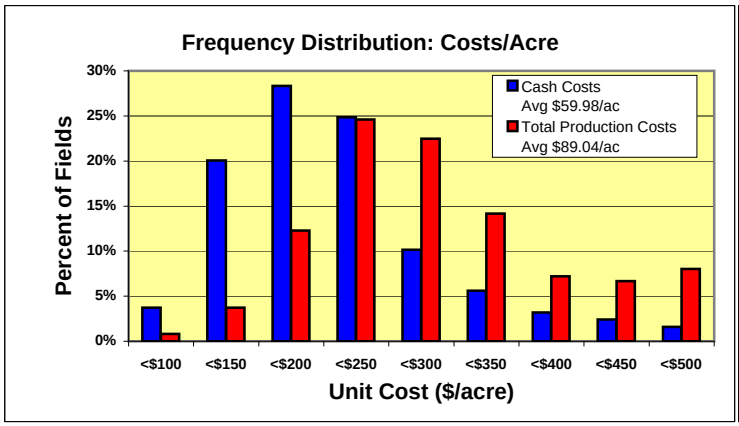
Alberta - Dryland Alfalfa/Grass Hay: 2004-08

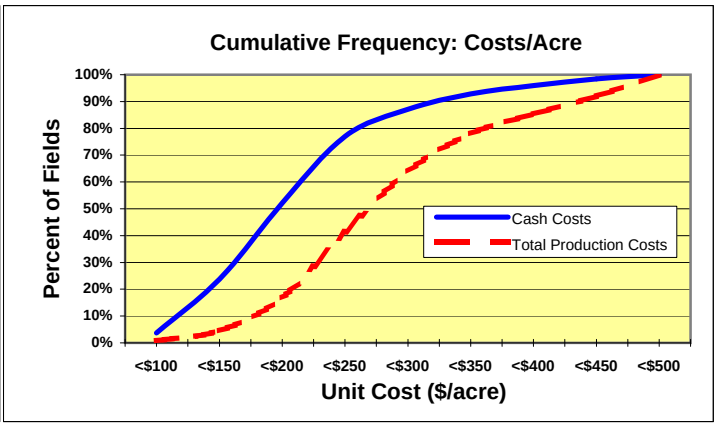


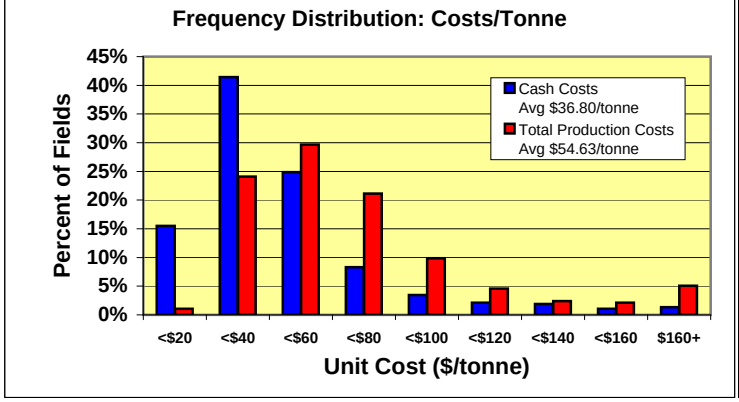


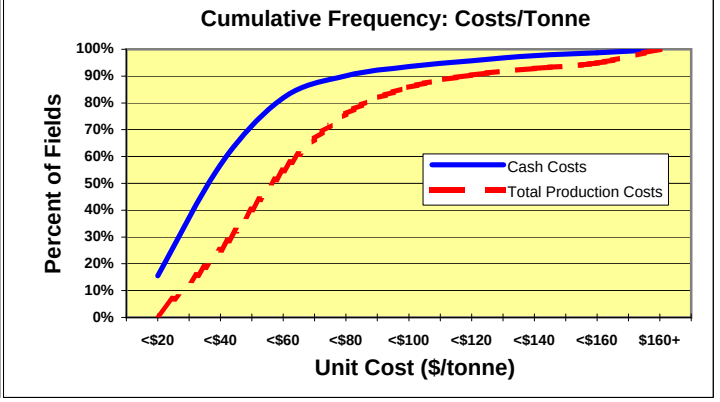












Alberta - Dryland Alfalfa/Grass Hay: 2004-08

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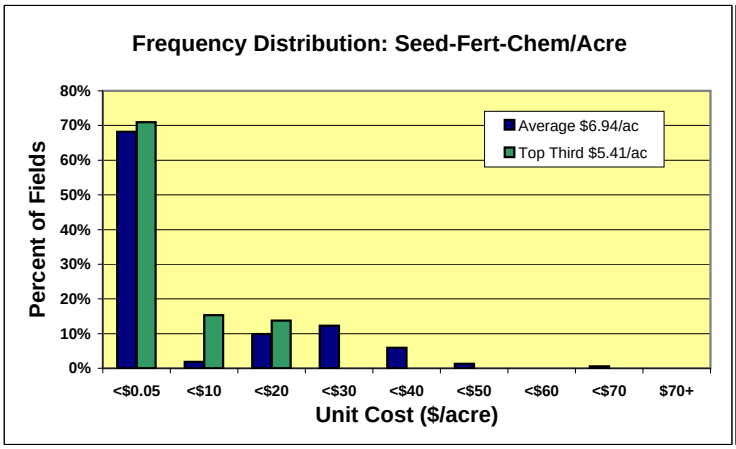
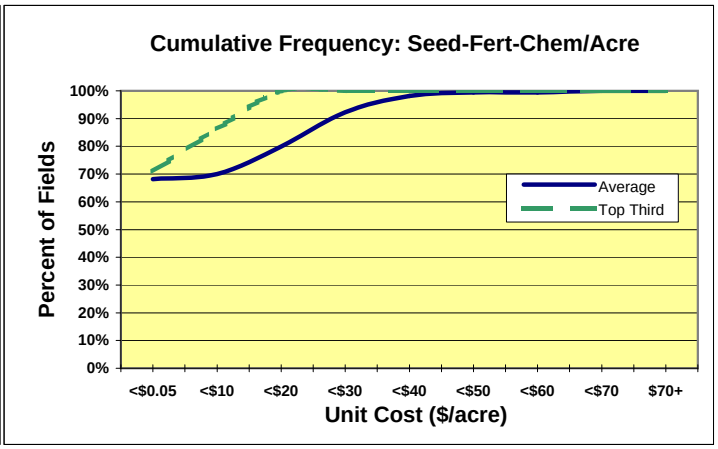
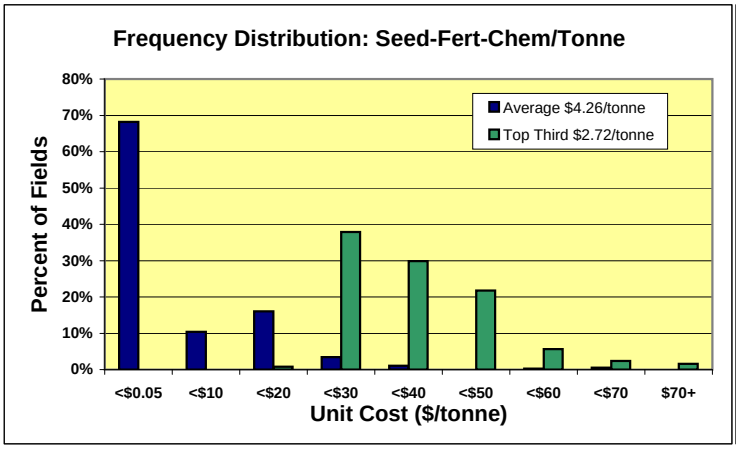
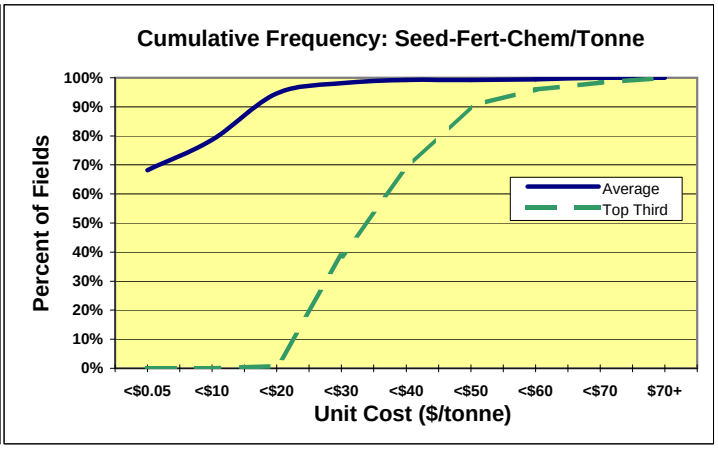
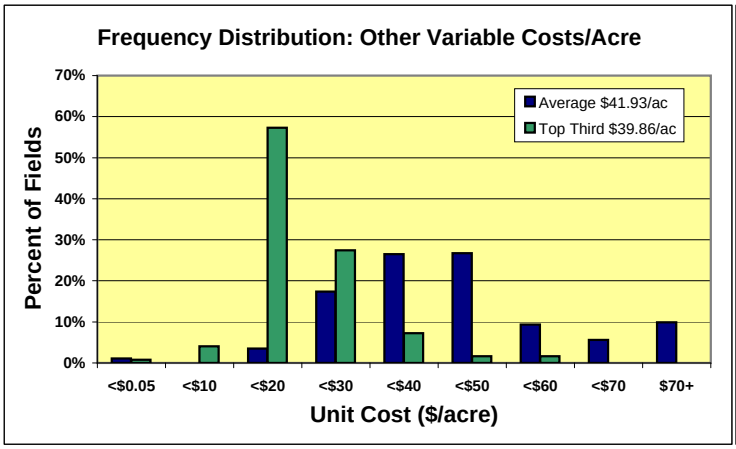
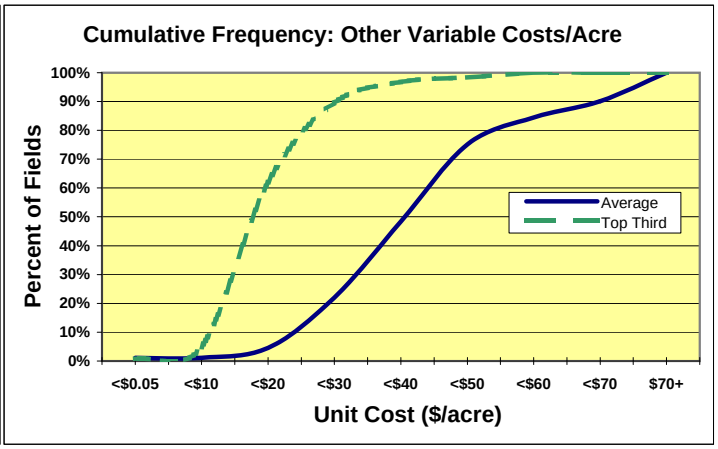


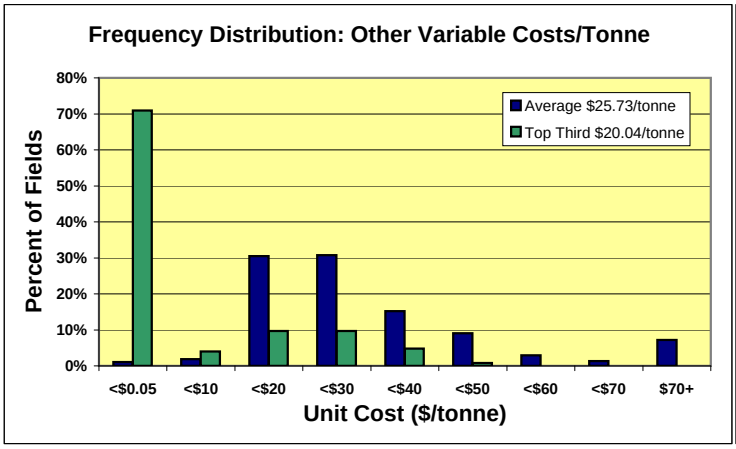


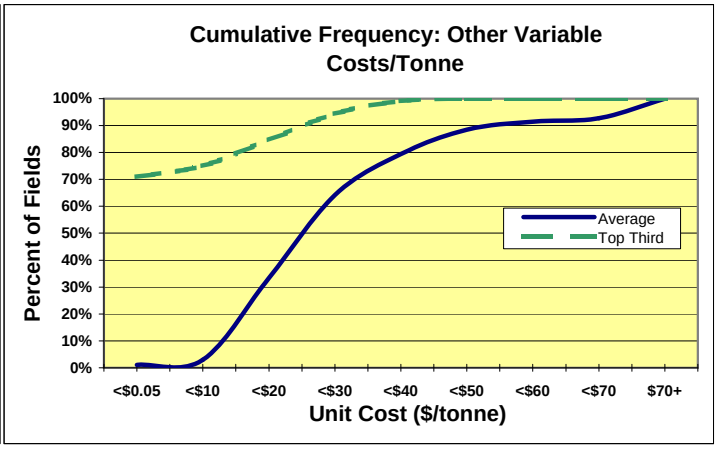






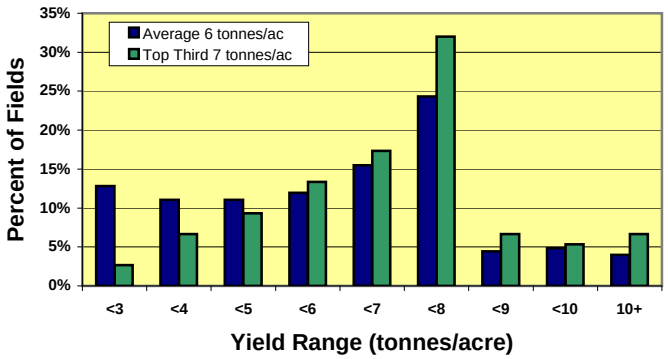




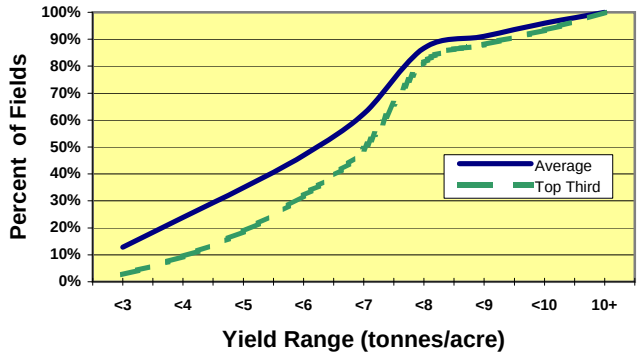


Alberta - Dryland Grain Silage: 2004-08

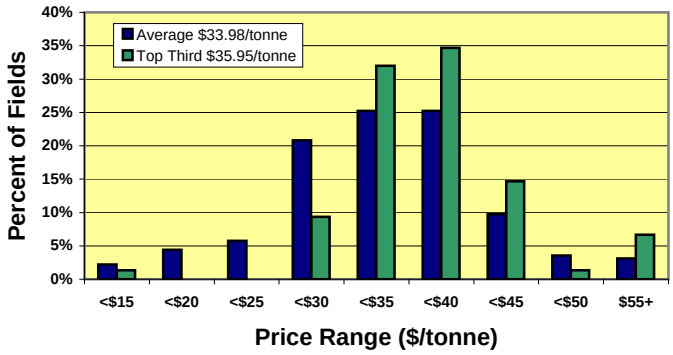
Frequency Distribution: Yield



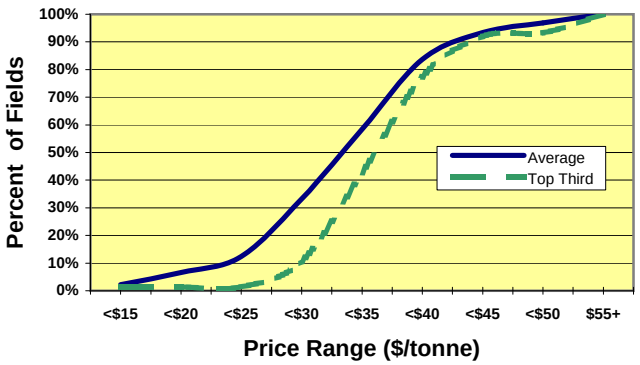
Cumulative Frequency: Yield



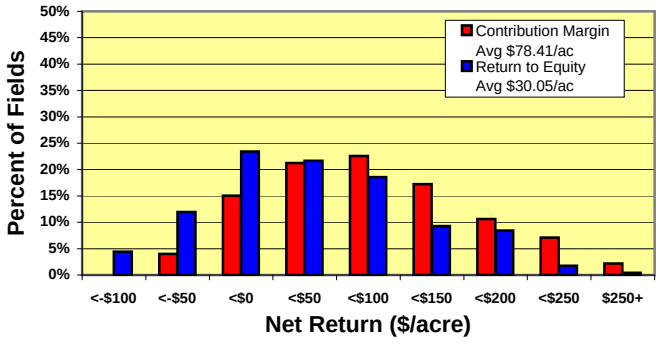
Frequency Distribution: Price



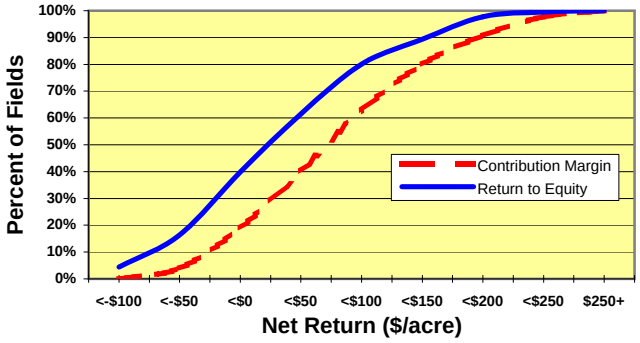
Cumulative Frequency: Price



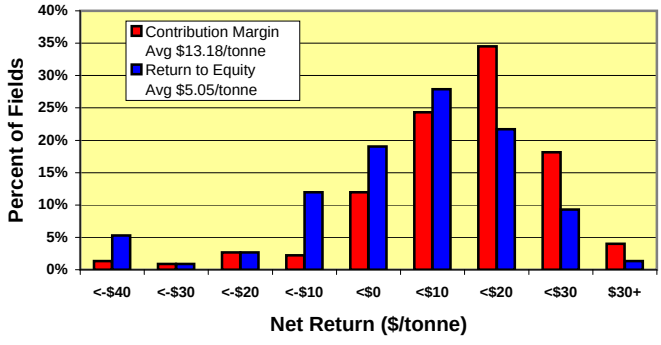
Frequency Distribution: Profitability/Acre



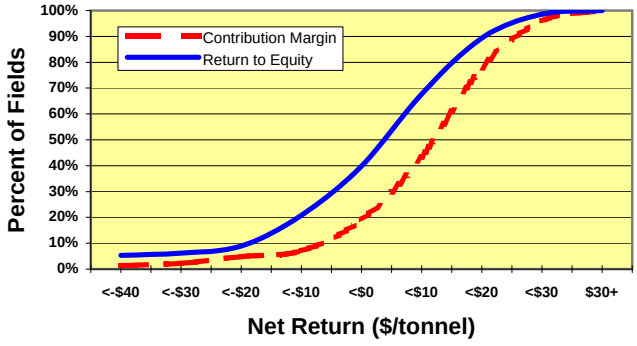
Cumulative Frequency: Profitability/Acre



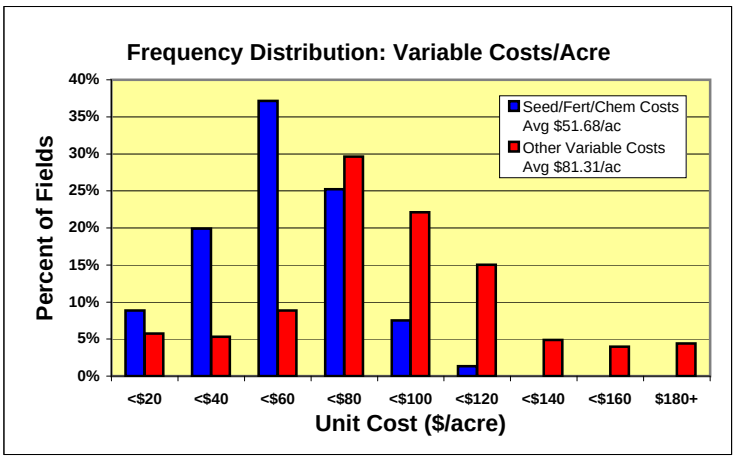
Frequency Distribution: Profitability/Tonne

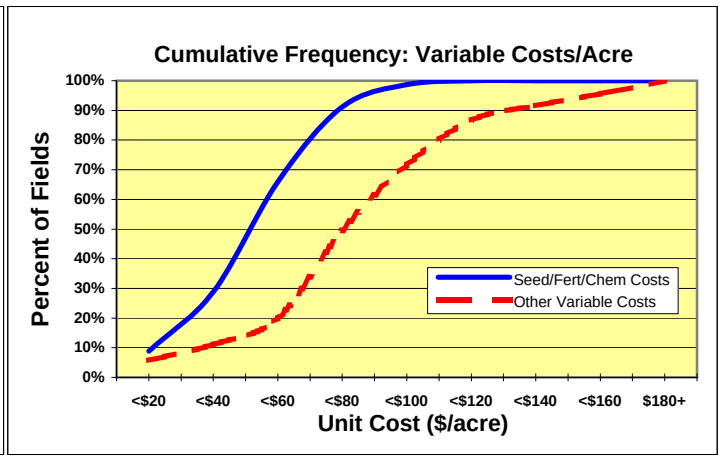


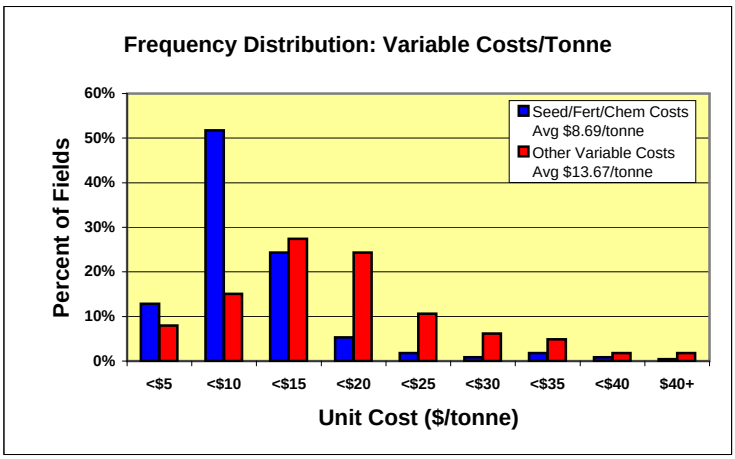
Cumulative Frequency: Profitability/Tonne

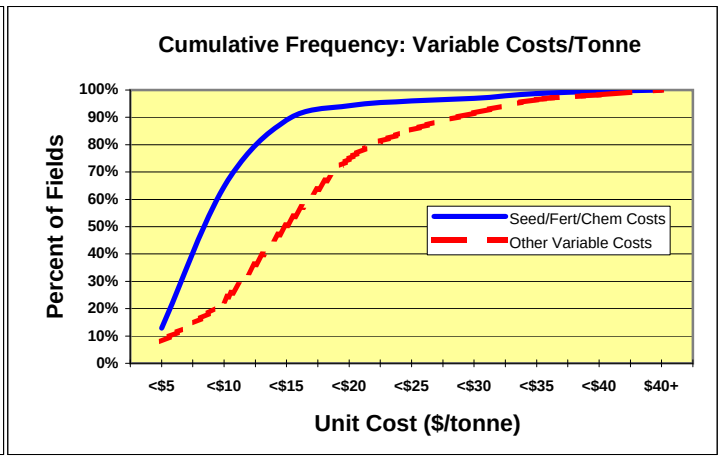


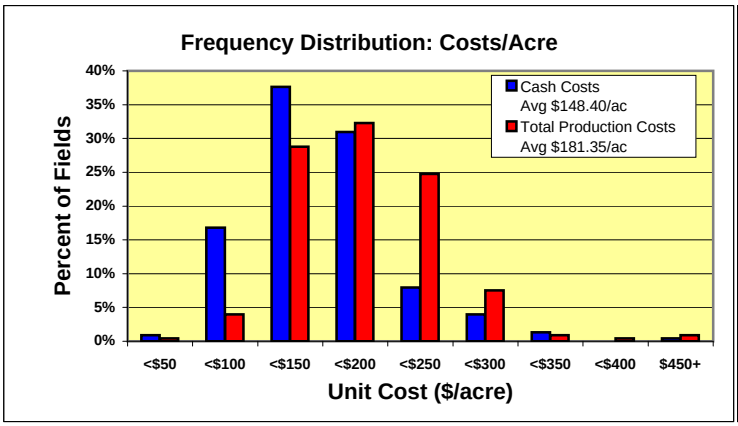
Alberta - Dryland Grain Silage: 2004-08

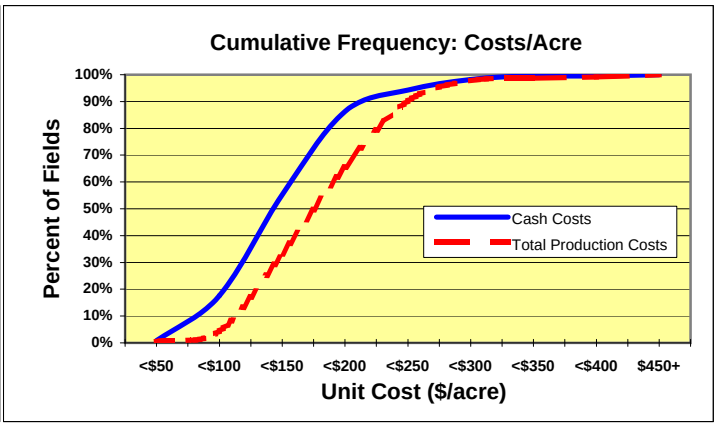


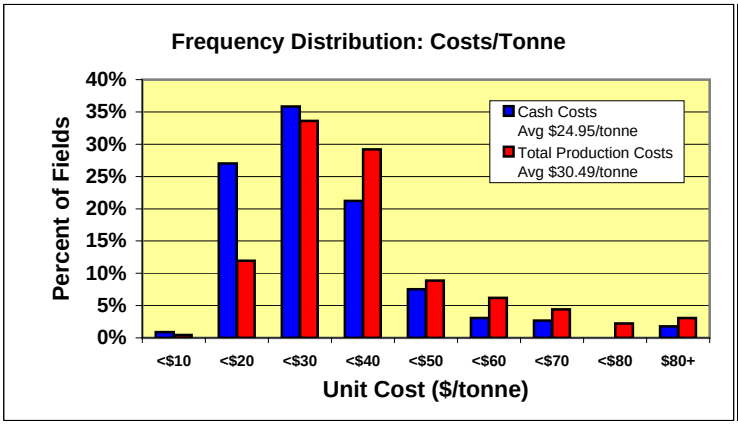


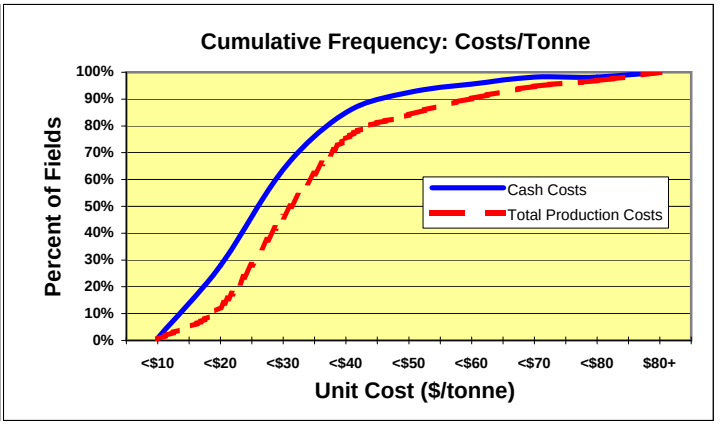












Alberta - Dryland Grain Silage: 2004-08

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