Study of Investment Levels and Costs of Production of Irrigated Specialty Crops in Alberta for the 2009 Crop Year

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Final Report

Canada

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Executive Summary

MNP has been commissioned by Alberta Agriculture and Rural Development (ARD) to survey 2009 cost of production on large-scale (over 2,000 acres) grain farms in Alberta. In addition to surveying large scale grain farms the survey has looked closely at certain specialty irrigated crops. The dryland crops are the subject of a separate report. Included in the irrigated sample are approximately 11 Hutterite Colonies and 16 other farms in the South of the Province.

This report will focus on the Irrigated, many of the farms surveyed had both dryland and irrigation and so are represented, with their respective data, in both reports.

In order to maintain confidentiality no farms have been identified; but where sample size permits the data has been analyzed according to Soil Zone.

These have been surveyed using farm questionnaires being utilized to supplement 2009 Agristability and Financial statement data. Almost the entire sample was from Assurance clients of the Consultants. This allowed the maximum use of accounting and farm program data prepared in a consistent fashion and subject to rigorous and consistent quality and reasonability review process. From the accounting and production data standpoint there is good comparability. However, by its very nature the farm-survey data is dependent upon the opinions/memories of the individual participants and is therefore less comparable.

The 2009 production year was characterized by commodity prices that were more reflective of the long-term past as commodity markets cooled-off along with the other recession hit markets globally. Production across most of Alberta was about as "normal" as could be expected except for the Peace Region which began to feel the effects of the drought that widened and deepened in 2010. The key driver(s) of the cost of production were, as was to be expected yield and total costs with the strongest correlation being to yield. Within the costs the key drivers were related to total investment and in particular machinery investment which varied widely (for example on irrigated farms the range was from under $1,000 per acre to over $6,000 although there was significant variation in the crops being grown.

By surveying the irrigated specialty crops as well as the grain crops grown in between those crops it has been possible to obtain a snapshot of the returns that are possible under irrigation that would not have been possible from looking at the grain crops alone. Indeed it is evident that the returns from irrigated grain crops do not justify investment in irrigation although a look at the specialty crops alone would tend to overstate the benefit of investing in irrigation systems.

Table 1 Summary of Irrigated Grains, Oilseed & Pulses Farms Surveyed in 2009

	Commercial	*Hutterite*	*Commercial Mixed*
Total (All Irrigated)	**9**	**11**	**5**

- This table includes observations from the Grain, Oilseed and Pulse enterprises only. No observations from the irrigated alfalfa, dry beans, alfalfa seed or potatoes are included here.

"Mixed" farms (of which there were 5 amongst the Commercial group in table 1) are those with significant other, non-crop enterprises that are not included in the study but which may lend some benefit to the surveyed enterprises by way of additional "scale" for the whole operation. Hutterite colonies by their very nature are large scale mixed operations of a type not generally seen outside of the colonies.

Table 2 Summary of Irrigated Farms (All Enterprises) by Soil Zone surveyed in 2009

Table 2 shows a summary of all commercial and Hutterite farms for all enterprises (irrigated grain, oilseed & pulse, irrigated alfalfa, potatoes, irrigated dry beans, and alfalfa seed).

	Commercial	Hutterite
Black Soil	**0**	**1**
Brown Soil	**11**	**3**
Dark Brown Soil	**5**	**7**
Total	**16**	**11**

- Table 2 does not necessarily agree with table 1 as it shows all enterprises (such as grains, oilseeds, pulses, alfalfa and potatoes) whereas table 1 only summarizes Irrigated Grains, Oilseeds & Pulses. In most cases, most irrigation farms had some irrigated grains, oilseeds or pulses in rotation.

All of the irrigated farms are in the South of the Province and their distribution within the various soil zones should not be altogether surprising.

Table 3 Summary of Main Crops Surveyed - Irrigation

Irrigation		
	Acres	**Records**
Irrigated Grain	14,836	48
Irrigated Canola	3,055	12
Irrigated Canola Seed	1,531	8
Irrigated Beans	1,838	11
Irrigated Potatoes	2,474	4
Irrigated Alfalfa	2,483	13
Irrigated Flax	579	2
Irrigated Alfalfa Seed	1,508	4
Total	**28,304**	**102**

*This table does not include all crops in the irrigated grain, oilseed and pulse data base.

Across the Irrigated Farms surveyed there were over 100 separate records and 30,000 acres under irrigation about a third of which were the targeted specialty crops.

Table 4 Return on Investment Irrigated Crops

Return on Investment	
Wheat	*-1.64%*
Barley	*-1.28%*
Canola	*-3.13%*
Canola Seed	*17.34%*
Dry Beans	*7.38%*
Potatoes	*1.01%*
Alfalfa	*-0.76%*
Alfalfa Seed	*3.72%*

Wheat here includes all classes of wheat (including durum).
Barley includes all barley including malt.
Dry Beans includes all types of beans in our sample (Great Northern, pinto, red, black)
Alfalfa seed includes both commercial and pedigree.

The Irrigated Sample mostly saw low to negative returns from their non specialty crops with Canola seed, Dry Beans and Alfalfa Seed showing the best returns.

Disclaimer

The information below contains data collected from Alberta agricultural producers to analyze cost of production, investment levels and productivity for the 2009 crop year. All information contained in this document has been modified to ensure producer anonymity. We informed participating producers that we were collecting the information for the purposes of carrying out a study for Alberta Agriculture and Rural Development, that participation was voluntary, that the information would be modified to ensure producer anonymity, and that the information would be shared with Alberta Agriculture and Rural Development unless the participating producer objected to such sharing.

The information in this report is intended for information purposes only and is not to be used or relied upon by any third party for any purpose. Circumstances are subject to future change and the analysis contained in this report involves uncertainties and is based on information that is also subject to change (e.g. prices, expenses, and production etc).

If you have any questions about this report or would like to discuss the information contained in it please use the contact details provided.

Introduction

Grain, oilseed and pulse producers in Alberta in the 2007 and 2008 crop years experienced a period of unprecedented commodity price increases and dramatically improved profit margins. However, in 2009 after two years of extremely volatile markets for grains, oilseeds, and input prices the commodity sector began to re-approach its long term pricing levels and profitability. Historically these trends have been the driving force in the consolidation of grain farms and have constantly forced top producers to review the financial performance of their business.

Irrigation: This study was undertaken to better understand the financial performance of irrigation farms and the larger irrigated specialty crops that are exclusive to the Southern Alberta region. Farms in the irrigated report varied dramatically in size (from 500 acres to 7,500 acres of irrigated land). Specific individual farm financial information along with crop related data was collected from each of the participants to compile the report.

In the irrigation specialty report targeted crops were alfalfa hay, canola seed, potatoes, dry beans flax and alfalfa seed. Farm observation targets were for 25 to 28 irrigated specialty crop records. A summary of the farms surveyed is shown in table 5.

Table 5 Alberta 2009 Irrigated Farms Summary of Specialty Crops

	Canola Seed	*Irrigated Alfalfa*	*Irrigated Beans*	*Potatoes*	*Alfalfa Seed*	*Flax*	*All*
# Records	**8**	**13**	**11**	**4**	**4**	**2**	**42**
Total Acres	**1,531**	**2,483**	**1,838**	**2,474**	**1,508**	**579**	**10,413**
Ave. Seeded Acres	**191**	**191**	**167**	**618**	**377**	**290**	

Note: Records are different as compared to farms. Many farms produced records for more than one of the specialty crops above.

The Specialty Crops accounted for about 1/3 of the total irrigated acres surveyed. In addition to those in the table there were a further 2,815 acres of minor crops such as Meadow Brome, Fescue and Sweetcorn under irrigation. Their sample size was too small however to be meaningful.

The key deliverables of these reports include:

- Investment levels in the operations.
  - Total investment (fair market value basis), by farm, in land, equipment and buildings.
  - A comparison of investment levels according to farm size.
  - Imputed investment levels, being defined as fair market value of total capital assets in use (land, machinery and buildings) whether owned by the producer or not (for example leased or rented).
- Production and cost of production information on an accrual basis.
- Productivity as defined by crop yields.
  - Yield and examination of whether differences are apparent between different investment levels, scale of production and/or management factors.
- Other farm management factors were also surveyed.
  - Equipment turnover (frequency of change of the major equipment items (front-line tractors, combines and sprayers).
  - Labour usage.

- Cost of production benchmarking.
    - A detailed breakdown of all variable and fixed costs for grain farms, on per acre and per unit of production basis.
    - Physical input use for seed and fertilizer is also reported.
    - Direct costs, fixed costs and total costs are compared for different scale farms.
- The information is further broken down in some reports by region, dryland, irrigated, irrigated specialty crop, soil zone, mixed farm and as well as a sub-set of Hutterite colonies.

This data is useful to the industry as a whole in understanding its overall competitiveness, the key drivers to profit in grain farms and the management practices of the top performers.

Individual participants will gain a detailed insight into their operation, where it stands within the data set and this will give clues as to how they might improve. With the use of a consistent and assured set of data and a consistent methodology the individual producers can be confident that they are being fairly compared to others and with this knowledge comes confidence in the analysis and from confidence in the analysis comes the motivation to make changes and improvements where they can be identified. The individual producers will receive a detailed benchmark report about their own crop operation and will be invited to participate in an extension session to summarize the reports results and conclusions.

Glossary

Some common definitions that are used throughout this report include:

- **Gross Income**: This is total revenue. In most cases it is calculated as yield times price but may also include secondary crop revenue (such as straw) and crop insurance receipts where applicable. From a whole farm perspective this would include the total revenues from all crops.
- **Direct Costs**: Are the costs or expenses incurred required to grow and insure the crop and include seed, fertilizer, chemical and production insurance. These costs have a direct impact upon the crop revenue and in most cases are physically applied to the crop.
- **Variable Costs**: These costs commonly are referred interchangeably with direct and operating costs and are variable because they often change with production levels
- **Gross Margin**: When direct costs are deducted from revenue, what is left over is known as gross margin.
- **Operating Costs**: Are costs or expenses incurred that are not required to grow the crop but are necessary to operate and maintain the business. As the scale of the operation changes so do these costs but they do not necessarily impact production per acre and are not physically applied to the crop. These expenses include freight & trucking, fuel, custom work, repairs and maintenance, supplies, small tools, operating interest, paid & unpaid labour and utilities.
- **Contribution Margin**: When direct and operating costs are deducted from revenue, what is left over is known as contribution margin.
- **Administration and Overhead Costs / Fixed Costs**: Are costs and expenses that are generally incurred on an annual basis that don't fluctuate with different levels of production. The term "Fixed" implies they do not change but in fact they do although changes tend to be gradual. These costs will be incurred regardless if production occurs or fails. These costs included equipment and building depreciation, equipment rent, insurance & licences, interest on long term debt, professional fees and miscellaneous, and land rent.

- **Net Income**: Is the amount of income remaining after direct, operating, and administration and overhead costs are deducted from Gross Income.
- **Return on Investment (ROI):** Is the net income as a percentage of the farms total farm based investment. It is a measure to determine how well the investment is performing. In this study, interest on long term debt has been added back to net income to derive return on investment to illustrate return on capital invested irrespective of the level of debt used to purchase the asset. This approach maintains comparability across all debt structures.

Report Methodology

Information collected for the purposes of carrying out this study was collected on a voluntary and anonymous basis.

The analysis presented in this report looked at data collected from unaudited financial statements and historical financial information prepared for the 2009 crop year. The financial data was combined with physical production data derived from production reports such as AgriStability returns and production insurance where applicable. Information provided by the participants has been reviewed for reasonability and compared to other financial and production data where available. All information provided is unaudited and cannot be verified due to the nature and timing of this report.

Production Insurance Adjustment. In situations where there were production insurance receipts on 2009 crops, in order to avoid improbable costs-of-production in low yield/high insurance situations the insurance receipts are converted back to yield at the standard price for that crop. Arguably this is not a perfect solution but the best available and the one that produces the least anomalies.

All of this data was augmented by a short questionnaire completed by each of the producers participating in the survey (for example input usage on the 2009 crops, labour usage and equipment replacement rates).

Fair market values for the fixed assets (as supplied by the participants) was used in order to ensure consistency in the calculation of depreciation and for the assessment of investment levels, various operating and overhead costs and, ultimately, allocation of financing costs. As a result the profitability of the individuals surveyed as collected and presented in the final report will differ from those shown on the respective financial statements where, for example, fixed assets will have been included at cost and the depreciation rates used may be higher depending upon the individual tax strategies in use. Many of these differences will be explained further below.

Physical crop data was collected on a crop by crop basis including; number of seeded acres, per acre production of each crop and secondary crop where applicable (i.e. straw), seed rates and application rates of Nitrogen, Phosphorous, Potassium and Sulphur (N P K S).

Direct costs were gathered on a per acre basis for each crop. These included seed, chemical, fertilizer, crop insurance, and other direct costs such as TUA's (included in seed costs) and irrigation fees (water rates).

The remaining variable costs, and overhead costs were allocated to the appropriate "enterprise-class". Enterprise classes are defined as dryland grain, irrigated grain, oilseed and pulse, the various irrigated specialty crops such as dry beans, alfalfa, alfalfa seed, and potatoes. Within each class costs are distributed equally across all acres in that class.

The allocation therefore is a two stage process, grouping "like" enterprises together into a class on the basis that, for the most part, their asset usage, fuel usage, repair costs, etc will be very similar if they were to be measured. The cost item is then shared equally amongst all crops in that class. This approach recognises that between classes there are very significant differences in the use of assets, operating costs, debt levels, capital costs, etc.

To further supplement the analysis, farm and farm management practices were surveyed. For example information was used regarding, type of land rental arrangements, equipment turnover rates (for major equipment items), and use of external consultants. This allowed an analysis of other factors that may affect productivity and profitability on these farms.

Labour use was surveyed making possible the identification of any efficiency in labour usage on medium and large scale grain farms. Labour costs were calculated on the basis of labour usage data supplied by the participants combined with labour cost data supplied by ARD. In order to minimize tax driven differences between operations, the labour will be calculated using a "standard cost" per hour. For the purposes of this report a "labour unit" was taken to be 2,200 hours.

Fixed capital (land, buildings and equipment) was allocated between the enterprise classes for dryland grain, irrigated grain, oilseeds & pulses, specific special crops (irrigated alfalfa, irrigated dry beans, potatoes, alfalfa seed) and other. The "other" category is, in effect, everything else. This allocation was done by the producer and required their judgement on shared (between enterprise classes) items only on mixed farms and only usually on a small number of lower value assets. The allocation of fixed capital in this way allows the relative use of fixed capital (or investment) between the enterprise classes (dryland grain, irrigated grain, oilseed & pulse, special crops (irrigated alfalfa, irrigated dry beans, potatoes, alfalfa seed)) and other to be used for determination of the allocation of items like financing costs and equipment operating costs. Given that it is impossible in all but a few situations to reliably allocate finance costs between enterprises it is more realistic to allocate to each enterprise on the basis of the capital in-use by that enterprise. In this way debt incurred as a result of historic losses and as a result of cross-financing between enterprises does not have to be analyzed (and there are rarely records that will assist with that process which is plagued by selective memory at the best of times). Cost items like depreciation and repairs and tools tend to be in proportion to the equipment capital in use by the enterprise and so the proportion of equipment investment is used as the driver of this allocation.

On mixed farms and Hutterite Colonies a full listing of assets and values (other buildings, quota, etc.) was collected to ensure all capital and related costs were allocated appropriately. In the case of Hutterite Colonies, where fair market values of buildings were not available for 2009 the values were based on current cost data discounted according to age and structure of each facility. A separate observation of Hutterite Colonies has been developed for comparative purposes.

In a limited number of cases crops such as silage, fescue, seed canola, flax and other seed operations have been included in the dryland grain, oilseed & pulse or irrigated grain, oilseed & pulse categories because the producer felt that it used the same land, equipment and labour as the other crops. In general producers didn't provide a breakdown of the various possible silage options and subsequently this crop is reported simply as "silage".

Crop pricing data was standardized using external references in order to eliminate the effect of selective memory by participants and the tremendous variability between the participants' actual pricing results. It is not possible to analyze the sales of crops from each farm in order to arrive at a fair weighted average and thus effectively survey the impact of marketing strategies or grain quality on farm profitability. Individual price results may therefore deviate significantly from the prices reported in this report due to location, grade, quality, market timing and individual marketing skills. External references included publicly available data such as Alberta Agriculture and Rural Development (ARD), Alberta Canola Council, Alberta Grain Commission, Alberta Financial Services Corporation (AFSC) and Canadian Wheat Board data. Prices were compiled based upon the 2009 crop marketing year. Feed grains that are transferred to other enterprises will be priced on an opportunity cost basis. In situations where public data was not

readily available or observations were limited, producer data has been utilized. Examples include potatoes, and camelina. Seed canola also presents a challenge in that there are various systems utilized in the industry with no publicly available reference point. Where available and material, regional adjustments have been made to adjust for distance to market for some commodities. It is important to note that no adjustments have been made for grade and protein differences as again they have been standardized. Moreover, by utilizing questionnaire and crop record data from the participants for assessing outputs rather than financial statement data the impact of marketing profits or losses on the sale of the prior (2008) crop are eliminated from the database.

Table 6 Pricing Sources Used in Analysis

Crop Category	*Comment*
CWB grains	Based on CWB final payments less average Alberta deductions as posted on the CWB website.
Feed grains	Based on historical pricing as posted by ARD / Alberta Canola Council websites and adjusted for region where applicable.
Canola	Based on a historical Alberta crusher average as supplied Alberta Grain Commission.
Peas, rye, forage seed, lentils, mustard	AFSC website, Sask Ag website (red lentils only).
Dry beans	Viterra
Silage, greenfeed, alfalfa	MNP monthly pricing database which is based upon the ARD / Alberta Canola Council websites; supplemented with local surveys where applicable.
Potatoes, camelina, seed canola, grass seed and other miscellaneous crops	As provided by client.

On the per unit cost of production (COP) benchmarking, other farm costs such as operating and overhead are allocated to the crop operation and individual crops based on a percentage allocation as supplied by the participant. By distributing the costs over all seeded acres a total per acre cost per crop is calculated and when divided by yield, a per unit cost of production is also calculated. Production and costs are based on accrued production and accrued costs.

Other deviations from the historical financial statement information will include the following:

- Market prices for individual commodities.
- Seed costs will be calculated on a seed-used basis including bin-run seed at opportunity cost. The Financial statements in most cases will only show seed purchased.
- Depreciation (amortization) at fair market values vs. book/tax rates
- All labour hours are calculated based on standard labour rates as supplied by ARD.

Exclusions include:

- Enterprise allocations are based on the crop portion of each business only. The report excludes mixed operation analysis (e.g. beef, dairy, hog, poultry etc) and therefore the income and expenses that relate to those enterprises.
- Non-farm revenues and expenses were excluded.
- Government program revenue like AgriStability was excluded.

Sorting of data as presented in this report has been done on a direct cost basis only (unless otherwise stated). Sorting labelled Top 1/3 in these cases indicate the sort was based on lowest direct costs. Direct costs include seed, fertilizer, chemical, production insurance and other production expenses. Sorting by this method doesn't necessarily imply those categorized in the Top 1/3 have 'best' overall results in terms of total costs, net revenue or even return on investment, in fact results can vary dramatically. Interest on long term debt has been added

back to net income to derive return on investment to illustrate return on capital invested irrespective of the level of debt used to purchase the asset. This approach maintains comparability across all debt structures.

When referencing the Appendix tables please note there are less than three samples in the Grey Wooded Soil Zone so it is not included in the Grain, Oilseed and Pulse Summary, further there are no farm samples in the data base for the Grey Soil Zone in the south.

Investment and Productivity Benchmark Analysis

DATABASE

The irrigation report will review irrigated farms located in Southern Alberta. Included in this analysis will be details on irrigated specialty crops including alfalfa hay, canola seed, potatoes, dry beans and when possible flax and alfalfa seed.

SOIL ZONE MAP

The 2009 study includes soil zone information incorporated into the 2009 database. The map indicates the main soil zones in Alberta. Data collected in this report has been aggregated into the applicable Alberta soil zones for analysis purposes.

DATABASE SUMMARY

Table 7 summarizes the farm data in the analysis.

Table 7 Irrigation Database Summary

Table 7 summarizes all the main grain, oilseed, pulse acres crops and all of the other acres including many minor crops like dry beans, alfalfa, silage, timothy etc. This table also includes a summary of colonies and commercial farms.

Enterprise	*Irrigated*
# of Commercial Farms	16
# of Colonies	11
Total Acres	32,826
Avg. Seeded Acres	937.88

- *Table 7 is all irrigated enterprises and as such will tally with table 2 above*

INVESTMENT LEVELS

Table 8 summarizes the three types of fixed asset investment (per acre) analyzed in the database. Table 8 is prepared using Fair Market Values.

Table 8 Investment Summary – Irrigated

Top 1/3 sort is by ROI (which differs from the enterprise and crop detail reports contained later in this document). In other words the dollar amounts shown are for the highest 1/3 ROI group. The Top 1/3 group employ about 5% less Total Capital than the average of the whole group with the economies spread throughout the three asset types.

Irrigated Investment $/acre		
	Average	Top 1/3
Machinery	$895	$747
Buildings	$173	$219
Land	$2,397	$2,320
Total	**$3,465**	**$3,287**
ROI %	-0.24%	11.75%

LABOUR USAGE

Data on Labour Usage is displayed in the table 9. The top 1/3 is sorted in terms of labour usage (most acres per labour unit).

Table 9 Labour Usage- Irrigated

	Irrigated	
	Average	Top 1/3
Hours per Acre	33.68	5.06
Acres per Labour Unit	305	734

There is a fairly dramatic difference between the average and the top 1/3 in this group. However the sample is relatively small which will increase the variance in the numbers and also there will be very significant differences because of the preferred crop mix. Those farms with a bias towards more labour intensive crops may predominate in the top 1/3 because these are the most profitable crops and this may distort the result. As the profitability analysis later in the report shows there is a lot of difference between profitability amongst the irrigated crops.

REPLACEMENT RATE

Table 10 Equipment Replacement rate – Irrigation

Table 10 shows the average age in years for each items of the following items of equipment on the surveyed farms. The top 1/3 is sorted by lowest average age.

	Irrigated	
	Average	Top 1/3
Tractor	10.4	4.0
Combine	7.5	2.0
Sprayer	7.9	2.1

It is evident that tractors are made to last the longest and that the top 1/3 group tend to change their equipment significantly sooner than the average.

There are a number of Charts found in the Analysis section of the report that utilize the replacement rate. In order to make these charts more intuitive to look at, the replacement rate is converted to a “replacement index”. This is described in more detail later but a low replacement index denotes longer periods between replacements than a high index. An index of 100 would denote someone changing equipment every year. Table 11 below shows the data from table 10 converted into replacement index which is used in the charts later on in the report. A high replacement index denotes a farm that cycles its equipment more rapidly.

Three items were surveyed in the study being the front-line tractor, the sprayer and the combine and the replacement policies on these were taken to be indicative of the general “policy” of replacement on the subject farm. In order to make the charts more intuitive to read the “Replacement Index” was taken as the reciprocal of the average age of the three equipment items and the average age of their predecessors on the subject farm. The effect of the reciprocal (which is 1 divided by the average age of the equipment multiplied by 100 so as to give a whole number with no fractions) is to give a lower “index” on farms which extend the life

of their equipment. High Indexes are indicative of farms that replace equipment rapidly and aggressively. The table above is sorted by Net Income and shows that those farms with the highest Net Income replace equipment more frequently. We will see later that the farms that replace aggressively do not achieve significantly higher production and so most likely what we are seeing here is that it is profitability that is driving the decision to replace more aggressively.

Table 11 Replacement Index - Irrigated

	Irrigated	
	Average	Top 1/3
Tractor	9.6	25
Combine	13.3	50
Sprayer	12.7	47.6

Replacement Index is calculated thus: (1/Average Age in Years) X 100

COST OF PRODUCTION RESULTS

ENTERPRISE SUMMARY

Table 12 shows the per acre analysis of the main components of the profitability and costs of production. This data is presented in more detail in Appendix II. The top third is determined by lowest direct cost of production per unit produced.

Table 12 Enterprise Income Summary - Irrigated

Grain, Oilseed & Pulse Farm Enterprise Summary		
	Avg.	**Top 1/3**
Crop Revenue	$453.82	$642.86
Direct Costs	$188.83	$182.80
Gross Margin	$271.27	$472.23
Operating Expenses	$155.32	$188.05
Contribution Margin	$115.95	$284.18
Administration & Overhead	$135.12	$188.15
Total Cost	$479.28	$559.00
Net Earnings	-$19.17	$96.03
ROI %	-0.01%	3.65%

CROP DETAIL SUMMARY

Table 13 is an example summary of the Crop Detail Summary for Canola which has been developed for all crops as shown in Appendix III.

Table 13 Crop Detail Summaries – Irrigated Canola

	Irrigated	
	Average per acre	**$/bushel**
Yield	49.96	
Gross Revenue	$450.60	$9.02
Direct Costs	$228.52	$4.57
Gross Margin	$222.08	$4.45
Operating Expenses	$204.28	$4.09
Contribution Margin	$17.81	$0.36
Admin. & Overhead	$148.72	$2.98
Cost of production	$581.51	$11.64
Net earnings	-$130.91	-$2.62
ROI	-3.13%	

MANAGEMENT PRACTICES

Table 14 summarizes the answers to questions regarding various management practices of the sample.

Table 14 Summary of Best Practices - Irrigation

Farm Management Practices	*Average*	*Top 1/3 sorted by Net Income per acre*
Uses Rented land	66%	53%
In Crop Insurance	69%	88%
In AgriStability	100%	100%
Hires Agronomists	62%	55%
Uses a GPS system	100%	100%
Uses certified wheat and barley seed	89%	73%
Minimum tillage seeding system	37%	20%
No tillage seeding system	23%	18%
Conventional tillage seeding system	40%	63%

The irrigated group show very similar results to the dryland group. There is some overlap between the groups which would tend to make the results more similar.

About two thirds of the irrigated samples were using rented land in some fashion. About two thirds use crop insurance and all were in AgriStability (but this was a criterion for participation in the survey for data purposes and so is not a surprising result). No tillage is essentially considered direct seeding (one pass) with minimal disturbance of the soil, minimum tillage is when some soil disturbance is necessary but the soil is not turned over, and conventional occurs when the soil is turned over. The amount of conventional tillage amongst this larger farm group was somewhat surprising given the apparent propensity for this group to invest in machinery.

PHYSICAL INPUT USE

Table 15 summarizes the physical quantities of seed and fertilizer used on the 2009 Canola and Wheat (all types) crops as reported by the participants. Potatoes, Alfalfa, Canola Seed and Dry Bean crops are summarized in Appendix III

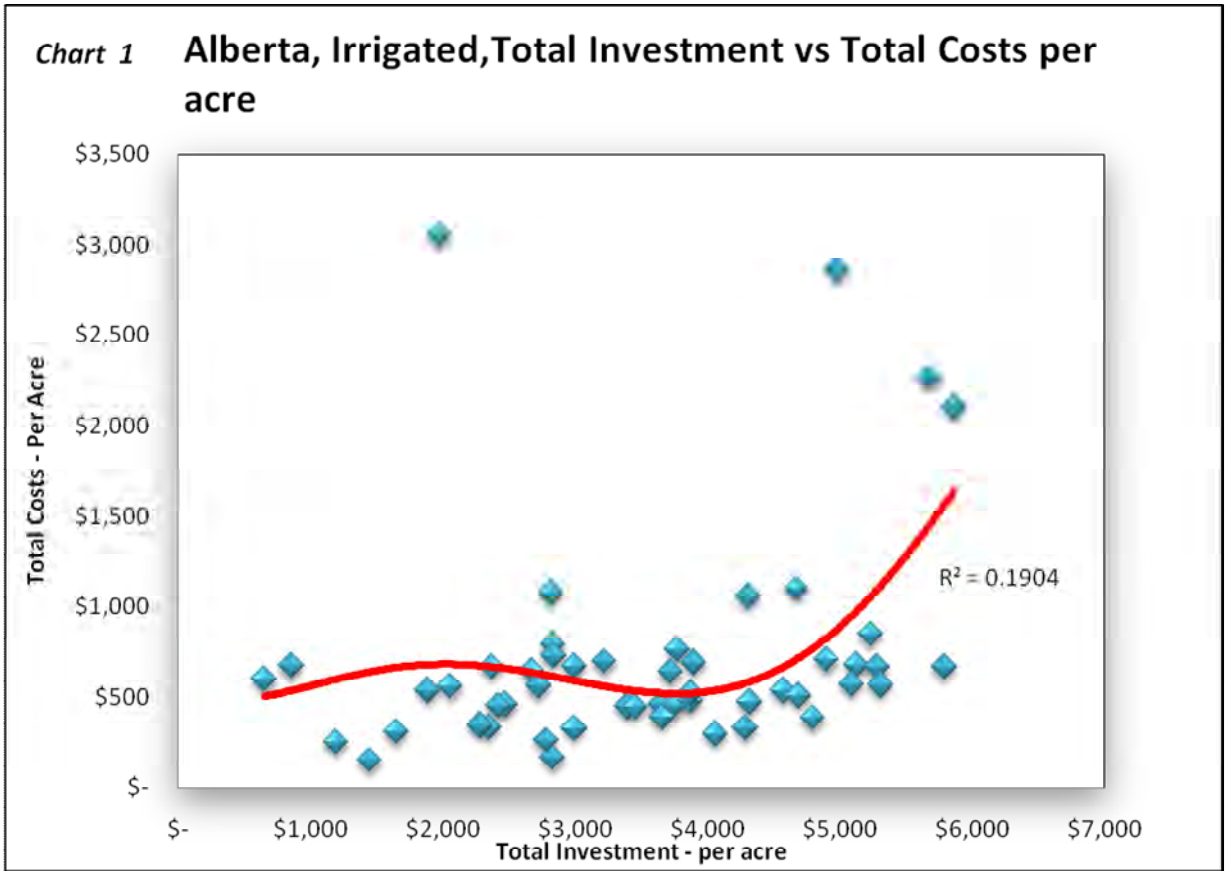
Table 15 Input Use Summary Irrigated Specialty Crops

	Potatoes	*Alfalfa*	*Canola Seed*	*Dry Beans*	*Flax*
Seed rate	2,000 lbs	4.4 lbs	5 lbs	69 lbs	1 bu
Nitrogen lbs/ac	240 lbs	14 lbs	135 lbs	86 lbs	95 lbs
Phosphorous lbs/ac	88 lbs	23 lbs	36 lbs	28 lbs	33 lbs
Potassium lbs/ac	84 lbs	16 lbs	20 lbs	9 lbs	10 lbs
Sulphur lbs/ac	8 lbs	2 lbs	8 lbs	2 lbs	2 lbs

ANALYSIS

In the charts that follow in order to assist the reader trend lines have been included that trace a line of "best-fit" between the sometimes numerous data points. Except where a trend-line intersects every point on a scatter chart these lines are a compromise and bring some clarity to an often confusing array of points but are not a perfect fit. The degree of "perfection" is shown by the R^2 value appended to every trend line. The closer the R^2 value is to 1.0 the better the "fit" it has to the data points. High R^2 values tend to come from data points that are close together (low variability) and should give the reader more confidence in the degree of correlation between the variables being measured. Charts with high R^2 values and a high number of data points demonstrate a strong correlation and low R^2 values and fewer data points the opposite.

Chart 1 Total Investment per Acre vs. Total Costs per acre



The trend-line indicates not only the gradually increasing costs per acre, primarily associated with capital costs such as depreciation and interest on debt. It also includes repair costs, which as shown later, also tend to rise as machinery investment rises. Also significant is the wide range of investment levels – over $5,000 per acre difference between the highest and the lowest with a corresponding difference of over $1,000 per acre in annual costs.

Chart 2 Total Investment vs. Return on Investment

The trend-line suggests the response of ROI to increasing investment is more or less neutral at 2009 production and cost levels until investment reaches about $4,000 per acre. More special crops like Potatoes, Canola Seed etc are found at this end of the chart. Increasing capital costs mostly offset the gains in yield from better quality land as manifested in gross margin (as illustrated by chart 3). Average ROI for the Irrigated Farms was close to zero in 2009. ROI is defined as net income plus interest on long term debt divided by total investment.

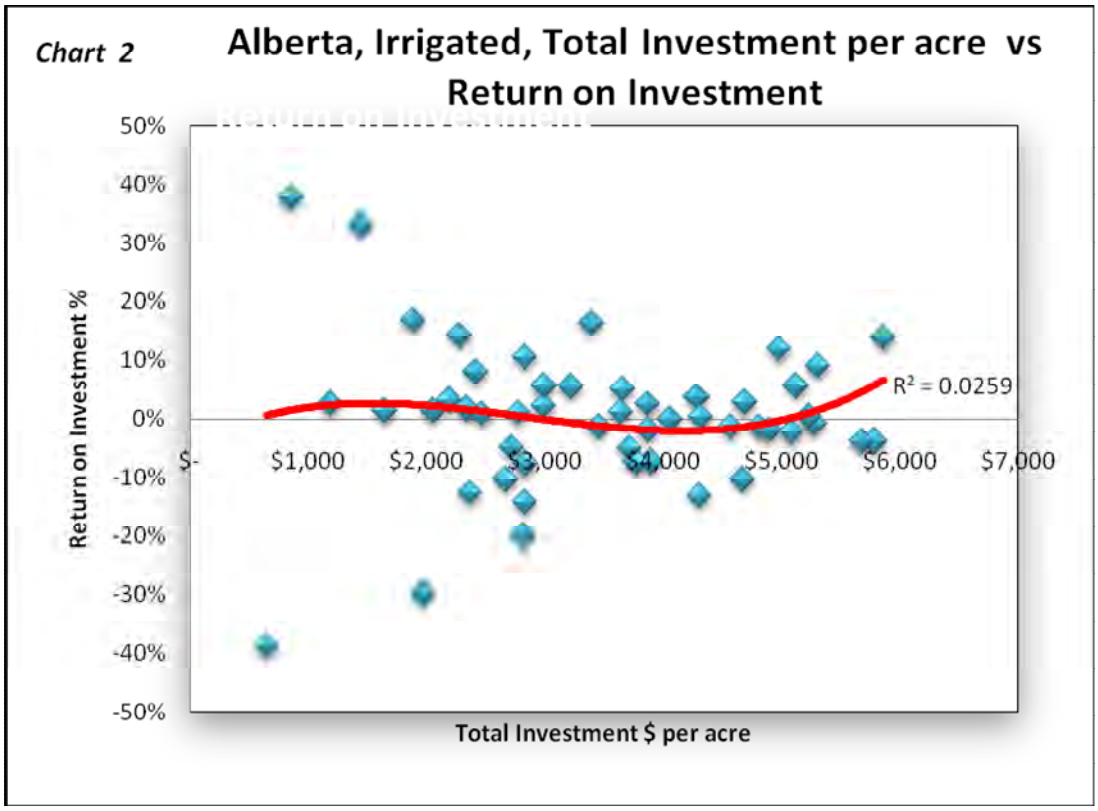


Chart 3 Investment in Land vs. Gross Margin per Acre

This chart attempts to describe the relationship between land quality (as defined by land value) and production (as expressed in the gross margin). Evidently there is a response although it is important to note that the land fair market value is influenced by factors other than productivity (such as scarcity and location), gross margin and yield. While this chart is heavily influenced by yield, management also has a strong impact.

Gross margin initially declines but then trends back up suggesting that the impact of irrigation on the highest quality land is enough to offset the higher costs associated with non-farming demand.

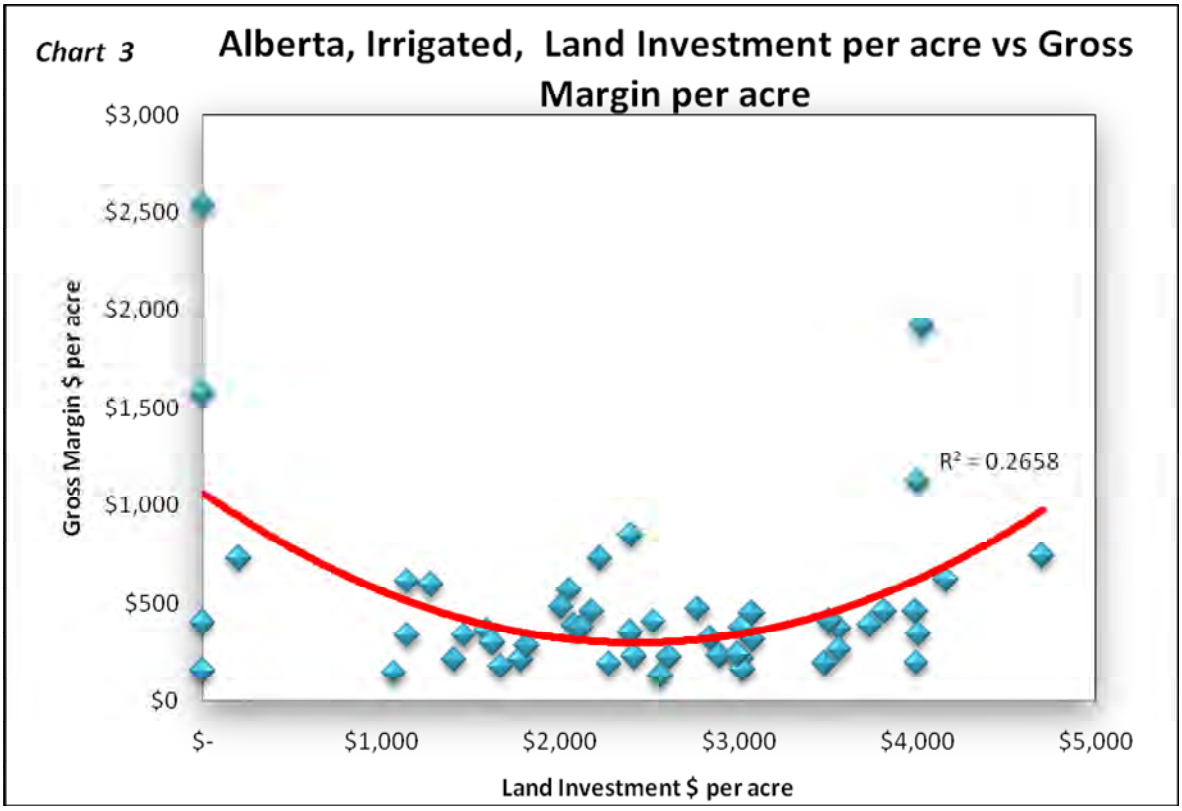


Chart 4 Farm Size vs. Machinery Investment per acre

One of the key influences upon grain farm profitability is the level of investment in machinery. Chart 4 illustrates not only the large range of Machinery Investment levels for irrigated farms that but also that there are efficiency gains through the size range but a lower response than in dryland farming.

Agriculture mirrors other industries in that economies of scale mainly influence machinery and labour costs but have to be managed as the benefits of economies of scale don't just happen because the operation is large.

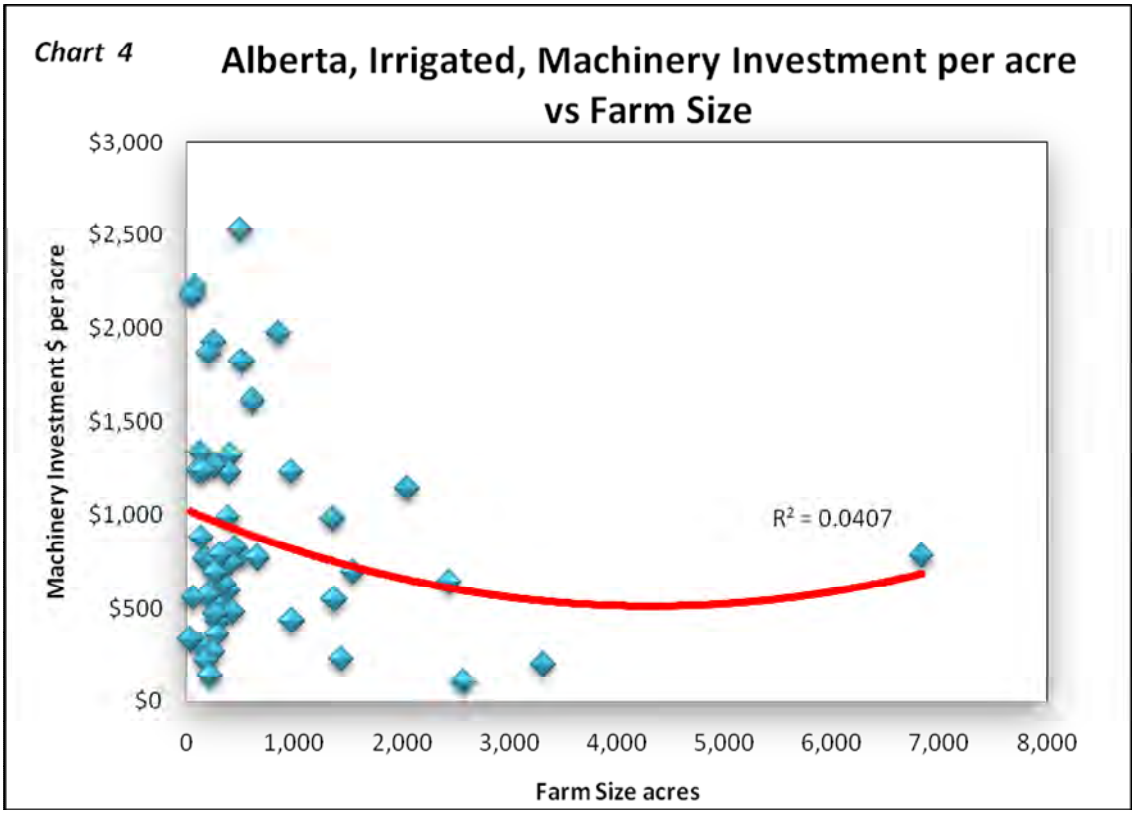


Chart 5 Farm Size vs. Return on Investment

A natural extension of the analysis above in chart 4 would be to ask whether there are any gains in ROI that stem from increasing size. Bear in mind however that the reduction in machinery investment, while it declines as farm size increases is a small part of the total farm investment and the effect, if any, is likely to be mild. The flat trend line in chart 5 indicates that larger farms are not generally achieving higher ROIs despite their economies of scale.

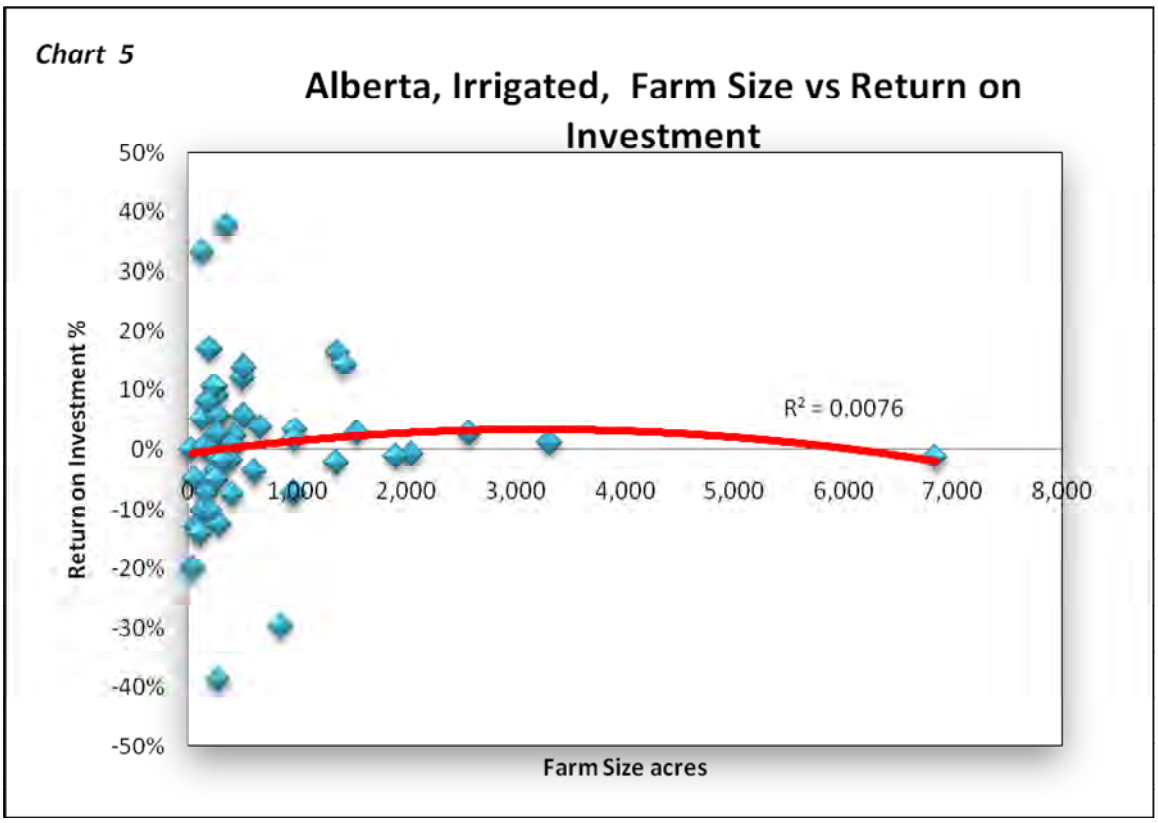


Chart 6 Net Income vs. Total Investment per acre

Ultimately it is Net Income that matters the most and Chart 6 looks at the correlation between increasing investment and Net Income per acre. It is evident that there is a wide range of net incomes achieved at similar investment levels. Furthermore the trend is fairly flat to mildly negative suggesting that something other than farm profits are what drive investment decisions. It is apparent that 2009 saw more about half the farms sampled experiencing negative returns from the 2009 crop.

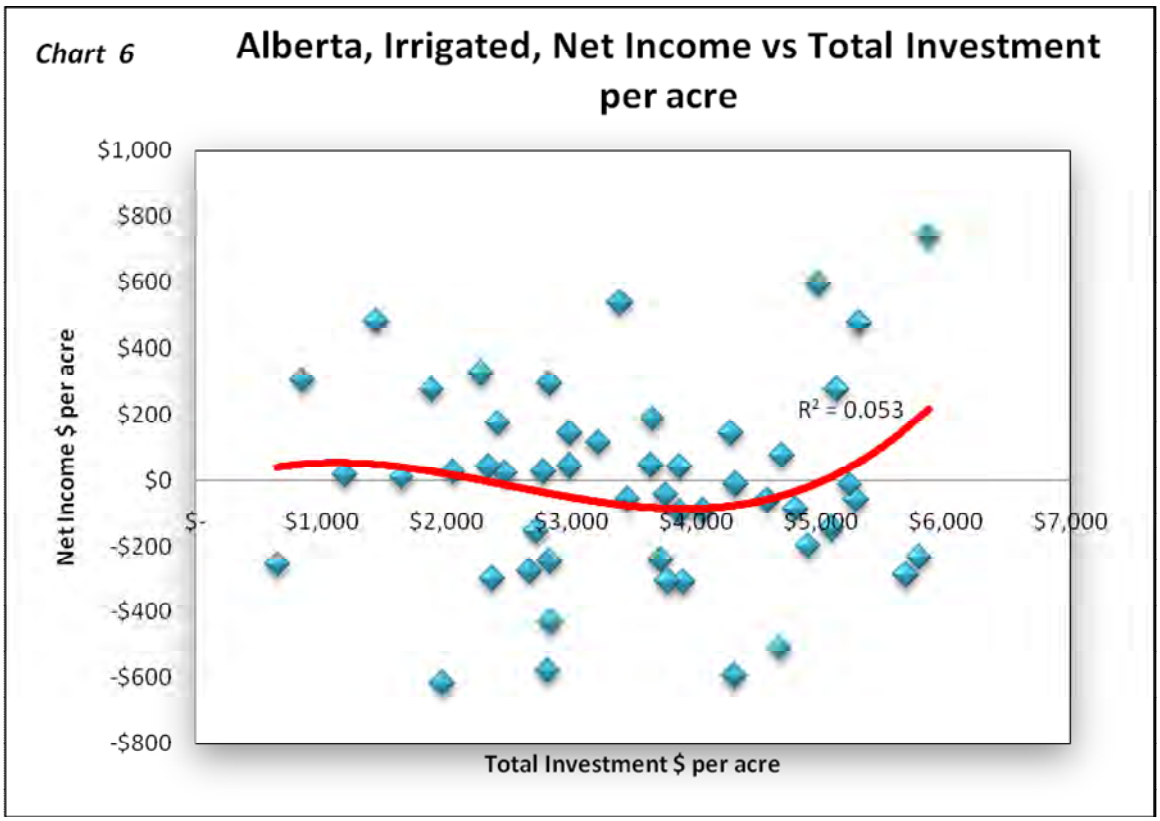


Chart 7 Farm Size vs. Return on Investment – Irrigated Grains, Oilseeds & Pulses

Looking at just the irrigated grains , oilseeds and pulses (Wheat, Barley, Pulses, and Canola) shows that the ROI is fairly neutral to farm size in this group, which for the most part is a group with fairly low average size.

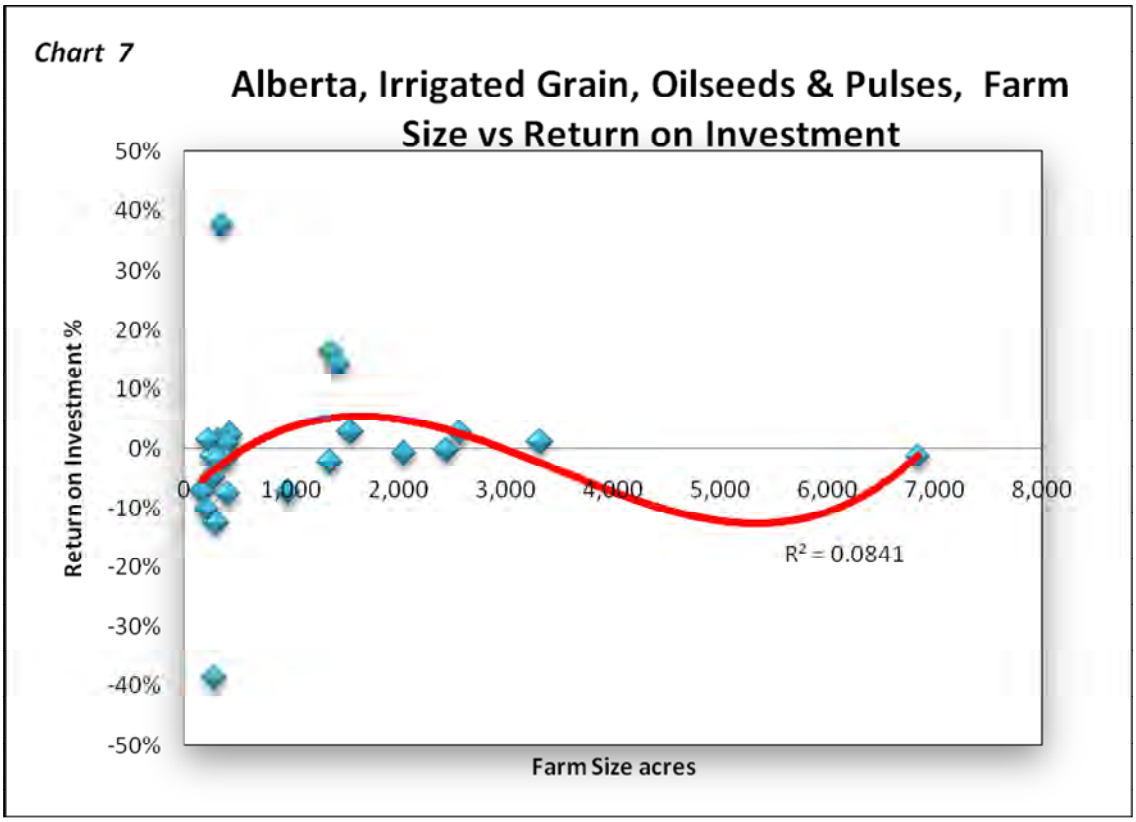


Chart 8 Farm Size vs. Return on Investment – Irrigated Specialty Crops

Looking at the Specialty Crops (Canola Seed, Alfalfa Seed, Dry Beans, Alfalfa and Potatoes) it is evident that farm size is also a fairly neutral factor when it comes to ROI.

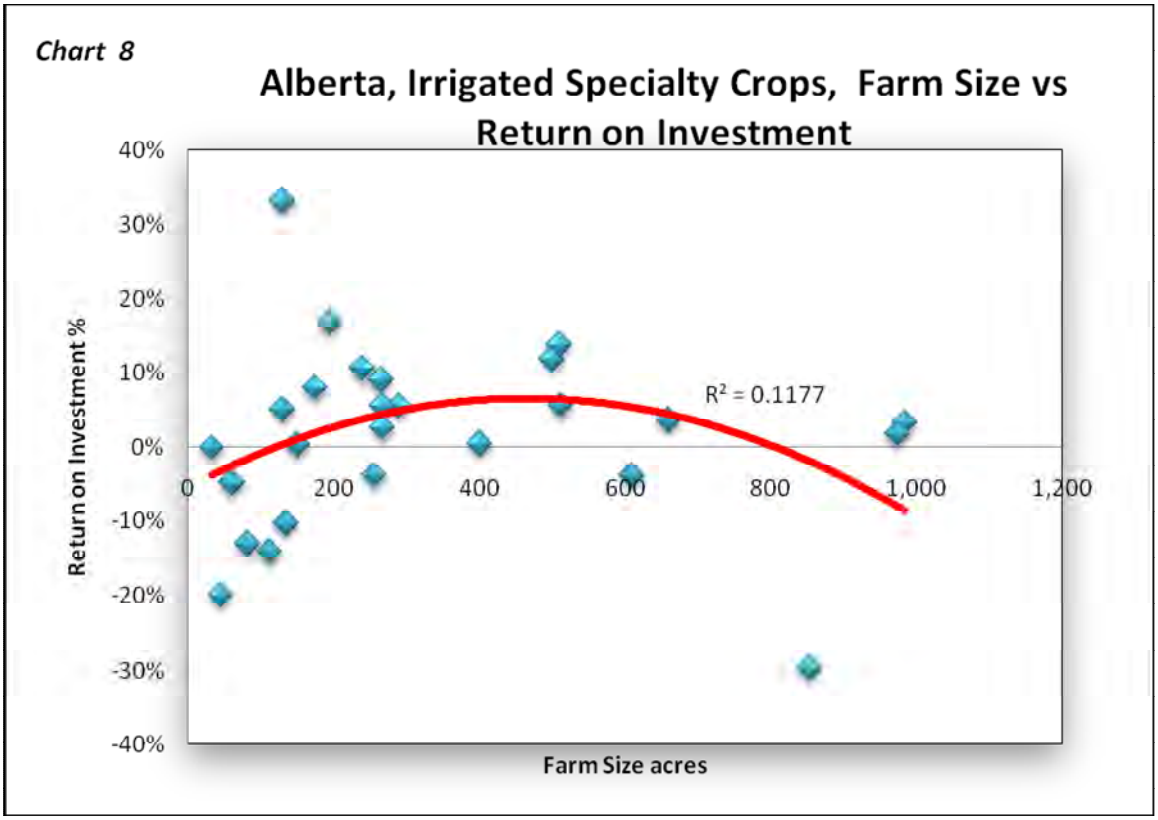


Chart 9 **Ratio of Machinery Investment to Land Investment vs. Return on Investment**

As the ratio of Machinery Investment to land Investment rises there is a marked decline in ROI amongst the irrigated farms. The implication is that maintaining a ratio of less than 30% is important.

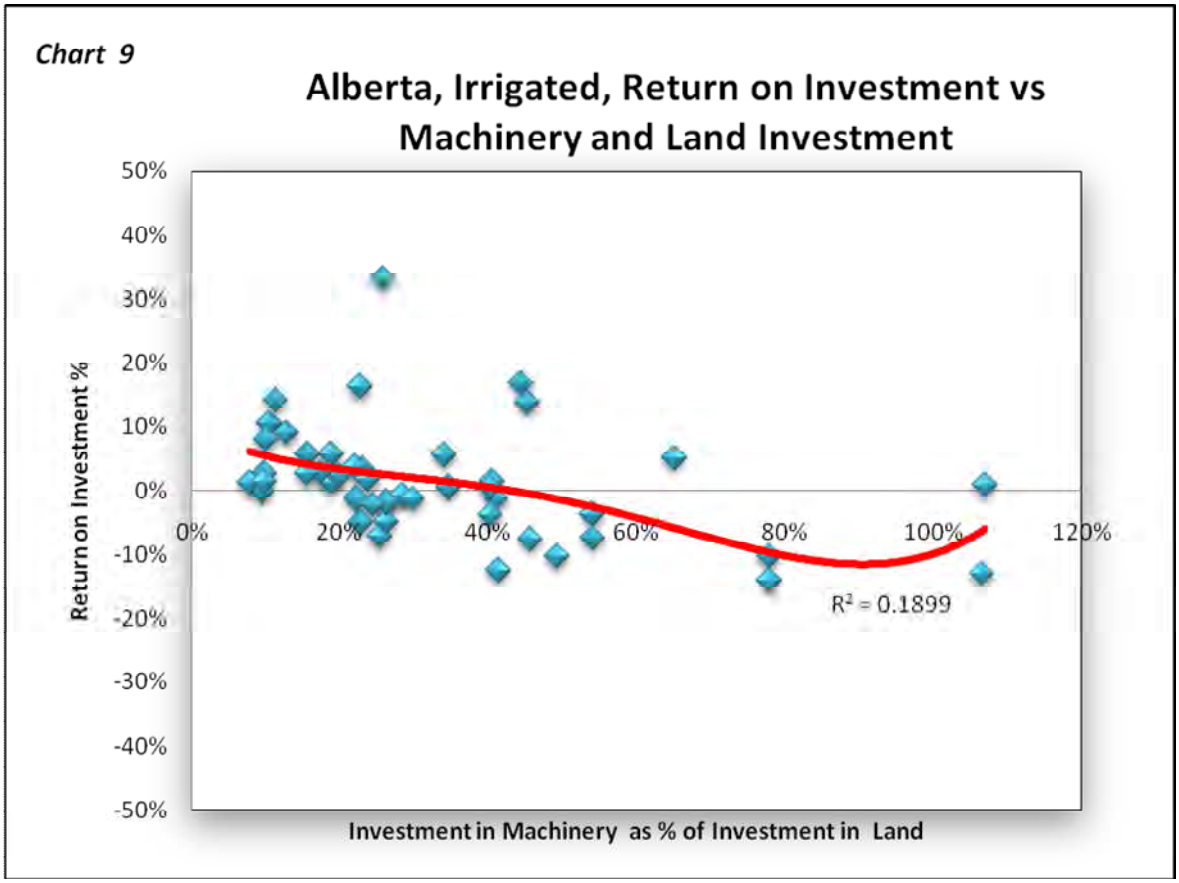


Chart 10 Machinery Investment vs. Machinery Costs per acre

Machinery Costs are defined as the collective costs of Depreciation, Repairs, Cost of Capital (at 5% of investment) and Fuel, these being the primary costs associated with operating an equipment line.

Chart 10 shows the very strong correlation between Machinery Costs per acre and the Machinery Investment per acre. This is important because after ensuring that Gross Margin is maximized or more correctly optimized the next most important task of the farm manager is the efficient operation of the equipment. This begins with the right investment decisions. Chart 11 demonstrates that these Machinery Costs take a large and ever increasing bite out of the Gross Margin leaving fewer and fewer dollars to bear the remaining costs on the farm such as labour, administration, land and building costs. Most of these costs do not decline as investment in equipment increases (so there is no offset).

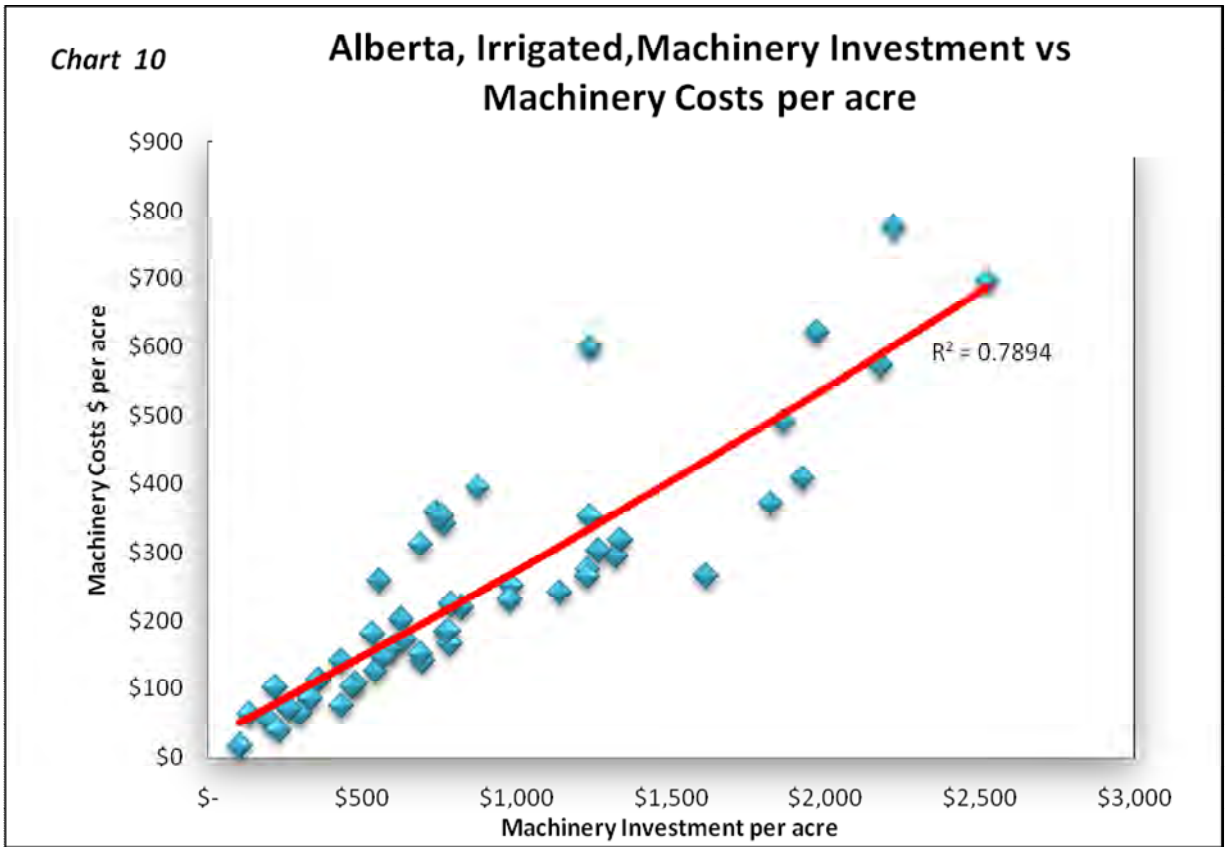


Chart 11 Machinery Costs as Percentage of Gross Margin vs. Machinery Investment

Chart 11 underlines the importance of the Machinery Costs (and its precursor, being Machinery Investment). It shows the machinery costs eroding a greater and greater proportion of the gross margin as it is increased. The lack of gross margin response to higher machinery investment levels is at the root of this problem. As more and more of the gross margin is dedicated to the machinery costs there is less and less available to meet the other expenses on the farm.

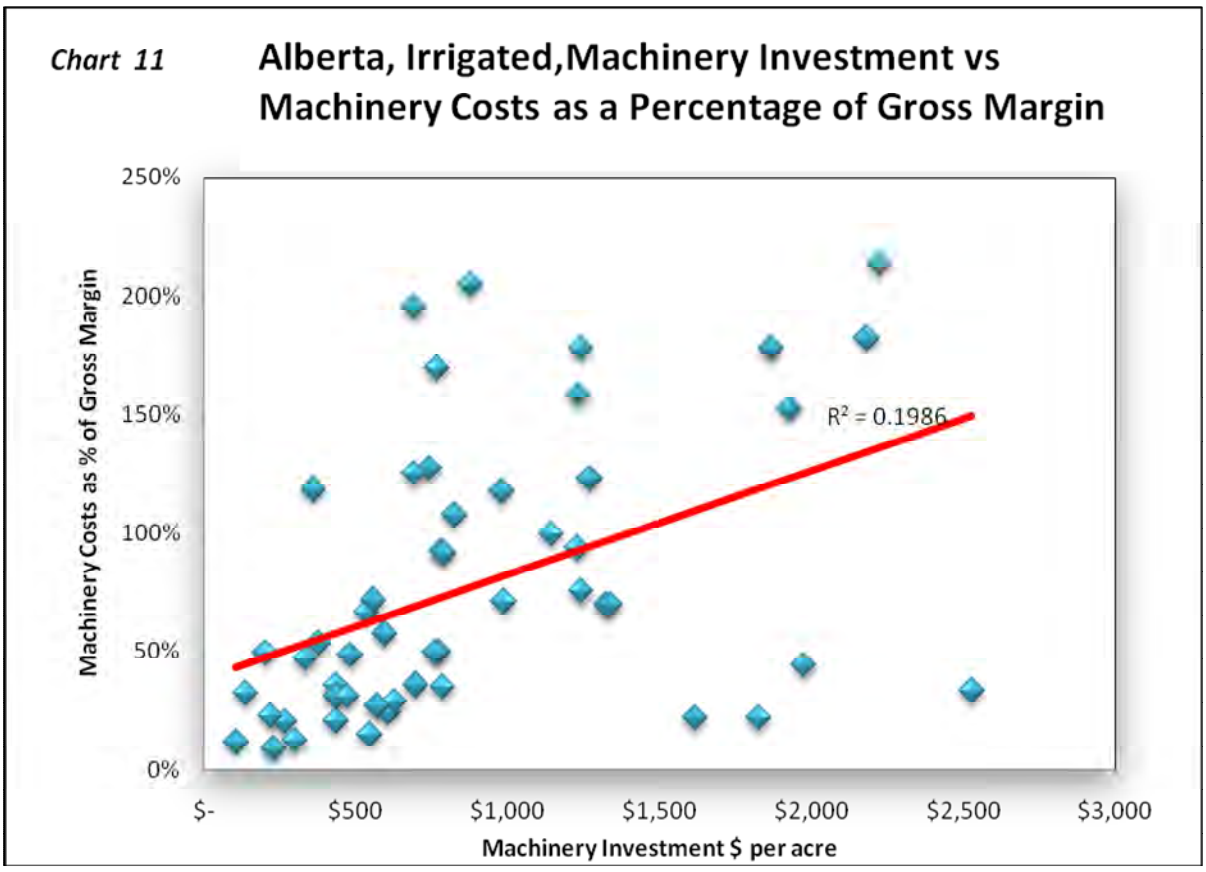


Chart 12 Machinery Investments vs. Net Income

Overall, as Machinery Investment is increased the Net Income declined in 2009 bearing out the point in the paragraph above. Indeed, at 2009 production and pricing levels the increasing costs associated with increasing Machinery Investment forced many of the surveyed farms into deficit. It is apparent that from this chart that investment beyond about $500 per acre was the point at which profit became more or less unattainable on the irrigated farms in 2009. Obviously the challenge for the farm manager is arriving at investment levels that work in the "average" season without compromising operations. However the data suggests that a significant part of the industry may be invested in equipment beyond levels that are sustainable in the long term or average environment.

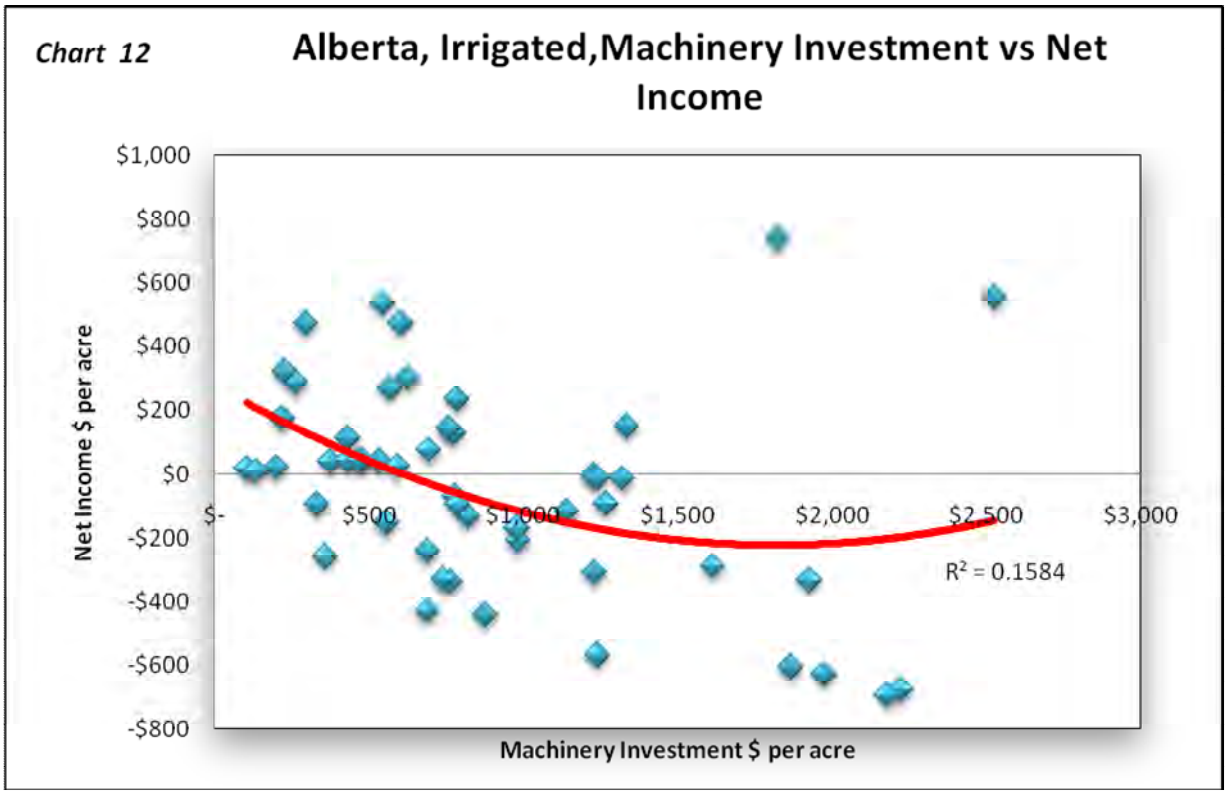


Chart 13 Machinery Investment vs. Machinery Repairs per acre

Farmers commonly will justify machinery purchases on the basis that newer equipment and/or greater investment in equipment leads to savings in repair costs. In this study we measure the Fair Market Value of the Investment in Equipment. High Investment Levels could be due to newer lines of equipment on the subject farms or more items of lower value equipment, we do not differentiate. In the first instance the farmer would be expecting fewer breakdowns in his newer equipment and savings through warranties. In the latter instance, although older equipment is more prone to breakdowns, the farmer's expectation by having more items of equipment (two combines instead of one for example) will be that there is some inbuilt redundancy. Fewer hours are put on each item of equipment and so breakdowns are less likely and therefore repair costs will be lower.

Chart 13 demonstrates that perception is mostly defeated by reality. Repair costs climb as investment increases .

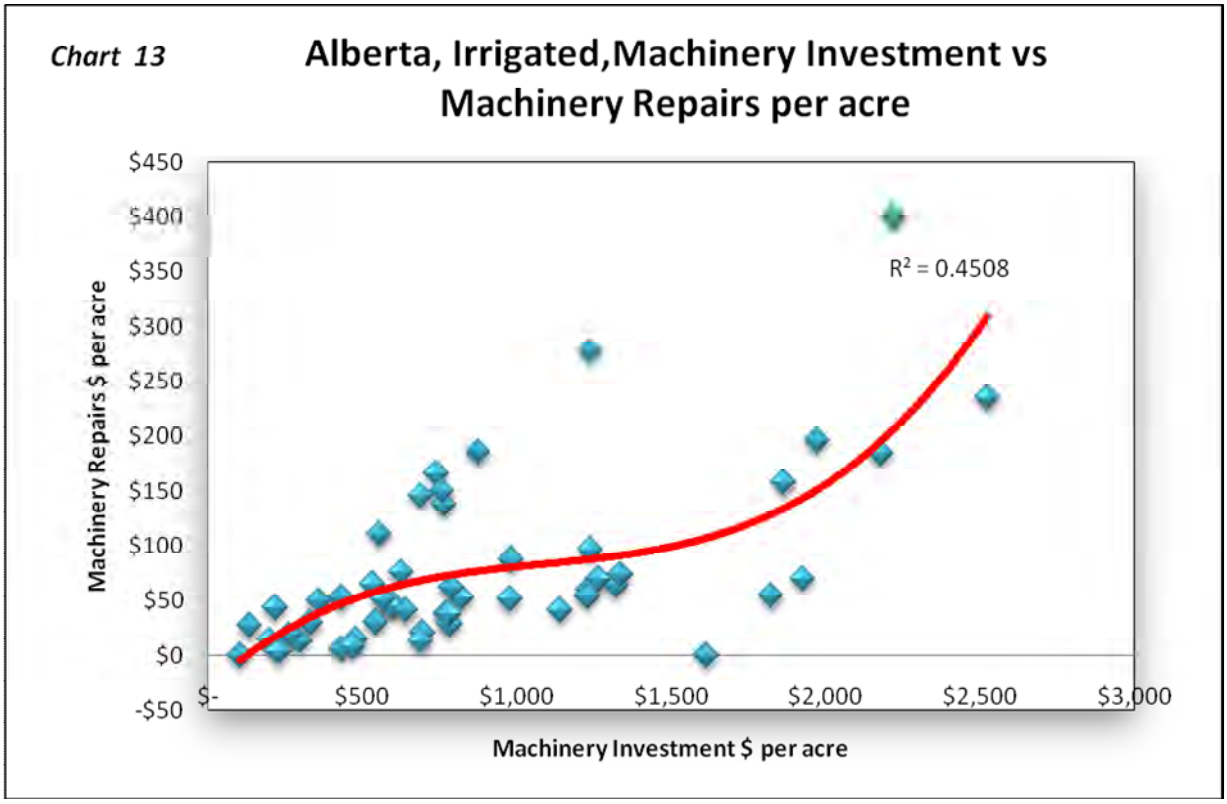


Chart 14 Machinery Investments vs. Cost of Production – Irrigated Grains

What influence do Machinery Investment decisions have upon the cost of production of the main irrigated crops? Chart 14 shows that when all of the various factors are taken into account, if there are production gains coming from increasing machinery investment they were not sufficient to reduce the cost of production of the various irrigated grains (wheat, barley & pulses) in the sample at the cost levels that prevailed in 2009. Cost of production climbs inexorably as machinery investment increases.

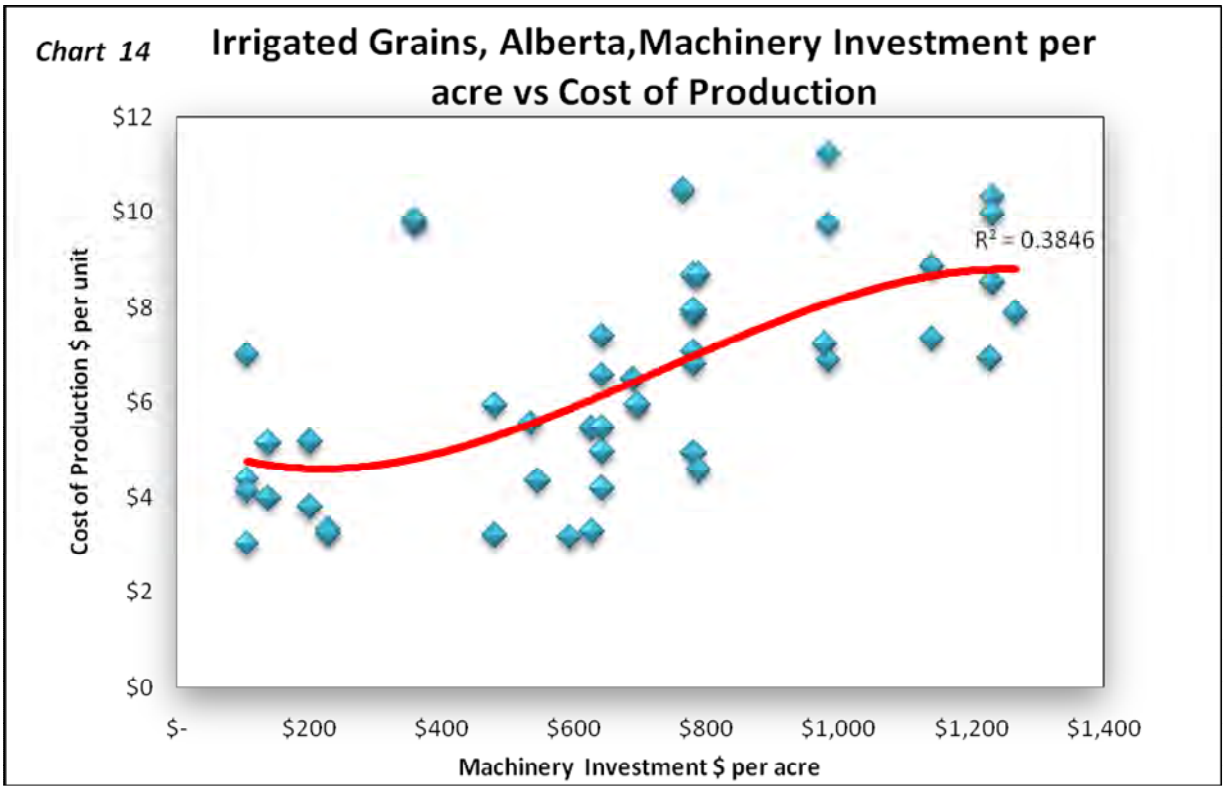


Chart 15 Machinery Investment vs. Cost of Production Irrigated Oilseeds

Irrigated Oilseeds (Canola (not seed) and Flax) show the same trend in Cost of Production as the grains.

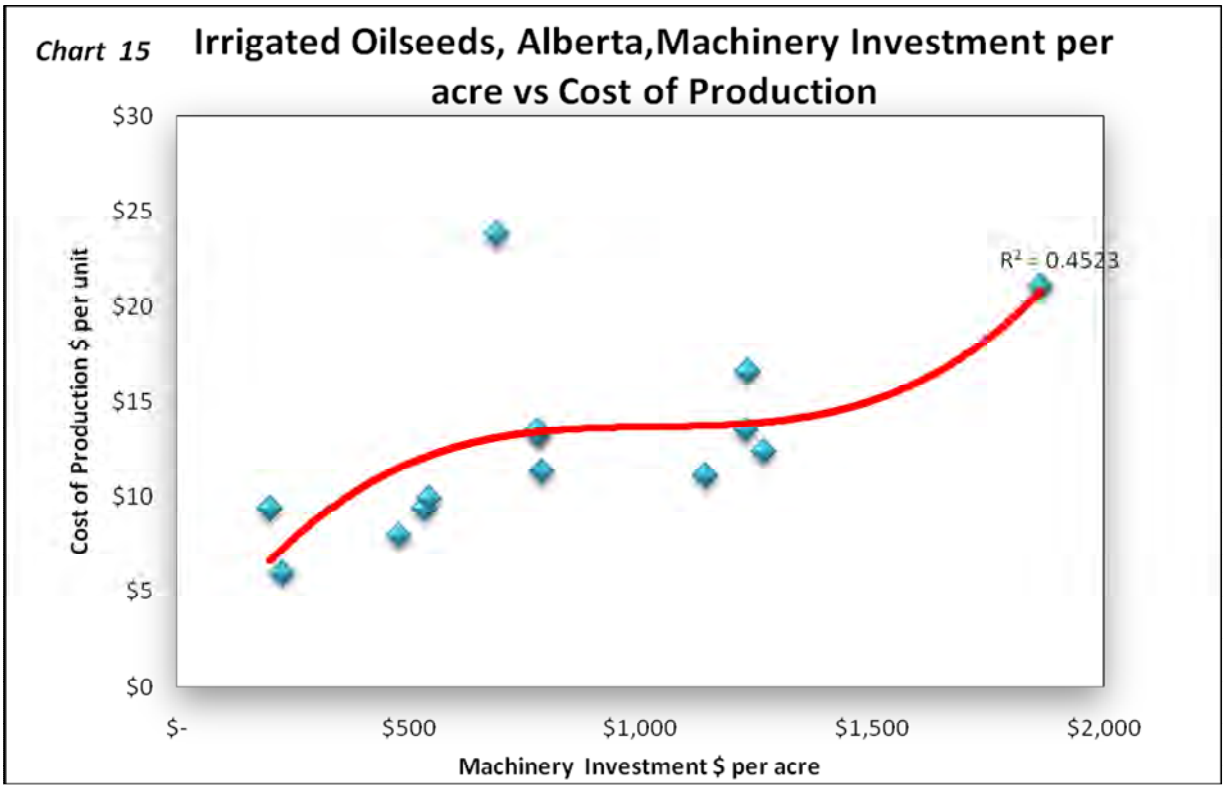


Chart 16 Machinery Investment vs. Cost of Production Irrigated Specialty Crops

The Irrigated Specialty Crops show similar increases in Cost of Production as the more conventional crops.

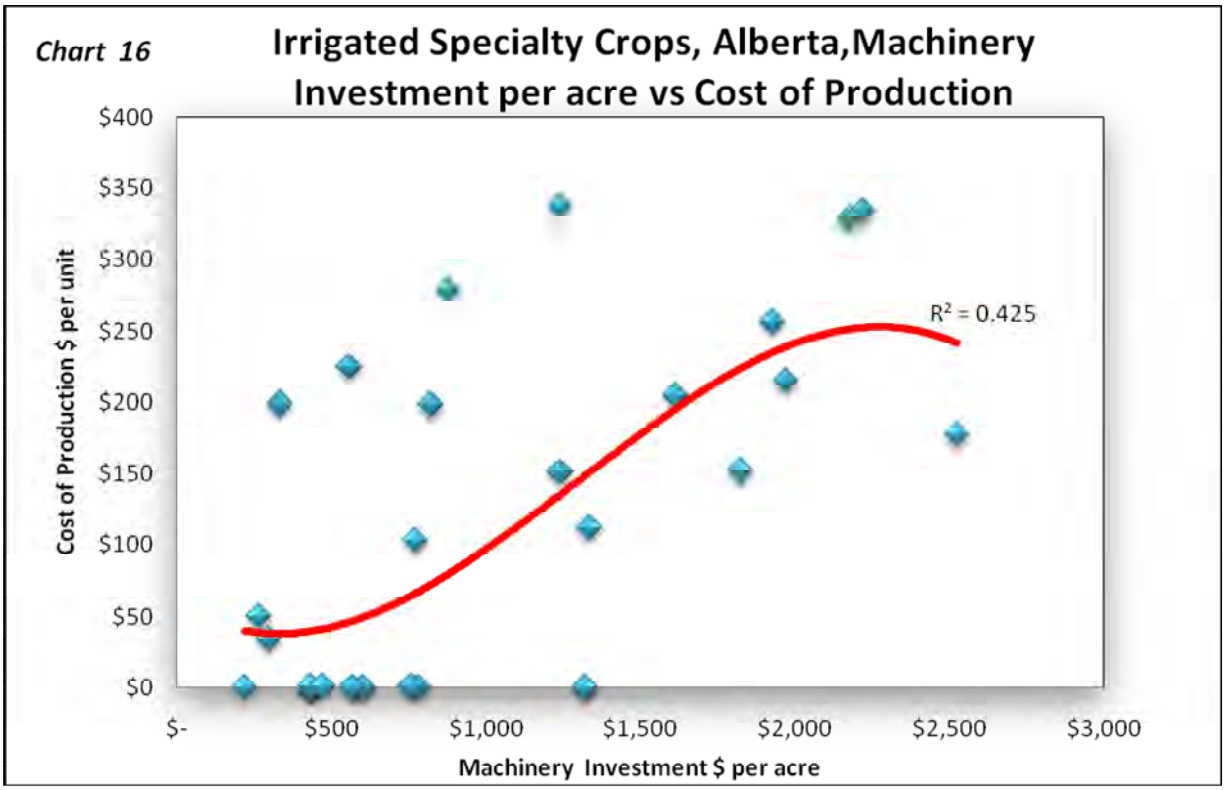


Chart 17 Replacement Index vs. Machinery Investment

Replacement Index is described earlier in the report but in simple terms it is a calculation used to convert the average age of equipment on each farm into a single number that permits an intuitive chart. A high replacement index denotes a low average age of the main equipment items and describes a farm that has an apparent policy of aggressive and frequent equipment replacement. The perception may be on those farms that this policy keeps machinery operating costs down and reliability (and therefore production or gross margins) up.

Chart 17 shows that on the irrigated farms that the majority of the equipment is under ten years old and that as replacement rates increase (lower replacement index) the investment declines until the average age drops below 30 months at which point the line trends back up.

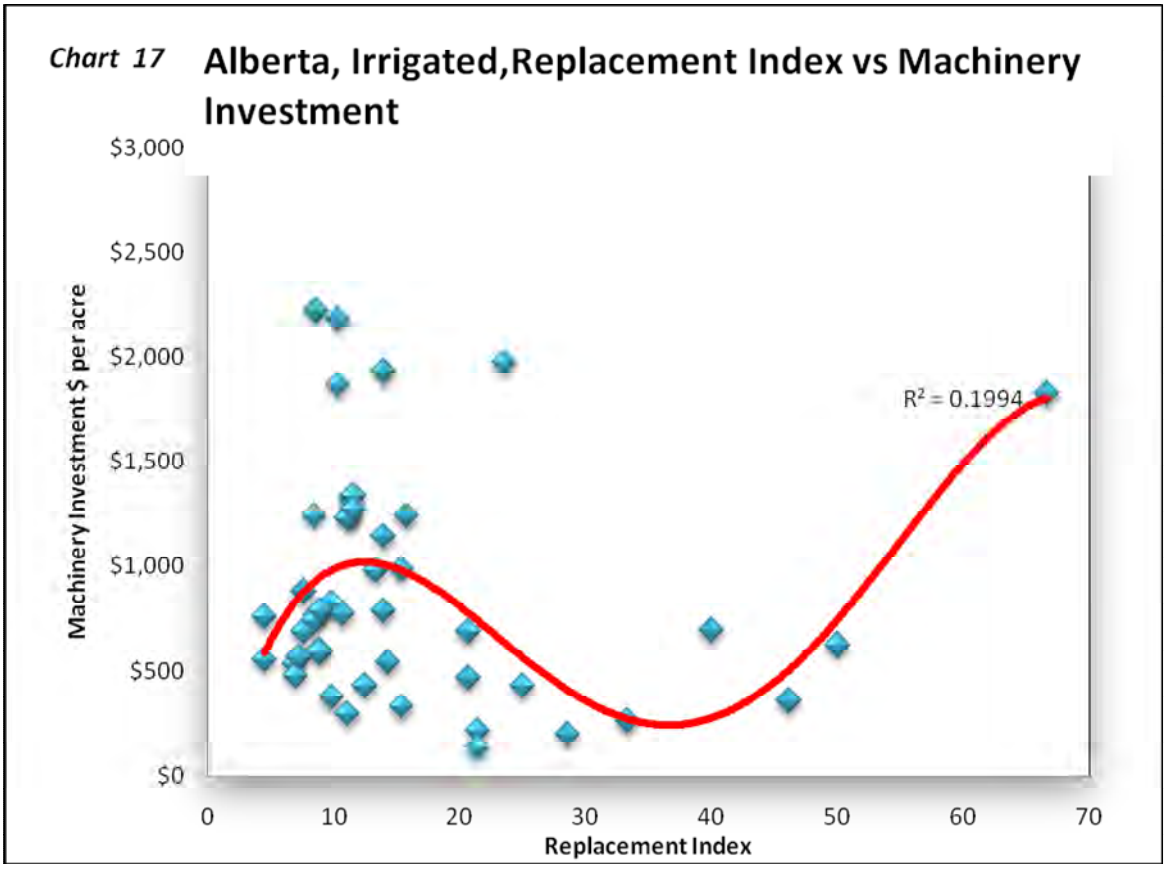
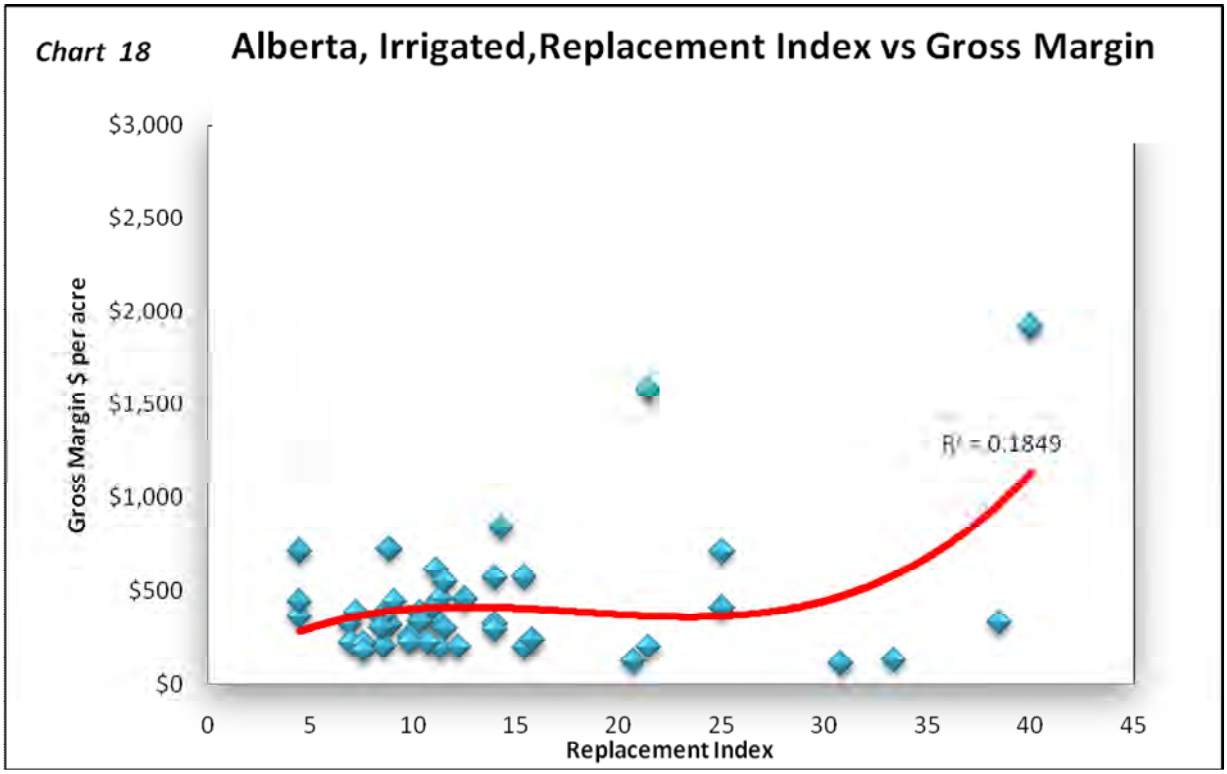


Chart 18 Replacement Index vs. Gross Margin per acre

The popular perception as already discussed is that newer equipment means greater reliability and therefore greater production. Insofar as the methodology allows (focussing only upon yield rather than yield and grade, and therefore price) the indications are that there is a benefit of as much as $500 per acre in Gross Margin from newer versus older equipment.



LABOUR USAGE

Chart 19 Machinery Investments vs. Acres per Labour Unit

A common remedy to insufficient labour resources in the Prairies has been to mechanize farms for greater efficiency – bigger equipment (aka more investment) allows more acres to be farmed with fewer labour resources. The survey asked for a subjective opinion from the participants of the hours of labour usage on their farms in 2009. Bar one or two, none kept timesheets and so this was a survey of opinions only but the results do give some broad indications on labour usage and therefore costs. The "labour-unit" as discussed in this section is defined as 2,200 hours per annum.

It is evident from Chart 19 that labour efficiency gradually declined as machinery investment increases and so labour costs and machinery costs would have been increasing in-step with each other. However, a more in-depth analysis shows that the most efficient crops (grains, oilseeds and pulses) dominate the left hand side of the chart while the more labour intensive specialty crops, especially potatoes, dominate the right. Inevitably the chart will appear to show diminishing efficiency but in fact its shape has more to do with crop types than anything else.

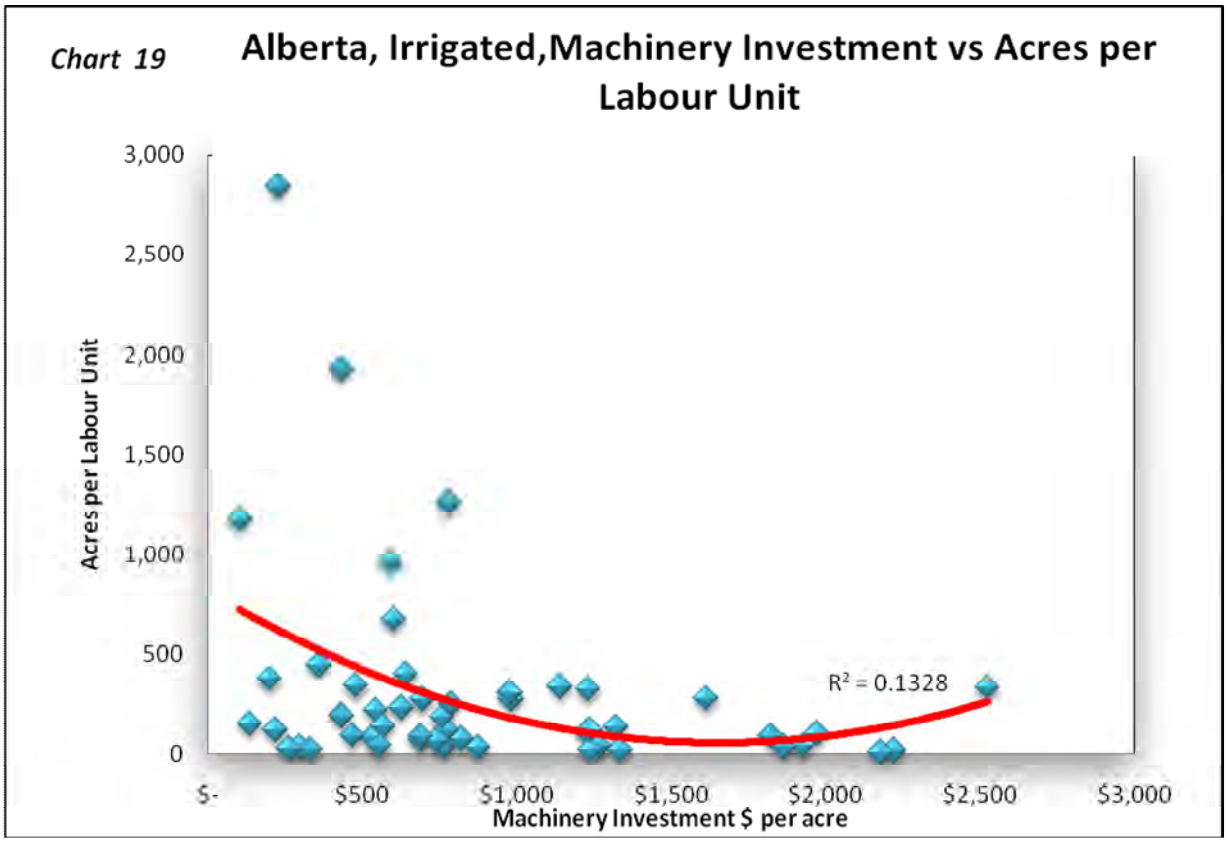


Chart 20 Farm Size vs Acres Per Labour Unit

It is evident from Chart 20 that it is Farm Size that seems to have the most significant impact upon labour efficiency with fairly steady gains in acres farmed per labour unit employed right through to the 6,000 acre mark. Like other industries, scale makes a difference when it comes to efficient and productive use of labour in Agriculture.

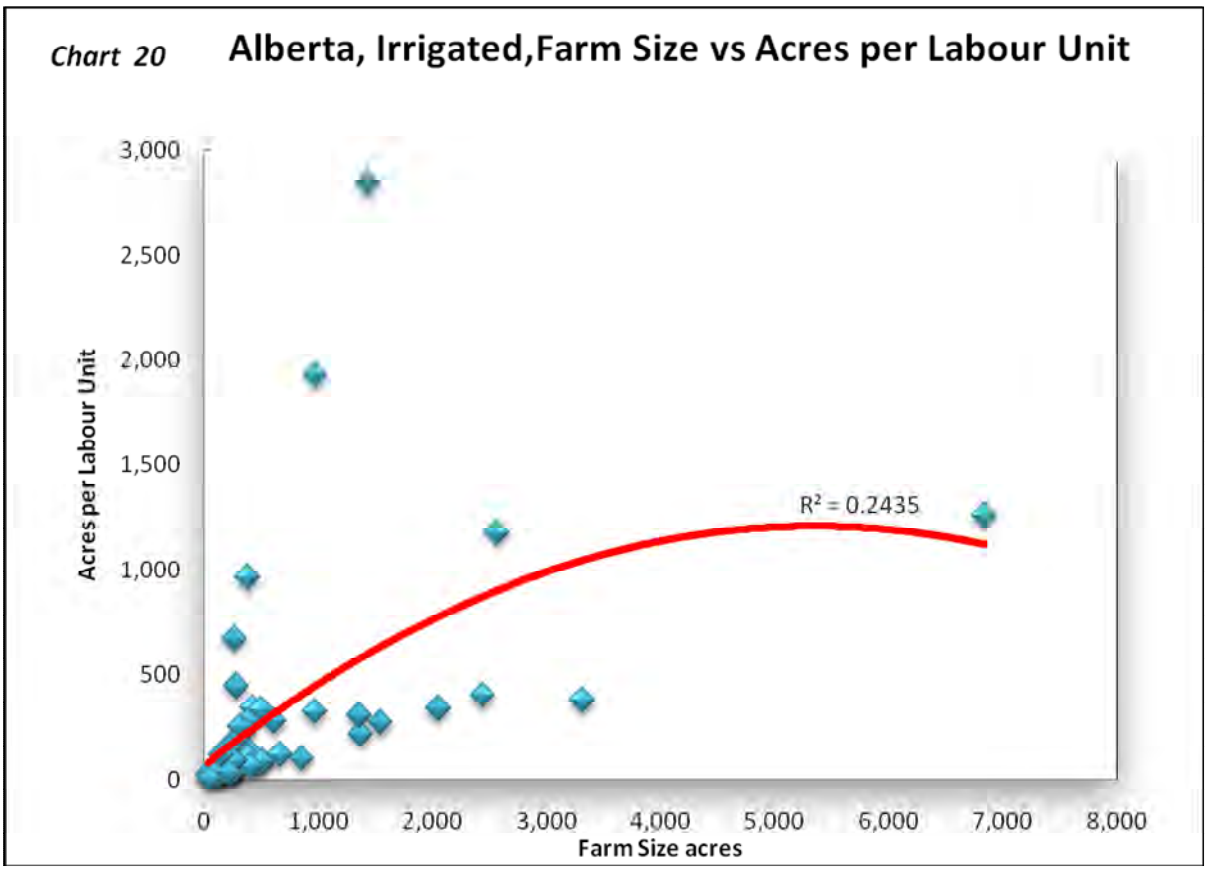


Chart 21 Machinery Costs and Custom Work per acre vs. Acres per labour Unit

The question arises whether the rising costs of operating machinery as seen in Chart10 are offset by decreasing labour costs as the farm gets more efficient – although as we have already seen in Chart 19 there appear to be minimal gains in efficiency at best. In this instance we need to factor-in the impact of custom work as this contains both machinery and a labour cost elements. Evidently as we see in Chart 21 as the labour efficiency increases there are worthwhile declines in Machinery Costs and Custom Costs per acre.

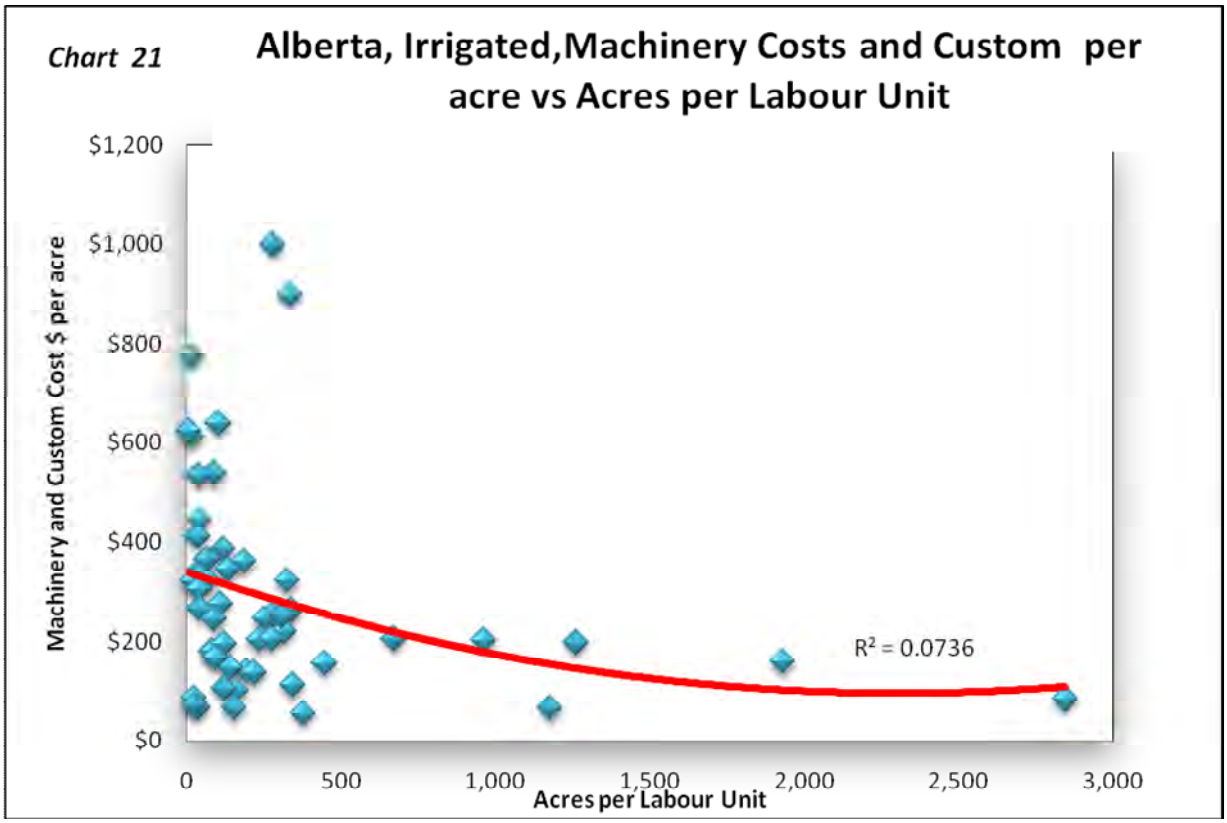


Chart 22 Fertilizer Costs vs. Gross Margin per acre – Irrigated

This chart shows significant gains in Gross Margin as Fertilizer Costs increase. This underlines the expected higher response rates to fertilizer under irrigation.

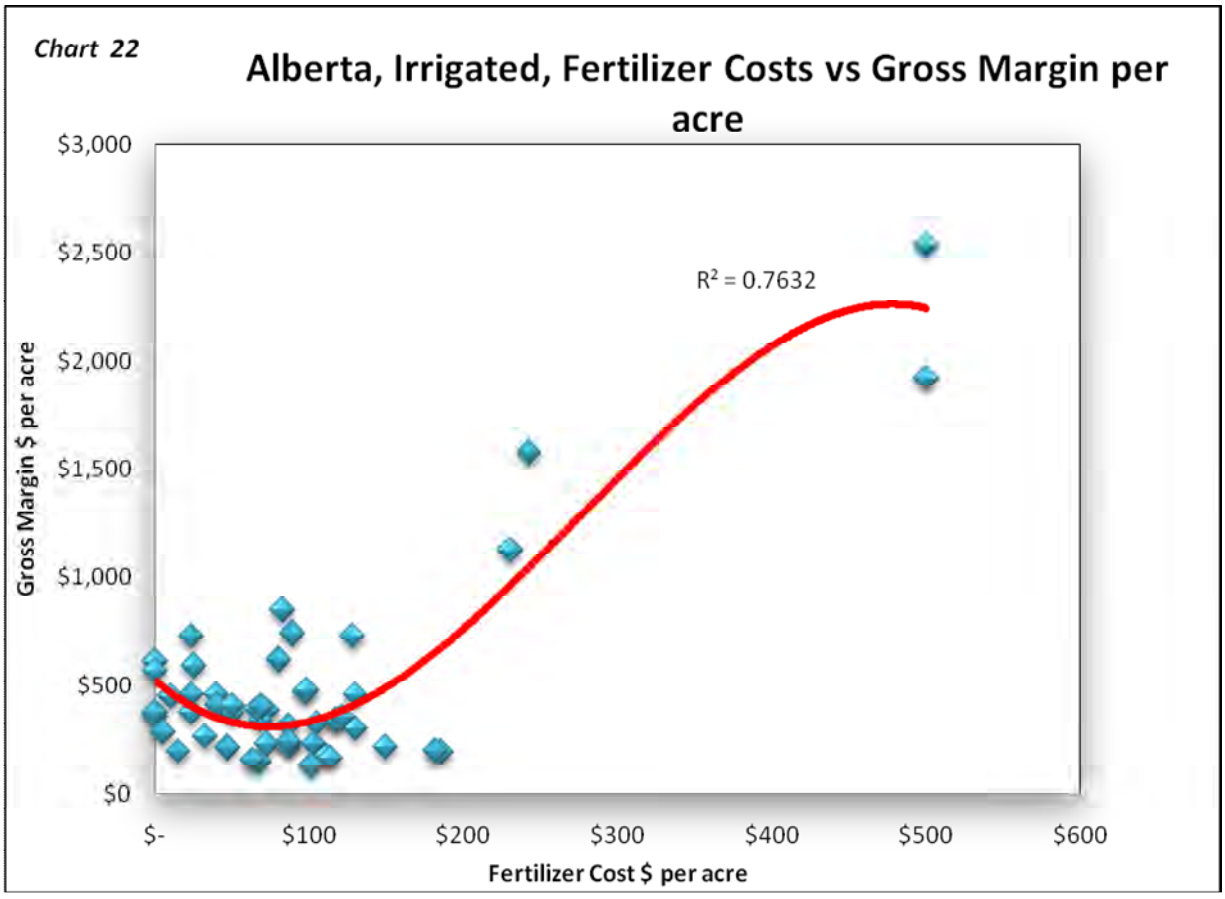


Chart 23 Chemical Costs vs. Gross Margin per acre – Irrigated

Similarly to the fertilizer chart above the irrigated crops showed marked benefits in terms of Gross Margin from increasing Chemical costs.

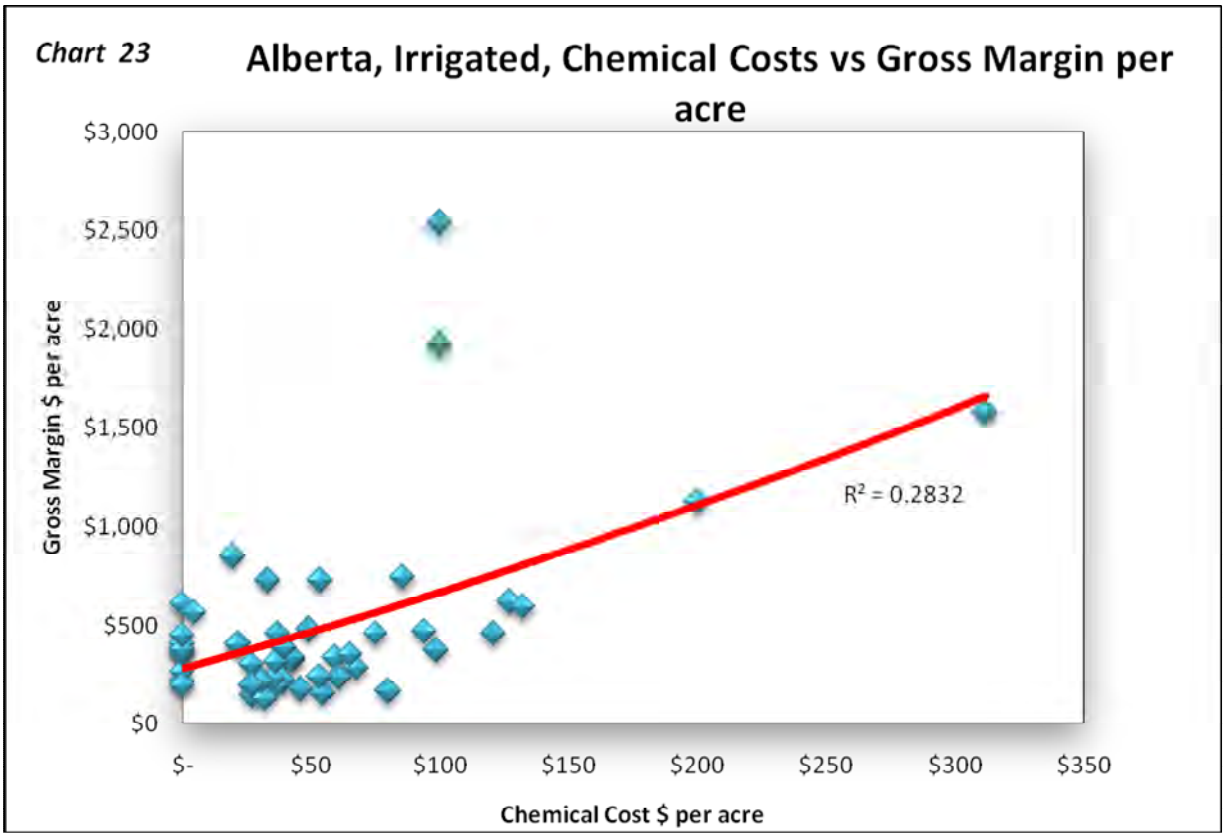


Chart 24 Variable Costs vs. Gross Margin

A chart of Total Variable Costs vs. Gross Margin takes into account seed costs and production insurance costs and shows a very similar result to the previous two charts.

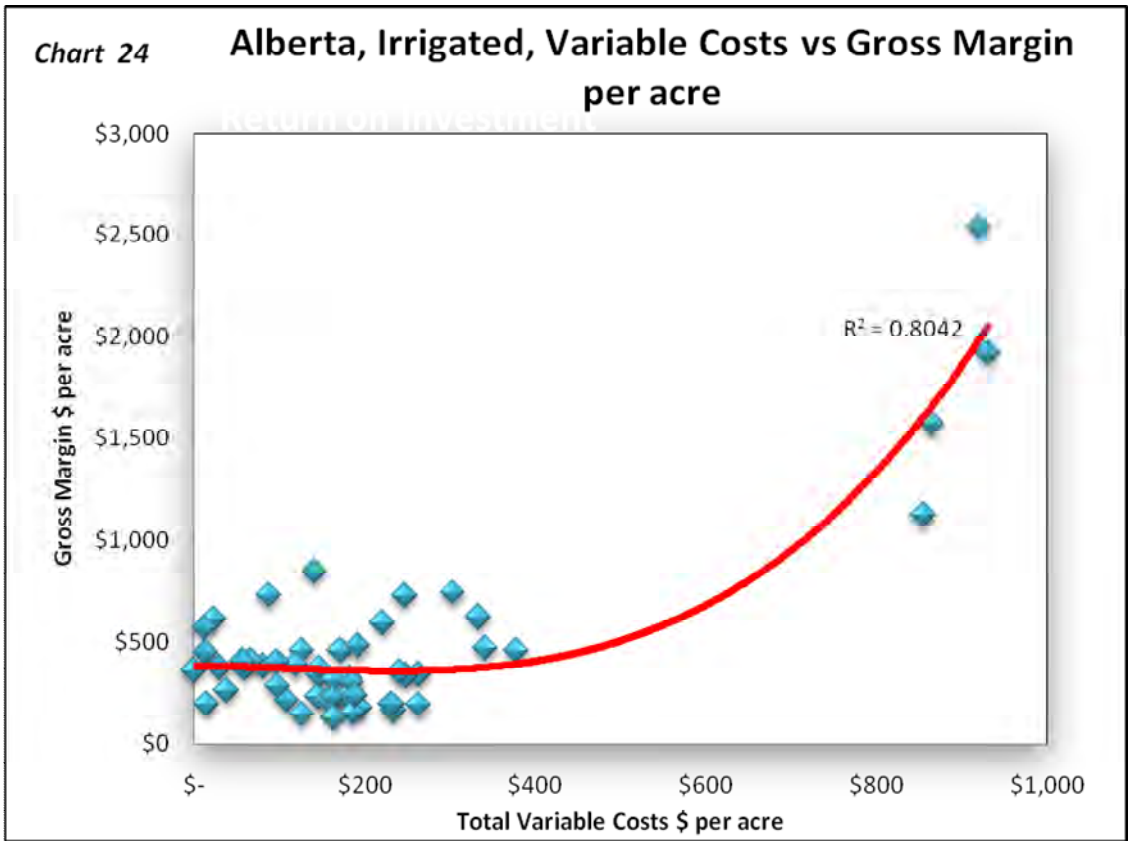


Chart 25 Fixed Costs vs. Net Income

Chart 25 underlines the importance of Fixed Cost control in the determination of Net Income. Irrigated farms with high cost structures (above about $450 per acre of Fixed Costs) stood little chance of being profitable. Indeed nearly half of the farms surveyed were in this category.

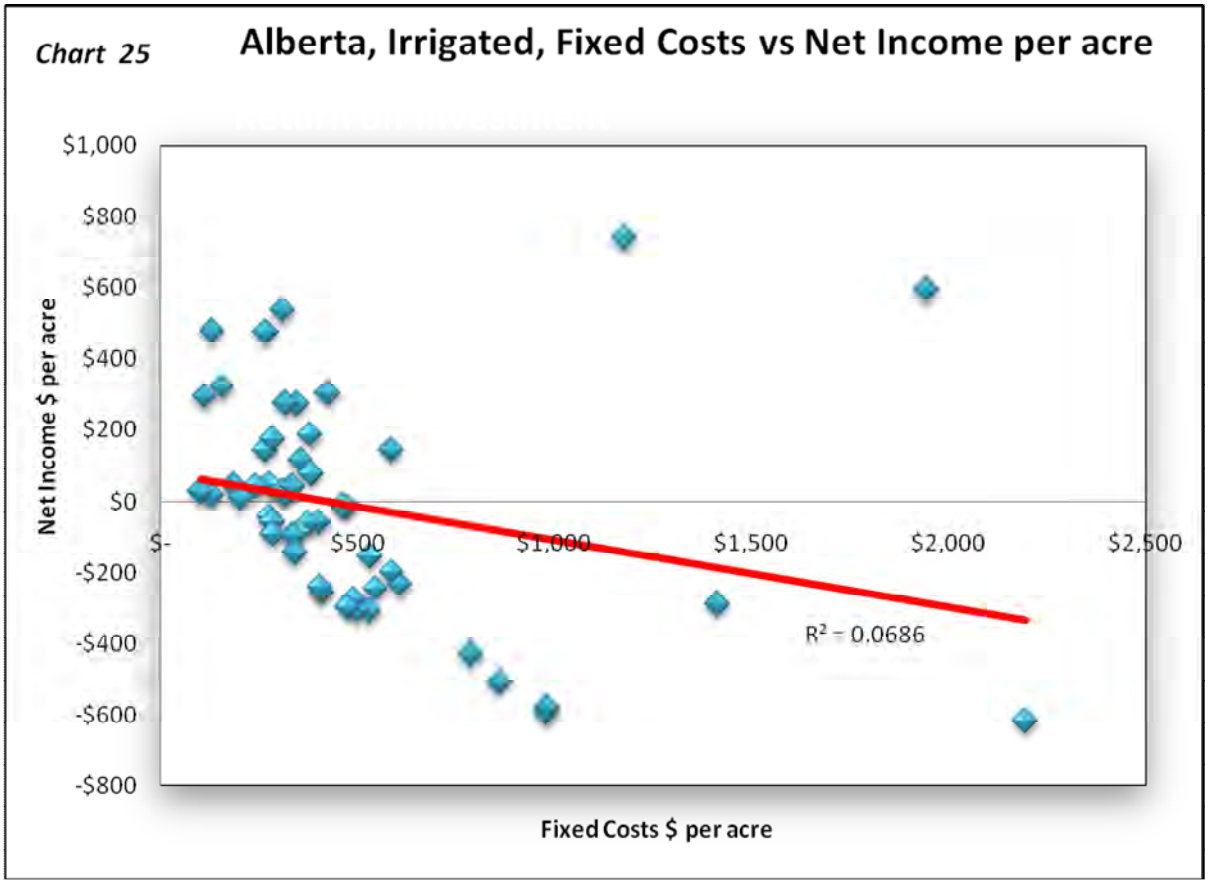


Chart 26 Net Income as a Percentage of Gross Income

Chart 26 is somewhat inconclusive with a wide array of Net Income results distributed above and below the line at between $400 and $1,000 per acre of gross output. Evidently management matters and crop choice matters much more than sheer gross output.

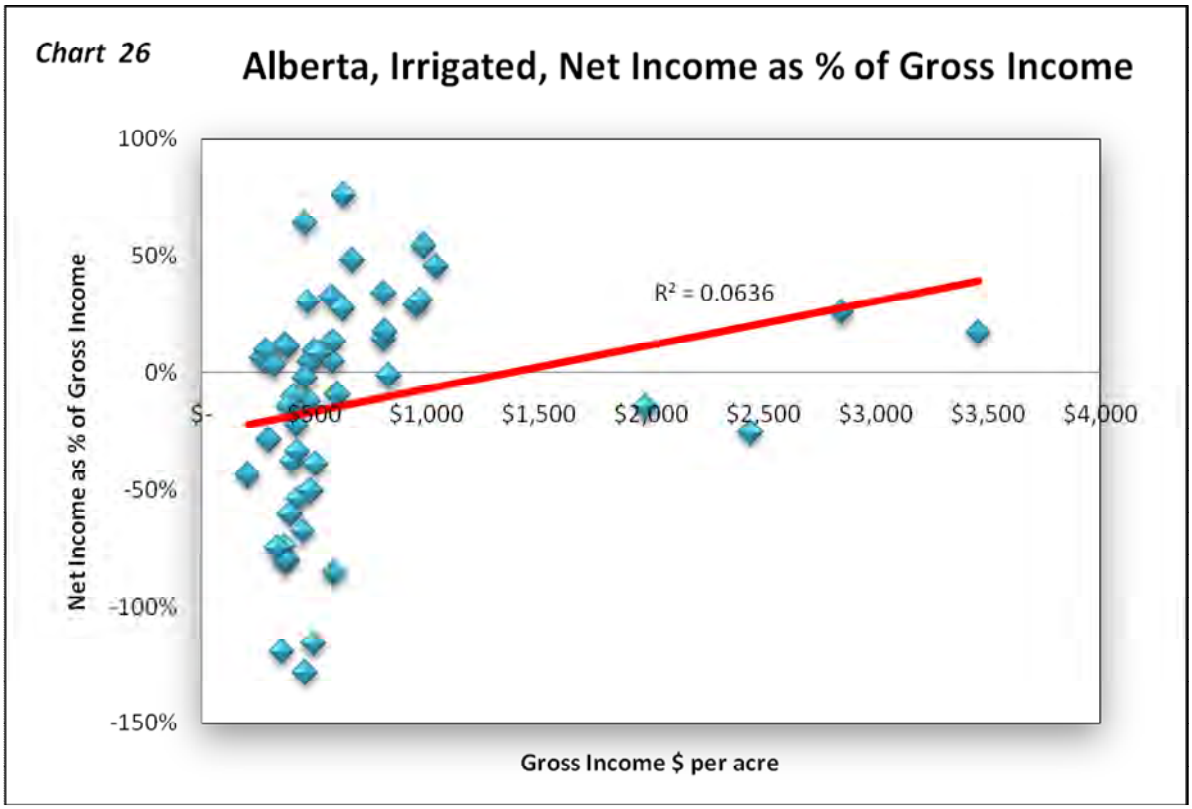


Chart 27 Net Income as a Percentage of Gross Margin

Chart 27 tends to mirror the result seen in chart 26.

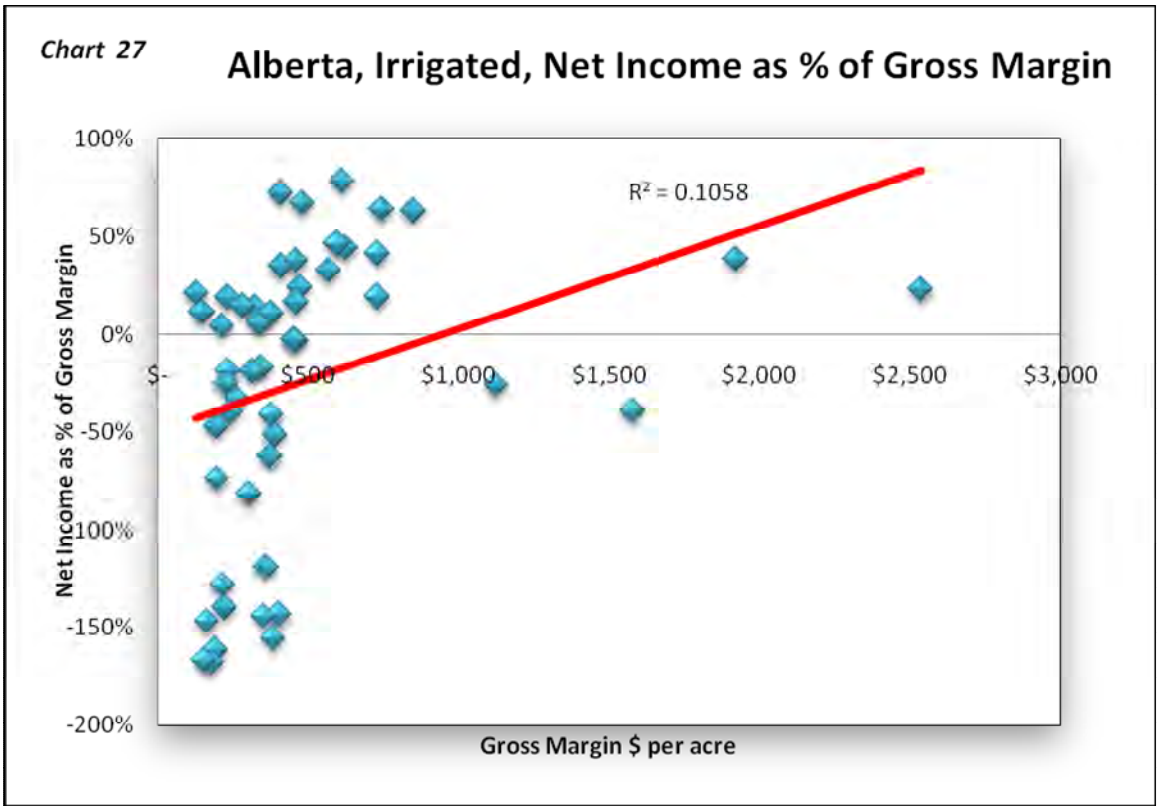


Chart 28 Gross Margin as a Percentage of Gross Income

Alternatively one can look at Gross Margin as a % of Gross Income and that ranged on the Irrigated farms 40% up to about 90% in 2009.

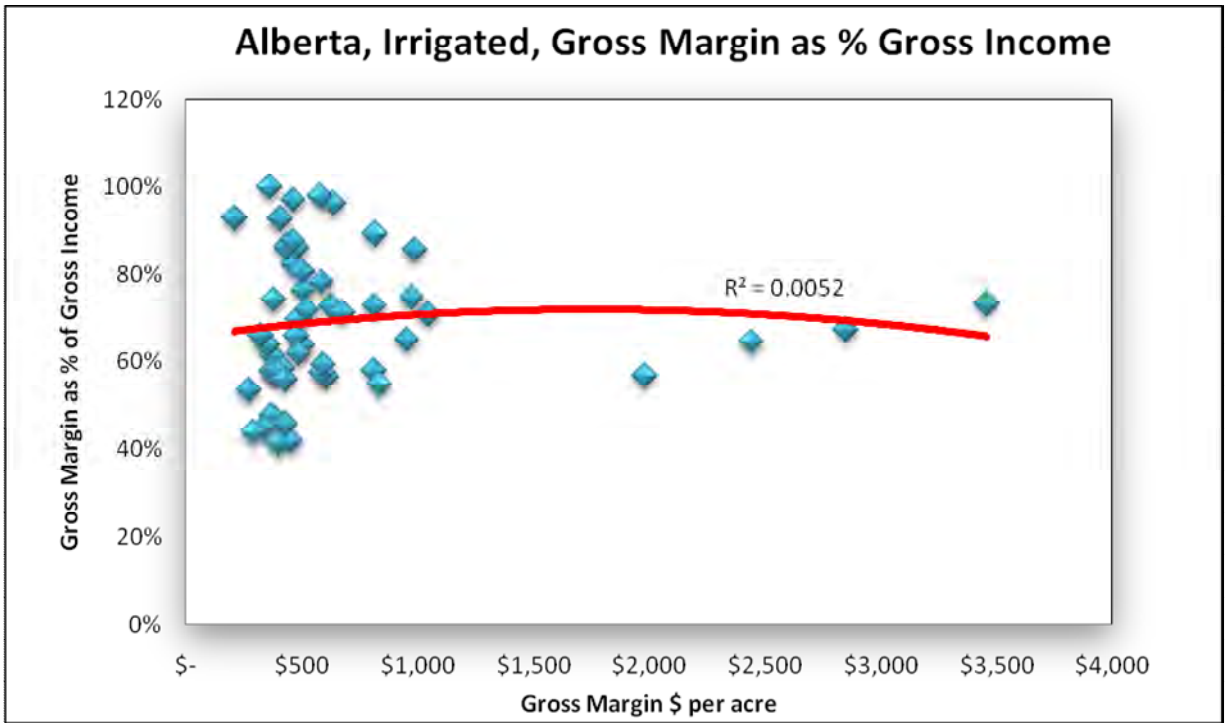


Chart 29 Gross Margin vs. Net Income

Finally the correlation between Net Income and Gross Margin is shown in Chart 29 indicating the importance of achieving good gross margins. On the irrigated farms at least the critical success factor seems to be reliably averaging over $500 per acre of gross margin.

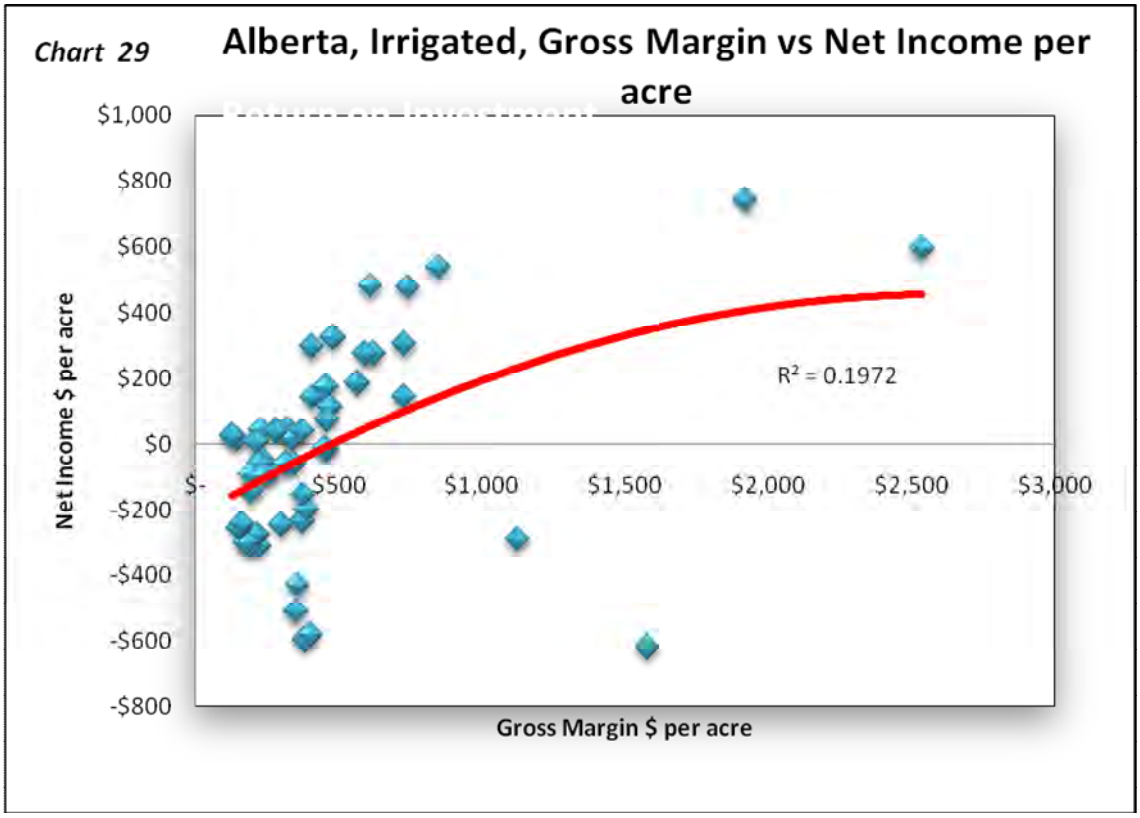


Chart 30 Investment per acre vs. Cost of Production Irrigated

This chart looks at all of the irrigated crops and it shows cost of production rising initially as investment increases and then declining again after about $2,500 per acre before a trend-up beyond around $5,000 per acre. This binomial distribution is probably related to different crop types clustered at different points of the chart.

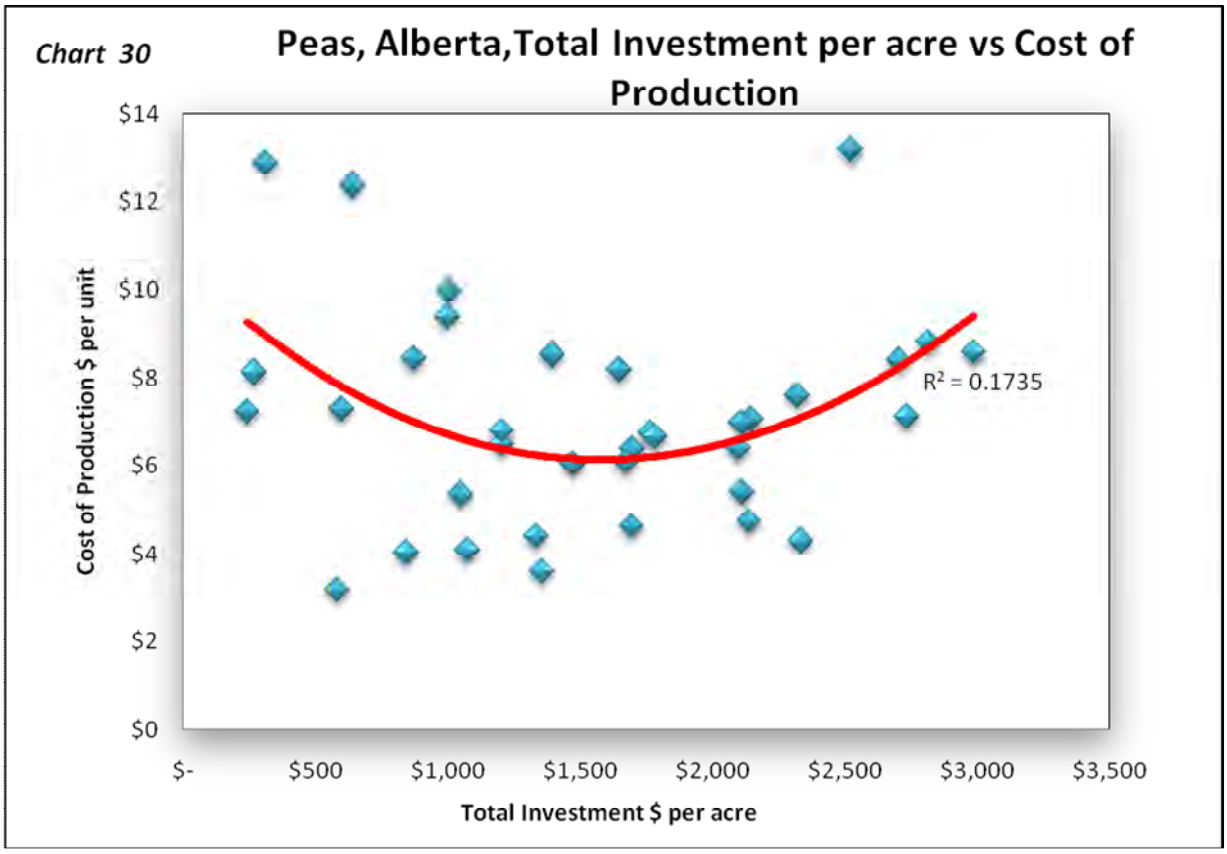


Chart 31 Investment per acre vs. Cost of Production Irrigated Grain, Oilseeds and Pulses

Chart 31 explains the first “peak” in chart 30 as being due to the grains, oilseeds and pulses in the sample.

Increasing investment results in rising Cost of Production in Irrigated Grains, Oilseeds and Pulses.

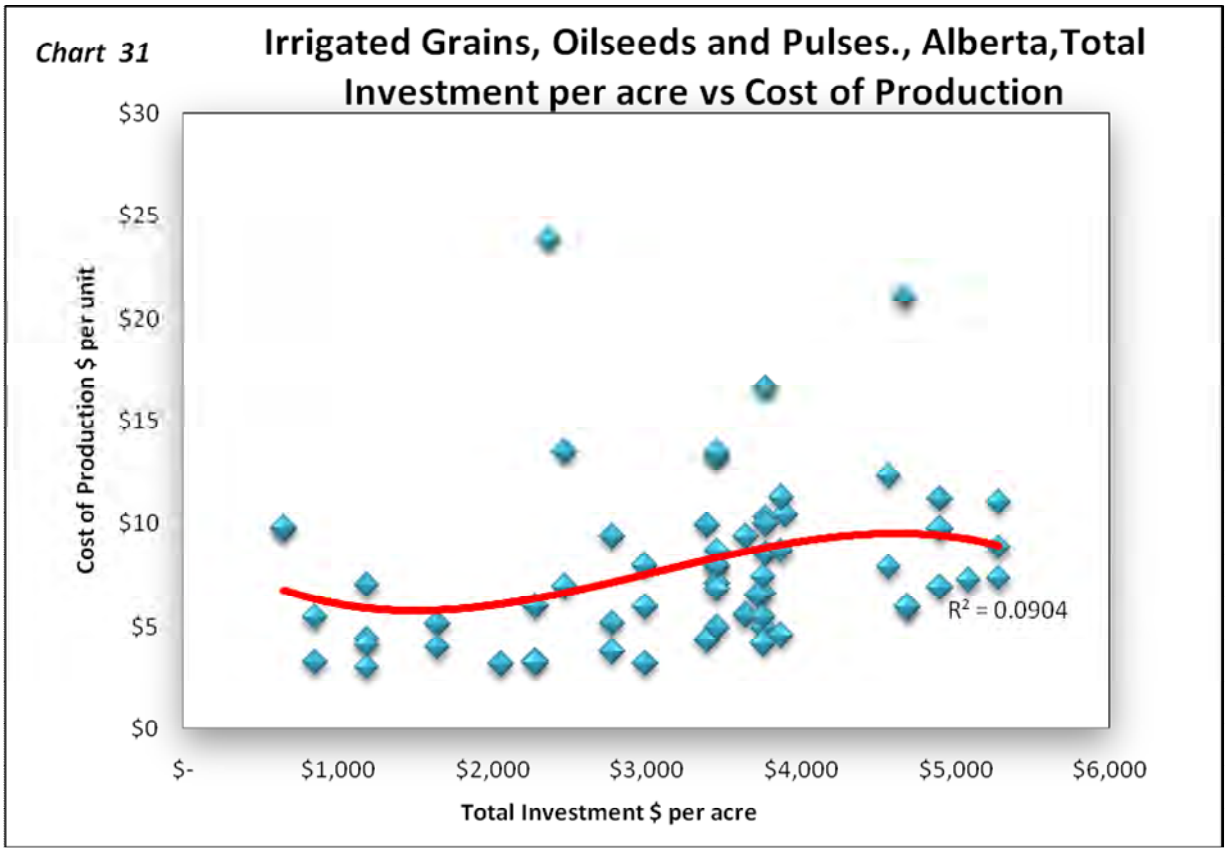


Chart 32 Investment per acre vs. Cost of Production Irrigated Specialty Crops

Chart 32 explains the second peak in chart 30.

In the Specialty Crops there was an increase in the Cost of Production as Investment per Acre increased.

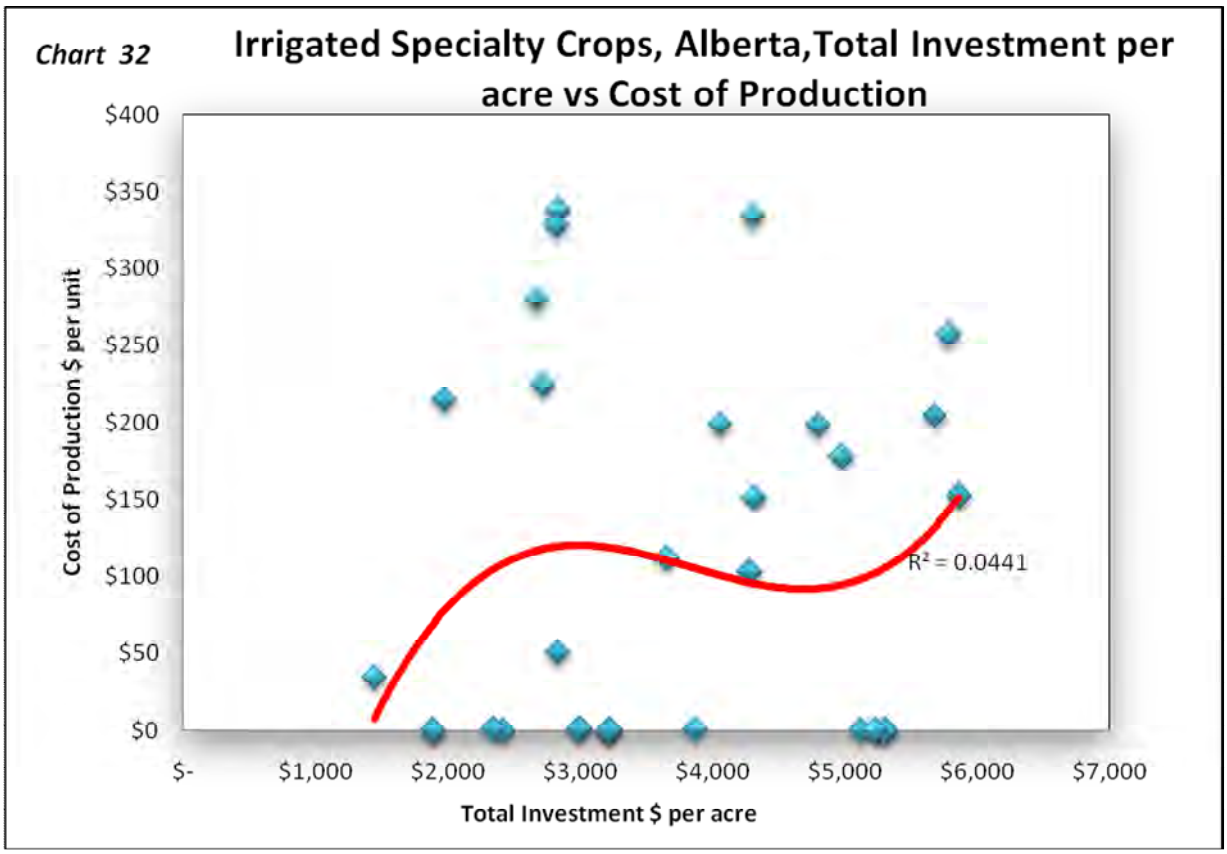


Chart 33 Variable Costs vs. Cost of Production – Irrigated Grains, Oilseeds and Pulses

Overall the Irrigated Grains, Oilseeds and Pulses showed declining Cost of Production until variable costs (seed, fertilizer, Chemical and Insurance), shown as Variable Costs/ac (per acre) exceeded around $150 per acre.

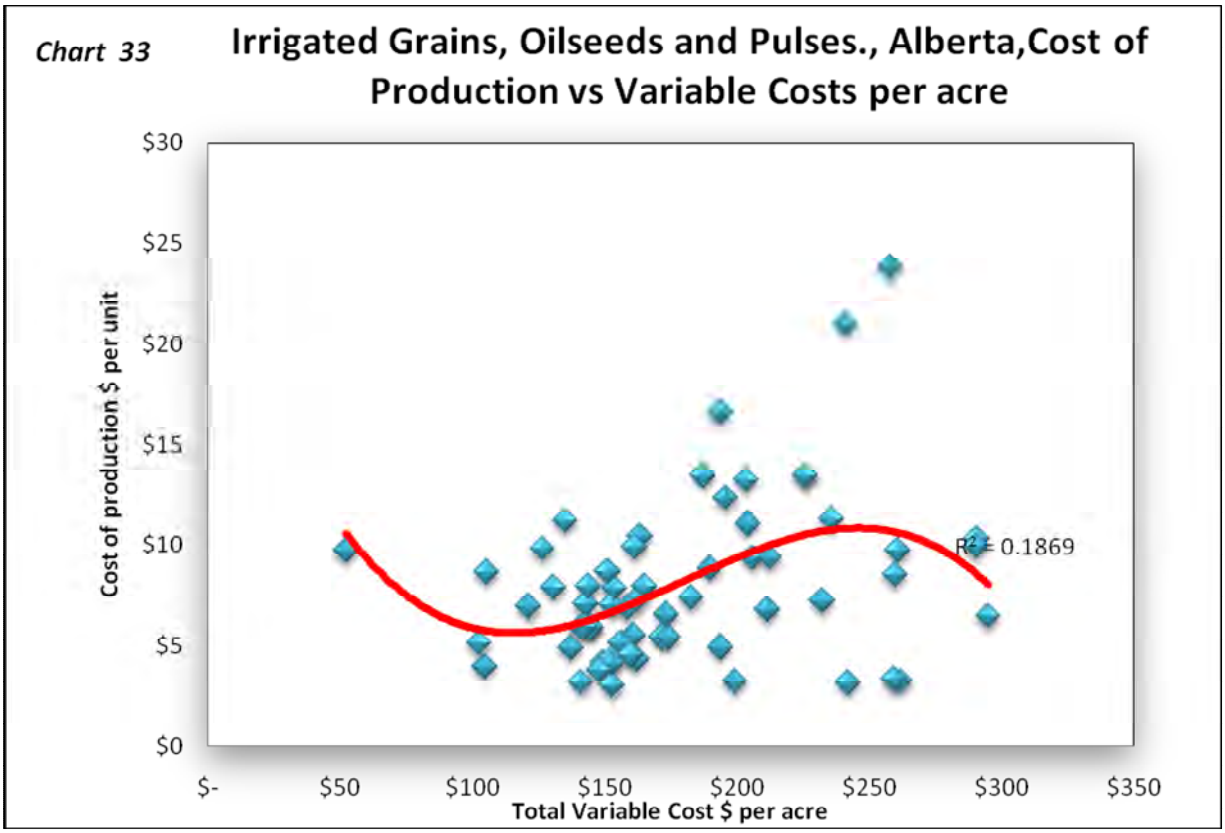


Chart 34 Yield vs. Cost of Production – Irrigated Grain

Irrigated Grains (Wheat, Barley and Pulses) showed a strong decline in Cost of Production as yield increased.

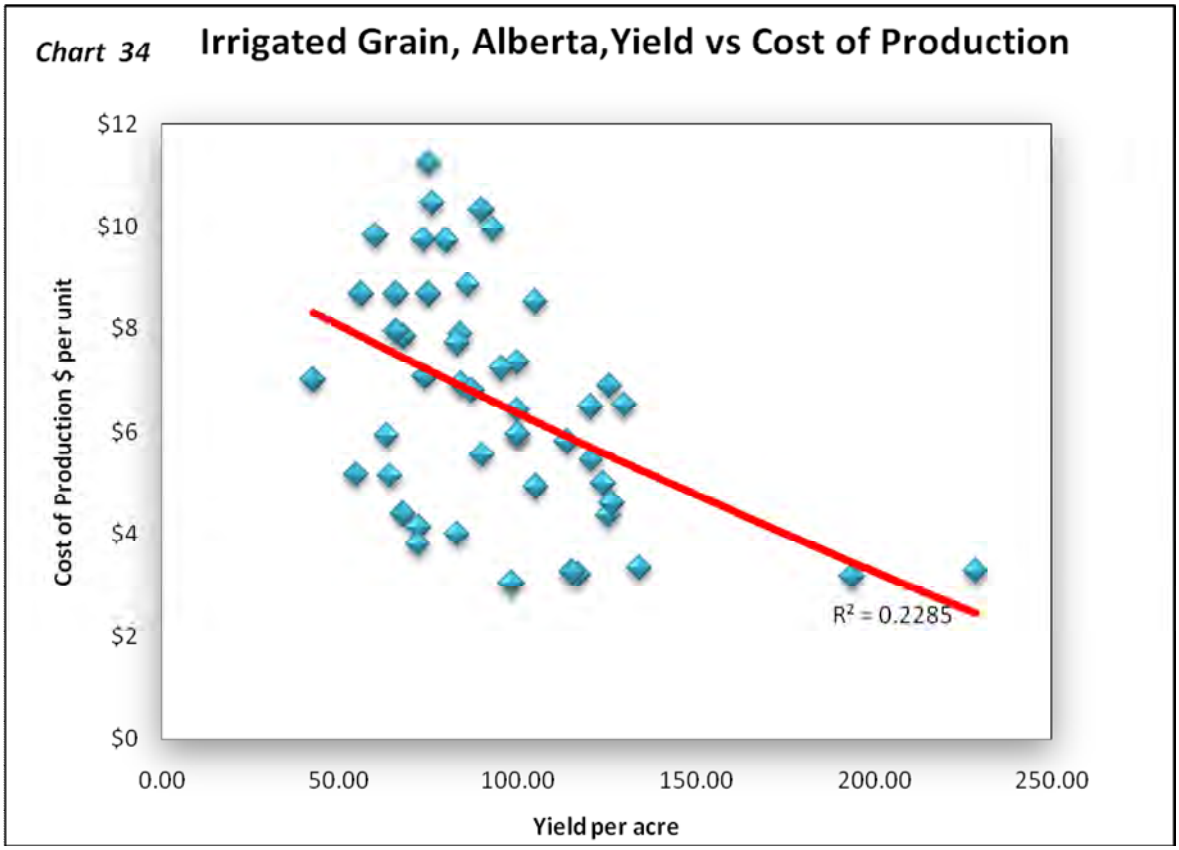


Chart 35 Yield vs. Cost of Production – Irrigated Oilseeds

Irrigated Canola and Flax meanwhile did not show as strong a decline in Cost of production from increasing yield. Seed Canola crops with their higher production costs are excluded from this chart as they tend to distort the data.

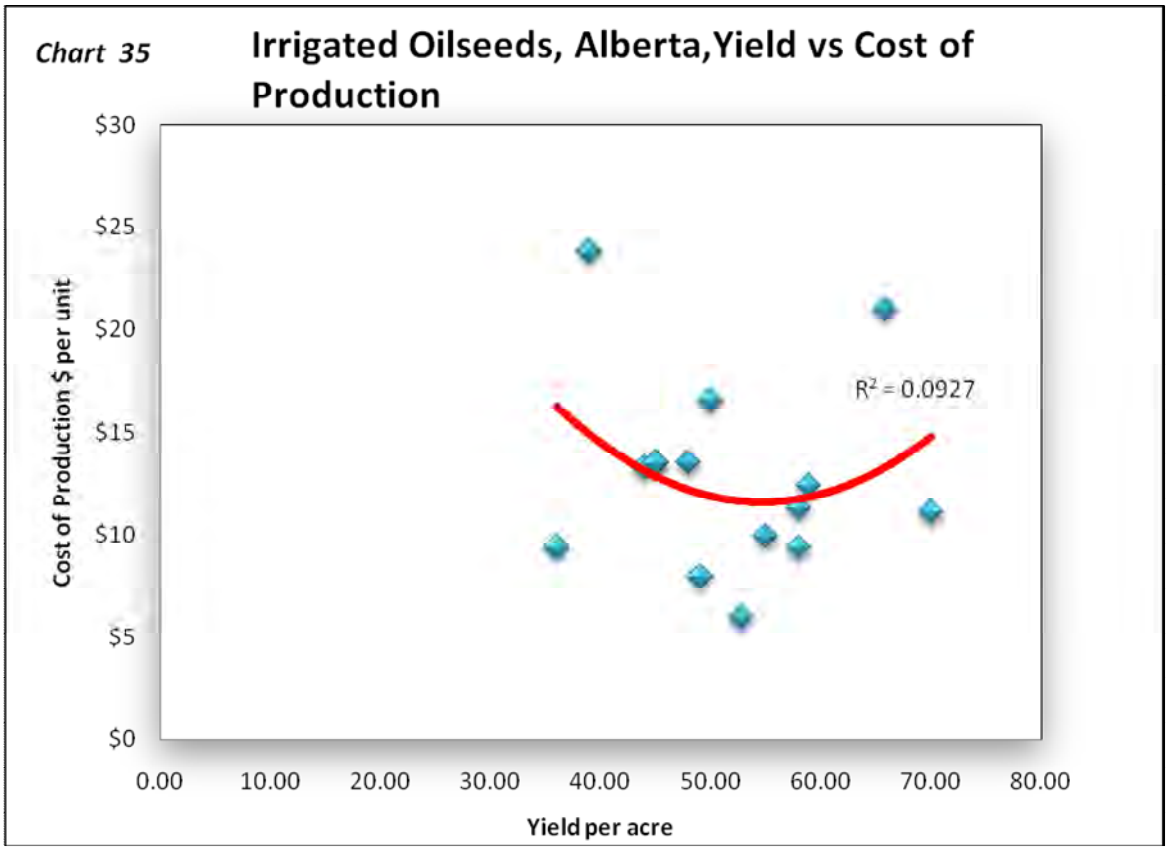


Chart 36 Yield vs. Cost of Production – Irrigated Dry Beans

Irrigated Dry Beans show the same declines in Cost of Production as the other crops.

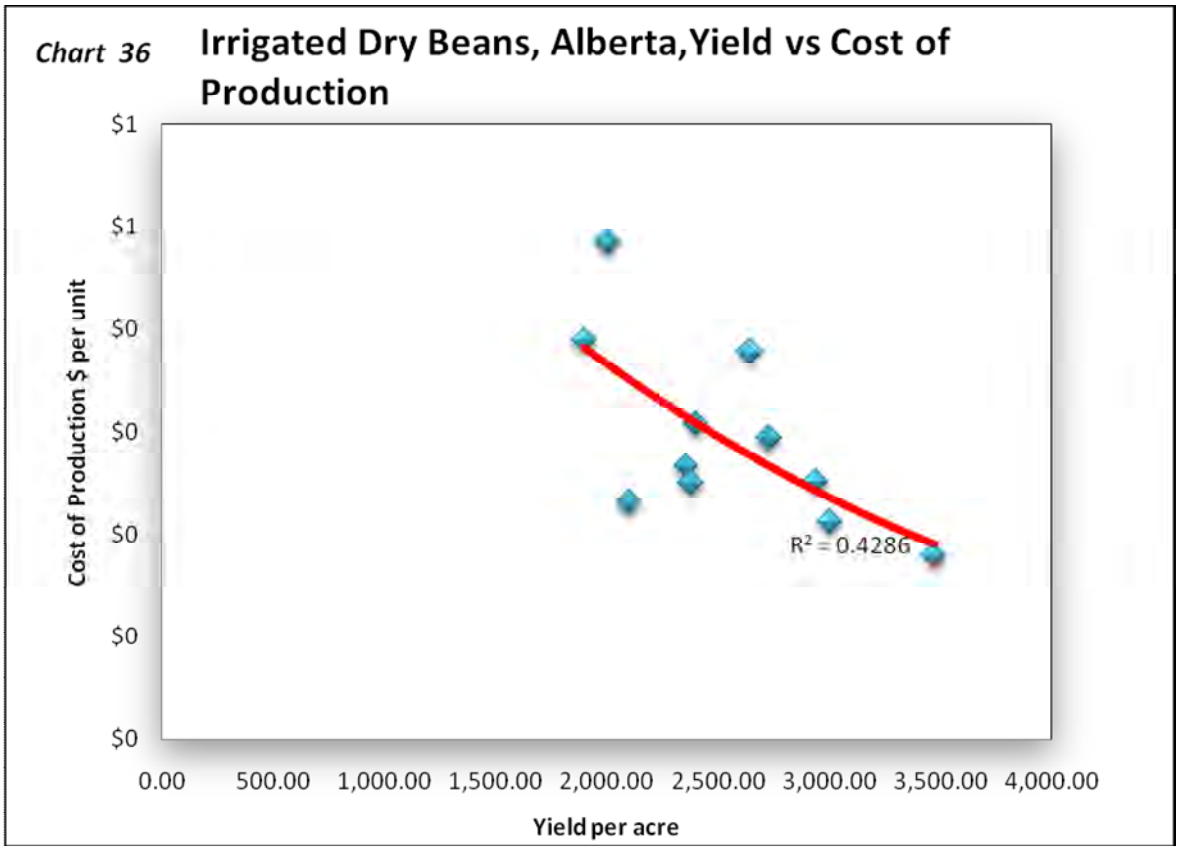
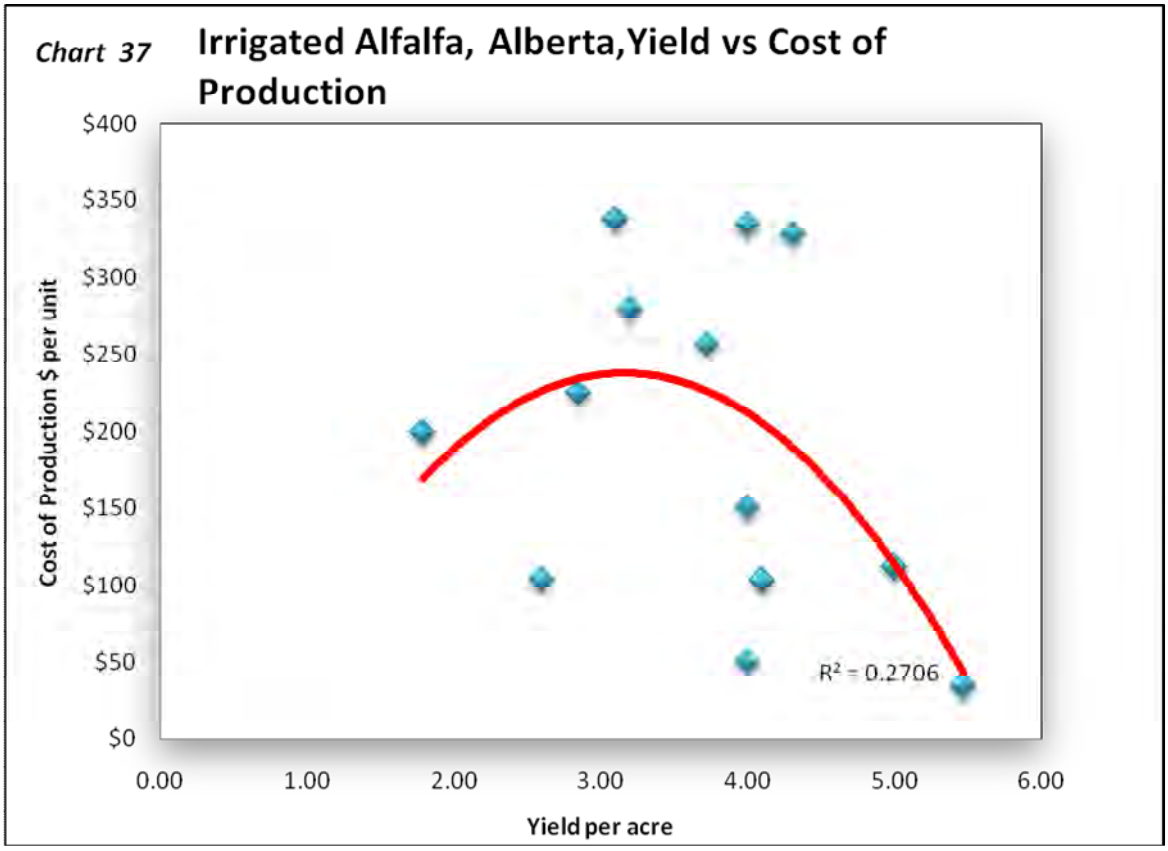


Chart 37 Yield vs. Cost of Production – Irrigated Alfalfa

Interestingly Alfalfa, with its comparatively low variable costs (especially relative to the fixed costs) produced widely scattered results in terms of Cost of Production and a less strong response to yield than some of the others.



SUMMARY AND CONCLUSIONS

On Irrigated farms in 2009 it was evident that there was a stronger response by the Return on Investment (ROI) to increasing levels of investment than on dryland farms. However the response could not be said to have been strong and it was heavily influenced by the choice of crops being grown. The irrigated group have, inevitably, a much wider choice of crops than the dryland group and these crops are more diverse in nature than on the dryland. This makes comparisons across the irrigated sample more difficult. What can be said is that there are signs that to a slightly greater extent returns are investment led although the tendency for investment to be led by returns as seen in the dryland group is also evident in the irrigated farms.

Also in much of Alberta the farmers' primary, and favourite asset, land, has its price heavily influenced by non-farming factors which tends to inflate its price beyond what farming returns can justify. This is more prevalent in the South (where the irrigated farms are) than the North. This leads to a generally low Return on Investment (ROI) from farming although the increasing value of land lends considerably to the wealth increase of these farms over time.

Thus we see that increasing land investment in this study describes a curve with land cost and quality not contributing to gross margins initially before a gradual trend-up beyond a land cost of about $2,500 per acre. Possibly the highest quality (cost) land is productive enough that it permits the growth of the most profitable crop. Growing the most profitable crops may allow the farmer to better compete with the demand for land from non-ag influences.

Increasing farm size does permit significant gains in the efficiency of machinery use (as demonstrated by Machinery Investment and other related costs) but not labour use (as shown by decreasing acres farmed per labour unit or higher hours per acre). However, the wide variance in results also shows that mere size is not enough; the management of each farm is a critical factor in the successful exploitation of size with many of the largest farms being outperformed by smaller counterparts in these two areas.

There is a strong, but not altogether surprising correlation between increasing machinery investment and increasing machinery costs (defined as depreciation, interest on the investment, repairs and fuel) that takes a larger and larger "bite" out of the gross margins on these farms to the extent that eventually profit becomes impossible as too much of the income is dedicated to owning and operating the machinery. Generally, with the major irrigated crops, increasing machinery investment led to increasing Cost of Production as any yield increases that may have come as a result of that investment were overcome by the escalating costs of owning and operating the machinery used to grow those crops.

Unlike the dryland farms there was some evidence that more aggressive replacement policies on the Machinery tended to help with gross margins suggesting that the irrigated crops or at least some of them were more sensitive to down-time and/or more responsive to advances in mechanical technology.

The Irrigated Crops showed much stronger responses to increased levels of inputs as one would expect with moisture tending not to be a limiting factor. This is not to say that there was a positive impact upon production from using higher inputs. This study was not a scientific trial of various types of input and cannot be interpreted as such. The farm locations and their diverse management practices make comparability almost impossible. All that can be said was that in 2009 at least, within this sample, the higher input operations made more money than the lower input operations but they may also have been growing more of the higher input/higher return crops.

The Irrigated Crops both collectively and individually all showed increased Cost of production in response to increased investment suggesting that in 2009 at least those investments did not add enough yield to offset the increasing costs associated with those investments (Depreciation, Interest on debt and repairs).

The same strong correlation between yield and Cost of Production seen in the Dryland Crops was evident amongst the irrigated crops. The conclusion is the same as for the Dryland Crops. The key driver to Cost of Production (which is critical to profitability) is first of all the achievement of high yields (which places agronomy and land quality at the forefront) and secondly effective fixed cost control (which mainly stems from disciplined capital budgeting).

APPENDIX I: DATA COLLECTION TEMPLATE

Study to Assess Cost of Production, Investment Levels, and Productivity of Grain Farms in Alberta for the 2009 Crop Year

Thank you for taking the time to be a part of this exciting project. We see this as a leading edge project that will be invaluable to you, by delivering a cost of production report detailing all variable and fixed costs on your grain operation. this report will create specific detailed industry benchmarks. You will receive investment and productivity levels for your farm, which will then give you the ability to compare yourself to industry benchmarks. You will also have the peace of mind knowing you are comparing apples to apples, since the methodology applied to all farms; and used in the report will be consistent. **Please note that all personal information will remain confidential.**

This report is fully funded by the government; therefore the direct cost to you is $0. In return for the information provided to you above, we are asking for some of your time to assist in providing and specifying details for ertain investments and costs relating to your crop operation as outlined in the following worksheets.

If you have any questions or concerns, don't hesitate to contact:

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BEST EMPLOYERS IN CANADA 2011

Instructions for Completing Your Farm Data

Each tab in this spreadsheet requires you to complete some detailed information for your operation relating to the crop produced in 2009. Please ensure that you scroll down the page to ensure that you have filled in all the information requested.

Crop COP Page

We have created these worksheets to be as straight forward as possible. We cannot stress enough, that we need the actual costs and results for you 2009 crop. For the crop worksheet, costs on a crop by cop basis are needed for all of your grain crops (We do not need information for forage or pasture land). Most of this information relates to productivity and costs per acre. We also want to stress that we need your physical seeding rate as well as actual fertilizer use of N P K S per acre for each crop.

Also note we are only asking for direct costs, seed, fertilizer, chemical , crop insurance and other costs directly related to the crop (if any). Costs such as fuel, repairs, and equipment costs are collected from your financial statements.

Crops must also be classified according to the following crop enterprises: Dryland, Irrigated Grains, Oilseeds & Pulses, Irrigated Alfalfa, Irrigated Dry Beans, Potatoes, Alfalfa seed, summer fallow, other

As you will see some of the sheets will already have some of the preliminary data populated. This is your own farm data collected for the year end related to the 2009 crop year.

Property and Equipment

If available, we have preloaded asset descriptions for your convenience. The key method in getting non-direct costs allocated on a per acres basis is through an allocation of the costs to the grain enterprise. For straight grain farms, if there are no other costs accounted for in the financial statements, related to other farm enterprises, (e.g. Cattle, Hogs or Poultry enterprises) the allocation of all costs and investments are 100% allocated to the grain enterprise.

For a mixed farm, for example grain and cattle, a loader tractor that is mostly used for chores in the winter, and making hay in the summer, may be mostly allocated away from the grain enterprise. Generally how many hours it would be used for grain of its total, (for example, if it is used for rock picking, running an auger, etc.) what would the percent be 10%, 20%, 30%, etc. for the grain operation. Your best estimate is required here.

Farm Questions

This tab contains straight forward questions about your operation. These will provide some insights into the different types of farming practices being employed by medium to large scale grain farms in Alberta.

Crop Cost of Production Data Collection

			Acres Allocated to Other Enterprises					
Total Crop Acres		Crop						
		Crop enterprise	Other					
-		Acres						
	Total	Average						
Primary Crop			Estimated Yield						
			Value $/Unit						
	$0	#DIV/0!		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Secondary Crop			Estimated Yield						
			Value $/Unit						
	$0	#DIV/0!	Total Revenue/acre	$ -	$ -	$ -	$ -	$ -	$ -
Crop Insurance Proceeds									
			Total Spring Price Endorsement						
			Total Crop Insurance Proceeds						
			Total Hail Insurance Proceeds						
Per financial Stmts			Total Proceeds Received	$ -	$ -	$ -	$ -	$ -	$ -
	$0	#DIV/0!	Proceeds per Acre	$ -	$ -	$ -	$ -	$ -	$ -
			Total Output	$ -	$ -	$ -	$ -	$ -	$ -
Seed Costs			Seed Rate						
			Unit of Measure						
			Cost $/Unit						
				$ -	$ -	$ -	$ -	$ -	$ -
			TUA / Acre						
	$0	#DIV/0!	**Total Seed Cost**	-	-	-	-	-	-
Fertilizer Costs			$/lb or $/unit						
			$per Acre 1						
			NH3						
			Nitrogen						
			Phosphate						
			Potash						
			Sulphur						
			Micro-nutrients						
Per financial Stmts			Other						
	$0	#DIV/0!	**Total Fertilizer Cost**	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Chemical Costs									
			Seed treatment						
			Preburn						
			In Crop						
			Desicant						
			Pesticide						
			Fungicide						
Per financial Stmts			Other						
	$0	#DIV/0!	**Total Chemical Cost**	$ -	$ -	$ -	$ -	$ -	$ -
Production Insurance									
			Crop Insurance						
			Spring Price Endorsement						
			Hail Insurance						
Per financial Stmts									
	$0	#DIV/0!	**Total Insurance Cost**	$ -	$ -	$ -	$ -	$ -	$ -
Other Direct Costs									
			Annual water rates						
			Other						
			Other						
	$0	#DIV/0!	**Total Other Direct Costs**	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Costs	$0	#DIV/0!		$ -	$ -	$ -	$ -	$ -	$ -
Gross Margin	$0	#DIV/0!		$ -	$ -	$ -	$ -	$ -	$ -
				Acres Allocated to Other Enterprises	-	-	-	-	-
Crop share Details				Other	-	-	-	-	-
			Acres Crop Shared						
			Percent of Crop						
			Percent of Inputs paid by landlord						
			Seed						
			Fertilizer						
			Chemical						
			Other						

Enter actual lbs applied

Property and Equipment

Import Fixed Assets

Sort By Type

2009 Equipment List - Please ensure the list is accurate for the 2009 crop year. Enter N/A where a piece was no longer on the farm
For each piece of equipment used in the cropping enterprise, please enter the market value and % allocation to the appropriate crop enterprise
For any pieces of equipment not used at all on the crop operation, just leave as blank
If there is equipment associated with custom work, custom trucking, etc. Please allocate this percentage of equipment to "Other

Have you included the following:
____Buildings
____Grain bins
____Quonsets
____Other Colony Farm buildings
____Farm machinery
____Pivots
____Irrigations equipment

Description	Type	2009 Closing FMV	% allocated to Dryland	% Allocated to Irrigated Grain & Oilseeds	% Allocated to Irrigated Alfalfa	% Allocated to Irrigated Dry Beans	% Allocated to Potatoes	% Allocated to Alfalfa seed	% Allocated to Summerfallow	% Allocated to Other	Total
Totals:		$0.00									
											0%
											0%
											0%
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Farm Questions

Please Remember - All information is to be filled out for the 2009 crop

Farm Name

What soil zone is the farm predominately located in? Select one by 'X'	Black Soil Zone	Brown Soil Zone	Dark Brown Soil Zone	Grey-Wooded Soil Zone	Peace Region

Acres Farmed in 2009	Dryland	Irrigated Grain & Oilseeds	Irrigated Alfalfa	Irrigated Dry Beans	Potatoes	Alfalfa seed	Summerfallow	Other	Total Acres
Total Acres farmed	-	-	-	-	-	-	-	-	-
Total Acres Cash Rented from arm's length parties									-
Total Acres Share rent from arm's length parties	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-

Investment Details

Market Value per acre - Owned land									
Market Value of Owned land	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Market Value per acre - Rented land									
Market Value of Rented Land	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cash rent expense $/acre									
Annual Cash Rental Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Leased Buildings and Machinery

			% allocation							
Description	Type	Fair market Value	Dryland	Irrigated Grain & Oilseeds	Irrigated Alfalfa	Irrigated Dry Beans	Potatoes	Alfalfa seed	Summerfallow	Other Farm Enterprises

Equipment Ownership

The following questions relate to the major equipment (Tractors, Combines and Sprayers) that you owned for the 2009 Production Year

Description	Equipment type	In 2009 You owned this equipment for X Years	Model Year	You owned its predecessor for X years	What year do you expect to trade it in?	Do you typically buy New
	Tractor					
	Sprayer					
	Combine					

Farm Management Practices

What type of seeding system do you predominately use?		**Do you use consultants for:**	
Do you participate in crop insurance		Business Management	
Do you participate in AgriStability		Agronomy	
Do you use certified seed for wheat and barley?		Variable rate technology	
Do you use GPS Systems?		Marketing	
Did you employ arms-length (not related) labour?		Other	
How often do you use fungicides?			

Custom work

Type	How many acres did you pay for custom work?	How many acres did you receive custom work income for?
Seeding		
Spraying		
Swathing		
Combining		
Trucking		

Labour

Labour - 2009 Crop Enterprise

Note: Labour use here is to measure physical on farm/field tasks, fixing machinery, field prep, hauling inputs and grain. It is not related to, "management" marketing time, procurement, etc. As this is more difficult to measure and more dependant on individuals rather than farm size.

Please ensure that you allocate the total hours of farm activity at the bottom of the page.

Activity		Labour	Unpaid Family	Unpaid Family	Unpaid Family	Total	Employees Emp. 1	Emp. 2	Emp. 3	Emp. 4	Emp. 5	Paid Total	Total Hours
Field work & Seeding	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Fertilizing, Spraying,	Hrs/day		0										
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Swathing, Combining, Other Harvesting	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Trucking	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Repairs and Maintenance	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Other	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Record Keeping	Hrs/day												
	No. of Days												
	Total	0	0	0	0	**0**	0	0	0	0	0	**0**	**0**
Total Hours		0	0	0	0	**0**	0	0	0	0	0	**0**	**0**

Allocation of hours

Activity	Total Hours	Dryland	Irrigated Grain & Oilseeds	Irrigated Alfalfa	Irrigated Dry Beans	Potatoes	Alfalfa seed	Summerfallow	Other	
Field work & seeding	0									FALSE
Spraying Desiccating	0									FALSE
Swathing, Combining, Harvesting	0									FALSE
Trucking	0									FALSE
Repairs and Maintenance	0									FALSE
Other	0									FALSE
Record Keeping	0									FALSE
Total Hours	**0**	-	-	-	-	-	-		-	
Unpaid Labour Allocation	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	
Paid Labour Allocation	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	

Debt Held Outside the Farm Operation

Debt Held Outside of Farm Operation

This worksheet relates to debt held outside of the farm operation but related to farm assets. For example your corporation is responsible for farm operations, but you personally own the land and the mortgage, you would include the details of the mortgage here. The land should already be included in your seeded acres.

Loan Description	Beginning 2009 Balance	Interest rate
Total Debt Held Outside Farm Operation	$ -	
Estimated Interest expense	$ -	

APPENDIX TABLES BACKGROUND:

Sorting of data as presented in this report has been done on a direct cost basis only. Sorting labelled Top 1/3 in these cases indicate the lowest direct costs. Direct costs include seed, fertilizer, chemical, production insurance and other production expenses. Sorting by this method doesn't necessarily imply those categorized in the Top 1/3 have 'best' overall results in terms of total costs, net revenue or even return on investment. Where tables don't include sorting by Top 1/3 it is because there are three or less observations available.

Due to data base limitations, where data in a particular table is labelled: Enterprise: Irrigated Grains and Oilseeds, it includes grain, oilseeds and pulse crops.

In the crop detail summary tables:

- Cereal seed units are entered in bushels per acre whereas oilseeds, potatoes and beans are entered in lbs per acre.
- Nitrogen/Phosphorus/Potassium/Sulphur (NPKS) are expressed in units per acre and in all cases are in lbs per acre.

APPENDIX II: IRRIGATED GRAIN, OILSEED AND PULSE / MIXED FARM / HUTTERITE COLONY / SPECIALTY CROP ENTERPRISE SUMMARY

Please note that some of the specialty crops have relatively few records which will limit reliability and will simply be commented on rather than reported in detail.

Seed canola and flax have not been separated from the other irrigated grain, oilseed and pulse crops as clients have not provided a separate allocation of overhead costs for these crops. Seed canola details will be reported on in the targeted crop report. Since there are only two observations of flax it will not be included in the targeted crop report.

There are only three commercial alfalfa seed samples in the data (plus one pedigree observation), therefore commentary is included only. Alfalfa seed commercial revenue is greater than $450 per acre, direct costs are over $145 per acre and positive net earnings were reported with a positive ROI.

IRRIGATED TOP THIRD TABLE – IRRIGATED GRAIN, OILSEED AND PULSE ENTERPRISE (AVERAGE FARM TOTAL & $ PER ACRE)

Irrigated Grain, Oilseed and Pulse Enterprise Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Measurement	**AVE/Farm**	**AVE/Acre**	**Total**	**$/Acre**
Total Acres in sample	28,541		5,682	
Average seeded acres per Farm	1,142		710	
Number of Farms	25		8	
Primary Revenue	$ 518,097.16	$ 453.82	$ 456,588.13	$ 642.86
Total Revenue	**$ 525,276.36**	**$ 460.11**	**$ 465,236.00**	**$ 655.03**
Direct Expenses				
Seed	$ 29,750.08	$ 26.06	$ 12,142.13	$ 17.10
Fertilizer	$ 113,638.52	$ 99.54	$ 66,100.50	$ 93.07
Chemical	$ 42,134.68	$ 36.91	$ 26,369.00	$ 37.13
Insurance - Production	$ 16,800.08	$ 14.72	$ 19,640.38	$ 27.65
Other Production Expenses	$ 13,256.52	$ 11.61	$ 5,579.25	$ 7.86
Total Direct Costs	**$ 215,579.88**	**$ 188.83**	**$ 129,831.25**	**$ 182.80**
Gross_Margin	**$ 309,696.48**	**$ 271.27**	**$ 335,404.75**	**$ 472.23**
Variable Costs				
Freight_Trucking	$ 5,555.52	$ 4.87	$ 6,608.44	$ 9.30
Fuel	$ 29,938.10	$ 26.22	$ 16,291.57	$ 22.94
Custom Work Expense	$ 24,200.13	$ 21.20	$ 25,863.32	$ 36.41
R & M	$ 42,383.29	$ 37.12	$ 28,623.73	$ 40.30
Supplies & Small Tools	$ 18,177.31	$ 15.92	$ 1,036.49	$ 1.46
Operating Interest	$ 2,460.25	$ 2.16	$ 1,669.33	$ 2.35
Paid & Unpaid Labour	$ 25,332.50	$ 22.19	$ 34,815.05	$ 49.02
Utilities	$ 29,275.08	$ 25.64	$ 18,657.95	$ 26.27
Total_Operating_Expenses	**$ 177,322.17**	**$ 155.32**	**$ 133,565.88**	**$ 188.05**
Contribution_Margin	**$ 132,374.31**	**$ 115.95**	**$ 201,838.87**	**$ 284.18**
Admin & Overheads				
Equip & Building Depr.	$ 77,255.93	$ 67.67	$ 57,852.32	$ 81.45
Equipment Rent	$ 1,724.98	$ 1.51	$ 1,552.04	$ 2.19
Insurance & Licenses	$ 14,820.10	$ 12.98	$ 7,956.21	$ 11.20
Interest Long Term	$ 21,345.17	$ 18.70	$ 26,360.58	$ 37.11
Professional Fees & Misc.	$ 12,468.46	$ 10.92	$ 10,379.05	$ 14.61
Property Taxes	$ 4,130.29	$ 3.62	$ 1,794.98	$ 2.53
Rent	$ 22,516.67	$ 19.72	$ 27,736.06	$ 39.05
Total_Admin_And_Overhead	**$ 154,261.60**	**$ 135.12**	**$ 133,631.24**	**$ 188.15**
Total Cost	**$ 547,163.65**	**$ 479.28**	**$ 397,028.37**	**$ 559.00**
Net_Earnings	**-$ 21,887.29**	**-$ 19.17**	**$ 68,207.63**	**$ 96.03**
Return on Investment		**-0.01%**		**3.65%**
Investment Levels				
Invest_Machinery	$ 737,638.69	$ 646.12	$ 527,668.34	$ 742.93
Invest_Buildings	$ 124,912.40	$ 109.41	$ 123,709.72	$ 174.18
Invest_Land	$ 2,951,693.75	$ 2,585.49	$ 1,941,570.25	$ 2,733.64
Total Investment	**$ 3,814,244.83**	**$ 3,341.02**	**$ 2,592,948.31**	**$ 3,650.75**

IRRIGATED HUTTERITE COLONY TOP THIRD TABLE – IRRIGATED GRAIN, OILSEED AND PULSE ENTERPRISE (AVERAGE FARM TOTAL & $ PER ACRE)

Hutterite Colony - Irrigated Grain, Oilseed and Pulse Enterprise Report

Farm Type	Hutterite Colony			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Measurement	AVE/Farm	AVE/Acre	Total	$/Acre
Total Acres in sample	16,679		9,765	
Average seeded acres per Farm	1,516		2,441	
Number of Farms	11		4	
Primary Revenue	$ 614,782.64	$ 405.46	$ 952,619.25	$ 390.22
Total Revenue	**$ 623,766.27**	**$ 411.38**	**$ 977,324.25**	**$ 400.34**
Direct Expenses				
Seed	$ 49,245.73	$ 32.48	$ 76,629.25	$ 31.39
Fertilizer	$ 154,164.45	$ 101.67	$ 240,324.50	$ 98.44
Chemical	$ 57,030.09	$ 37.61	$ 94,081.50	$ 38.54
Insurance - Production	$ 13,342.55	$ 8.80	$ 656.25	$ 0.27
Other Production Expenses	$ 18,431.82	$ 12.16	$ 21,485.00	$ 8.80
Total Direct Costs	**$ 292,214.64**	**$ 192.72**	**$ 433,176.50**	**$ 177.44**
Gross_Margin	**$ 331,551.64**	**$ 218.66**	**$ 544,147.75**	**$ 222.90**
Variable Costs				
Freight_Trucking	$ 1,712.35	$ 1.13	$ 3,086.22	$ 1.26
Fuel	$ 48,585.22	$ 32.04	$ 80,680.28	$ 33.05
Custom Work Expense	$ 14,737.14	$ 9.72	$ 23,224.67	$ 9.51
R & M	$ 64,811.56	$ 42.74	$ 100,011.67	$ 40.97
Supplies & Small Tools	$ 37,236.33	$ 24.56	$ 39,753.72	$ 16.28
Operating Interest	$ 2,755.32	$ 1.82	$ 2,973.03	$ 1.22
Paid & Unpaid Labour	$ 24,036.70	$ 15.85	$ 31,169.63	$ 12.77
Utilities	$ 44,360.60	$ 29.26	$ 69,724.61	$ 28.56
Total_Operating_Expenses	**$ 238,235.22**	**$ 157.12**	**$ 350,623.83**	**$ 143.62**
Contribution_Margin	**$ 93,316.42**	**$ 61.54**	**$ 193,523.92**	**$ 79.27**
Admin & Overheads				
Equip & Building Depr.	$ 111,888.00	$ 73.79	$ 191,276.38	$ 78.35
Equipment Rent	$ 2,094.01	$ 1.38	$ 2,626.91	$ 1.08
Insurance & Licenses	$ 25,639.35	$ 16.91	$ 34,402.58	$ 14.09
Interest Long Term	$ 21,057.89	$ 13.89	$ 42,383.48	$ 17.36
Professional Fees & Misc.	$ 16,672.51	$ 11.00	$ 31,539.48	$ 12.92
Property Taxes	$ 6,506.58	$ 4.29	$ 10,575.17	$ 4.33
Rent	$ 24,837.59	$ 16.38	$ 53,818.65	$ 22.05
Total_Admin_And_Overhead	**$ 208,695.93**	**$ 137.64**	**$ 366,622.65**	**$ 150.18**
Total Cost	**$ 739,145.78**	**$ 487.48**	**$ 1,150,422.98**	**$ 471.24**
Net_Earnings	**-$ 115,379.51**	**-$ 76.09**	**-$ 173,098.73**	**-$ 70.91**
Return on Investment		**-1.74%**		**-1.51%**
Investment Levels				
Invest_Machinery	$ 1,082,796.07	$ 714.12	$ 1,801,498.72	$ 737.94
Invest_Buildings	$ 160,319.26	$ 105.73	$ 268,045.72	$ 109.80
Invest_Land	$ 4,175,760.52	$ 2,753.96	$ 6,584,964.00	$ 2,697.37
Total Investment	**$ 5,418,875.86**	**$ 3,573.81**	**$ 8,654,508.45**	**$ 3,545.11**

IRRIGATED MIXED FARM TOP THIRD TABLE – IRRIGATED GRAIN OILSEED AND PULSE ENTERPRISE (AVERAGE FARM TOTAL & $ PER ACRE)

Mixed Farm - Irrigated Grain, Oilseed and Pulse Enterprise Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Measurement	AVE/Farm	AVE/Acre	Total	$/Acre
Total Acres in sample	19,218		10,146	
Average seeded acres per Farm	1,201		2,029	
Number of Farms	16		5	
Primary Revenue	$ 489,432.75	$ 407.48	$ 788,771.40	$ 388.71
Total Revenue	**$ 496,699.81**	**$ 413.53**	**$ 811,014.00**	**$ 399.67**
Direct Expenses				
Seed	$ 36,552.50	$ 30.43	$ 60,382.40	$ 29.76
Fertilizer	$ 127,193.06	$ 105.89	$ 195,749.80	$ 96.47
Chemical	$ 45,196.44	$ 37.63	$ 79,811.60	$ 39.33
Insurance - Production	$ 10,817.31	$ 9.01	$ 2,501.40	$ 1.23
Other Production Expenses	$ 13,854.88	$ 11.53	$ 19,851.20	$ 9.78
Total Direct Costs	**$ 233,614.19**	**$ 194.50**	**$ 358,296.40**	**$ 176.57**
Gross_Margin	**$ 263,085.63**	**$ 219.03**	**$ 452,717.60**	**$ 223.10**
Variable Costs				
Freight_Trucking	$ 3,786.00	$ 3.15	$ 3,503.80	$ 1.73
Fuel	$ 39,136.47	$ 32.58	$ 62,209.07	$ 30.66
Custom Work Expense	$ 14,001.60	$ 11.66	$ 23,702.48	$ 11.68
R & M	$ 53,084.58	$ 44.20	$ 80,376.93	$ 39.61
Supplies & Small Tools	$ 28,082.97	$ 23.38	$ 31,460.10	$ 15.50
Operating Interest	$ 3,238.19	$ 2.70	$ 3,241.19	$ 1.60
Paid & Unpaid Labour	$ 20,653.14	$ 17.19	$ 30,632.81	$ 15.10
Utilities	$ 35,889.12	$ 29.88	$ 58,967.47	$ 29.06
Total_Operating_Expenses	**$ 197,872.06**	**$ 164.74**	**$ 294,093.85**	**$ 144.93**
Contribution_Margin	**$ 65,213.56**	**$ 54.29**	**$ 158,623.75**	**$ 78.17**
Admin & Overheads				
Equip & Building Depr.	$ 90,709.84	$ 75.52	$ 160,628.85	$ 79.16
Equipment Rent	$ 2,246.73	$ 1.87	$ 2,331.64	$ 1.15
Insurance & Licenses	$ 18,382.94	$ 15.30	$ 25,154.52	$ 12.40
Interest Long Term	$ 21,183.42	$ 17.64	$ 44,681.15	$ 22.02
Professional Fees & Misc.	$ 13,171.09	$ 10.97	$ 27,275.89	$ 13.44
Property Taxes	$ 5,380.74	$ 4.48	$ 8,521.91	$ 4.20
Rent	$ 18,606.72	$ 15.49	$ 47,953.72	$ 23.63
Total_Admin_And_Overhead	**$ 169,681.48**	**$ 141.27**	**$ 316,547.66**	**$ 156.00**
Total Cost	**$ 601,167.73**	**$ 500.50**	**$ 968,937.91**	**$ 477.50**
Net_Earnings	**-$ 104,467.91**	**-$ 86.98**	**-$ 157,923.91**	**-$ 77.83**
Return on Investment		**-1.88%**		**-1.57%**
Investment Levels				
Invest_Machinery	$ 879,834.35	$ 732.51	$ 1,499,240.35	$ 738.83
Invest_Buildings	$ 126,768.17	$ 105.54	$ 212,173.68	$ 104.56
Invest_Land	$ 3,427,803.39	$ 2,853.83	$ 5,493,604.90	$ 2,707.28
Total Investment	**$ 4,434,405.92**	**$ 3,691.88**	**$ 7,205,018.93**	**$ 3,550.67**

IRRIGATED SPECIALTY CROP ENTERPRISE TOP THIRD TABLES – (AVERAGE FARM TOTAL & $ PER ACRE)

Irrigated Alfalfa - Irrigated Specialty Crop Enterprise Reports

Farm Type	All			
Region	South			
Enterprise	IRRIGATED ALFALFA		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Measurement	AVE/Farm	AVE/Acre	Total	$/Acre
Total Acres in sample	2,483		522	
Average seeded acres per Farm	191		131	
Number of Farms	13		4	
Primary Revenue	$ 83,246.92	$ 435.85	$ 66,986.75	$ 513.31
Total Revenue	**$ 83,246.92**	**$ 435.85**	**$ 66,986.75**	**$ 513.31**
Direct Expenses				
Seed	$ 1,301.77	$ 6.82	$ 1,188.25	$ 9.11
Fertilizer	$ 7,587.46	$ 39.72	$ 375.00	$ 2.87
Chemical	$ 1,214.92	$ 6.36	$ 143.75	$ 1.10
Insurance - Production	$ -	$ -	$ -	$ -
Other Production Expenses	$ 2,352.23	$ 12.32	$ 847.50	$ 6.49
Total Direct Costs	**$ 12,456.38**	**$ 65.22**	**$ 2,554.50**	**$ 19.57**
Gross_Margin	**$ 70,790.54**	**$ 370.63**	**$ 64,432.25**	**$ 493.73**
Variable Costs				
Freight_Trucking	$ 395.83	$ 2.07	$ 89.37	$ 0.68
Fuel	$ 9,280.53	$ 48.59	$ 8,812.71	$ 67.53
Custom Work Expense	$ 2,441.99	$ 12.79	$ 1,927.45	$ 14.77
R & M	$ 15,482.28	$ 81.06	$ 14,217.28	$ 108.94
Supplies & Small Tools	$ 8,192.32	$ 42.89	$ 5,500.52	$ 42.15
Operating Interest	$ 626.92	$ 3.28	$ 985.50	$ 7.55
Paid & Unpaid Labour	$ 4,931.01	$ 25.82	$ 1,644.30	$ 12.60
Utilities	$ 8,992.44	$ 47.08	$ 6,272.00	$ 48.06
Total_Operating_Expenses	**$ 50,343.32**	**$ 263.58**	**$ 39,449.14**	**$ 302.29**
Contribution_Margin	**$ 20,447.22**	**$ 107.05**	**$ 24,983.11**	**$ 191.44**
Admin & Overheads				
Equip & Building Depr.	$ 18,966.86	$ 99.30	$ 13,082.95	$ 100.25
Equipment Rent	$ 505.08	$ 2.64	$ 387.75	$ 2.97
Insurance & Licenses	$ 3,310.07	$ 17.33	$ 2,802.73	$ 21.48
Interest Long Term	$ 3,873.61	$ 20.28	$ 1,883.69	$ 14.43
Professional Fees & Misc.	$ 2,451.25	$ 12.83	$ 2,129.92	$ 16.32
Property Taxes	$ 1,029.21	$ 5.39	$ 926.49	$ 7.10
Rent	$ -	$ -	$ -	$ -
Total_Admin_And_Overhead	**$ 30,136.08**	**$ 157.78**	**$ 21,213.53**	**$ 162.56**
Total Cost	**$ 92,935.79**	**$ 486.57**	**$ 63,217.18**	**$ 484.42**
Net_Earnings	**-$ 9,688.86**	**-$ 50.73**	**$ 3,769.57**	**$ 28.89**
Return on Investment		**-0.76%**		**1.39%**
Investment Levels				
Invest_Machinery	$ 186,015.49	$ 973.90	$ 134,320.55	$ 1,029.28
Invest_Buildings	$ 26,395.34	$ 138.20	$ 8,815.79	$ 67.55
Invest_Land	$ 550,025.98	$ 2,879.72	$ 263,957.31	$ 2,022.66
Total Investment	**$ 762,436.81**	**$ 3,991.82**	**$ 407,093.65**	**$ 3,119.49**

Note: in most cases clients have provided an amortized seed cost per their discretion.

Dry Beans - Irrigated Specialty Crop Enterprise Reports

Farm Type	All	
Region	South	
Enterprise	IRRIGATED DRY BEANS	
Harvest Year	2009	
Soil Zone	All	
Measurement	**AVE/Farm**	**AVE/Acre**
Total Acres in sample	1,838	
Average seeded acres per Farm	306	
Number of Farms	6	
Primary Revenue	$ 267,749.83	$ 874.05
Total Revenue	**$ 267,749.83**	**$ 874.05**
Direct Expenses		
Seed	$ 18,835.83	$ 61.49
Fertilizer	$ 25,637.00	$ 83.69
Chemical	$ 33,723.17	$ 110.09
Insurance - Production	$ 17,601.67	$ 57.46
Other Production Expenses	$ 7,334.83	$ 23.94
Total Direct Costs	**$ 103,132.50**	**$ 336.67**
Gross_Margin	**$ 164,617.33**	**$ 537.38**
Variable Costs		
Freight_Trucking	$ 1,959.93	$ 6.40
Fuel	$ 7,594.74	$ 24.79
Custom Work Expense	$ 6,898.17	$ 22.52
R & M	$ 14,182.22	$ 46.30
Supplies & Small Tools	$ 3,938.45	$ 12.86
Operating Interest	$ 893.16	$ 2.92
Paid & Unpaid Labour	$ 13,967.45	$ 45.60
Utilities	$ 7,220.60	$ 23.57
Total_Operating_Expenses	**$ 56,654.72**	**$ 184.94**
Contribution_Margin	**$ 107,962.61**	**$ 352.44**
Admin & Overheads		
Equip & Building Depr.	$ 23,585.65	$ 76.99
Equipment Rent	$ 1,143.17	$ 3.73
Insurance & Licenses	$ 6,690.77	$ 21.84
Interest Long Term	$ 9,398.00	$ 30.68
Professional Fees & Misc.	$ 5,555.36	$ 18.14
Property Taxes	$ 1,113.93	$ 3.64
Rent	$ 1,032.50	$ 3.37
Total_Admin_And_Overhead	**$ 48,519.38**	**$ 158.39**
Total Cost	**$ 208,306.61**	**$ 680.00**
Net_Earnings	**$ 59,443.23**	**$ 194.05**
Return on Investment		**5.26%**
Investment Levels		
Invest_Machinery	$ 227,807.35	$ 743.66
Invest_Buildings	$ 23,979.85	$ 78.28
Invest_Land	$ 1,057,191.42	$ 3,451.11
Total Investment	**$ 1,308,978.61**	**$ 4,273.05**

Note: There were six farms reporting dry beans and in some cases individual farms reported multiple bean crops.

Potatoes - Irrigated Specialty Crop Enterprise Reports

Farm Type	All	
Region	South	
Enterprise	POTATOES	
Harvest Year	2009	
Soil Zone	All	
Measurement	**AVE/Farm**	**AVE/Acre**
Total Acres in sample	2,474	
Average seeded acres per Farm	619	
Number of Farms	4	
Primary Revenue	$ 1,619,049.50	$ 2,617.70
Total Revenue	**$ 1,619,049.50**	**$ 2,617.70**
Direct Expenses		
Seed	$ 167,520.00	$ 270.85
Fertilizer	$ 213,098.75	$ 344.54
Chemical	$ 122,362.00	$ 197.84
Insurance - Production	$ 45,563.75	$ 73.67
Other Production Expenses	$ 2,145.50	$ 3.47
Total Direct Costs	**$ 550,690.00**	**$ 890.36**
Gross_Margin	**$ 1,068,359.50**	**$ 1,727.34**
Variable Costs		
Freight_Trucking	$ 59,176.56	$ 95.68
Fuel	$ 50,908.15	$ 82.31
Custom Work Expense	$ 162,843.20	$ 263.29
R & M	$ 78,150.21	$ 126.35
Supplies & Small Tools	$ 7,402.21	$ 11.97
Operating Interest	$ 13,741.61	$ 22.22
Paid & Unpaid Labour	$ 175,080.00	$ 283.07
Utilities	$ 58,436.12	$ 94.48
Total_Operating_Expenses	**$ 605,738.06**	**$ 979.37**
Contribution_Margin	**$ 462,621.44**	**$ 747.97**
Admin & Overheads		
Equip & Building Depr.	$ 133,234.59	$ 215.42
Equipment Rent	$ 29,030.75	$ 46.94
Insurance & Licenses	$ 26,595.11	$ 43.00
Interest Long Term	$ 41,007.27	$ 66.30
Professional Fees & Misc.	$ 73,520.48	$ 118.87
Property Taxes	$ 1,572.75	$ 2.54
Rent	$ 171,895.75	$ 277.92
Total_Admin_And_Overhead	**$ 476,856.70**	**$ 770.99**
Total Cost	**$ 1,633,284.76**	**$ 2,640.72**
Net_Earnings	**-$ 14,235.26**	**-$ 23.02**
Return on Investment		**1.01%**
Investment Levels		
Invest_Machinery	$ 1,216,198.28	$ 1,966.37
Invest_Buildings	$ 316,135.39	$ 511.13
Invest_Land	$ 1,125,250.00	$ 1,819.32
Total Investment	**$ 2,657,583.68**	**$ 4,296.82**

- It is important to note that this represents only four samples and is NOT necessarily indicative of the industry. The data is an average of table potatoes of varying quality.

APPENDIX III: IRRIGATED TARGETED CROP DETAIL SUMMARY

IRRIGATED CROP DETAIL TABLES – IRRIGATED GRAIN, OILSEED AND PULSE CROPS (PER ACRE & PER UNIT)

Pea samples are not included as observations are below threshold levels (in summary however, yields averaged greater than 65 bushels per acre and direct expenses were over $145 per acre while net earnings were negative).

High Oil Canola and Malt barley samples are not included as observations are below threshold levels.

Irrigated Canola - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Crop	Canola-Irr			
Measurement	**Per Acre**	**Per Unit**	**Per Acre**	**$/Unit**
Total Acres in sample	3055		723	
Number of Farms	12		4	
Primary Yield (bu/acre)	49.96		63.34	
Primary Price ($/bu)	$ 9.02		$ 9.02	
Primary Revenue	**$ 450.60**	$ 9.02	**$ 571.33**	$ 9.02
Total Revenue	**$ 450.60**	$ 9.02	**$ 571.33**	$ 9.02
Direct Expenses				
Seed	$ 46.89	$ 0.94	$ 44.06	$ 0.70
Fertilizer	$ 116.89	$ 2.34	$ 94.97	$ 1.50
Chemical	$ 45.54	$ 0.91	$ 57.30	$ 0.90
Insurance - Production	$ 6.64	$ 0.13	$ 2.93	$ 0.05
Other Production Expenses	$ 12.57	$ 0.25	$ 30.07	$ 0.47
Total Direct Costs	**$ 228.52**	**$ 4.57**	**$ 229.33**	**$ 3.62**
Gross_Margin	**$ 222.08**	**$ 4.45**	**$ 342.00**	**$ 5.40**
Variable Costs				
Freight_Trucking	$ 1.63	$ 0.03	$ 0.98	$ 0.02
Fuel	$ 38.13	$ 0.76	$ 40.74	$ 0.64
Custom Work Expense	$ 11.96	$ 0.24	$ 12.29	$ 0.19
R & M	$ 55.01	$ 1.10	$ 48.69	$ 0.77
Supplies & Small Tools	$ 33.05	$ 0.66	$ 36.54	$ 0.58
Operating Interest	$ 3.06	$ 0.06	$ 2.57	$ 0.04
Paid & Unpaid Labour	$ 27.83	$ 0.56	$ 20.58	$ 0.32
Utilities	$ 33.61	$ 0.67	$ 39.87	$ 0.63
Total_Operating_Expenses	**$ 204.28**	**$ 4.09**	**$ 202.26**	**$ 3.19**
Contribution_Margin	**$ 17.81**	**$ 0.36**	**$ 139.74**	**$ 2.21**
Admin & Overheads				
Equip & Building Depr.	$ 84.09	$ 1.68	$ 96.37	$ 1.52
Equipment Rent	$ 2.56	$ 0.05	$ 4.13	$ 0.07
Insurance & Licenses	$ 19.21	$ 0.38	$ 26.65	$ 0.42
Interest Long Term	$ 15.22	$ 0.30	$ 10.49	$ 0.17
Professional Fees & Misc.	$ 12.36	$ 0.25	$ 7.04	$ 0.11
Property Taxes	$ 5.02	$ 0.10	$ 6.56	$ 0.10
Rent	$ 10.25	$ 0.21	$ -	$ -
Total_Admin_And_Overhead	**$ 148.72**	**$ 2.98**	**$ 151.25**	**$ 2.39**
Total Cost	**$ 581.51**	**$ 11.64**	**$ 582.83**	**$ 9.20**
Net_Earnings	**-$ 130.91**	**-$ 2.62**	**-$ 11.51**	**-$ 0.18**
Return on Investment		**-3.13%**		**-0.02%**
Investment Levels				
Invest_Machinery	$ 827.00	$ 16.55	$ 968.44	$ 15.29
Invest_Buildings	$ 134.40	$ 2.69	$ 171.45	$ 2.71
Invest_Land	$ 2,733.65	$ 54.72	$ 3,433.66	$ 54.21
Total Investment	**$ 3,695.05**	**$ 73.97**	**$ 4,573.54**	**$ 72.21**
Input use				
Input_Seed_Rate	5.3	lbs/acre	5.3	lbs/acre
Input_Nitrogen	169.7	lbs/acre	147.8	lbs/acre
Input_Phosphorus	30.6	lbs/acre	33.5	lbs/acre
Input_Potassium	2.9	lbs/acre	0.0	lbs/acre
Input_Sulfur	14.5	lbs/acre	5.0	lbs/acre

Irrigated Canola Seed - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Canola Seed-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1531	
Number of Farms	8	
Primary Yield (bu/acre)	32.65	
Primary Price ($/bu)	$ 28.98	
Primary Revenue	**$ 946.16**	$ 28.98
Total Revenue	**$ 946.16**	$ 28.98
Direct Expenses		
Seed	$ -	$ -
Fertilizer	$ 100.15	$ 3.07
Chemical	$ 46.34	$ 1.42
Insurance - Production	$ 40.02	$ 1.23
Other Production Expenses	$ 14.28	$ 0.44
Total Direct Costs	**$ 200.79**	**$ 6.15**
Gross_Margin	**$ 745.37**	**$ 22.83**
Variable Costs		
Freight_Trucking	$ 8.69	$ 0.27
Fuel	$ 13.57	$ 0.42
Custom Work Expense	$ 42.76	$ 1.31
R & M	$ 24.82	$ 0.76
Supplies & Small Tools	$ 1.02	$ 0.03
Operating Interest	$ 1.62	$ 0.05
Paid & Unpaid Labour	$ 35.13	$ 1.08
Utilities	$ 24.25	$ 0.74
Total_Operating_Expenses	**$ 151.85**	**$ 4.65**
Contribution_Margin	**$ 593.52**	**$ 18.18**
Admin & Overheads		
Equip & Building Depr.	$ 51.40	$ 1.57
Equipment Rent	$ 1.45	$ 0.04
Insurance & Licenses	$ 6.55	$ 0.20
Interest Long Term	$ 25.83	$ 0.79
Professional Fees & Misc.	$ 12.53	$ 0.38
Property Taxes	$ 2.24	$ 0.07
Rent	$ 24.18	$ 0.74
Total_Admin_And_Overhead	**$ 124.19**	**$ 3.80**
Total Cost	**$ 476.83**	**$ 14.60**
Net_Earnings	**$ 469.33**	**$ 14.37**
Return on Investment		**17.34%**
Investment Levels		
Invest_Machinery	$ 488.72	$ 14.97
Invest_Buildings	$ 68.70	$ 2.10
Invest_Land	$ 2,297.81	$ 70.38
Total Investment	**$ 2,855.22**	**$ 87.45**
Input use		
Input_Seed_Rate	5.0	lbs/acre
Input_Nitrogen	135.4	lbs/acre
Input_Phosphorus	36.3	lbs/acre
Input_Potassium	20.5	lbs/acre
Input_Sulfur	7.5	lbs/acre

Irrigated Barley - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Barley-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1552	
Number of Farms	6	
Primary Yield (bu/acre)	101.79	
Primary Price ($/bu)	$ 3.26	
Primary Revenue	**$ 331.84**	$ 3.26
Total Revenue	**$ 343.28**	$ 3.37
Direct Expenses		
Seed	$ 14.57	$ 0.14
Fertilizer	$ 91.54	$ 0.90
Chemical	$ 34.59	$ 0.34
Insurance - Production	$ 5.24	$ 0.05
Other Production Expenses	$ 10.56	$ 0.10
Total Direct Costs	**$ 156.51**	**$ 1.54**
Gross_Margin	**$ 186.78**	**$ 1.83**
Variable Costs		
Freight_Trucking	$ 1.92	$ 0.02
Fuel	$ 28.63	$ 0.28
Custom Work Expense	$ 7.51	$ 0.07
R & M	$ 31.84	$ 0.31
Supplies & Small Tools	$ 15.89	$ 0.16
Operating Interest	$ 2.30	$ 0.02
Paid & Unpaid Labour	$ 14.83	$ 0.15
Utilities	$ 21.51	$ 0.21
Total_Operating_Expenses	**$ 124.42**	**$ 1.22**
Contribution_Margin	**$ 62.36**	**$ 0.61**
Admin & Overheads		
Equip & Building Depr.	$ 64.26	$ 0.63
Equipment Rent	$ 1.24	$ 0.01
Insurance & Licenses	$ 14.60	$ 0.14
Interest Long Term	$ 17.85	$ 0.18
Professional Fees & Misc.	$ 8.64	$ 0.08
Property Taxes	$ 4.49	$ 0.04
Rent	$ 13.59	$ 0.13
Total_Admin_And_Overhead	**$ 124.67**	**$ 1.22**
Total Cost	**$ 405.60**	**$ 3.98**
Net_Earnings	**-$ 62.31**	**-$ 0.61**
Return on Investment		**-1.23%**
Investment Levels		
Invest_Machinery	$ 621.42	$ 6.10
Invest_Buildings	$ 99.07	$ 0.97
Invest_Land	$ 2,892.13	$ 28.41
Total Investment	**$ 3,612.61**	**$ 35.49**
Input use		
Input_Seed_Rate	2.5	bu/acre
Input_Nitrogen	129.8	lbs/acre
Input_Phosphorus	29.2	lbs/acre
Input_Potassium	2.7	lbs/acre
Input_Sulfur	4.3	lbs/acre

Irrigated Wheat - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	**All**			
Region	**South**			
Enterprise	**IRRIGATED GRAIN & OILSEEDS**		**Top 1/3**	
Harvest Year	**2009**		**Direct Cost**	
Soil Zone	**All**			
Crop	**Wheat HRS-Irr**			
Measurement	**Per Acre**	**Per Unit**	**Per Acre**	**$/Unit**
Total Acres in sample	4795		484	
Number of Farms	13		4	
Primary Yield (bu/acre)	67.15		83.95	
Primary Price ($/bu)	$ 5.06		$ 5.06	
Primary Revenue	**$ 339.79**	$ 5.06	**$ 424.77**	$ 5.06
Total Revenue	**$ 345.10**	$ 5.14	**$ 435.23**	$ 5.18
Direct Expenses				
Seed	$ 15.23	$ 0.23	$ 17.52	$ 0.21
Fertilizer	$ 101.46	$ 1.51	$ 79.19	$ 0.94
Chemical	$ 34.83	$ 0.52	$ 34.09	$ 0.41
Insurance - Production	$ 11.76	$ 0.18	$ 5.88	$ 0.07
Other Production Expenses	$ 7.13	$ 0.11	$ 7.85	$ 0.09
Total Direct Costs	**$ 170.41**	**$ 2.54**	**$ 144.54**	**$ 1.72**
Gross_Margin	**$ 174.69**	**$ 2.60**	**$ 290.69**	**$ 3.46**
Variable Costs				
Freight_Trucking	$ 2.43	$ 0.04	$ 2.47	$ 0.03
Fuel	$ 23.67	$ 0.35	$ 34.87	$ 0.42
Custom Work Expense	$ 10.18	$ 0.15	$ 1.78	$ 0.02
R & M	$ 32.90	$ 0.49	$ 65.67	$ 0.78
Supplies & Small Tools	$ 11.58	$ 0.17	$ 13.18	$ 0.16
Operating Interest	$ 2.70	$ 0.04	$ 4.85	$ 0.06
Paid & Unpaid Labour	$ 16.86	$ 0.25	$ 31.19	$ 0.37
Utilities	$ 19.34	$ 0.29	$ 39.24	$ 0.47
Total_Operating_Expenses	**$ 119.65**	**$ 1.78**	**$ 193.25**	**$ 2.30**
Contribution_Margin	**$ 55.04**	**$ 0.82**	**$ 97.44**	**$ 1.16**
Admin & Overheads				
Equip & Building Depr.	$ 51.60	$ 0.77	$ 80.67	$ 0.96
Equipment Rent	$ 1.78	$ 0.03	$ 5.59	$ 0.07
Insurance & Licenses	$ 13.99	$ 0.21	$ 18.43	$ 0.22
Interest Long Term	$ 14.03	$ 0.21	$ 24.74	$ 0.29
Professional Fees & Misc.	$ 7.63	$ 0.11	$ 12.34	$ 0.15
Property Taxes	$ 3.64	$ 0.05	$ 6.51	$ 0.08
Rent	$ 16.59	$ 0.25	$ 14.85	$ 0.18
Total_Admin_And_Overhead	**$ 109.26**	**$ 1.63**	**$ 163.14**	**$ 1.94**
Total Cost	**$ 399.32**	**$ 5.95**	**$ 500.93**	**$ 5.97**
Net_Earnings	**-$ 54.21**	**-$ 0.81**	**-$ 65.70**	**-$ 0.78**
Return on Investment		**-1.25%**		**-1.09%**
Investment Levels				
Invest_Machinery	$ 497.71	$ 7.41	$ 747.57	$ 8.91
Invest_Buildings	$ 82.94	$ 1.24	$ 203.94	$ 2.43
Invest_Land	$ 2,631.92	$ 39.19	$ 2,812.47	$ 33.50
Total Investment	**$ 3,212.57**	**$ 47.84**	**$ 3,763.98**	**$ 44.84**
Input use				
Input_Seed_Rate	2.1	bu/acre	2.1	bu/acre
Input_Nitrogen	132.2	lbs/acre	130.0	lbs/acre
Input_Phosphorus	28.5	lbs/acre	40.0	lbs/acre
Input_Potassium	2.5	lbs/acre	2.5	lbs/acre
Input_Sulfur	2.0	lbs/acre	0.0	lbs/acre

Irrigated Winter Wheat - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Winter Wheat-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1174	
Number of Farms	5	
Primary Yield (bu/acre)	94.03	
Primary Price ($/bu)	$ 3.63	
Primary Revenue	**$ 341.33**	$ 3.63
Total Revenue	**$ 365.59**	$ 3.89
Direct Expenses		
Seed	$ 15.39	$ 0.16
Fertilizer	$ 143.88	$ 1.53
Chemical	$ 35.13	$ 0.37
Insurance - Production	$ 4.70	$ 0.05
Other Production Expenses	$ 9.11	$ 0.10
Total Direct Costs	**$ 208.21**	**$ 2.21**
Gross_Margin	**$ 157.38**	**$ 1.67**
Variable Costs		
Freight_Trucking	$ 3.20	$ 0.03
Fuel	$ 30.99	$ 0.33
Custom Work Expense	$ 14.02	$ 0.15
R & M	$ 48.36	$ 0.51
Supplies & Small Tools	$ 13.80	$ 0.15
Operating Interest	$ 2.25	$ 0.02
Paid & Unpaid Labour	$ 25.71	$ 0.27
Utilities	$ 30.93	$ 0.33
Total_Operating_Expenses	**$ 169.26**	**$ 1.80**
Contribution_Margin	**-$ 11.88**	**-$ 0.13**
Admin & Overheads		
Equip & Building Depr.	$ 91.31	$ 0.97
Equipment Rent	$ 2.55	$ 0.03
Insurance & Licenses	$ 12.29	$ 0.13
Interest Long Term	$ 26.81	$ 0.29
Professional Fees & Misc.	$ 14.71	$ 0.16
Property Taxes	$ 3.80	$ 0.04
Rent	$ 35.96	$ 0.38
Total_Admin_And_Overhead	**$ 187.42**	**$ 1.99**
Total Cost	**$ 564.88**	**$ 6.01**
Net_Earnings	**-$ 199.30**	**-$ 2.12**
Return on Investment		**-4.69%**
Investment Levels		
Invest_Machinery	$ 848.44	$ 9.02
Invest_Buildings	$ 124.88	$ 1.33
Invest_Land	$ 2,700.75	$ 28.72
Total Investment	**$ 3,674.07**	**$ 39.07**
Input use		
Input_Seed_Rate	2.0	bu/acre
Input_Nitrogen	137.0	lbs/acre
Input_Phosphorus	27.4	lbs/acre
Input_Potassium	6.4	lbs/acre
Input_Sulfur	0.0	lbs/acre

Irrigated Durum - Irrigated Grain, Oilseed and Pulse Crop Detail Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Crop	Durum-Irr			
Measurement	**Per Acre**	**Per Unit**	**Per Acre**	**$/Unit**
Total Acres in sample	4964		1140	
Number of Farms	13		4	
Primary Yield (bu/acre)	107.39		156.48	
Primary Price ($/bu)	$ 4.22		$ 4.22	
Primary Revenue	**$ 453.18**	$ 4.22	**$ 660.35**	$ 4.22
Total Revenue	**$ 460.00**	$ 4.28	**$ 666.26**	$ 4.26
Direct Expenses				
Seed	$ 21.87	$ 0.20	$ 19.64	$ 0.13
Fertilizer	$ 120.41	$ 1.12	$ 98.51	$ 0.63
Chemical	$ 40.60	$ 0.38	$ 39.49	$ 0.25
Insurance - Production	$ 18.70	$ 0.17	$ 37.42	$ 0.24
Other Production Expenses	$ 10.04	$ 0.09	$ 12.51	$ 0.08
Total Direct Costs	**$ 211.61**	**$ 1.97**	**$ 207.56**	**$ 1.33**
Gross_Margin	**$ 248.39**	**$ 2.31**	**$ 458.70**	**$ 2.93**
Variable Costs				
Freight_Trucking	$ 10.76	$ 0.10	$ 2.88	$ 0.02
Fuel	$ 28.08	$ 0.26	$ 22.03	$ 0.14
Custom Work Expense	$ 26.72	$ 0.25	$ 17.15	$ 0.11
R & M	$ 39.43	$ 0.37	$ 50.73	$ 0.32
Supplies & Small Tools	$ 11.80	$ 0.11	$ 2.98	$ 0.02
Operating Interest	$ 2.94	$ 0.03	$ 2.43	$ 0.02
Paid & Unpaid Labour	$ 24.46	$ 0.23	$ 32.99	$ 0.21
Utilities	$ 25.86	$ 0.24	$ 18.19	$ 0.12
Total_Operating_Expenses	**$ 170.06**	**$ 1.58**	**$ 149.39**	**$ 0.95**
Contribution_Margin	**$ 78.33**	**$ 0.73**	**$ 309.31**	**$ 1.98**
Admin & Overheads				
Equip & Building Depr.	$ 75.89	$ 0.71	$ 71.34	$ 0.46
Equipment Rent	$ 2.12	$ 0.02	$ 2.82	$ 0.02
Insurance & Licenses	$ 9.74	$ 0.09	$ 15.34	$ 0.10
Interest Long Term	$ 24.57	$ 0.23	$ 22.61	$ 0.14
Professional Fees & Misc.	$ 10.54	$ 0.10	$ 17.41	$ 0.11
Property Taxes	$ 3.69	$ 0.03	$ 3.48	$ 0.02
Rent	$ 23.11	$ 0.22	$ 64.22	$ 0.41
Total_Admin_And_Overhead	**$ 149.65**	**$ 1.39**	**$ 197.22**	**$ 1.26**
Total Cost	**$ 531.31**	**$ 4.95**	**$ 554.16**	**$ 3.54**
Net_Earnings	**-$ 71.31**	**-$ 0.66**	**$ 112.10**	**$ 0.72**
Return on Investment		**-1.29%**		**4.70%**
Investment Levels				
Invest_Machinery	$ 726.39	$ 6.76	$ 614.52	$ 3.93
Invest_Buildings	$ 135.77	$ 1.26	$ 255.56	$ 1.63
Invest_Land	$ 2,757.16	$ 25.67	$ 1,998.02	$ 12.77
Total Investment	**$ 3,619.31**	**$ 33.70**	**$ 2,868.10**	**$ 18.33**
Input use				
Input_Seed_Rate	2.2	bu/acre	2.2	bu/acre
Input_Nitrogen	138.2	lbs/acre	122.5	lbs/acre
Input_Phosphorus	37.9	lbs/acre	28.1	lbs/acre
Input_Potassium	10.5	lbs/acre	7.5	lbs/acre
Input_Sulfur	1.7	lbs/acre	0.0	lbs/acre

IRRIGATED CROP DETAIL TABLES – IRRIGATED SPECIALTY CROP REPORT (PER ACRE & PER UNIT)

Flax has not been included as there are too few observations to report.

Alfalfa seed has not been included as there are too few observations to report. In summary however there are three common alfalfa seed observations and one pedigree seed observation. Common seed is valued at approximately a discount of $0.10 and common seed had a much lower production than the pedigree sample, however both reported a positive ROI.

Irrigated Canola Seed - Irrigated Specialty Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Canola Seed-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1531	
Number of Farms	8	
Primary Yield (bu/acre)	32.65	
Primary Price ($/bu)	$ 28.98	
Primary Revenue	**$ 946.16**	$ 28.98
Total Revenue	**$ 946.16**	$ 28.98
Direct Expenses		
Seed	$ -	$ -
Fertilizer	$ 100.15	$ 3.07
Chemical	$ 46.34	$ 1.42
Insurance - Production	$ 40.02	$ 1.23
Other Production Expenses	$ 14.28	$ 0.44
Total Direct Costs	**$ 200.79**	**$ 6.15**
Gross_Margin	**$ 745.37**	**$ 22.83**
Variable Costs		
Freight_Trucking	$ 8.69	$ 0.27
Fuel	$ 13.57	$ 0.42
Custom Work Expense	$ 42.76	$ 1.31
R & M	$ 24.82	$ 0.76
Supplies & Small Tools	$ 1.02	$ 0.03
Operating Interest	$ 1.62	$ 0.05
Paid & Unpaid Labour	$ 35.13	$ 1.08
Utilities	$ 24.25	$ 0.74
Total_Operating_Expenses	**$ 151.85**	**$ 4.65**
Contribution_Margin	**$ 593.52**	**$ 18.18**
Admin & Overheads		
Equip & Building Depr.	$ 51.40	$ 1.57
Equipment Rent	$ 1.45	$ 0.04
Insurance & Licenses	$ 6.55	$ 0.20
Interest Long Term	$ 25.83	$ 0.79
Professional Fees & Misc.	$ 12.53	$ 0.38
Property Taxes	$ 2.24	$ 0.07
Rent	$ 24.18	$ 0.74
Total_Admin_And_Overhead	**$ 124.19**	**$ 3.80**
Total Cost	**$ 476.83**	**$ 14.60**
Net_Earnings	**$ 469.33**	**$ 14.37**
Return on Investment		**17.34%**
Investment Levels		
Invest_Machinery	$ 488.72	$ 14.97
Invest_Buildings	$ 68.70	$ 2.10
Invest_Land	$ 2,297.81	$ 70.38
Total Investment	**$ 2,855.22**	**$ 87.45**
Input use		
Input_Seed_Rate	5.0	lbs/acre
Input_Nitrogen	135.4	lbs/acre
Input_Phosphorus	36.3	lbs/acre
Input_Potassium	20.5	lbs/acre
Input_Sulfur	7.5	lbs/acre

Irrigated Alfalfa - Irrigated Specialty Crop Detail Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED ALFALFA		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Crop	Alfalfa-Irr			
Measurement	**Per Acre**	**Per Unit**	**Total**	**$/Unit**
Total Acres in sample	2483		522	
Number of Farms	13		4	
Primary Yield (tonnes/acre)	3.74		4.42	
Primary Price ($/tonnes)	$ 116.58		$ 116.09	
Primary Revenue	**$ 435.85**	$ 116.58	**$ 513.31**	$ 116.09
Total Revenue	**$ 435.85**	$ 116.58	**$ 513.31**	$ 116.09
Direct Expenses				
Seed	$ 6.82	$ 1.82	$ 9.11	$ 2.06
Fertilizer	$ 39.72	$ 10.63	$ 2.87	$ 0.65
Chemical	$ 6.36	$ 1.70	$ 1.10	$ 0.25
Insurance - Production	$ -	$ -	$ -	$ -
Other Production Expenses	$ 12.32	$ 3.29	$ 6.49	$ 1.47
Total Direct Costs	**$ 65.22**	**$ 17.44**	**$ 19.57**	**$ 4.43**
Gross_Margin	**$ 370.63**	**$ 99.14**	**$ 493.73**	**$ 111.67**
Variable Costs				
Freight_Trucking	$ 2.07	$ 0.55	$ 0.68	$ 0.15
Fuel	$ 48.59	$ 13.00	$ 67.53	$ 15.27
Custom Work Expense	$ 12.79	$ 3.42	$ 14.77	$ 3.34
R & M	$ 81.06	$ 21.68	$ 108.94	$ 24.64
Supplies & Small Tools	$ 42.89	$ 11.47	$ 42.15	$ 9.53
Operating Interest	$ 3.28	$ 0.88	$ 7.55	$ 1.71
Paid & Unpaid Labour	$ 25.82	$ 6.91	$ 12.60	$ 2.85
Utilities	$ 47.08	$ 12.59	$ 48.06	$ 10.87
Total_Operating_Expenses	**$ 263.58**	**$ 70.50**	**$ 302.29**	**$ 68.37**
Contribution_Margin	**$ 107.05**	**$ 28.63**	**$ 191.44**	**$ 43.30**
Admin & Overheads				
Equip & Building Depr.	$ 99.30	$ 26.56	$ 100.25	$ 22.67
Equipment Rent	$ 2.64	$ 0.71	$ 2.97	$ 0.67
Insurance & Licenses	$ 17.33	$ 4.64	$ 21.48	$ 4.86
Interest Long Term	$ 20.28	$ 5.42	$ 14.43	$ 3.26
Professional Fees & Misc.	$ 12.83	$ 3.43	$ 16.32	$ 3.69
Property Taxes	$ 5.39	$ 1.44	$ 7.10	$ 1.61
Rent	$ -	$ -	$ -	$ -
Total_Admin_And_Overhead	**$ 157.78**	**$ 42.20**	**$ 162.56**	**$ 36.77**
Total Cost	**$ 486.57**	**$ 130.15**	**$ 484.42**	**$ 109.56**
Net_Earnings	**-$ 50.73**	**-$ 13.57**	**$ 28.89**	**$ 6.53**
Return on Investment		**-0.76%**		**1.39%**
Investment Levels				
Invest_Machinery	$ 973.90	$ 260.50	$ 1,029.28	$ 232.79
Invest_Buildings	$ 138.20	$ 36.96	$ 67.55	$ 15.28
Invest_Land	$ 2,879.72	$ 770.26	$ 2,022.66	$ 457.47
Total Investment	**$ 3,991.82**	**$ 1,067.72**	**$ 3,119.49**	**$ 705.53**
Input use				
Input_Seed_Rate	4.3	lbs/acre	3.6	lbs/acre
Input_Nitrogen	12.9	lbs/acre	0.0	lbs/acre
Input_Phosphorus	21.3	lbs/acre	0.0	lbs/acre
Input_Potassium	14.8	lbs/acre	0.0	lbs/acre
Input_Sulfur	1.5	lbs/acre	0.0	lbs/acre

- In most cases clients have provided an amortized seed cost per their discretion.

Irrigated Great Northern Dry Beans - Irrigated Specialty Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED DRY BEANS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Beans GN-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1109	
Number of Farms	5	
Primary Yield (lbs/acre)	2713.09	
Primary Price ($/lbs)	$ 0.35	
Primary Revenue	**$ 949.41**	$ 0.35
Total Revenue	**$ 949.41**	$ 0.35
Direct Expenses		
Seed	$ 62.22	$ 0.02
Fertilizer	$ 87.70	$ 0.03
Chemical	$ 119.42	$ 0.04
Insurance - Production	$ 59.89	$ 0.02
Other Production Expenses	$ 30.42	$ 0.01
Total Direct Costs	**$ 359.65**	**$ 0.13**
Gross_Margin	**$ 589.76**	**$ 0.22**
Variable Costs		
Freight_Trucking	$ 5.36	$ 0.00
Fuel	$ 24.83	$ 0.01
Custom Work Expense	$ 25.04	$ 0.01
R & M	$ 42.93	$ 0.02
Supplies & Small Tools	$ 19.63	$ 0.01
Operating Interest	$ 3.15	$ 0.00
Paid & Unpaid Labour	$ 35.61	$ 0.01
Utilities	$ 26.81	$ 0.01
Total_Operating_Expenses	**$ 183.37**	**$ 0.07**
Contribution_Margin	**$ 406.39**	**$ 0.15**
Admin & Overheads		
Equip & Building Depr.	$ 87.86	$ 0.03
Equipment Rent	$ 3.83	$ 0.00
Insurance & Licenses	$ 29.58	$ 0.01
Interest Long Term	$ 26.40	$ 0.01
Professional Fees & Misc.	$ 16.79	$ 0.01
Property Taxes	$ 4.14	$ 0.00
Rent	$ 1.25	$ 0.00
Total_Admin_And_Overhead	**$ 169.85**	**$ 0.06**
Total Cost	**$ 712.87**	**$ 0.26**
Net_Earnings	**$ 236.54**	**$ 0.09**
Return on Investment		**5.62%**
Investment Levels		
Invest_Machinery	$ 846.16	$ 0.31
Invest_Buildings	$ 110.87	$ 0.04
Invest_Land	$ 3,725.15	$ 1.37
Total Investment	**$ 4,682.18**	**$ 1.73**
Input use		
Input_Seed_Rate	68.4	lbs/acre
Input_Nitrogen	91.0	lbs/acre
Input_Phosphorus	31.6	lbs/acre
Input_Potassium	10.4	lbs/acre
Input_Sulfur	2.0	lbs/acre

Irrigated dry beans summary:

- Red – 2 observations with a strong positive ROI
- Pinto and Black – 4 observations with a small positive ROI
- All varieties varied in terms of direct costs, overhead costs. Samples were from both small and large farms.

Irrigated Potatoes - Irrigated Specialty Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**POTATOES**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Potatoes**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	2474	
Number of Farms	4	
Primary Yield (ton/acre)	14.96	
Primary Price ($/ton)	$ 174.94	
Primary Revenue	**$ 2,617.70**	$ 174.94
Total Revenue	**$ 2,617.70**	$ 174.94
Direct Expenses		
Seed	$ 270.85	$ 18.10
Fertilizer	$ 344.54	$ 23.03
Chemical	$ 197.84	$ 13.22
Insurance - Production	$ 73.67	$ 4.92
Other Production Expenses	$ 3.47	$ 0.23
Total Direct Costs	**$ 890.36**	**$ 59.50**
Gross_Margin	**$ 1,727.34**	**$ 115.44**
Variable Costs		
Freight_Trucking	$ 95.68	$ 6.39
Fuel	$ 82.31	$ 5.50
Custom Work Expense	$ 263.29	$ 17.60
R & M	$ 126.35	$ 8.44
Supplies & Small Tools	$ 11.97	$ 0.80
Operating Interest	$ 22.22	$ 1.48
Paid & Unpaid Labour	$ 283.07	$ 18.92
Utilities	$ 94.48	$ 6.31
Total_Operating_Expenses	**$ 979.37**	**$ 65.45**
Contribution_Margin	**$ 747.97**	**$ 49.99**
Admin & Overheads		
Equip & Building Depr.	$ 215.42	$ 14.40
Equipment Rent	$ 46.94	$ 3.14
Insurance & Licenses	$ 43.00	$ 2.87
Interest Long Term	$ 66.30	$ 4.43
Professional Fees & Misc.	$ 118.87	$ 7.94
Property Taxes	$ 2.54	$ 0.17
Rent	$ 277.92	$ 18.57
Total_Admin_And_Overhead	**$ 770.99**	**$ 51.53**
Total Cost	**$ 2,640.72**	**$ 176.48**
Net_Earnings	**-$ 23.02**	**-$ 1.54**
Return on Investment		**1.01%**
Investment Levels		
Invest_Machinery	$ 1,966.37	$ 131.41
Invest_Buildings	$ 511.13	$ 34.16
Invest_Land	$ 1,819.32	$ 121.59
Total Investment	**$ 4,296.82**	**$ 287.16**
Input use		
Input_Seed_Rate	2000.0	lbs/acre
Input_Nitrogen	240.7	lbs/acre
Input_Phosphorus	88.4	lbs/acre
Input_Potassium	84.3	lbs/acre
Input_Sulfur	7.6	lbs/acre

- It is important to note that this represents only four samples and is NOT necessarily indicative of the industry. The data is an average of table potatoes of varying quality.

IRRIGATED CROP DETAIL TABLES – IRRIGATED MIXED FARM CROP DETAILS REPORT (PER ACRE & PER UNIT)

Irrigated Canola- Irrigated Mixed Farm Crop Detail Report

Farm Type	All	
Region	South	
Enterprise	IRRIGATED GRAIN & OILSEEDS	
Harvest Year	2009	
Soil Zone	All	
Crop	Canola-Irr	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	2449	
Number of Farms	10	
Primary Yield (bu/acre)	51.28	
Primary Price ($/bu)	$ 9.02	
Primary Revenue	**$ 462.57**	$ 9.02
Total Revenue	**$ 462.57**	$ 9.02
Direct Expenses		
Seed	$ 48.85	$ 0.95
Fertilizer	$ 115.73	$ 2.26
Chemical	$ 47.92	$ 0.93
Insurance - Production	$ 7.88	$ 0.15
Other Production Expenses	$ 13.50	$ 0.26
Total Direct Costs	**$ 233.87**	**$ 4.56**
Gross_Margin	**$ 228.69**	**$ 4.46**
Variable Costs		
Freight_Trucking	$ 1.15	$ 0.02
Fuel	$ 38.58	$ 0.75
Custom Work Expense	$ 14.63	$ 0.29
R & M	$ 59.29	$ 1.16
Supplies & Small Tools	$ 36.27	$ 0.71
Operating Interest	$ 3.39	$ 0.07
Paid & Unpaid Labour	$ 31.01	$ 0.60
Utilities	$ 33.97	$ 0.66
Total_Operating_Expenses	**$ 218.30**	**$ 4.26**
Contribution_Margin	**$ 10.40**	**$ 0.20**
Admin & Overheads		
Equip & Building Depr.	$ 87.82	$ 1.71
Equipment Rent	$ 2.63	$ 0.05
Insurance & Licenses	$ 20.49	$ 0.40
Interest Long Term	$ 10.70	$ 0.21
Professional Fees & Misc.	$ 14.54	$ 0.28
Property Taxes	$ 4.75	$ 0.09
Rent	$ 12.79	$ 0.25
Total_Admin_And_Overhead	**$ 153.72**	**$ 3.00**
Total Cost	**$ 605.89**	**$ 11.81**
Net_Earnings	**-$ 143.32**	**-$ 2.79**
Return on Investment		**-3.58%**
Investment Levels		
Invest_Machinery	$ 877.43	$ 17.11
Invest_Buildings	$ 116.67	$ 2.28
Invest_Land	$ 2,707.92	$ 52.80
Total Investment	**$ 3,702.02**	**$ 72.19**
Input use		
Input_Seed_Rate	5.2	lbs/acre
Input_Nitrogen	169.2	lbs/acre
Input_Phosphorus	31.0	lbs/acre
Input_Potassium	3.5	lbs/acre
Input_Sulfur	14.9	lbs/acre

Irrigated Barley - Irrigated Mixed Farm Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Barley-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1309	
Number of Farms	5	
Primary Yield (bu/acre)	98.97	
Primary Price ($/bu)	$ 3.26	
Primary Revenue	**$ 322.63**	$ 3.26
Total Revenue	**$ 336.20**	$ 3.40
Direct Expenses		
Seed	$ 15.18	$ 0.15
Fertilizer	$ 94.91	$ 0.96
Chemical	$ 33.33	$ 0.34
Insurance - Production	$ 3.41	$ 0.03
Other Production Expenses	$ 10.85	$ 0.11
Total Direct Costs	**$ 157.68**	**$ 1.59**
Gross_Margin	**$ 178.52**	**$ 1.80**
Variable Costs		
Freight_Trucking	$ 1.15	$ 0.01
Fuel	$ 29.03	$ 0.29
Custom Work Expense	$ 8.25	$ 0.08
R & M	$ 34.97	$ 0.35
Supplies & Small Tools	$ 18.84	$ 0.19
Operating Interest	$ 2.73	$ 0.03
Paid & Unpaid Labour	$ 12.19	$ 0.12
Utilities	$ 25.50	$ 0.26
Total_Operating_Expenses	**$ 132.65**	**$ 1.34**
Contribution_Margin	**$ 45.87**	**$ 0.46**
Admin & Overheads		
Equip & Building Depr.	$ 67.51	$ 0.68
Equipment Rent	$ 1.47	$ 0.01
Insurance & Licenses	$ 13.76	$ 0.14
Interest Long Term	$ 16.57	$ 0.17
Professional Fees & Misc.	$ 9.33	$ 0.09
Property Taxes	$ 4.87	$ 0.05
Rent	$ 16.11	$ 0.16
Total_Admin_And_Overhead	**$ 129.63**	**$ 1.31**
Total Cost	**$ 419.96**	**$ 4.24**
Net_Earnings	**-$ 83.76**	**-$ 0.85**
Return on Investment		**-1.80%**
Investment Levels		
Invest_Machinery	$ 647.67	$ 6.54
Invest_Buildings	$ 100.28	$ 1.01
Invest_Land	$ 2,980.20	$ 30.11
Total Investment	**$ 3,728.14**	**$ 37.67**
Input use		
Input_Seed_Rate	2.5	bu/acre
Input_Nitrogen	129.5	lbs/acre
Input_Phosphorus	27.8	lbs/acre
Input_Potassium	3.2	lbs/acre
Input_Sulfur	5.2	lbs/acre

Irrigated Wheat HRS - Irrigated Mixed Farm Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Wheat HRS-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	4041	
Number of Farms	10	
Primary Yield (bu/acre)	65.32	
Primary Price ($/bu)	$ 5.06	
Primary Revenue	**$ 330.53**	$ 5.06
Total Revenue	**$ 336.83**	$ 5.16
Direct Expenses		
Seed	$ 12.86	$ 0.20
Fertilizer	$ 97.84	$ 1.50
Chemical	$ 35.08	$ 0.54
Insurance - Production	$ 10.79	$ 0.17
Other Production Expenses	$ 7.17	$ 0.11
Total Direct Costs	**$ 163.73**	**$ 2.51**
Gross_Margin	**$ 173.10**	**$ 2.65**
Variable Costs		
Freight_Trucking	$ 0.82	$ 0.01
Fuel	$ 25.47	$ 0.39
Custom Work Expense	$ 4.36	$ 0.07
R & M	$ 34.76	$ 0.53
Supplies & Small Tools	$ 13.74	$ 0.21
Operating Interest	$ 3.02	$ 0.05
Paid & Unpaid Labour	$ 13.09	$ 0.20
Utilities	$ 21.11	$ 0.32
Total_Operating_Expenses	**$ 116.37**	**$ 1.78**
Contribution_Margin	**$ 56.73**	**$ 0.87**
Admin & Overheads		
Equip & Building Depr.	$ 49.78	$ 0.76
Equipment Rent	$ 1.85	$ 0.03
Insurance & Licenses	$ 14.98	$ 0.23
Interest Long Term	$ 12.61	$ 0.19
Professional Fees & Misc.	$ 7.89	$ 0.12
Property Taxes	$ 4.22	$ 0.06
Rent	$ 15.25	$ 0.23
Total_Admin_And_Overhead	**$ 106.58**	**$ 1.63**
Total Cost	**$ 386.68**	**$ 5.92**
Net_Earnings	**-$ 49.85**	**-$ 0.76**
Return on Investment		**-1.10%**
Investment Levels		
Invest_Machinery	$ 487.23	$ 7.46
Invest_Buildings	$ 77.74	$ 1.19
Invest_Land	$ 2,807.47	$ 42.98
Total Investment	**$ 3,372.45**	**$ 51.63**
Input use		
Input_Seed_Rate	2.1	bu/acre
Input_Nitrogen	128.7	lbs/acre
Input_Phosphorus	32.3	lbs/acre
Input_Potassium	2.6	lbs/acre
Input_Sulfur	2.6	lbs/acre

Irrigated Durum - Irrigated Mixed Farm Crop Detail Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Durum-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	2673	
Number of Farms	6	
Primary Yield (bu/acre)	91.21	
Primary Price ($/bu)	$ 4.22	
Primary Revenue	**$ 384.91**	$ 4.22
Total Revenue	**$ 395.05**	$ 4.33
Direct Expenses		
Seed	$ 20.93	$ 0.23
Fertilizer	$ 133.61	$ 1.46
Chemical	$ 37.93	$ 0.42
Insurance - Production	$ 5.81	$ 0.06
Other Production Expenses	$ 6.03	$ 0.07
Total Direct Costs	**$ 204.31**	**$ 2.24**
Gross_Margin	**$ 190.75**	**$ 2.09**
Variable Costs		
Freight_Trucking	$ 14.11	$ 0.15
Fuel	$ 38.57	$ 0.42
Custom Work Expense	$ 18.61	$ 0.20
R & M	$ 47.70	$ 0.52
Supplies & Small Tools	$ 21.11	$ 0.23
Operating Interest	$ 4.43	$ 0.05
Paid & Unpaid Labour	$ 18.05	$ 0.20
Utilities	$ 33.90	$ 0.37
Total_Operating_Expenses	**$ 196.49**	**$ 2.15**
Contribution_Margin	**-$ 5.74**	**-$ 0.06**
Admin & Overheads		
Equip & Building Depr.	$ 91.27	$ 1.00
Equipment Rent	$ 2.97	$ 0.03
Insurance & Licenses	$ 9.63	$ 0.11
Interest Long Term	$ 30.61	$ 0.34
Professional Fees & Misc.	$ 9.17	$ 0.10
Property Taxes	$ 4.93	$ 0.05
Rent	$ 10.26	$ 0.11
Total_Admin_And_Overhead	**$ 158.84**	**$ 1.74**
Total Cost	**$ 559.63**	**$ 6.14**
Net_Earnings	**-$ 164.58**	**-$ 1.80**
Return on Investment		**-3.02%**
Investment Levels		
Invest_Machinery	$ 904.23	$ 9.91
Invest_Buildings	$ 119.01	$ 1.30
Invest_Land	$ 3,407.22	$ 37.36
Total Investment	**$ 4,430.46**	**$ 48.57**
Input use		
Input_Seed_Rate	2.1	bu/acre
Input_Nitrogen	134.1	lbs/acre
Input_Phosphorus	44.8	lbs/acre
Input_Potassium	4.0	lbs/acre
Input_Sulfur	3.0	lbs/acre

APPENDIX IV: Imputed Investment Analysis

METHODOLOGY

Investment was analyzed from two viewpoints: from the investment level by the farmer, and also the investment level of total capital (irrespective of ownership). In other words the fair market value of any of the rented and leased items is taken into account in order to eliminate from the analysis the respective financing decisions taken by the participants from the analysis. To do this an imputed investment analysis was conducted. In order to arrive at Imputed Values for this analysis the actual values collected in the survey were adjusted thus:

- All land rental expenses were removed.
- All equipment rental expenses were removed.
- All lease expenses were removed.
- Interest on operating finance was left in.
- Custom work expenses were left in.
- All rented and leased items of fixed capital were assessed a fair market value and this value added to the respective fixed assets.
- A charge of 5% on all of the additional fixed capital items (including the re-valued leased and rented items) was added to the interest on long term debt.
- Depreciation costs were also added for the leased equipment at a rate of 10% of the fair market value for these particular assets.

Below are presented a series of charts, corresponding with many in the body of the report calculated using the Imputed Value method. In broad summary, charging for all of the capital in-use results for the most part in poorer results. However they do reflect the reality for any would-be investor for whom all capital whether borrowed or not has a cost.

Imputed Irrigation Detail Reports

IMPUTED IRRIGATION TOP THIRD TABLES – ENTERPRISE

Imputed – Irrigation Grain, Oilseed and Pulse Enterprise Reports

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Measurement	AVE/Farm	AVE/Acre	Total	$/Acre
Total Acres in sample	28,541		5,682	
Average seeded acres per Farm	1,142		710	
Number of Farms	25		8	
Primary Revenue	$ 518,097.16	$ 453.82	$ 456,588.13	$ 642.86
Total Revenue	**$ 525,276.36**	**$ 460.11**	**$ 465,236.00**	**$ 655.03**
Direct Expenses				
Seed	$ 29,750.08	$ 26.06	$ 12,142.13	$ 17.10
Fertilizer	$ 113,638.52	$ 99.54	$ 66,100.50	$ 93.07
Chemical	$ 42,134.68	$ 36.91	$ 26,369.00	$ 37.13
Insurance - Production	$ 16,800.08	$ 14.72	$ 19,640.38	$ 27.65
Other Production Expenses	$ 13,256.52	$ 11.61	$ 5,579.25	$ 7.86
Total Direct Costs	**$ 215,579.88**	**$ 188.83**	**$ 129,831.25**	**$ 182.80**
Gross_Margin	**$ 309,696.48**	**$ 271.27**	**$ 335,404.75**	**$ 472.23**
Variable Costs				
Freight_Trucking	$ 5,555.52	$ 4.87	$ 6,608.44	$ 9.30
Fuel	$ 29,938.10	$ 26.22	$ 16,291.57	$ 22.94
Custom Work Expense	$ 24,200.13	$ 21.20	$ 25,863.32	$ 36.41
R & M	$ 42,383.29	$ 37.12	$ 28,623.73	$ 40.30
Supplies & Small Tools	$ 18,177.31	$ 15.92	$ 1,036.49	$ 1.46
Operating Interest	$ 2,460.25	$ 2.16	$ 1,669.33	$ 2.35
Paid & Unpaid Labour	$ 25,332.50	$ 22.19	$ 34,815.05	$ 49.02
Utilities	$ 29,275.08	$ 25.64	$ 18,657.95	$ 26.27
Total_Operating_Expenses	**$ 177,322.17**	**$ 155.32**	**$ 133,565.88**	**$ 188.05**
Contribution_Margin	**$ 132,374.31**	**$ 115.95**	**$ 201,838.87**	**$ 284.18**
Admin & Overheads				
Equip & Building Depr.	$ 78,869.07	$ 69.08	$ 62,893.39	$ 88.55
Equipment Rent	$ -	$ -	$ -	$ -
Insurance & Licenses	$ 14,820.10	$ 12.98	$ 7,956.21	$ 11.20
Interest Long Term	$ 66,166.92	$ 57.96	$ 60,322.31	$ 84.93
Professional Fees & Misc.	$ 12,468.46	$ 10.92	$ 10,379.05	$ 14.61
Property Taxes	$ 4,130.29	$ 3.62	$ 1,794.98	$ 2.53
Rent	$ -	$ -	$ -	$ -
Total_Admin_And_Overhead	**$ 176,454.85**	**$ 154.56**	**$ 143,345.93**	**$ 201.82**
Total Cost	**$ 569,356.90**	**$ 498.72**	**$ 406,743.06**	**$ 572.68**
Net_Earnings	**-$ 44,080.54**	**-$ 38.61**	**$ 58,492.94**	**$ 82.36**
Return on Investment		**0.47%**		**3.63%**
Investment Levels				
Invest_Machinery	$ 737,638.69	$ 646.12	$ 527,668.34	$ 742.93
Invest_Buildings	$ 124,912.40	$ 109.41	$ 123,709.72	$ 174.18
Invest_Land	$ 2,951,693.75	$ 2,585.49	$ 1,941,570.25	$ 2,733.64
Total Investment	**$ 3,814,244.83**	**$ 3,341.02**	**$ 2,592,948.31**	**$ 3,650.75**
Imputed investment levels				
Invest_Rent_Machinery	$ 756,487.78	$ 662.63	$ 586,571.74	$ 825.87
Invest_Rent_Buildings	$ 122,194.71	$ 107.03	$ 115,216.96	$ 162.22
Invest_Rent_Land	$ 3,831,997.40	$ 3,356.57	$ 2,570,394.16	$ 3,619.00
Total Imputed Investment	**$ 4,710,679.89**	**$ 4,126.24**	**$ 3,272,182.85**	**$ 4,607.09**

IMPUTED IRRIGATION - CROP DETAILS

Imputed Irrigated Canola - Irrigation Grain, Oilseed and Pulse Crop Details Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Crop	Canola-Irr			
Measurement	**Per Acre**	**Per Unit**	**Total**	**$/Unit**
Total Acres in sample	3055		723	
Number of Farms	12		4	
Primary Yield (bu/acre)	49.96		63.34	
Primary Price ($/bu)	$ 9.02		$ 9.02	
Primary Revenue	**$ 450.60**	$ 9.02	**$ 571.33**	$ 9.02
Total Revenue	**$ 450.60**	$ 9.02	**$ 571.33**	$ 9.02
Direct Expenses				
Seed	$ 46.89	$ 0.94	$ 44.06	$ 0.70
Fertilizer	$ 116.89	$ 2.34	$ 94.97	$ 1.50
Chemical	$ 45.54	$ 0.91	$ 57.30	$ 0.90
Insurance - Production	$ 6.64	$ 0.13	$ 2.93	$ 0.05
Other Production Expenses	$ 12.57	$ 0.25	$ 30.07	$ 0.47
Total Direct Costs	**$ 228.52**	**$ 4.57**	**$ 229.33**	**$ 3.62**
Gross_Margin	**$ 222.08**	**$ 4.45**	**$ 342.00**	**$ 5.40**
Variable Costs				
Freight_Trucking	$ 1.63	$ 0.03	$ 0.98	$ 0.02
Fuel	$ 38.13	$ 0.76	$ 40.74	$ 0.64
Custom Work Expense	$ 11.96	$ 0.24	$ 12.29	$ 0.19
R & M	$ 55.01	$ 1.10	$ 48.69	$ 0.77
Supplies & Small Tools	$ 33.05	$ 0.66	$ 36.54	$ 0.58
Operating Interest	$ 3.06	$ 0.06	$ 2.57	$ 0.04
Paid & Unpaid Labour	$ 27.83	$ 0.56	$ 20.58	$ 0.32
Utilities	$ 33.61	$ 0.67	$ 39.87	$ 0.63
Total_Operating_Expenses	**$ 204.28**	**$ 4.09**	**$ 202.26**	**$ 3.19**
Contribution_Margin	**$ 17.81**	**$ 0.36**	**$ 139.74**	**$ 2.21**
Admin & Overheads				
Equip & Building Depr.	$ 84.09	$ 1.68	$ 96.37	$ 1.52
Equipment Rent	$ -	$ -	$ -	$ -
Insurance & Licenses	$ 19.21	$ 0.38	$ 26.65	$ 0.42
Interest Long Term	$ 27.22	$ 0.54	$ 10.49	$ 0.17
Professional Fees & Misc.	$ 12.36	$ 0.25	$ 7.04	$ 0.11
Property Taxes	$ 5.02	$ 0.10	$ 6.56	$ 0.10
Rent	$ -	$ -	$ -	$ -
Total_Admin_And_Overhead	**$ 147.91**	**$ 2.96**	**$ 147.12**	**$ 2.32**
Total Cost	**$ 580.70**	**$ 11.62**	**$ 578.70**	**$ 9.14**
Net_Earnings	**-$ 130.10**	**-$ 2.60**	**-$ 7.37**	**-$ 0.12**
Return on Investment		**-2.61%**		**0.07%**
Investment Levels				
Invest_Machinery	$ 827.00	$ 16.55	$ 968.44	$ 15.29
Invest_Buildings	$ 134.40	$ 2.69	$ 171.45	$ 2.71
Invest_Land	$ 2,733.65	$ 54.72	$ 3,433.66	$ 54.21
Total Investment	**$ 3,695.05**	**$ 73.97**	**$ 4,573.54**	**$ 72.21**
Input use				
Input_Seed_Rate	5.3	lbs/acre	5.3	lbs/acre
Input_Nitrogen	169.7	lbs/acre	147.8	lbs/acre
Input_Phosphorus	30.6	lbs/acre	33.5	lbs/acre
Input_Potassium	2.9	lbs/acre	0.0	lbs/acre
Input_Sulfur	14.5	lbs/acre	5.0	lbs/acre
Imputed investment levels				
Invest_Rent_Machinery	$ 827.00	$ 16.55	$ 968.44	$ 15.29
Invest_Rent_Buildings	$ 134.40	$ 2.69	$ 171.45	$ 2.71
Invest_Rent_Land	$ 2,973.79	$ 59.53	$ 3,433.66	$ 54.21
Total Imputed Investment	**$ 3,935.20**	**$ 78.77**	**$ 4,573.54**	**$ 72.21**

Imputed Irrigated Barley - Irrigation Grain, Oilseed and Pulse Crop Details Report

Farm Type	**All**	
Region	**South**	
Enterprise	**IRRIGATED GRAIN & OILSEEDS**	
Harvest Year	**2009**	
Soil Zone	**All**	
Crop	**Barley-Irr**	
Measurement	**Per Acre**	**Per Unit**
Total Acres in sample	1552	
Number of Farms	6	
Primary Yield (bu/acre)	101.79	
Primary Price ($/bu)	$ 3.26	
Primary Revenue	**$ 331.84**	$ 3.26
Total Revenue	**$ 343.28**	$ 3.37
Direct Expenses		
Seed	$ 14.57	$ 0.14
Fertilizer	$ 91.54	$ 0.90
Chemical	$ 34.59	$ 0.34
Insurance - Production	$ 5.24	$ 0.05
Other Production Expenses	$ 10.56	$ 0.10
Total Direct Costs	**$ 156.51**	**$ 1.54**
Gross_Margin	**$ 186.78**	**$ 1.83**
Variable Costs		
Freight_Trucking	$ 1.77	$ 0.02
Fuel	$ 26.86	$ 0.26
Custom Work Expense	$ 7.47	$ 0.07
R & M	$ 29.92	$ 0.29
Supplies & Small Tools	$ 14.82	$ 0.15
Operating Interest	$ 2.21	$ 0.02
Paid & Unpaid Labour	$ 14.22	$ 0.14
Utilities	$ 19.79	$ 0.19
Total_Operating_Expenses	**$ 117.06**	**$ 1.15**
Contribution_Margin	**$ 69.72**	**$ 0.68**
Admin & Overheads		
Equip & Building Depr.	$ 60.88	$ 0.60
Equipment Rent	$ -	$ -
Insurance & Licenses	$ 14.58	$ 0.14
Interest Long Term	$ 32.97	$ 0.32
Professional Fees & Misc.	$ 8.64	$ 0.08
Property Taxes	$ 4.18	$ 0.04
Rent	$ -	$ -
Total_Admin_And_Overhead	**$ 121.24**	**$ 1.19**
Total Cost	**$ 394.81**	**$ 3.88**
Net_Earnings	**-$ 51.53**	**-$ 0.51**
Return on Investment		**-0.49%**
Investment Levels		
Invest_Machinery	$ 591.26	$ 5.81
Invest_Buildings	$ 88.68	$ 0.87
Invest_Land	$ 2,756.28	$ 27.08
Total Investment	**$ 3,436.22**	**$ 33.76**
Input use		
Input_Seed_Rate	2.5	bu/acre
Input_Nitrogen	129.8	lbs/acre
Input_Phosphorus	29.2	lbs/acre
Input_Potassium	2.7	lbs/acre
Input_Sulfur	4.3	lbs/acre
Imputed investment levels		
Invest_Rent_Machinery	$ 591.26	$ 5.81
Invest_Rent_Buildings	$ 88.68	$ 0.87
Invest_Rent_Land	$ 3,091.16	$ 30.37
Total Imputed Investment	**$ 3,771.10**	**$ 37.05**

Imputed Irrigated Wheat HRS - Irrigation Grain, Oilseed and Pulse Crop Details Report

Farm Type	All			
Region	South			
Enterprise	IRRIGATED GRAIN & OILSEEDS		Top 1/3	
Harvest Year	2009		Direct Cost	
Soil Zone	All			
Crop	Wheat HRS-Irr			
Measurement	**Per Acre**	**Per Unit**	**Per Acre**	**$/Unit**
Total Acres in sample	4795		484	
Number of Farms	13		4	
Primary Yield (bu/acre)	67.15		83.95	
Primary Price ($/bu)	$ 5.06		$ 5.06	
Primary Revenue	**$ 339.79**	$ 5.06	**$ 424.77**	$ 5.06
Total Revenue	**$ 345.10**	$ 5.14	**$ 435.23**	$ 5.18
Direct Expenses				
Seed	$ 15.23	$ 0.23	$ 17.52	$ 0.21
Fertilizer	$ 101.46	$ 1.51	$ 79.19	$ 0.94
Chemical	$ 34.83	$ 0.52	$ 34.09	$ 0.41
Insurance - Production	$ 11.76	$ 0.18	$ 5.88	$ 0.07
Other Production Expenses	$ 7.13	$ 0.11	$ 7.85	$ 0.09
Total Direct Costs	**$ 170.41**	**$ 2.54**	**$ 144.54**	**$ 1.72**
Gross_Margin	**$ 174.69**	**$ 2.60**	**$ 290.69**	**$ 3.46**
Variable Costs				
Freight_Trucking	$ 2.37	$ 0.04	$ 2.47	$ 0.03
Fuel	$ 23.01	$ 0.34	$ 34.87	$ 0.42
Custom Work Expense	$ 10.16	$ 0.15	$ 1.78	$ 0.02
R & M	$ 32.18	$ 0.48	$ 65.67	$ 0.78
Supplies & Small Tools	$ 11.18	$ 0.17	$ 13.18	$ 0.16
Operating Interest	$ 2.66	$ 0.04	$ 4.85	$ 0.06
Paid & Unpaid Labour	$ 16.63	$ 0.25	$ 31.19	$ 0.37
Utilities	$ 18.70	$ 0.28	$ 39.24	$ 0.47
Total_Operating_Expenses	**$ 116.90**	**$ 1.74**	**$ 193.25**	**$ 2.30**
Contribution_Margin	**$ 57.79**	**$ 0.86**	**$ 97.44**	**$ 1.16**
Admin & Overheads				
Equip & Building Depr.	$ 52.49	$ 0.78	$ 102.03	$ 1.22
Equipment Rent	$ -	$ -	$ -	$ -
Insurance & Licenses	$ 13.98	$ 0.21	$ 18.43	$ 0.22
Interest Long Term	$ 43.97	$ 0.65	$ 14.74	$ 0.18
Professional Fees & Misc.	$ 7.63	$ 0.11	$ 12.34	$ 0.15
Property Taxes	$ 3.53	$ 0.05	$ 6.51	$ 0.08
Rent	$ -	$ -	$ -	$ -
Total_Admin_And_Overhead	**$ 121.60**	**$ 1.81**	**$ 154.05**	**$ 1.84**
Total Cost	**$ 408.91**	**$ 6.09**	**$ 491.84**	**$ 5.86**
Net_Earnings	**-$ 63.81**	**-$ 0.95**	**-$ 56.61**	**-$ 0.67**
Return on Investment		**-0.53%**		**-1.17%**
Investment Levels				
Invest_Machinery	$ 486.45	$ 7.24	$ 747.57	$ 8.91
Invest_Buildings	$ 79.06	$ 1.18	$ 203.94	$ 2.43
Invest_Land	$ 2,581.18	$ 38.44	$ 2,812.47	$ 33.50
Total Investment	**$ 3,146.69**	**$ 46.86**	**$ 3,763.98**	**$ 44.84**
Input use				
Input_Seed_Rate	2.1	bu/acre	2.1	bu/acre
Input_Nitrogen	132.2	lbs/acre	130.0	lbs/acre
Input_Phosphorus	28.5	lbs/acre	40.0	lbs/acre
Input_Potassium	2.5	lbs/acre	2.5	lbs/acre
Input_Sulfur	2.0	lbs/acre	0.0	lbs/acre
Imputed investment levels				
Invest_Rent_Machinery	$ 511.73	$ 7.62	$ 998.04	$ 11.89
Invest_Rent_Buildings	$ 75.38	$ 1.12	$ 167.10	$ 1.99
Invest_Rent_Land	$ 3,170.65	$ 47.22	$ 2,398.74	$ 28.57
Total Imputed Investment	**$ 3,757.77**	**$ 55.96**	**$ 3,563.88**	**$ 42.45**

Chart 38 is very similar to the equivalent Actual Investment chart (30) in the report.

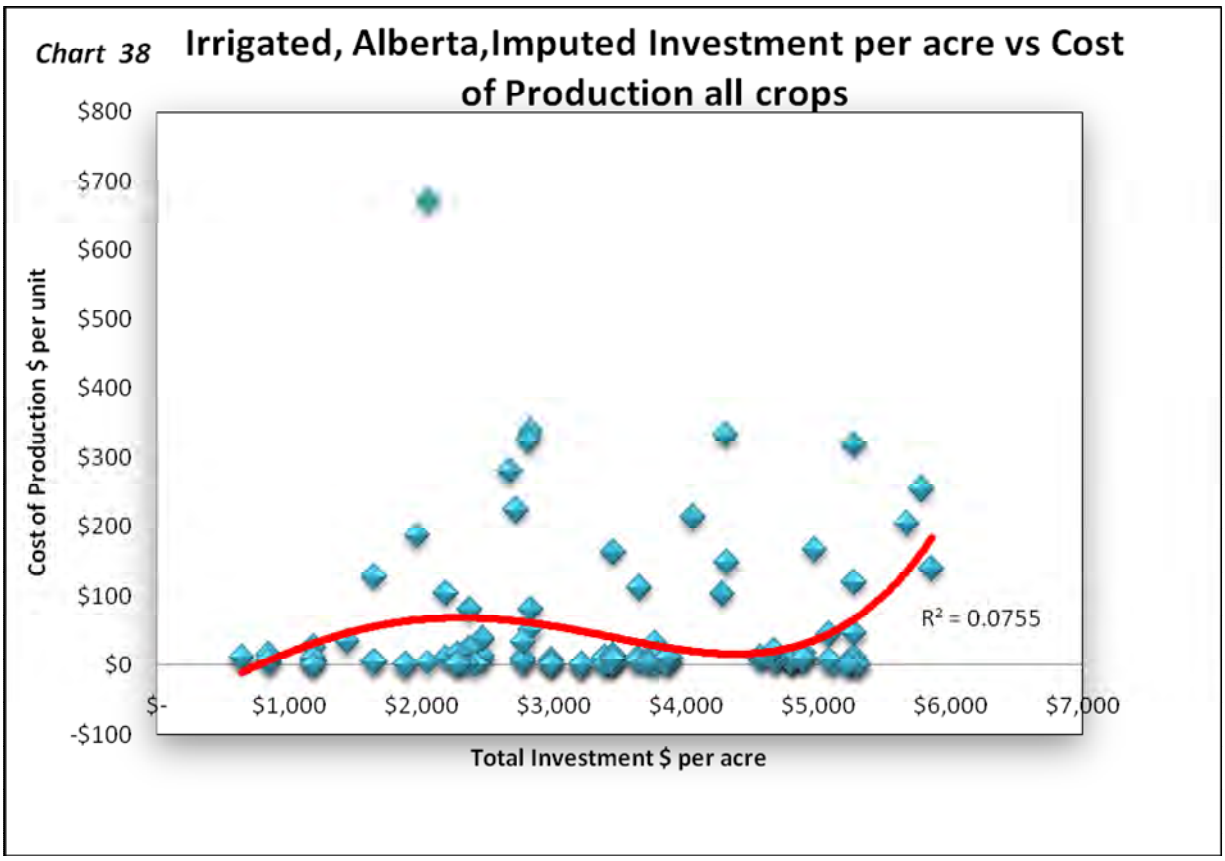


Chart 39 Imputed Investment vs. Return on Investment

Equivalent to Chart 2 in the report the Imputed version shows a similar but slightly more exaggerated curve.

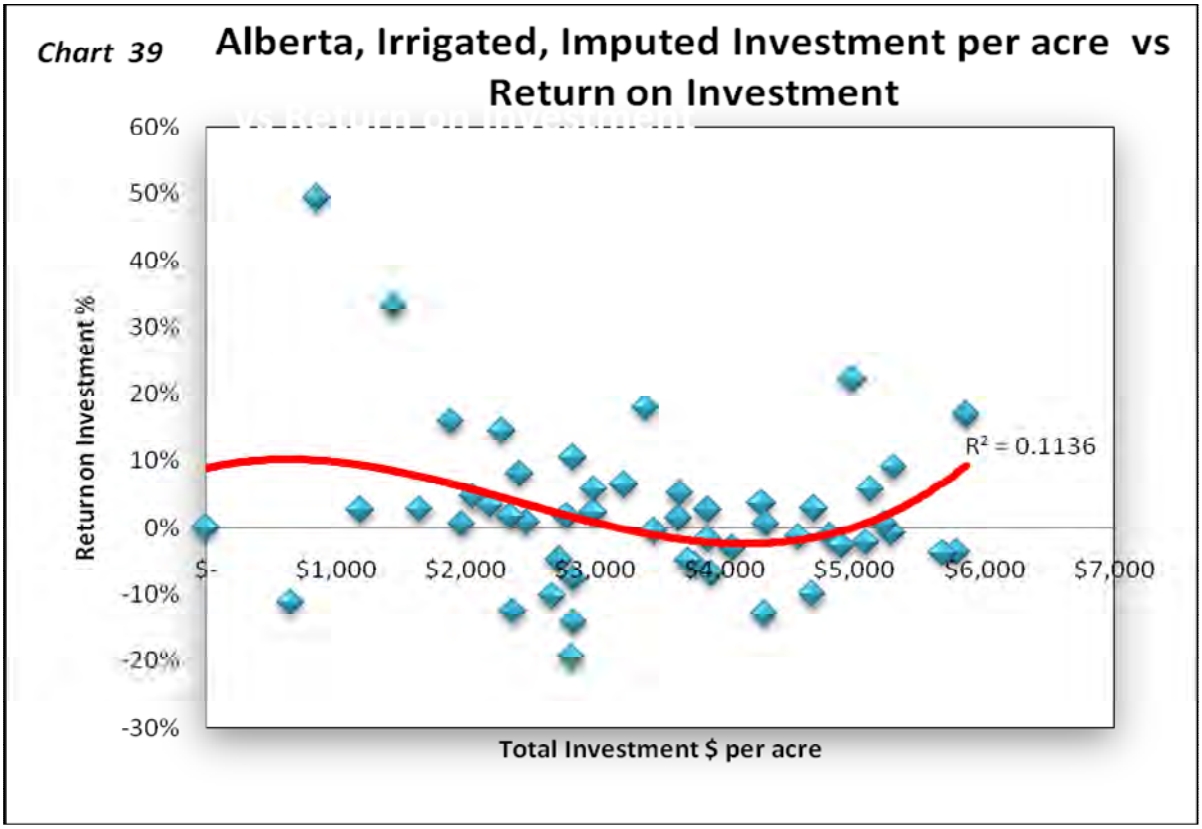
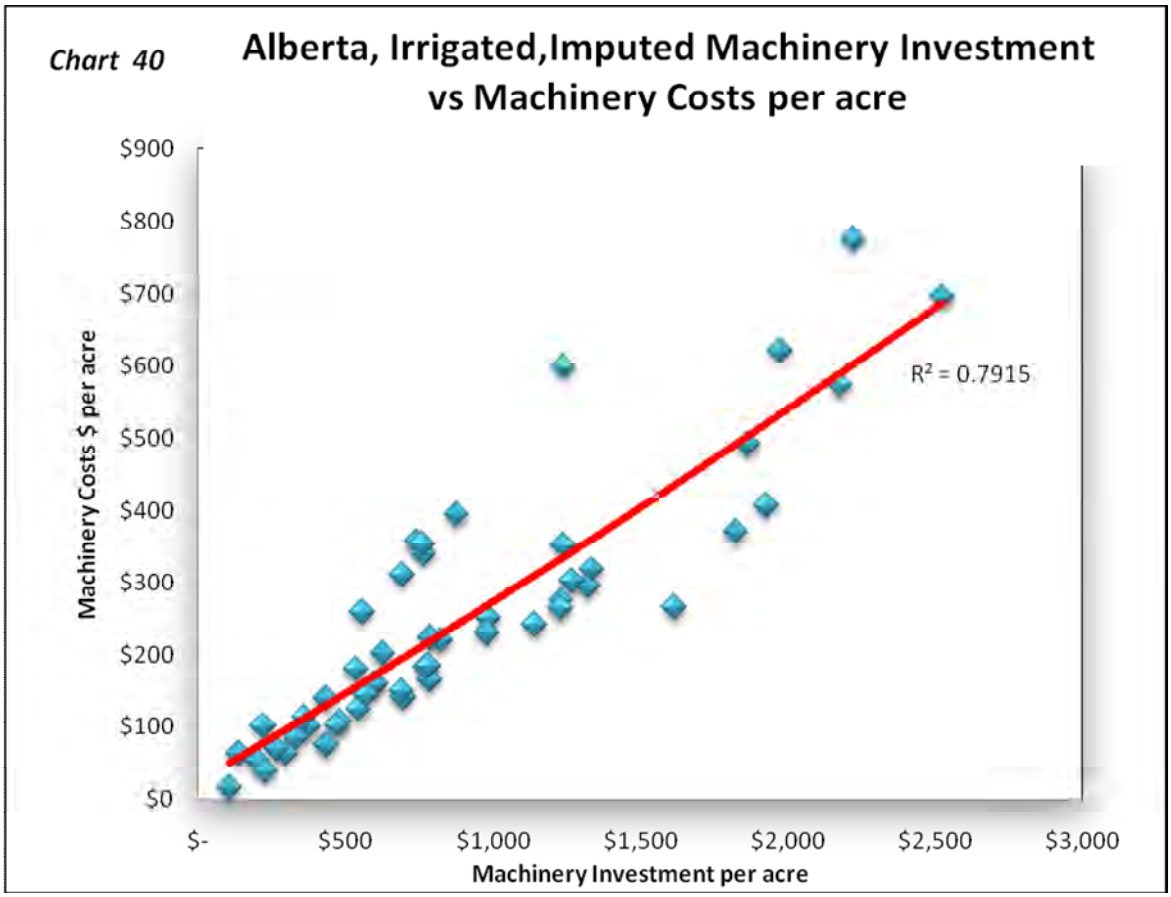


Chart 40 Imputed Machinery Investment vs. Machinery Costs per Acre

This chart mirrors the strong correlation seen in Chart 10 in the report.



APPENDIX V: COLONY ANALYSIS

*(number) denotes an equivalent chart in the main body of the report.

In all 11 colonies with irrigation were included in the sample for 2009. These participants are complex farming organisations with up to six or seven separate enterprises including the grain farm. Arriving at a fair allocation of overhead costs is challenging but the process adopted, as described earlier in the report gives reasonably robust and comparable results. What is apparent from the data is that for the most part these participants perform at similar levels to all the other farms in the sample although generally, as the sample goes they were amongst the largest farms (although typically they will support from fifteen to twenty families and so, per family are very small grain farms by Alberta standards). The smallest was around 160 irrigated acres ranging up to around 7,400 irrigated acres.

Chart 41 Investment vs. Return on Investment (2)

Like the non-colony farms in the sample ROI is quite widely scattered from negative 20% to positive 35% in 2009 with a trend-line that shows negative returns on irrigation beyond about $3,000.

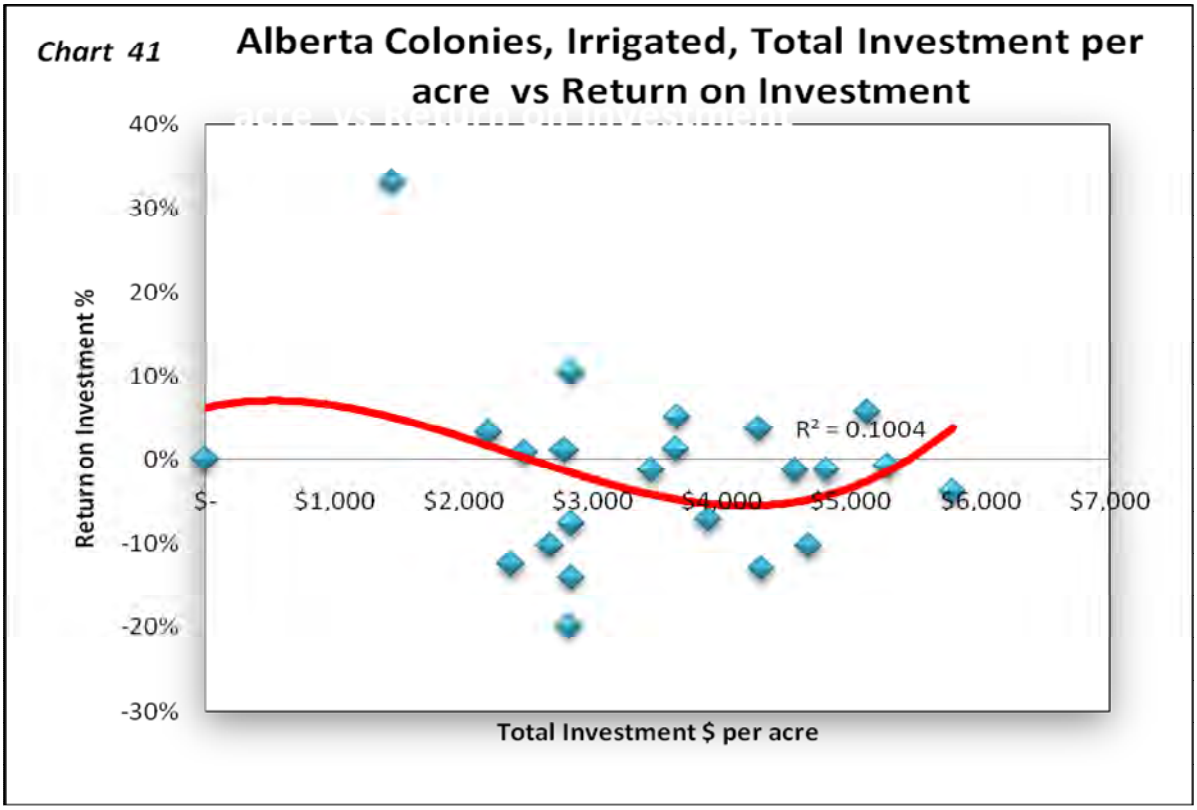


Chart 42 Net Income vs. Total Investment (6)

Net Income per acre is quite widely scattered with around $1,000 per acre from highest to lowest. It is difficult to spot any trend in this sample and evidently something other than total investment is influencing net income.

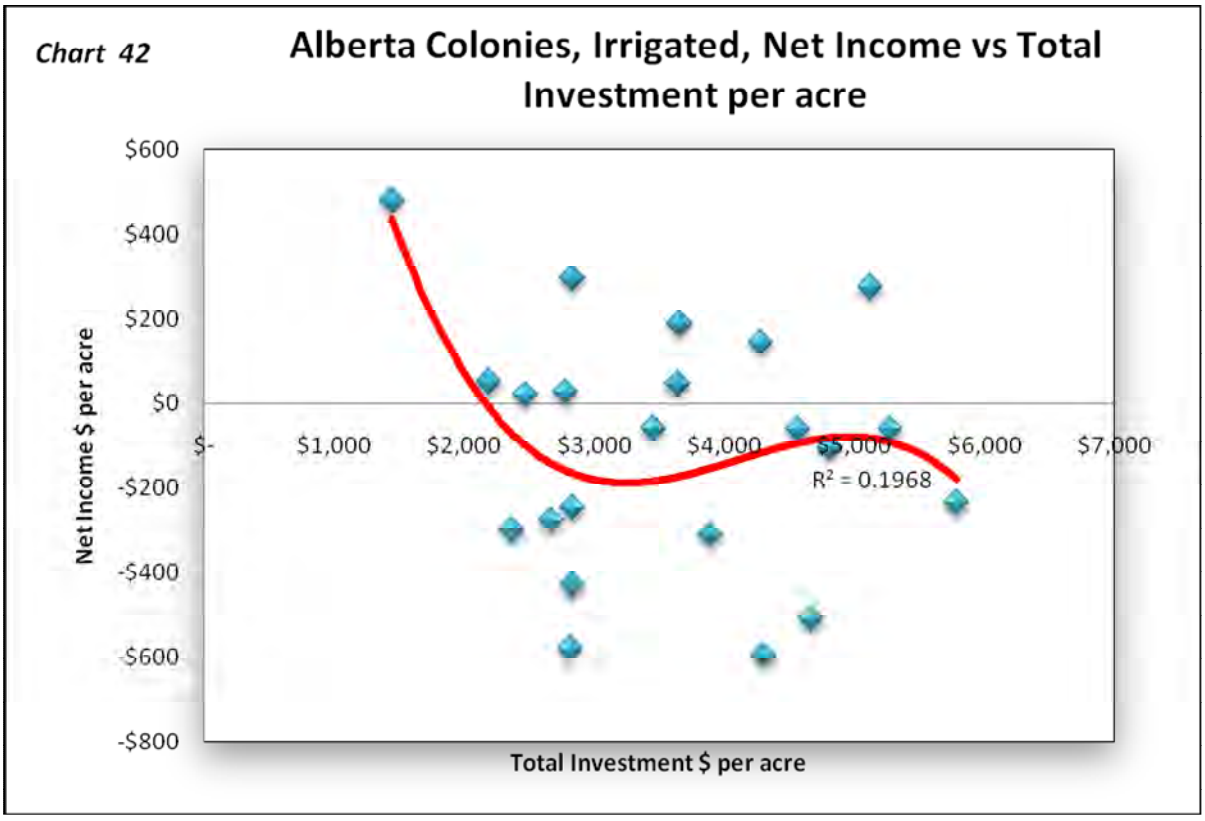


Chart 43 Fixed Costs vs. Net Income (25)

If anything the Irrigated Crops on participants posted losses at fixed cost levels about $100 per acre lower than the survey group as a whole.

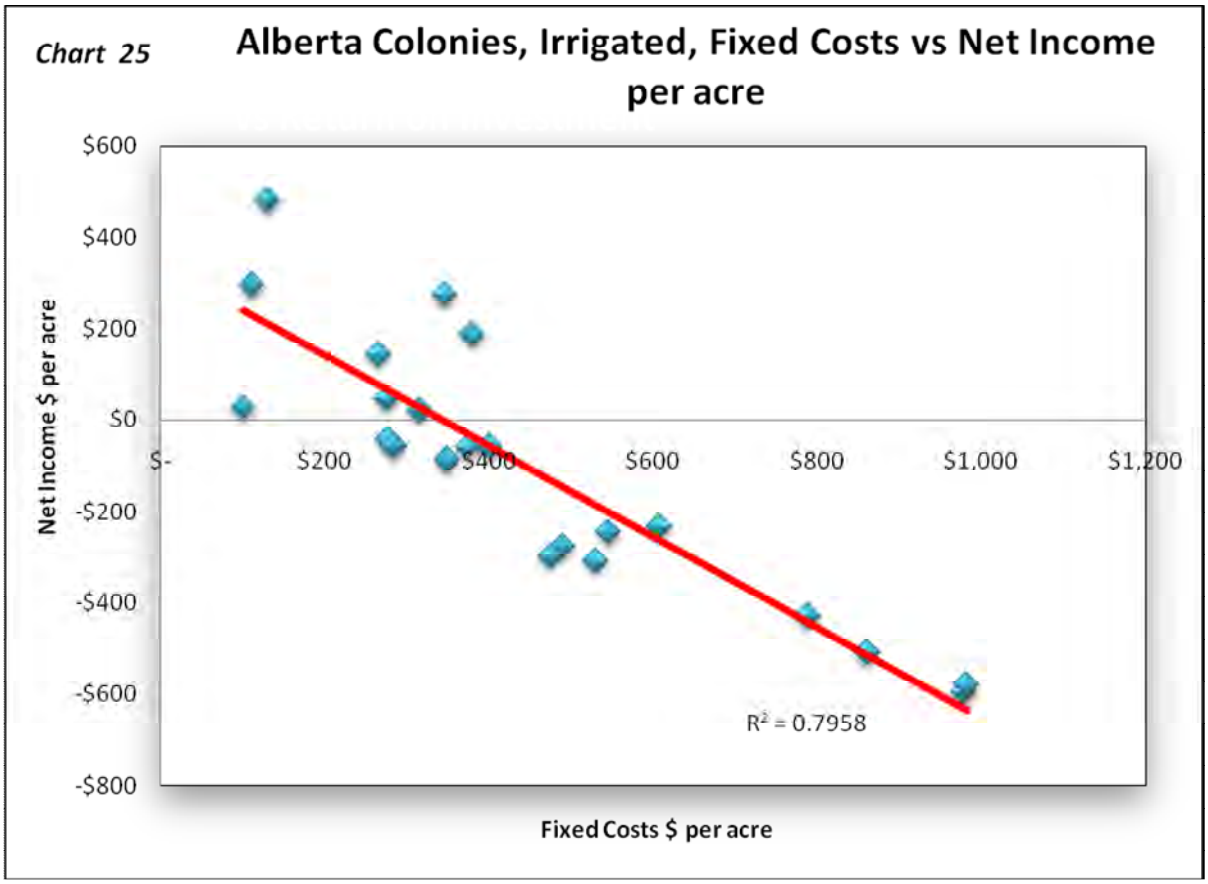


Chart 44 Equipment Investment vs. Net Income (12)

Following on from Chart 43 above it is only to be expected therefore that, if Gross Margins are generally lower then the net income is less tolerant of over investment in Machinery. Chart 44 bears this out with participants showing more than around $500 per acre of Machinery having difficulty in being profitable. Significantly these participants as a group average around $1,015 per acre of Machinery compared with around $895 for the group as a whole.

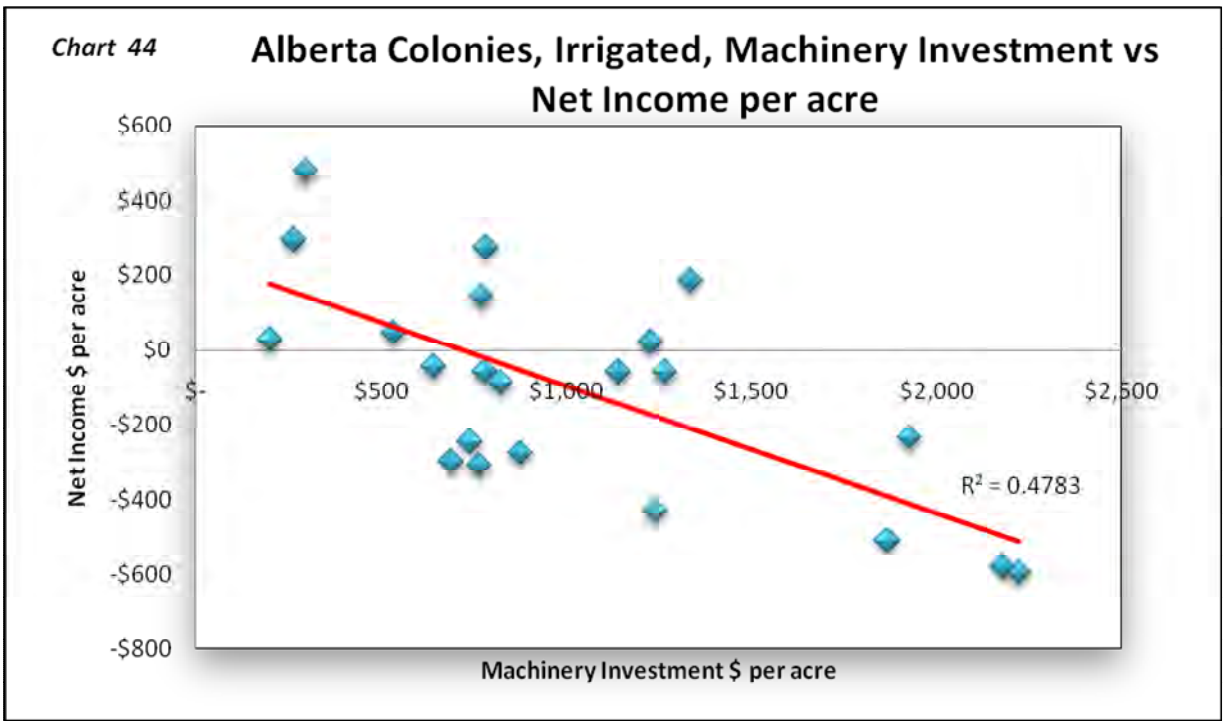


Chart 45 Net Income as a Percentage of Gross Income (26)

At Gross Income of around $500 per acre these participants for the most part started to generate positive net incomes which ranged up as high as 85% of the Gross Income.

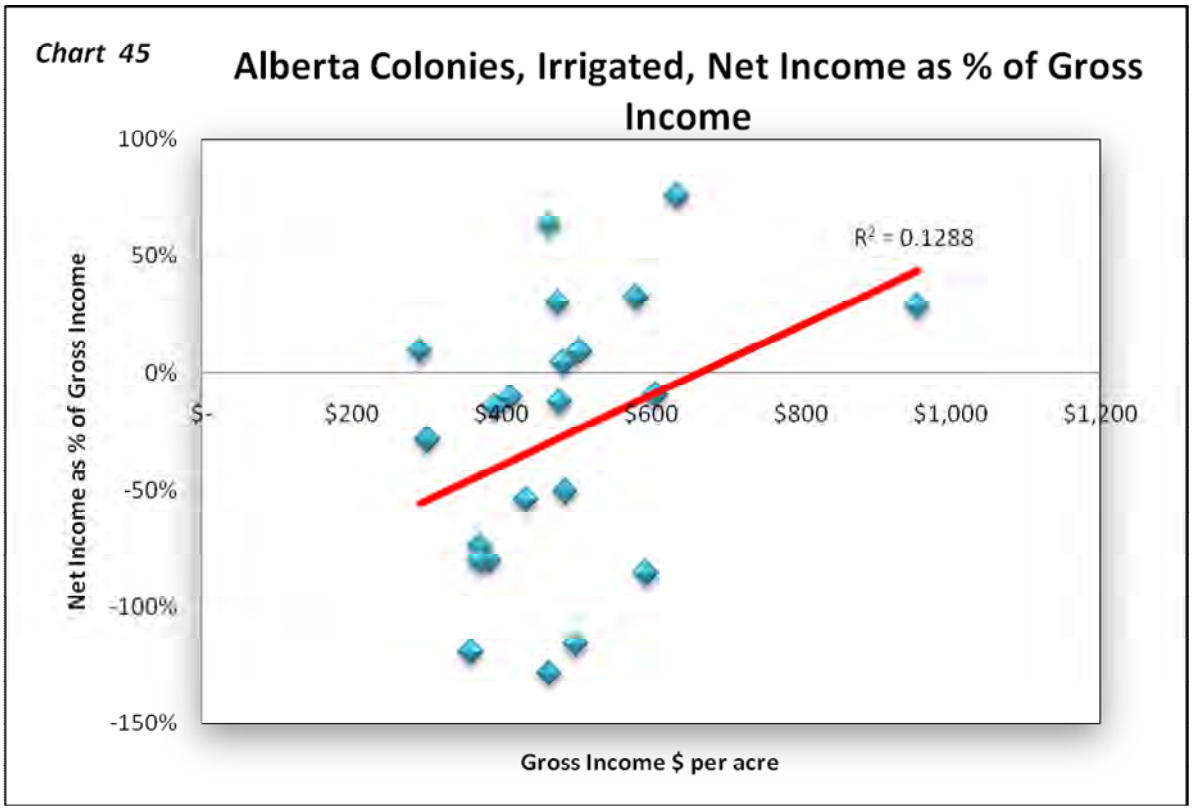


Chart 46 Gross Margin as a Percentage of Gross Income (28)

Gross Margin as a percentage of Gross Income is in broadly the same 40% to 90% range as for the group as a whole.

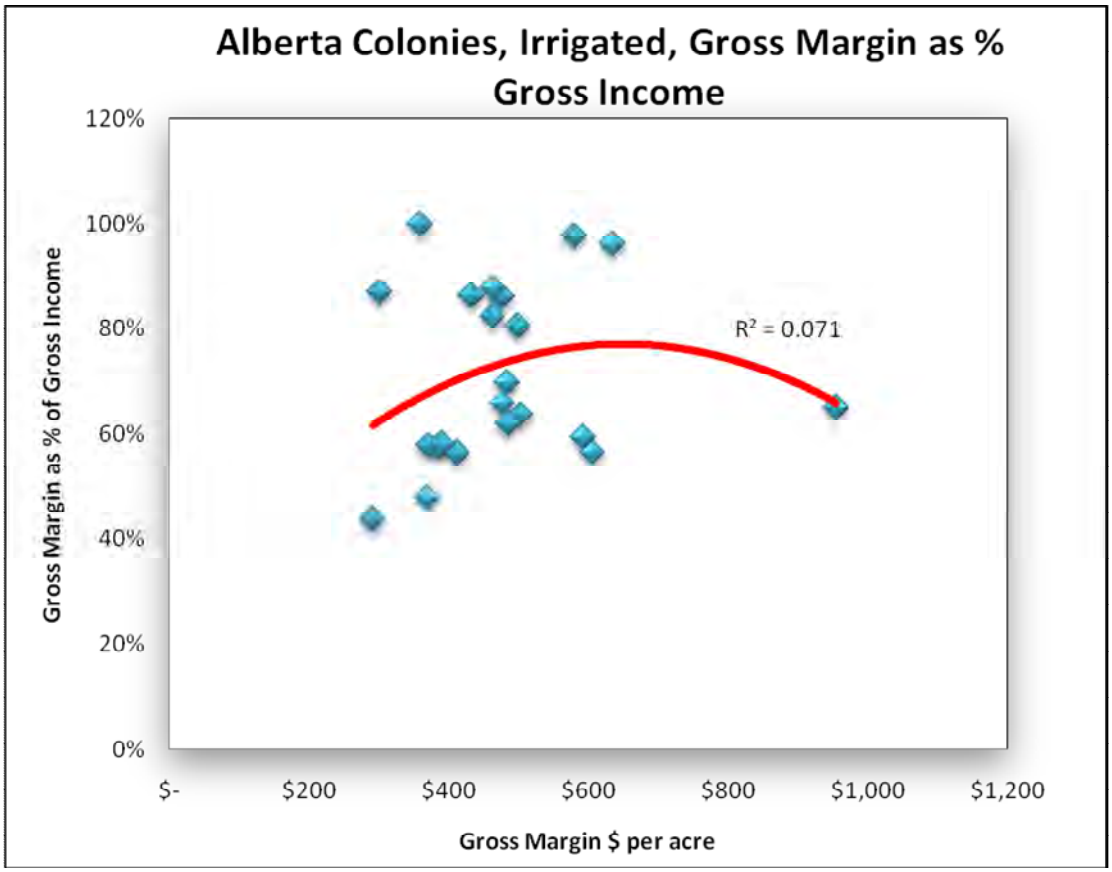


Chart 47 Net Income as a Percentage of Gross Margin (27)

The same strong correlation of Net Income to Gross Margin seen in the sample as a whole is borne out in this chart.