Differences Between High-, Medium-, and Low-Profit Producers: An Analysis of 2006-2008 Kansas Farm Management Association Crop Enterprises

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Because of its importance at the individual farm level and at the policy-making level, farm profitability is a topic widely discussed in both the agricultural community and in Washington D.C. Uncontrollable macroeconomic factors such as interest rates, trade policies, and government programs/policies impact overall farm profitability. However, individual producers do have more control of profitability at the farm level relative to other producers. That is, while numerous factors beyond the producer's control impact the absolute level of profitability, producers' management abilities impact their relative profitability. In a competitive, consolidating industry such as agriculture, relative profitability dictates which producers remain in business in the long run.

Thus, it is important to recognize which characteristics determine relative farm profitability among producers. Do profitable farms get higher yields? Do profitable farms receive higher prices for their commodities? Do they have lower costs? If they have lower costs, in what areas are their costs lower? To consider these questions, crop enterprise budgets from the Kansas Farm Management Association (KFMA) Enterprise Analysis for the years 2006-2008 are divided into three profitability groups, high, middle, and low, based on the 3-year average per acre return to management.[1] The enterprises (number of farms) included in this analysis are alfalfa (49), corn (98), irrigated corn (45), grain sorghum (132), soybean (120), and wheat (225). Enterprise analyses completed at the regional level are aggregated for the entire state for this analysis. Enterprises were also aggregated by tillage method where applicable – i.e., no-till enterprises were analyzed jointly with those including tillage (same was done for center pivot and flood irrigation in the case of irrigated corn). For a farm to be included in a specific enterprise analysis, it must have data for that enterprise each year over the 3-year period. Producer returns over a multi-year period better characterize profitability differences due to management abilities than would returns from a single year, which would be expected to be more random due to uncontrollable events (e.g., weather).[2]

Aggregation of a number of the income and expense categories reported in the KFMA enterprise reports allows for easier comparisons. Crop income was calculated for each farm-year by multiplying the yield by the operator percentage and the commodity price. Gross income includes crop income plus any government payments, crop insurance payments, and any other type of miscellaneous income directly related to the production of the specific crop. Machinery costs are the summation of general machinery repairs, machinery hire net of custom work, fuel, gas, oil, market depreciation, and machinery-related labor costs. Other costs are the summation of fees, grain storage and marketing, personal property tax, general farm insurance, utility expense, conservation, and auto-expense. Land costs are the summation of cash rent, real estate taxes, and an

[1] The words profitability and profit used in this paper refer to the Net Return to Management measure reported in the Kansas Farm Management Association Enterprise *PROFITCENTER* Summary reports. Net Return to Management is gross income less all costs, which includes unpaid labor, depreciation, and a charge for owned land.

[2] A 5-year average (2004-2008) was also examined as this smoothes through random weather effects better than a shorter time period. However, the number of farms available for analysis would have decreased considerably – alfalfa (28), corn (44), irrigated corn (16), grain sorghum (812), soybean (66), and wheat (146). Thus, it was determined to report the results for the analysis on the larger sample size (results were generally consistent with 5-year averages).

opportunity cost on owned land (calculated based on a percentage of the crop times an average market price). The following is a brief discussion of the analysis for each of the different enterprises included.

Non-irrigated Corn (Table 1)

On average, high-profit farms earned $149.77 per acre more profit than the low-profit farms and averaged $70.76 per acre more than the mid-profit farms. Yields and prices varied across all three profit categories, resulting in over $60 per acre difference in gross income between high- and low-profit farms and high- and mid-profit farms. Low-profit farm's gross income was $61.02 per acre lower than high-profit farms, but it was $16.05 per acre higher than that of mid-profit farms. Thus, about 60% of the difference in net profit between high- and low-profit farms was due to cost differences, as opposed to income differences. Of the various cost categories, machinery costs had the largest impact on farm profitability. Machinery costs were $32.83 per acre lower for the high-profit farms relative to the low-profit farms, which is 37% of the total cost difference. The machinery cost difference between high- and mid-profit farms was only $3.15 per acre. The second largest disparity in costs between high- and low-profit farms was for fertilizer. Fertilizer costs for high-profit farms were $15.66 per acre (25%) lower than for low-profit farms. This fertilizer difference is likely price-related, as opposed to rates applied, as high-profit farms had higher yields (+16.7 bu/ac) compared to low-profit farms. Land costs for the high- and mid-profit farms were lower than low-profit farms, and when this is coupled with slightly lower operator percentages of the crop, it suggests high- and mid-profit farms tend to rely more on crop share rental arrangements. High-profit farms had lower costs relative to low-profit farms in every category except crop insurance, where low-profit farms had 9% lower costs. Of the three profit categories, mid-profit farms had the lowest total costs, but they also had the lowest yields, and hence lowest income. Thus, while cost control is clearly important, these results suggest that making sure that production is maintained is important. Overall, low-profit farms had costs that were $88.75 per acre (23%) higher than high-profit farms and $95.06 (25%) higher than mid-profit farms.

Mid-profit farms had the highest acreage with 544 acres, high-profit farms were second with 507 acres, and low-profit farms were third with 259 acres. Thus, high-profit farms had 96% more acres (507 versus 259) than low-profit farms and 7% fewer acres (507 versus 544) than mid-profit farms. High-profit farms had the highest yield (106.9 bu/ac) of the three categories and mid-profit farms had the lowest yield (85.5 bu/ac). At the relatively high prices received over this time period, the impact of yield differences on profitability differences is quite important. Contributing to the income differences is the fact that high-profit farms also received slightly higher prices. Looking at differences between mid- and low-profit farms, it can be seen that costs were the big driver as yields and prices actually favored the low-profit farms. Of the 98 farms, 45 were classified as no-till operations. These 45 no-till operations were spread over the high-, mid-, and low-profit categories as 15, 16, and 14, respectively, indicating no-till was not a determinant of profit ranking.

In summary, high-profit farms had higher gross income, primarily due to higher yields, compared to low-profit farms, and much lower costs leading to a 3-year average difference in returns of almost $150 per acre. Mid-profit farms had the lowest gross income, but because they were very cost efficient, having costs that were $95.06 per acre lower than the low-profit farms, they averaged returns over $70 per acre more than low-profit farms. Low-profit farms averaged a negative return to management ($64.30/ac) over this 3-year period. Figure 1a contains a breakdown of prices and yields for the three profitability groups and Figure 1b presents a similar breakdown of each group's costs.

Irrigated Corn (Table 2)

The profitability difference between high- and low-profit farms for irrigated corn in Kansas was $251.77 per acre. As was the case for non-irrigated corn, the high-profit farms had both a yield and price advantage. However, when operator percentage is accounted for, the difference in gross income per acre was only $20.67. Thus, almost 92% of the profit difference between high- and low-profit farms was due to cost differences. As was the case with non-irrigated corn, the mid-profit farms had the lowest yield and gross income per acre, but they were more profitable than low-profit farms because of significantly lower costs ($194.19/ac lower). Because of these lower costs, the mid-profit farms had returns that were $120.58 per acre higher than low-profit farms in spite of $63 per acre lower income. Both high- and mid-profit farms had lower costs than low-profit farms in every category. The higher land costs and operator percentage for low-profit farms suggests these farms rely less on crop share rental arrangements than the mid- and high-profit farms. The "other" cost category represented a large difference in costs between the high- and low-profit farms ($67.21/ac difference). This category is an aggregation of irrigation expenses and other whole-farm related expenses (e.g., fees, utilities, marketing). The large differences are likely due to energy sources for irrigation pumping and potentially margin calls associated with grain hedges in 2008 (specific details are not available).

Low-profit farms raised 31% fewer acres of irrigated corn than high-profit farms, and 7% less than mid-profit farms. High-profit farms had the highest yield (192.9 bu/ac) of the three categories and mid-profit farms had the lowest yield (177.0 bu/ac). At the relatively high prices received over this time period, the impact of yield differences on profitability differences is quite important. However, that is not real apparent here because the high-profit farms only received an average of 85.1% of the crop compared to 93.5% for the low-profit farms (i.e., more land rented on crop share basis). The high-profit farms also received slightly higher prices than the mid- and low-profit farms ($3.86/bu versus $3.67/bu). Of the 45 farms, 29 were classified as center pivot with the rest being furrow irrigated. These 29 center pivot operations were spread over the high-, mid-, and low-profit categories as 8, 6, and 15, respectively, indicating a slight tendency for center pivot to be slightly less profitable than furrow.

In summary, high-profit farms had the highest gross income, due to a combination of higher yields and prices, and much lower costs leading to a 3-year average difference in returns of over $250 per acre. Mid-profit farms had the lowest gross income, but because they were efficient, having costs that were almost $200 per acre lower than the low-profit farms, they averaged returns of $131.19 per acre more than low-profit farms. Low-profit farms averaged a negative return to management of $43.66 per acre over this 3-year period. Figure 2a contains a breakdown of prices and yields for the three profitability groups and Figure 2b presents a similar breakdown of each group's costs.

Non-irrigated Grain Sorghum (Table 3)

On average, the high-profit farms earned $125.44 per acre higher profit than low-profit farms and $56.37 per acre more than mid-profit farms. Both yields and prices were highest for high-profit farms and lowest for low-profit farms. High-profit farms had the best yield with 93.5 bushels per acre, whereas low-profit farms only produced 71.4 bushels per acre and mid-profit farms produced 80.1 bushels per acre. Gross income differences account for 61.7% of the $125.44 per acre profit difference between high- and low-profit farms, and total costs account for 38.3% of the difference. Of the various cost categories, machinery costs had the largest impact on farm profitability. Machinery costs were $29.62 per acre (31%) lower for the high-profit category compared to the low-profit category. The total cost difference between high-profit farms and low-

profit farms was $48.01 per acre. Thus, machinery cost differences accounted for over 60% of the total machinery costs differences between high- and low-profit farms. While differences in costs for other categories were generally quite small, high-profit farms had lower costs than low-profit farms in every category except crop insurance. Costs for mid-profit farms were very similar to high-profit farms indicating the difference in profit between these categories of $56.37 was almost entirely due to income differences.

Low-profit farms had 47% fewer acres than high-profit farms, and 57% less than mid-profit farms. All three profit categories had similar operator percentages and land costs suggesting similar land tenure arrangements (mid-profit farms appear to rely slightly more on crop share arrangements). Of the 132 farms, 54 were classified as no-till operations. These 54 no-till operations were spread over the high-, mid-, and low-profit categories as 21, 23, and 10, respectively, indicating a slight tendency for no-till to be associated with a higher profit ranking.

In summary, high-profit farms had the highest gross income, due to a combination of higher yields and prices, and slightly lowest costs leading to a 3-year average difference in returns of approximately $125 per acre. Mid-profit farms had the second highest gross income and costs comparable to high-profit farms and thus they averaged returns of about $56 per acre more than low-profit farms. Low-profit farms averaged a negative return to management ($44.73/ac) over this 3-year period. Figure 3a contains a breakdown of prices and yields for the three profitability groups and Figure 3b presents a similar breakdown of each group's costs.

Non-irrigated Wheat (Table 4)

The average difference in profit between high-profit and low-profit farms was $119.56 per acre, while the average difference in profit between high- and mid-profit farms was $49.00 per acre. Prices and yields descended from high- to low-profit farms with high-profit farms getting $0.23 per bushel and 6.3 bushels per acre more, respectively. The combination of higher yields and higher prices resulted in high-profit farms earning $23.50 per acre higher gross income than mid-profit farms and $39.84 per acre more than low-profit farms. While substantial differences in gross income between the high- and low-profit farms exist, only one third (33.3%) is income related (i.e., yield and price) with the other two-thirds (66.7%) due to higher costs for the low-profit farms. The difference in total costs between high- and low-profit farms was almost $80 per acre. Of the various cost categories, machinery costs had the largest impact on farm profitability. Machinery costs were $32.82 per acre (33%) lower for the high-profit category relative to the low-profit category. Fertilizer costs were also lower for the high-profit farms ($13.67/ac). Given that high-profit farms obtained higher yields, their lower fertilizer costs is likely a price issue as opposed to lower application rates. High-profit farms had lower costs than low-profit farms in every cost category, except crop insurance where they were nearly equal, and mid-profit farms had lower costs than low-profit farms in all categories except herbicide-insecticide and crop insurance.

A positive relationship between enterprise size (acres) and profit category exists, as larger acre farms incurred less cost per acre than smaller acre farms. High-profit farms farmed 10% more acres than mid-profit farms (841 versus 764). Mid-profit farms farmed 91% more acres than the low-profit farms (764 versus 400). All three profit categories had similar operator percentages and land costs suggesting similar land tenure arrangements (high-profit farms appear to rely slightly more on crop share arrangements, but differences are quite small). Of the 225 farms, 38 were classified as no-till operations. These 38 no-till operations were spread over the high-, mid-, and low-profit categories as 13, 13, and 12, respectively, indicating no relationship between no-till and profit ranking.

In summary, high-profit farms had the highest income, lowest cost, and highest acreage of the three groups leading to a 3-year average difference in returns of approximately $120 per acre. Mid-profit farms had the second highest gross income and second lowest costs leading to a 3-year average difference in returns of about $54 per acre more than low-profit farms. Low-profit farms had lowest income, highest cost, and smallest acreage of the three profit categories leading to a negative average return to management of $64.10 over the 3-year period analyzed. Figure 4a contains a breakdown of prices and yields for the three profitability groups and Figure 4b presents a similar breakdown of each group's costs.

Non-irrigated Soybeans (Table 5)

On average, the net return to management for high-profit farms was $129.62 per acre higher than low-profit farms and $61.32 per acre higher than mid-profit farms. High-profit farms had higher yields and higher prices compared to mid- and low-profit farms. These higher yields and prices resulted in high-profit farms having $72.21 per acre higher crop income than the low-profit farms and $22.67 per acre higher than mid-profit farms. Of the $129.62 per acre difference in profitability between high- and low-profit farms, over half (55.7%) was gross income related (i.e., yield and price), with the remaining 44.3% ($57.41/ac) coming from the cost differences. Of the various cost categories, machinery costs had the largest impact on farm profitability. Machinery costs were $30.36 per acre (31%) lower for the high-profit category relative to the low-profit category. High-profit farms had lower costs than low-profit farms in every cost category, except land and fertilizer where they were almost equal. Total costs for mid-profit farms were $38.65 per acre higher than for high-profit farms and $18.76 per acre lower than low-profit farms.

Low-profit farms had the smallest acreage planted to soybeans at 211 acres compared to 346 acres for high-profit farms and 369 acres for mid-profit farms. Low-profit farms had a slightly lower operator percentage indicating they rely more on crop share arrangements than the other categories. Of the 120 farms, 35 were classified as no-till operations. These 35 no-till operations were spread over the high-, mid-, and low-profit categories as 15, 9, and 11, respectively, indicating very little relationship between those enterprises classified as no-till and profit ranking. This is not particularly surprising because those enterprises not classified as no-till rely very little on tillage (i.e., the "non no-till" operations are likely quite similar to those classified as no-till).

In summary, high-profit farms had both the highest gross income and the lowest cost of the three different groups leading to a 3-year average difference in returns of approximately $130/acre. Mid-profit farms had the second highest gross income and second lowest costs leading to a 3-year average difference in returns of about $68 per acre more than low-profit farms. Low-profit farms had lowest income, highest cost, and smallest acreage of the three profit categories and averaged a negative $28.95 per acre return to management over the 3-year period. Figure 5a contains a breakdown of prices and yields for the three profitability groups and Figure 5b presents a similar breakdown of each group's costs.

Non-irrigated Alfalfa (Table 6)

The average difference in profit between high- and low-profit farms was $166.02 per acre. The difference between high- and mid-profit farms was $81.93 per acre. The high-profit farms had the highest yield (3.7 tons/ac) and the low-profit farms had the lowest yield (2.8 tons/ac). Average prices were very similar for all three profit categories, ranging from $93.87/ton for high-profit farms to $94.66/ton for mid-profit farms. Thus, the difference in gross income between high- and low-profit farms ($83.78/ac) was due primarily to yield differences. Approximately half (50.5%) of the

profitability difference between high- and low-profit farms was due to income, while the other 49.5% ($82.24/ac) was due to cost differences. Of the various cost categories, machinery costs had the largest impact on farm profitability. Machinery costs were almost $35 per acre lower for high-profit farms relative to the low-profit farms. High-profit farms had lower costs than low-profit farms in every cost category. The costs for the mid-profit farms were similar to high-profit farms (only $4.28/ac difference). Thus, the main difference in net returns between these two groups ($81.93/ac) was due to income differences and not costs.

An interesting note with alfalfa, is that it is the only enterprise with an inverse relationship between enterprise size (acres) and profit category. High-profit farms had the lowest acreage and low-profit farms raised the largest acreage. The lower costs on these smaller acres could be related to how producers allocate some of their fixed expenses to the alfalfa enterprise because it is doubtful that diseconomies of size exist. The operator percentages for alfalfa also are generally higher than with the other crops indicating alfalfa is planted on owned or cash rented land more often relative to other crops. In addition, low-profit farms spent the most money on seed, fertilizer, and chemicals, inputs typically associated with higher production, yet these farms had the lowest average yield.

In summary, high-profit farms had significantly higher income and substantially lower costs compared to the low-profit farms leading to a 3-year average difference in returns of $166 per acre. The gross income of the mid-profit farms was only slightly better than the low-profit farms ($6.13/ac higher), but their costs were almost $80 per acre lower leading to a 3-year average difference in returns of $84.09 per acre more than low-profit farms. That is, mid-profit farms had income comparable to low-profit farms and costs comparable to high-profit farms resulting in returns roughly $80 per acre worse (better) than high(low)-profit farms. Low-profit farms had the lowest income and highest cost of the three profit categories resulting in a negative 3-year average return to management of $35.14 per acre. Figure 6a contains a breakdown of prices and yields for the three profitability groups and Figure 6b presents a similar breakdown of each group's costs.

Summary

Several conclusions can be drawn from this information. The difference between the average profit (returns to management) for high-profit and low-profit farms ranged from $119.56 for wheat to $251.77 for irrigated corn (see Table 7). This indicates there are extremely large differences in profitability across producers at a point in time (here, the years 2006-2008). Furthermore, for all enterprises examined, the bottom third of producers had negative average returns compared to the mid- and high-profit farms that had positive returns. That is, even during relatively good economic times (for the most part 2006 to 2008 were good years for crop producers in Kansas), the bottom one-third of producers are not profitable. This wide disparity in profitability makes it difficult to design policy that supports agriculture because the needed support varies considerably.

For all enterprises except alfalfa, the low-profit farms had the smallest acres devoted to that enterprise providing some evidence that larger operations are more profitable. However, in several cases the high-profit farms had fewer acres devoted to the enterprise than the mid-profit farms indicating it is not simply a farm size issue. For all enterprises examined, high-profit farms had both the highest revenue and the lowest cost, with the relative importance of cost versus income varying from one crop to another. For example, differences in profit between high- and low-profit farms for irrigated corn was almost entirely due to cost differences (91.8%); whereas, profit differences for wheat were due more to revenue differences (66.7%). Figure 7a shows the income advantage for high-profit farms versus low-profit farms and decomposes the total advantage into

three parts – yield effect, price effect, and other. With the exception of irrigated corn, the average yield difference plays a larger role in explaining income differences than the average price difference. That is, for those enterprises where income differences are important in explaining profit differences, it is the higher yields that are primarily responsible for the income difference.

Figure 7b shows the relative importance of income differences in explaining profit differences for each of the enterprises over three different time periods – 1-year (2008), 3-year average (2006-08), and 5-year average (2004-08). The number of farms listed represents the total number of farms included in the analysis, which decreases with longer time periods given that the analysis required a farm to have data for each year in order to be included. The data for the 669 farms in 2006-08 represent the information summarized in Tables 1-6. What is quite apparent from this figure is that income differences are less important in explaining profit differences as the length of time included in the analysis increases. This is exactly what would be expected if price (and yields to a lesser extent) received in a given year are somewhat random, i.e., the ability for an individual producer to get better than average prices year in and year out is unlikely. Analyzing data from only 2008 indicates that income differences explain a large part of profitability differences between high- and low-profit farms. Given the extremely wide variation in prices throughout the year, this is likely due to when a particular producer sold his grain. However, with five years of data (2004-08) the importance of income differences decreases significantly and thus the importance of cost control increases.

For most of the enterprises considered, machinery costs represented a major cost difference between high- and low-profit farms. The difference in machinery costs between these two groups ranged from $22.35 per acre for irrigated corn to $34.88 per acre for alfalfa, with most enterprises being around to slightly above $30 per acre. While $30 per acre may not seem like a terribly high number for irrigated enterprises or for crops in the Corn Belt, it is quite significant for non-irrigated crop production in Kansas where the average cash rental rate as reported by Kansas Agricultural Statistics for 2009 was $46.50. Differences in machinery costs accounted for anywhere from 37% to 62% of the total cost differences for the non-irrigated crops. Thus, machinery management is one of the areas producers should focus their efforts to improve their relative profit positions.

Table 1. Kansas Farm Management Association Enterprise Analysis

Nonirrigated Corn -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	33	32	33		
Enterprise acres	507	544	259	248	96%
Yield per acre, bu	106.9	85.5	90.2	16.7	19%
Operator percentage	86.0%	83.6%	86.9%	-0.9%	-1%
Price per bushel	$3.71	$3.60	$3.58	$0.13	4%
INCOME ($/acre)					
Crop income	$345.32	$260.79	$288.12	$57.20	20%
Gross income	**$378.77**	**$301.70**	**$317.75**	**$61.02**	**19%**
COSTS ($/acre)[1]					
Seed	$36.37	$32.66	$39.66	-$3.29	-8%
Fertilizer	$47.47	$47.89	$63.13	-$15.66	-25%
Herbicide-insecticide	$23.78	$26.95	$33.69	-$9.91	-29%
Crop insurance	$15.61	$12.24	$14.33	$1.28	9%
Repairs	$15.47	$16.32	$24.54	-$9.07	-37%
Machine hire	$4.04	$9.01	$10.21	-$6.17	-60%
Fuel	$15.06	$16.95	$19.16	-$4.09	-21%
Depreciation	$20.95	$19.58	$28.39	-$7.44	-26%
Labor	$23.42	$20.23	$29.48	-$6.07	-21%
Total machinery	$78.94	$82.09	$111.78	-$32.83	-29%
Other	$20.70	$19.32	$28.83	-$8.13	-28%
Land	$49.11	$45.97	$60.53	-$11.42	-19%
Interest	$21.31	$19.87	$30.10	-$8.79	-29%
Total Cost	**$293.30**	**$286.99**	**$382.05**	**-$88.75**	**-23%**
Net Return to Management	**$85.47**	**$14.71**	**-$64.30**	**$149.77**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

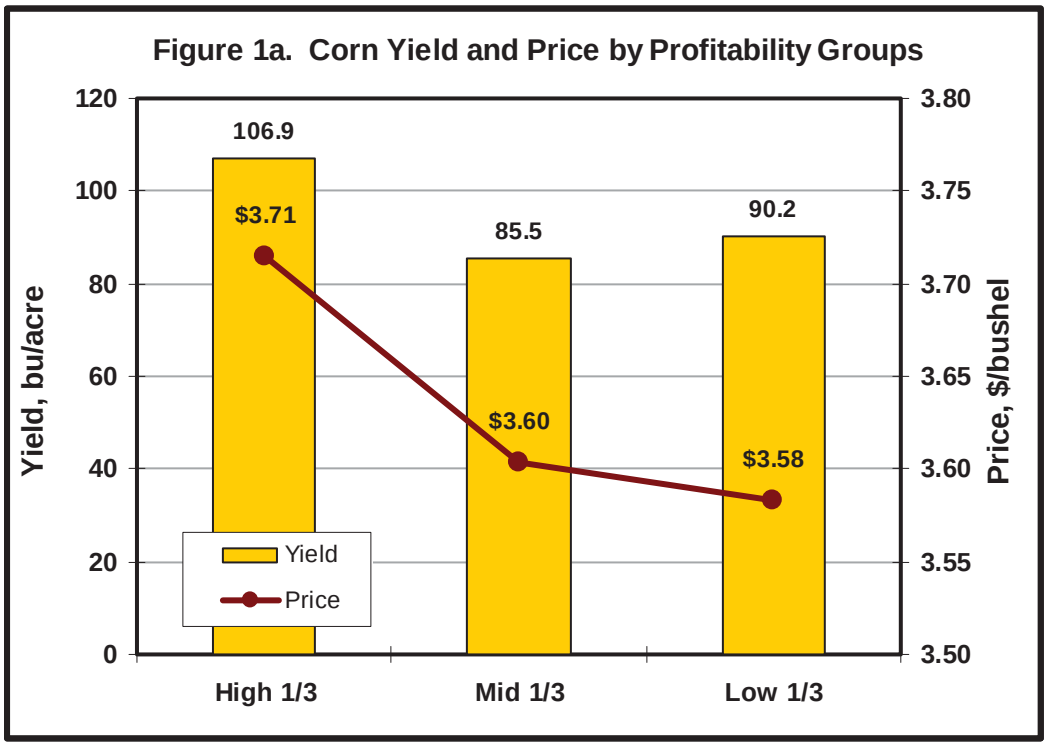

Figure 1a. Relationship between price and yields for low-, medium- and high-profit farms, Non-irrigated corn enterprise.

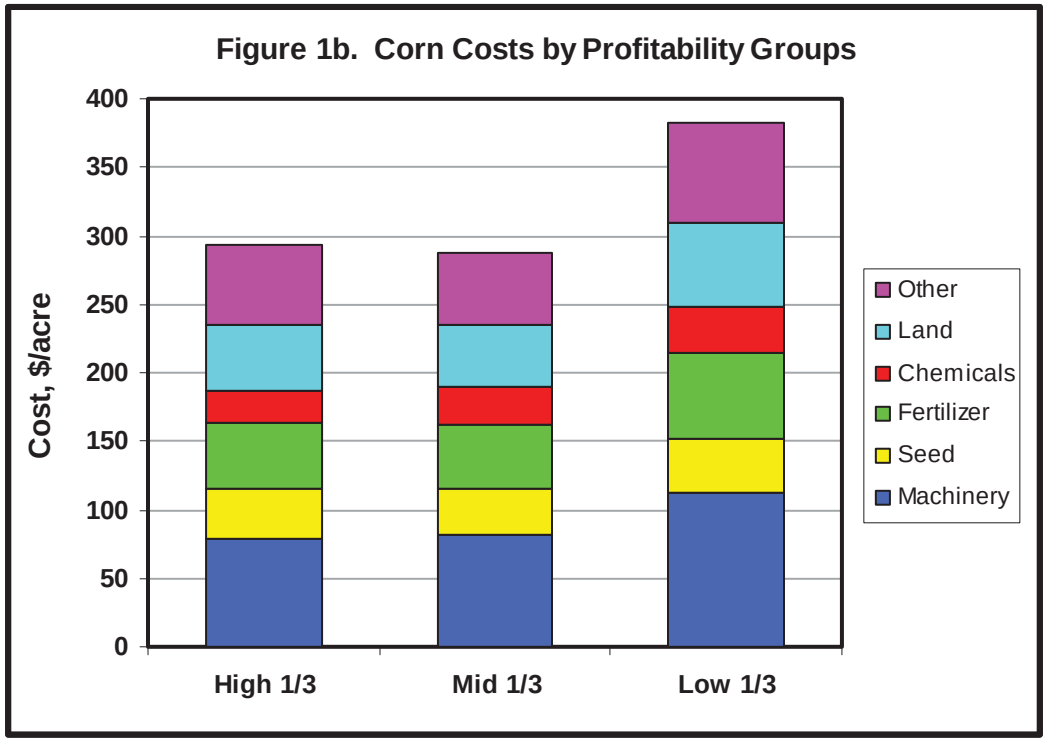

Figure 1b. Relationship of different costs between low-, medium-, and high-profit farms, Non-irrigated corn enterprise.

Table 2. Kansas Farm Management Association Enterprise Analysis

Irrigated Corn -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	15	15	15		
Enterprise acres	637	520	485	151	31%
Yield per acre, bu	192.9	177.0	182.4	10.5	6%
Operator percentage	85.1%	83.7%	93.2%	-8.1%	-9%
Price per bushel	$3.86	$3.67	$3.67	$0.19	5%
INCOME ($/acre)					
Crop income	$638.63	$544.53	$623.89	$14.74	2%
Gross income	**$684.73**	**$601.05**	**$664.05**	**$20.67**	**3%**
COSTS ($/acre)[1]					
Seed	$47.01	$52.76	$62.72	-$15.71	-25%
Fertilizer	$75.72	$74.30	$92.68	-$16.95	-18%
Herbicide-insecticide	$35.62	$39.74	$50.80	-$15.18	-30%
Crop insurance	$13.04	$18.76	$28.21	-$15.18	-54%
Repairs	$18.73	$23.64	$26.73	-$8.01	-30%
Machine hire	$17.65	$9.16	$18.00	-$0.35	-2%
Fuel	$25.99	$25.16	$26.17	-$0.18	-1%
Depreciation	$31.12	$27.12	$32.99	-$1.87	-6%
Labor	$22.51	$31.25	$34.45	-$11.94	-35%
Total machinery	$115.99	$116.33	$138.34	-$22.35	-16%
Other	$84.37	$91.92	$151.58	-$67.21	-44%
Land	$72.00	$84.92	$136.95	-$64.95	-47%
Interest	$32.86	$34.78	$46.42	-$13.56	-29%
Total Cost	**$476.62**	**$513.52**	**$707.71**	**-$231.10**	**-33%**
Net Return to Management	**$208.11**	**$87.53**	**-$43.66**	**$251.77**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

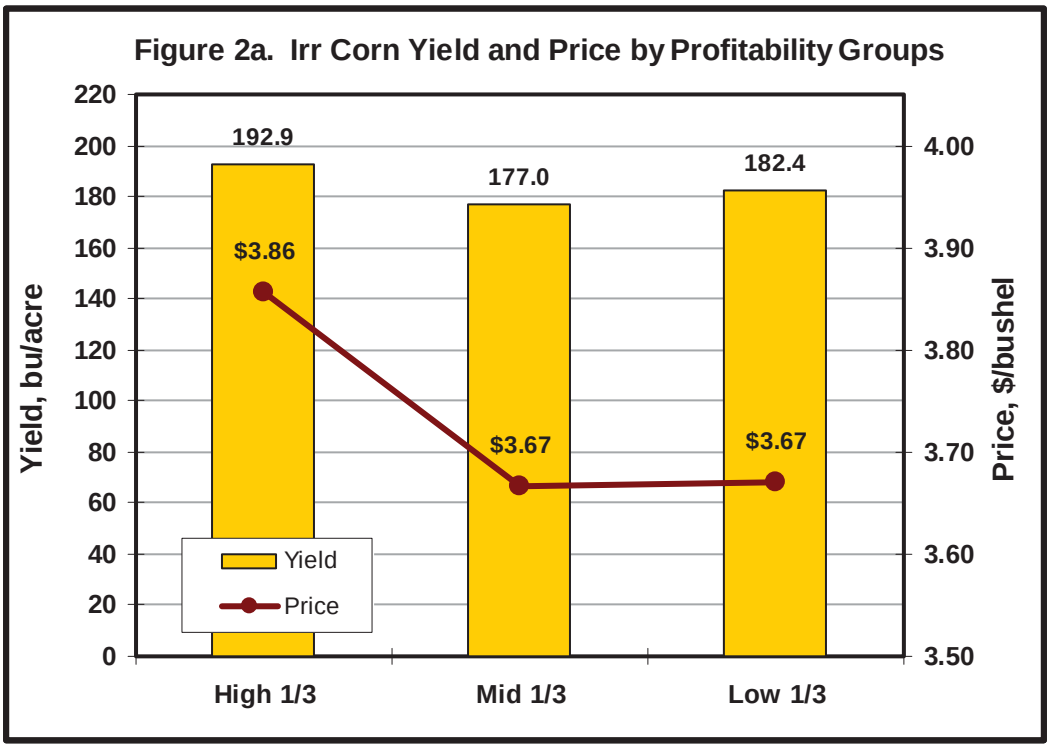

Figure 2a. Relationship between price and yields for low-, medium-, and high-profit farms, Irrigated corn enterprise.

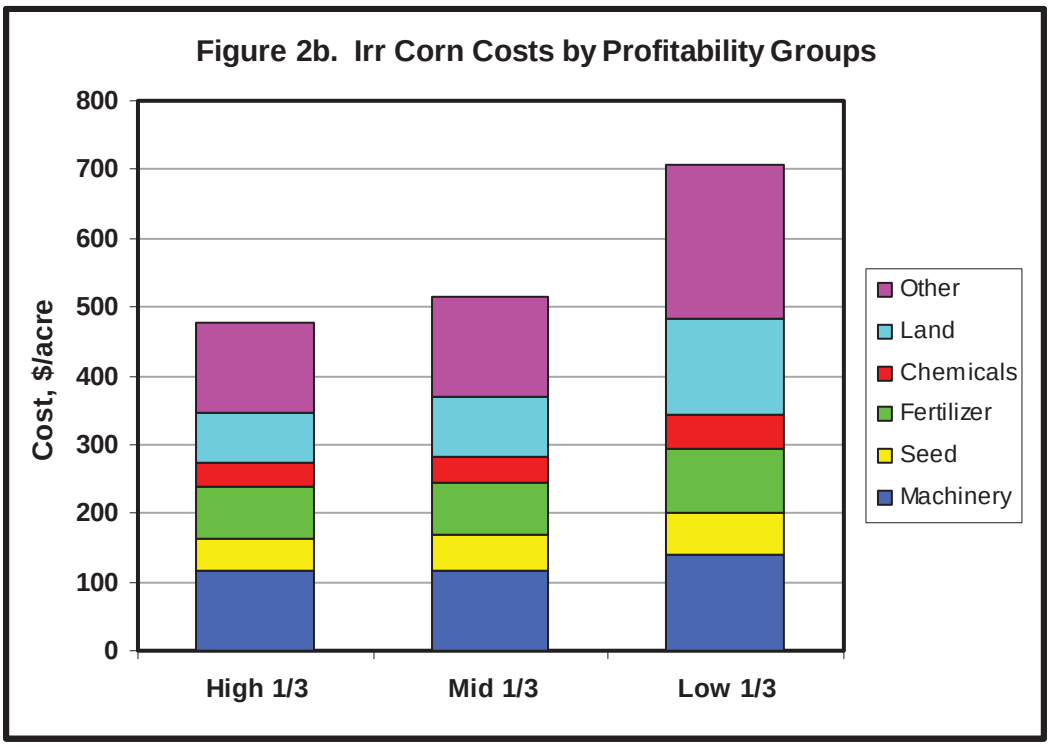

Figure 2b. Relationship of different costs between low-, medium-, and high-profit farms, Irrigated corn enterprise.

Table 3. Kansas Farm Management Association Enterprise Analysis

Nonirrigated Sorghum -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	44	44	44		
Enterprise acres	371	397	252	119	47%
Yield per acre, bu	93.5	80.1	71.4	22.2	31%
Operator percentage	83.0%	80.1%	83.8%	-0.8%	-1%
Price per bushel	$3.55	$3.43	$3.38	$0.18	5%
INCOME ($/acre)					
Crop income	$279.22	$222.58	$200.87	$78.35	39%
Gross income	**$306.43**	**$252.06**	**$228.99**	**$77.43**	**34%**
COSTS ($/acre)[1]					
Seed	$12.08	$12.63	$16.52	-$4.44	-27%
Fertilizer	$39.52	$36.05	$43.30	-$3.79	-9%
Herbicide-insecticide	$27.12	$31.29	$28.45	-$1.33	-5%
Crop insurance	$9.33	$9.56	$8.32	$1.01	12%
Repairs	$13.46	$15.65	$19.15	-$5.69	-30%
Machine hire	$3.82	$5.43	$7.60	-$3.78	-50%
Fuel	$13.50	$14.11	$18.49	-$4.99	-27%
Depreciation	$14.81	$17.51	$18.45	-$3.65	-20%
Labor	$19.54	$20.49	$31.04	-$11.50	-37%
Total machinery	$65.12	$73.19	$94.73	-$29.62	-31%
Other	$17.66	$18.43	$24.79	-$7.13	-29%
Land	$40.06	$30.33	$38.33	$1.73	5%
Interest	$14.84	$16.24	$19.27	-$4.43	-23%
Total Cost	**$225.72**	**$227.72**	**$273.72**	**-$48.01**	**-18%**
Net Return to Management	**$80.71**	**$24.34**	**-$44.73**	**$125.44**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

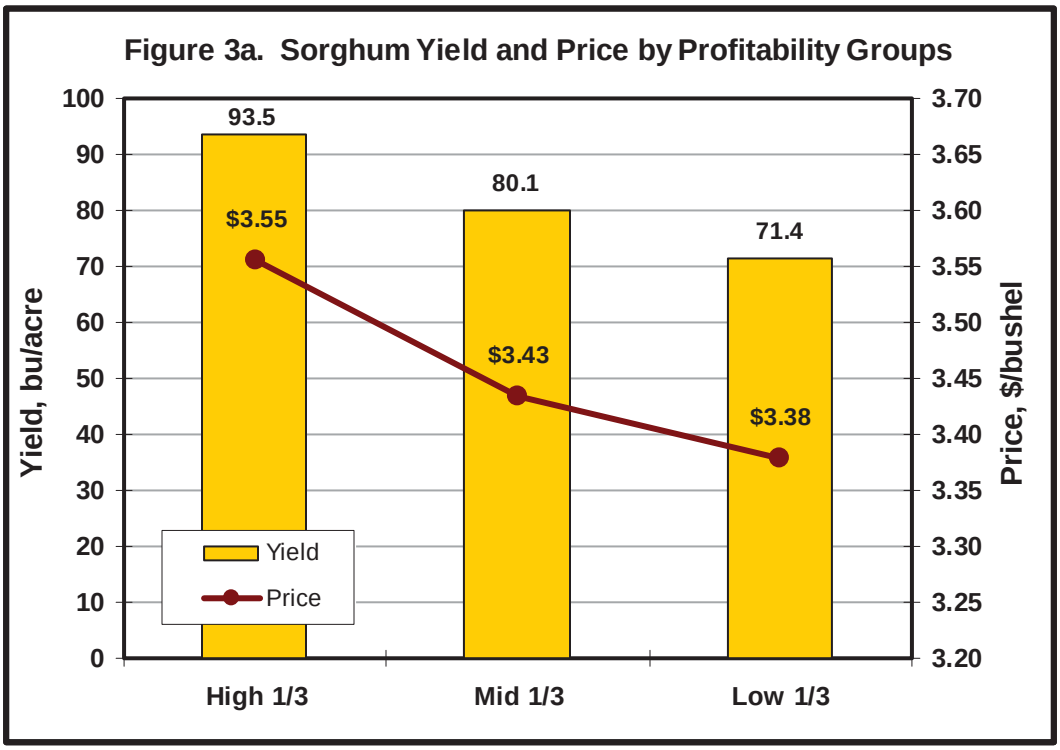

Figure 3a. Relationship between price and yields for low-, medium-, and high-profit farms, Sorghum enterprise.

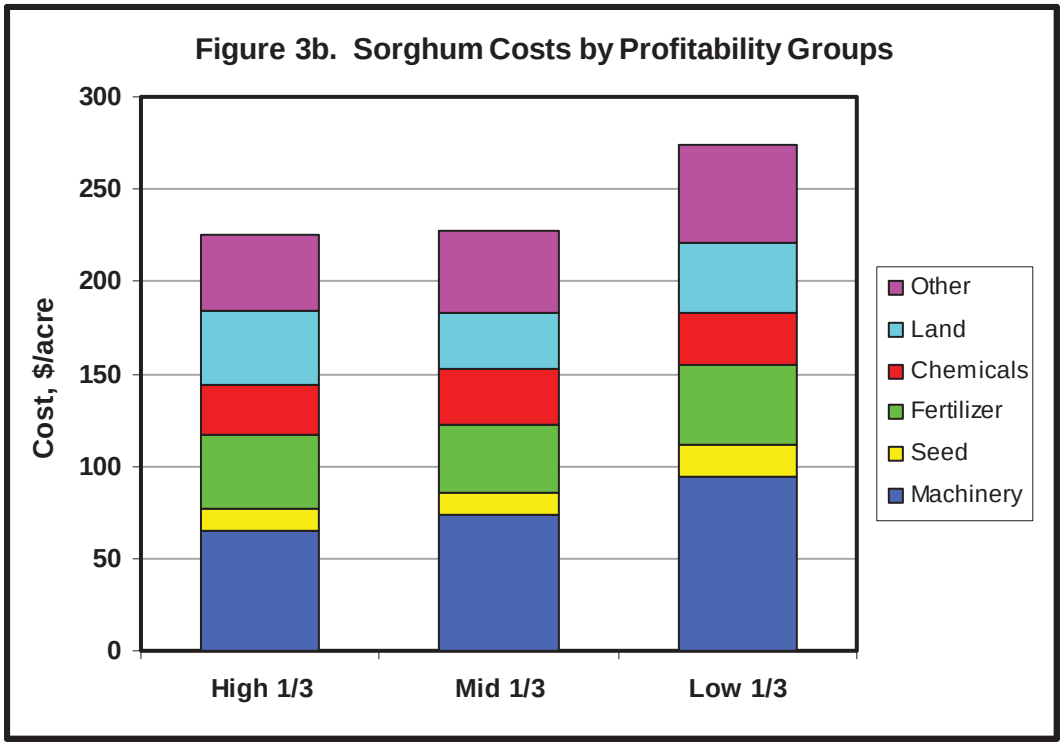

Figure 3b. Relationship of different costs between low-, medium-, and high-profit farms, Sorghum enterprise.

Table 4. Kansas Farm Management Association Enterprise Analysis

Nonirrigated Wheat -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	75	75	75		
Enterprise acres	841	764	400	441	110%
Yield per acre, bu	39.5	35.4	33.1	6.3	19%
Operator percentage	82.2%	83.7%	83.6%	-1.5%	-2%
Price per bushel	$5.78	$5.58	$5.56	$0.23	4%
INCOME ($/acre)					
Crop income	$191.36	$167.45	$156.02	$35.35	23%
Gross income	**$232.28**	**$208.78**	**$192.44**	**$39.84**	**21%**
COSTS ($/acre)[1]					
Seed	$8.75	$10.76	$12.14	-$3.38	-28%
Fertilizer	$28.96	$36.23	$42.62	-$13.67	-32%
Herbicide-insecticide	$7.40	$9.22	$9.15	-$1.75	-19%
Crop insurance	$7.15	$7.77	$7.08	$0.07	1%
Repairs	$13.88	$15.11	$20.71	-$6.83	-33%
Machine hire	$5.17	$3.96	$7.51	-$2.34	-31%
Fuel	$14.02	$14.16	$20.44	-$6.42	-31%
Depreciation	$15.76	$16.67	$17.68	-$1.92	-11%
Labor	$19.20	$21.43	$34.51	-$15.31	-44%
Total machinery	$68.02	$71.32	$100.84	-$32.82	-33%
Other	$16.01	$19.11	$28.91	-$12.90	-45%
Land	$27.08	$32.17	$36.26	-$9.18	-25%
Interest	$13.45	$15.73	$19.54	-$6.09	-31%
Total Cost	**$176.82**	**$202.31**	**$256.53**	**-$79.72**	**-31%**
Net Return to Management	**$55.46**	**$6.47**	**-$64.10**	**$119.56**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

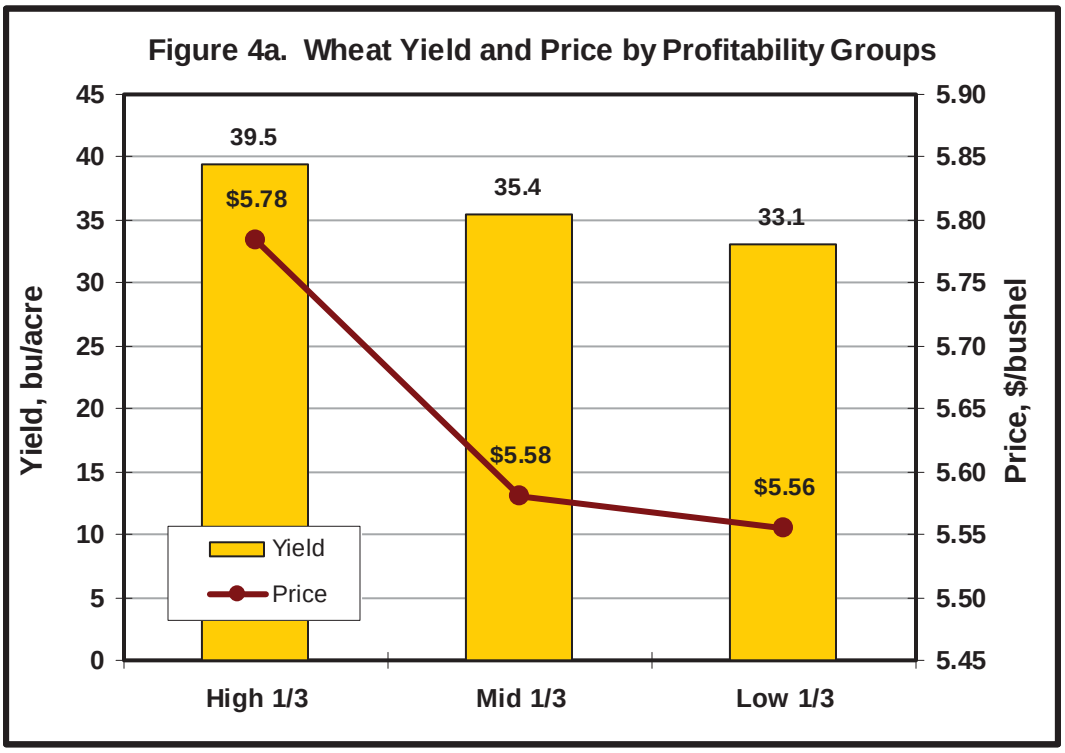

Figure 4a. Relationship between price and yields for low-, medium-, and high-profit farms, Wheat enterprise.

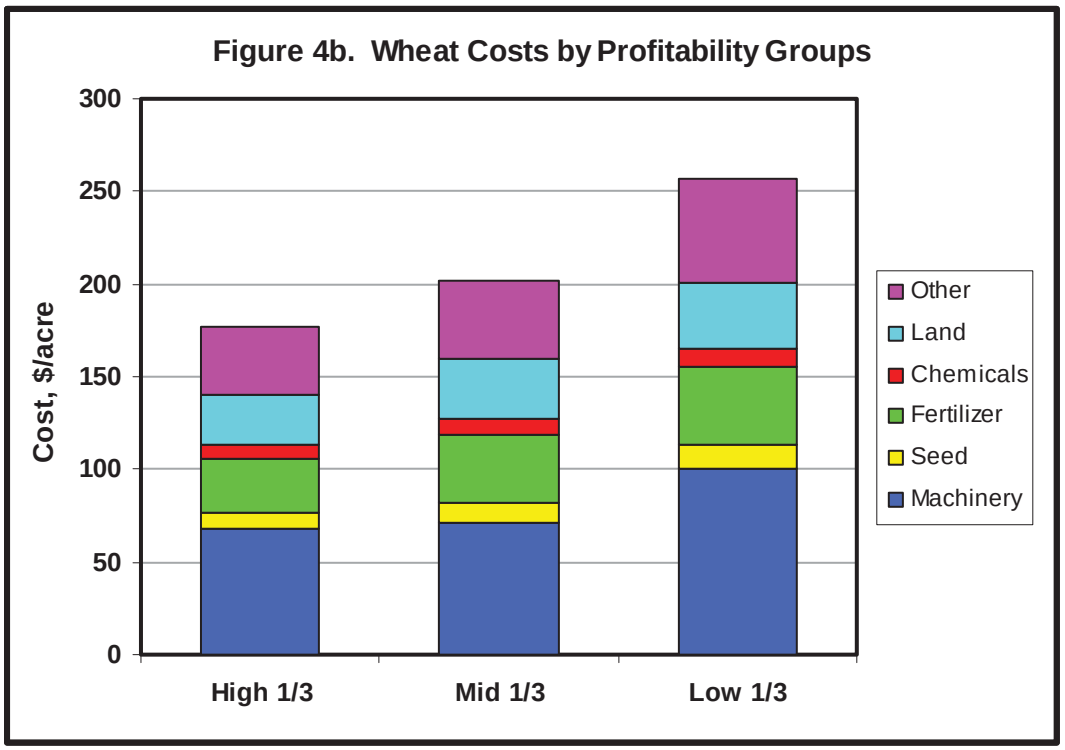

Figure 4b. Relationship of different costs between low-, medium-, and high-profit farms, Wheat enterprise.

Table 5. Kansas Farm Management Association Enterprise Analysis

Nonirrigated Soybeans -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	40	40	40		
Enterprise acres	346	369	211	135	64%
Yield per acre, bu	37.7	36.2	31.6	6.1	19%
Operator percentage	85.5%	86.3%	83.4%	2.1%	3%
Price per bushel	$8.51	$8.27	$7.94	$0.57	7%
INCOME ($/acre)					
Crop income	$279.18	$257.62	$209.87	$69.31	33%
Gross income	**$304.06**	**$281.39**	**$231.85**	**$72.21**	**31%**
COSTS ($/acre)[1]					
Seed	$26.60	$32.28	$32.21	-$5.62	-17%
Fertilizer	$7.31	$9.06	$7.33	-$0.02	0%
Herbicide-insecticide	$16.93	$19.73	$21.38	-$4.46	-21%
Crop insurance	$10.36	$11.56	$10.81	-$0.45	-4%
Repairs	$13.91	$17.64	$20.63	-$6.72	-33%
Machine hire	$3.03	$5.11	$7.71	-$4.67	-61%
Fuel	$13.29	$15.80	$16.78	-$3.49	-21%
Depreciation	$16.50	$17.83	$22.83	-$6.32	-28%
Labor	$20.67	$22.68	$29.82	-$9.15	-31%
Total machinery	$67.40	$79.06	$97.76	-$30.36	-31%
Other	$17.30	$20.83	$27.60	-$10.29	-37%
Land	$43.00	$51.35	$42.92	$0.08	0%
Interest	$14.49	$18.17	$20.78	-$6.29	-30%
Total Cost	**$203.39**	**$242.04**	**$260.80**	**-$57.41**	**-22%**
Net Return to Management	**$100.66**	**$39.35**	**-$28.95**	**$129.62**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

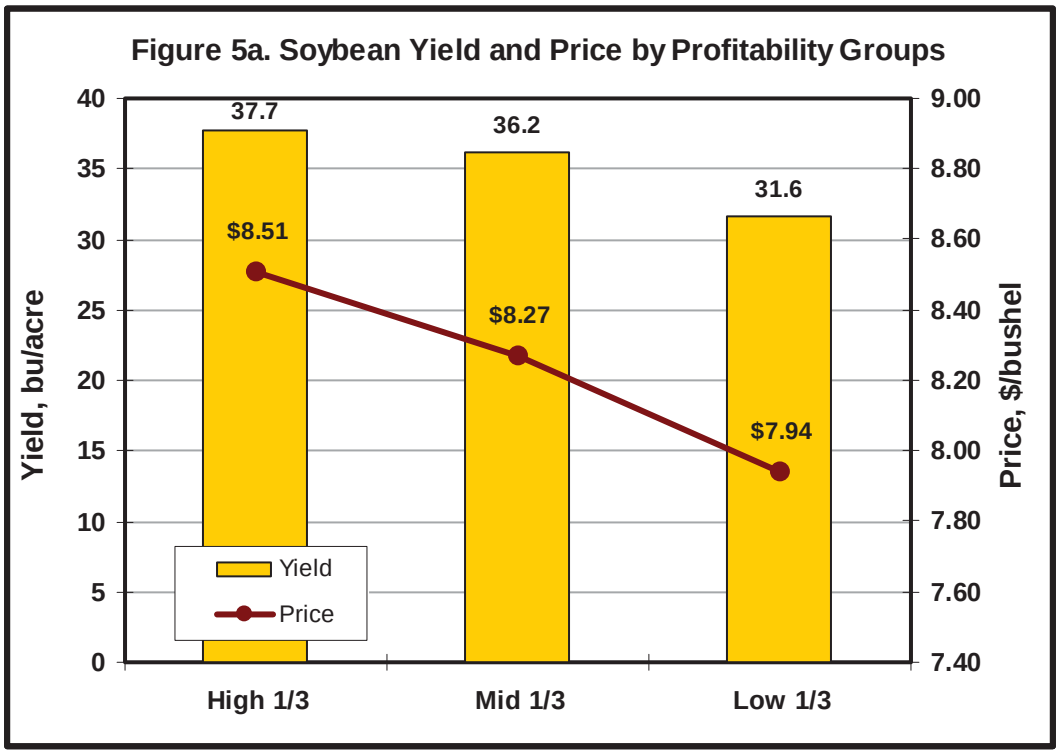

Figure 5a. Relationship between price and yields for low-, medium-, and high-profit farms, Soybean enterprise.

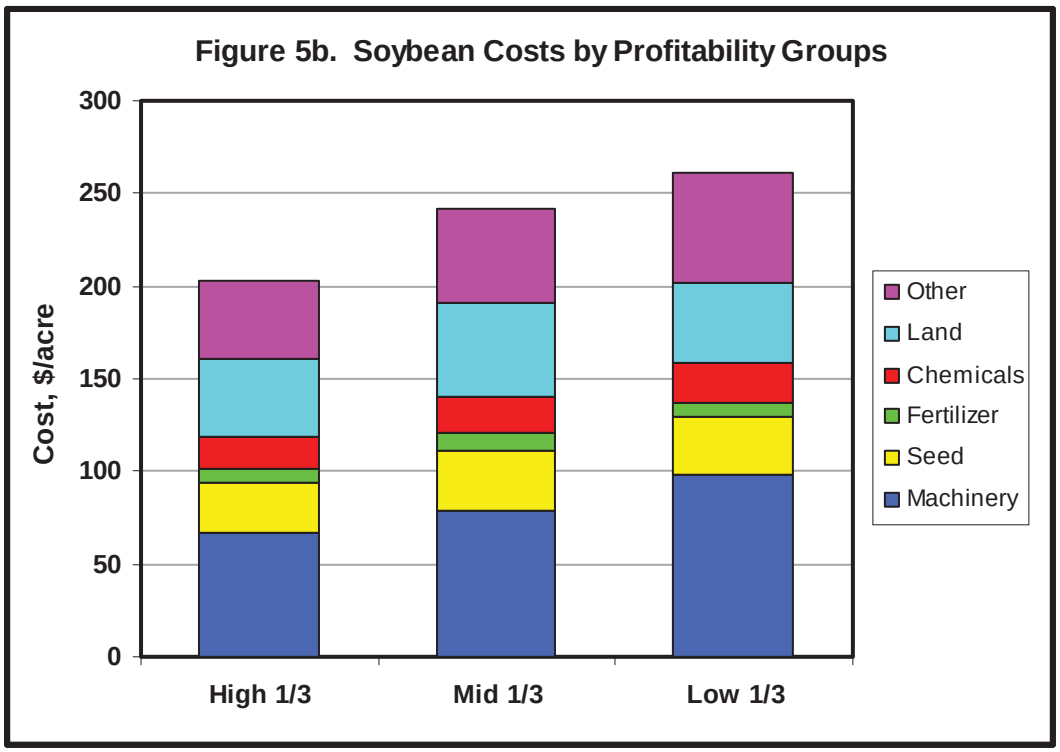

Figure 5b. Relationship of different costs between low-, medium-, and high-profit farms, Soybean enterprise.

Table 6. Kansas Farm Management Association Enterprise Analysis

Alfalfa -- State Averages, 2006-2008

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3	Mid 1/3	Low 1/3	Absolute	%
Number of farms	16	17	16		
Enterprise acres	63	102	136	-72	-53%
Yield per acre, tons	3.7	3.0	2.8	0.9	31%
Operator percentage	95.5%	89.6%	91.0%	4.5%	5%
Price per ton	$93.87	$94.66	$94.12	-$0.26	0%
INCOME ($/acre)					
Crop income	$325.75	$250.76	$238.17	$87.59	37%
Gross income	**$338.60**	**$260.95**	**$254.82**	**$83.78**	**33%**
COSTS ($/acre)[1]					
Seed	$10.43	$5.26	$11.53	-$1.09	-9%
Fertilizer	$5.87	$7.95	$16.33	-$10.46	-64%
Herbicide-insecticide	$8.91	$8.80	$16.07	-$7.16	-45%
Crop insurance	$0.02	$0.00	$1.51	-$1.49	-99%
Repairs	$21.25	$18.36	$30.30	-$9.05	-30%
Machine hire	$8.04	$8.50	$9.97	-$1.93	-19%
Fuel	$15.40	$14.93	$22.69	-$7.28	-32%
Depreciation	$23.07	$23.48	$27.92	-$4.85	-17%
Labor	$26.86	$30.74	$38.63	-$11.77	-30%
Total machinery	$94.62	$96.01	$129.50	-$34.88	-27%
Other	$19.64	$23.57	$31.71	-$12.07	-38%
Land	$50.06	$52.02	$60.04	-$9.98	-17%
Interest	$18.16	$18.39	$23.27	-$5.11	-22%
Total Cost	**$207.72**	**$212.00**	**$289.96**	**-$82.24**	**-28%**
Net Return to Management	**$130.88**	**$48.95**	**-$35.14**	**$166.02**	

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

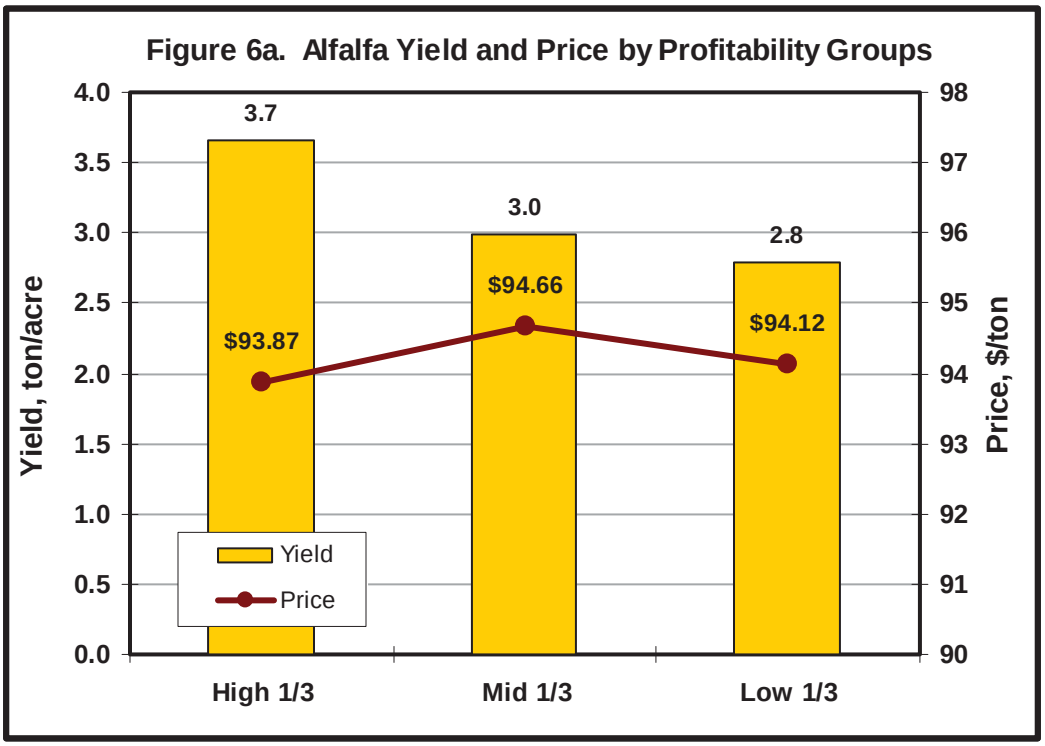

Figure 6a. Relationship between price and yields for low-, medium-, and high-profit farms, Alfalfa enterprise.

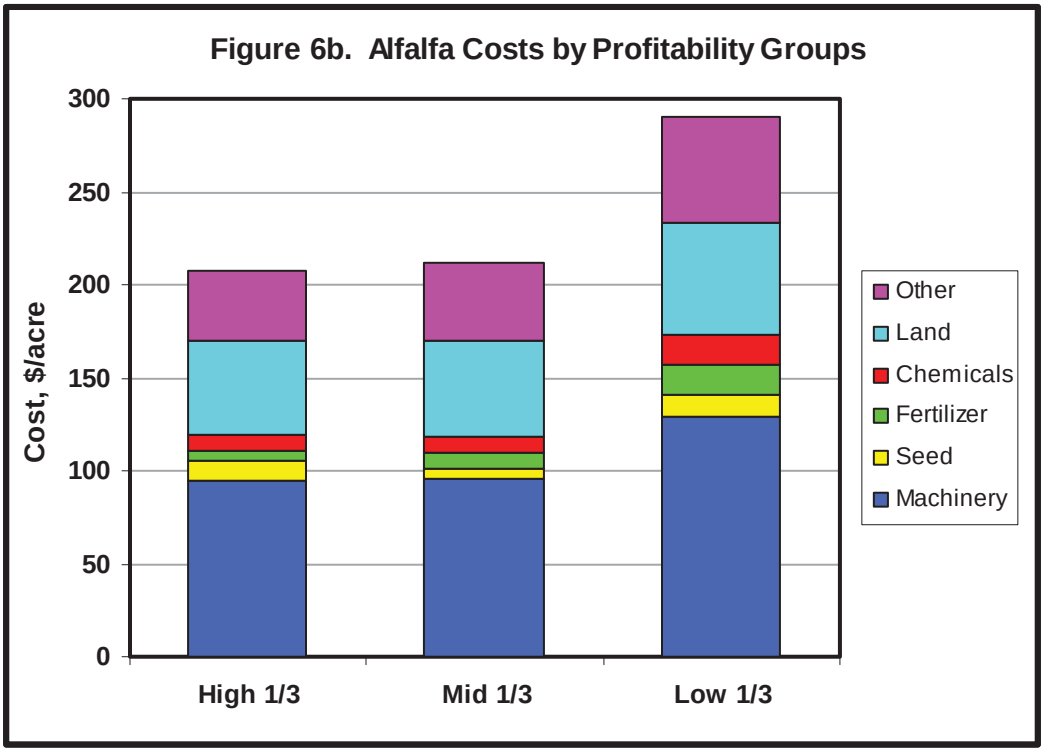

Figure 6b. Relationship of different costs between low-, medium-, and high-profit farms, Alfalfa enterprise.

Table 7. Difference between the High 1/3 and Low 1/3 farms ranked on return to management
Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2006-2008

	Corn	Irr Corn	Sorghum	Wheat	Soybean	Alfalfa
Number of farms	98	45	132	225	120	49
Enterprise acres	248	151	119	441	135	-72
Yield per acre, bu	16.7	10.5	22.2	6.3	6.1	0.9
Operator percentage	-0.9%	-8.1%	-0.8%	-1.5%	2.1%	4.5%
Price per unit	$0.13	$0.19	$0.18	$0.23	$0.57	-$0.26
INCOME ($/acre)						
Crop income	$57.20	$14.74	$78.35	$35.35	$69.31	$87.59
Gross income	**$61.02**	**$20.67**	**$77.43**	**$39.84**	**$72.21**	**$83.78**
COSTS ($/acre)[1]						
Seed	-$3.29	-$15.71	-$4.44	-$3.38	-$5.62	-$1.09
Fertilizer	-$15.66	-$16.95	-$3.79	-$13.67	-$0.02	-$10.46
Herbicide-insecticide	-$9.91	-$15.18	-$1.33	-$1.75	-$4.46	-$7.16
Crop insurance	$1.28	-$15.18	$1.01	$0.07	-$0.45	-$1.49
Repairs	-$9.07	-$8.01	-$5.69	-$6.83	-$6.72	-$9.05
Machine hire	-$6.17	-$0.35	-$3.78	-$2.34	-$4.67	-$1.93
Fuel	-$4.09	-$0.18	-$4.99	-$6.42	-$3.49	-$7.28
Depreciation	-$7.44	-$1.87	-$3.65	-$1.92	-$6.32	-$4.85
Labor	-$6.07	-$11.94	-$11.50	-$15.31	-$9.15	-$11.77
Machinery	-$32.83	-$22.35	-$29.62	-$32.82	-$30.36	-$34.88
Other	-$8.13	-$67.21	-$7.13	-$12.90	-$10.29	-$12.07
Land	-$11.42	-$64.95	$1.73	-$9.18	$0.08	-$9.98
Interest	-$8.79	-$13.56	-$4.43	-$6.09	-$6.29	-$5.11
Total Cost	**-$88.75**	**-$231.10**	**-$48.01**	**-$79.72**	**-$57.41**	**-$82.24**
Net Return to Management	**$149.77**	**$251.77**	**$125.44**	**$119.56**	**$129.62**	**$166.02**

[1] Based on the operator's share of production, and thus includes only production expenses paid by the operator.

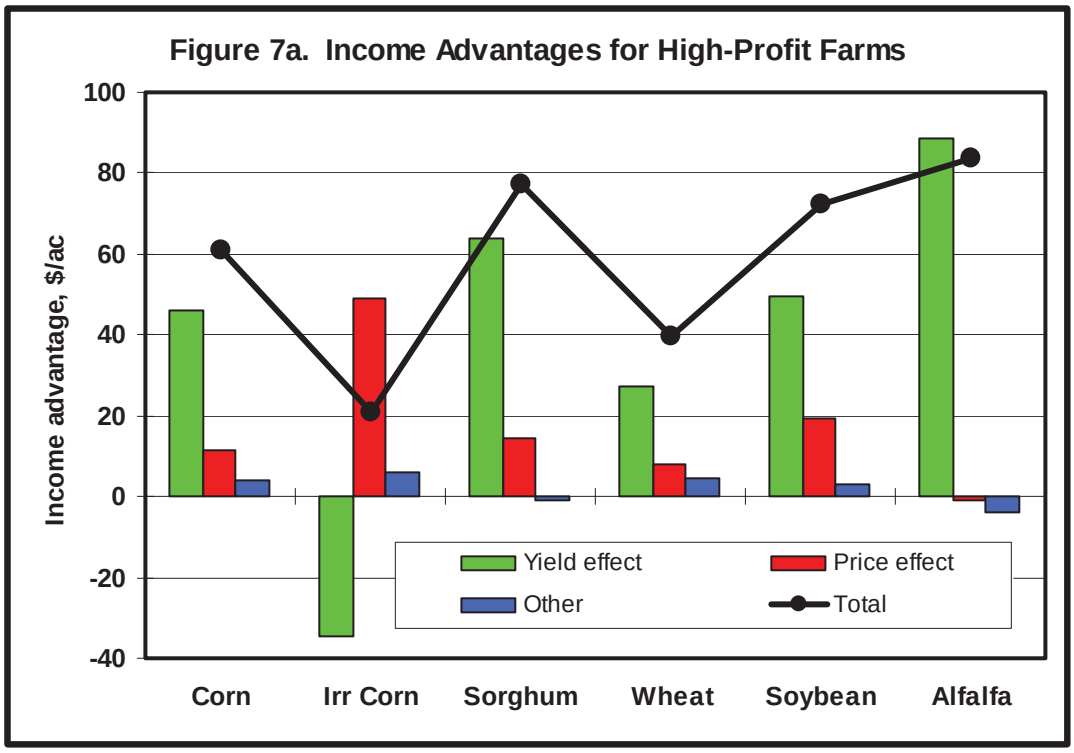

Figure 7a. Income advantages of high-profit farms over low-profit farms for different crops analyzed.

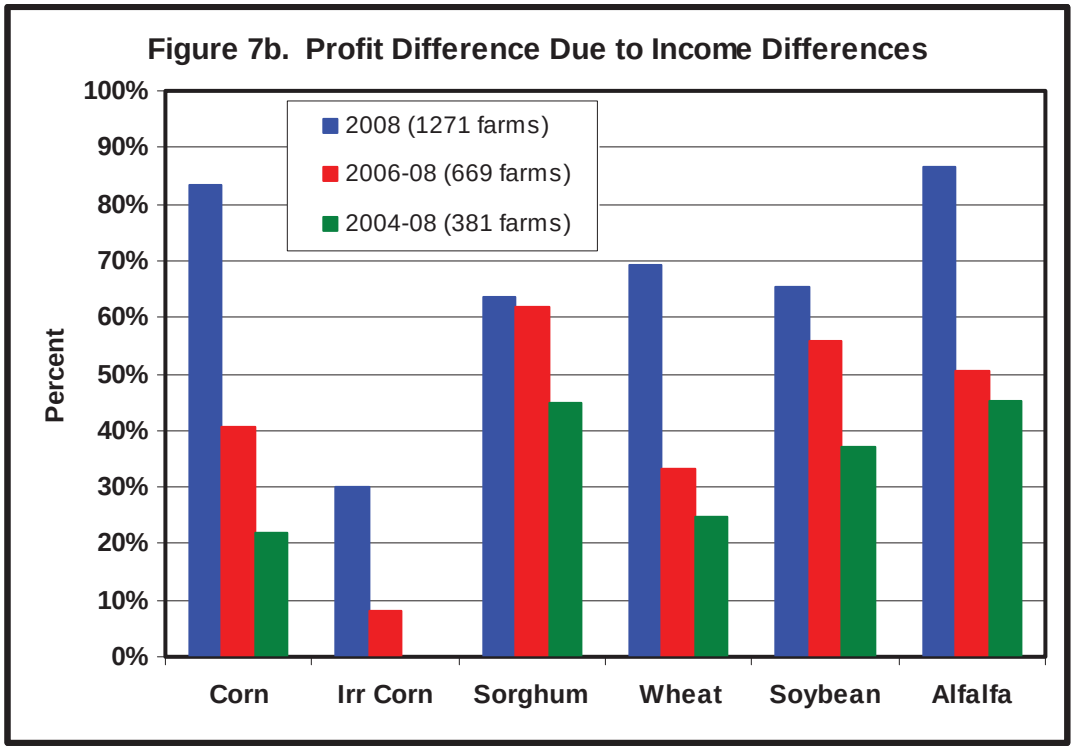

Figure 7b. Importance of income differences in explaining differences in profit between high-profit and low-profit farms for various time periods.