

**Price risk management: What to expect?  
# 2 out of 5 articles**

**Management Factors:  
What is important, prices, yields, costs or technology adoption?**

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This is the second in a series of five papers. The first paper presented the fact that few, if any, people can predict prices. Prices cannot be predicted because the market uses all available information to determine price. What makes today's price different from yesterday's price is "new information." If this "Efficient Market" hypothesis is correct, then one marketing strategy is nearly as good as any other marketing strategy. What is important is that producers develop "rules" for marketing.

This paper reports on research conducted at Kansas State University by Kastens, Dhuyvetter, and Nivens ([http://www.agecon.ksu.edu/kdhuyvetter/KD\\_Papers.htm](http://www.agecon.ksu.edu/kdhuyvetter/KD_Papers.htm)). They used records from over 1,000 Kansas farms during a 10-year period to evaluate management practices that explained the difference between the top 1/3 of the farms and the bottom 1/3 of the farms. Their conclusion was that price (marketing strategy) made little or no difference in the profitability of the farms. Important management factors were costs, yields and use of technology.

The Department of Agricultural Economics, Kansas State University, has a farm business specialist group that assists Kansas producers with their farm records. Dr. Terry Kastens and Dr. Kevin Dhuyvetter used these records to determine which management practices made the greatest difference in profit among the farms.

Kastens and Dhuvetter had records for about 1,000 farms over the 10-year period 1990 through 1999. The farms produced wheat, corn, soybeans, grain sorghum and alfalfa.

Management factors considered for use in explaining the difference in profit were planting intensity, costs, price received, use of technology and yields. Risk, size and government payments were included as important long-run factors but were not considered important in the short-run.

Standard deviation was used to measure the difference between the average of the bottom third of the market and the average of the top one-third of the market. For example, the standard deviation for profit was \$75 per acre. This implies that there was a \$150 difference between the average profit of the top one-third of producers and the average in the bottom one-third. Profit may not be positive. Thus, \$75 per acre or \$150 per acre does not imply anything about the average profit per acre over the 10-year period.

To determine the difference between the top one-third and the bottom one-third, multiply the standard deviation by 2. Another way to interpret the results is to infer that the average of the top one-third is one standard deviation above the average for all farms and that the average for the bottom one-third was a standard deviation less than the average for all farms.

Producers in the top one-third had 32 percent lower costs than average and producers in the bottom one-third had 32 percent higher costs than average. There was a 64 percent spread between costs of the top and bottom one-third of the producers. There was plus or minus 14 percent spread in yields, 9 percent spread in price, 42-year spread in technology adaptation and 23 percent spread in planting intensity.

When converted into dollars per acre, there was a \$57.22 spread between the bottom one-third and top one-third average costs ( $\$28.61 \times 2$ ). Planting intensity (number of crops per year)

produced a spread of \$24.94; yield \$15.12, and technology a spread between the top and bottom one-third of \$14.40. The spread for price was \$0.56 and was the only factor that was not significantly different from zero.

In the short run, producers have the highest probability to increase profit by first lowering costs, followed by planting intensity, yield, and technology. In the long run, taking and managing production risk is the single most important management factor. Managing production risk produced a spread between the top and lower one-third of \$46.50 per acre.

In the long run, size was the second most important factor with a spread of \$39.80. Government payments were \$13.36 per acre higher for the top one-third compared to the bottom one-third.

Relative to managing price risk the conclusion was that, within reason, the marketing strategy is the least likely management factor to increase profit. This finding is consistent with the “efficient market theory”.

### **Caveat**

The Kansas State University research results do not imply that marketing should be totally ignored. Rather, the results imply that a marketing plan should be developed that normally produces an average or higher price over time.

After a producer develops management skills in costs, production, use of technology and intensive use of the resources, marketing management skills may be “fine tuned.” The important point is that “marketing efforts” offer less probability of profit enhancement than efforts applied in other management areas.

**A well managed farm is one  
that consistently makes greater profits  
than similarly structured neighboring farms.**



## **Evaluated five management factors**

**Profit**

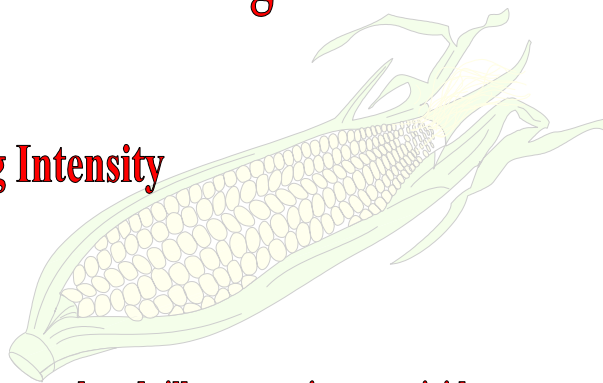
**Planting Intensity**

**Costs**

**Price**

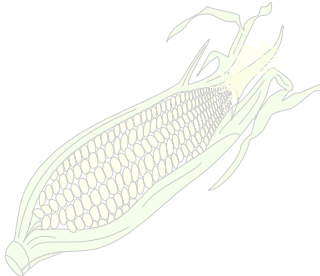
**Technology – reduced tillage practices, pesticide use**

**Yield**




# Variability of management factors

Measure	Standard Deviation
Profit	\$73/acre
Cost	15%
Yield	30%

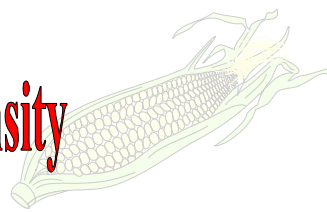
A detailed illustration of a single ear of corn, showing the kernels and the husk. The corn is oriented diagonally, with the top of the ear pointing towards the upper right. The husk is partially peeled back, revealing the rows of kernels. The illustration is rendered in a light green and yellow color palette.

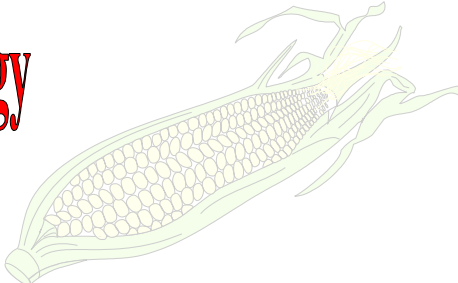
<b>Measure</b>	<b>Standard Deviation</b>
<b>Price</b>	<b>8%</b>
<b>Less-till technology adoption</b>	<b>14 years</b>
<b>Planting Intensity</b>	<b>23%</b>



### **Impact on Profit per Acre of Management Tools**

<b>MEASURE</b>	<b>Best Third</b>	<b>Results in This Change in Profit/acre</b>
<b>Cost</b>		<b>\$18.40</b>
<b>Planting Intensity</b>		<b>\$13.52</b>
<b>Yield</b>		<b>\$7.12</b>



<b>MEASURE</b>		<b>Results in This Change in Profit/acre</b>
<b>Technology</b>		<b>\$5.87</b>
<b>Price</b>		<b>\$0.00</b>

### **Impact on Profit per Acre of Management Tools**

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<b>Risk</b>		<b>\$23.25</b>
<b>Size</b>		<b>\$19.90</b>
<b>Government Payment</b>		<b>\$6.68</b>