**Fertilizer and Fuel Outlook for Spring 2006**
**FAPRI-UMC Report #04-06**
**April 2006**

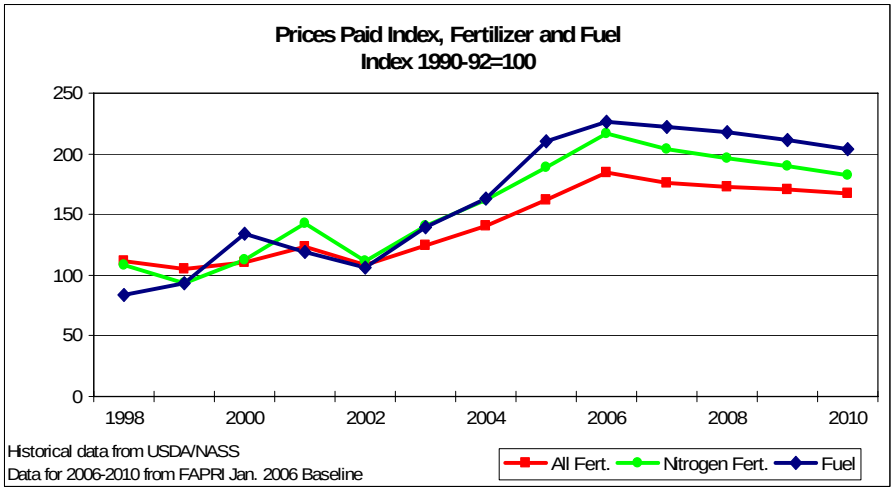
The March 31, 2006 Prospective Plantings report released by USDA indicated corn acreage in Missouri could be down 11 percent or 350,000 acres from 2005. This March 31 report would also suggest a majority of the acres moving out of corn, 300,000, may show up in increased soybean acreage. A primary source of this shift in acres has been cited as increases in production costs. Information received throughout the state of Missouri by the Food and Agricultural Policy Research Institute (FAPRI) from producers and Representative Farm updates would suggest moisture, futures prices, and input costs are providing mixed signals regarding this spring's planting decisions. The next month will provide more insight into the impact of increased costs, as well as other factors, on planting decisions.

***FAPRI 2006 Baseline***

Variable cost of production indications from the FAPRI 2006 Baseline, completed in January 2006, suggest 2006 will be the fourth consecutive year for increases in fertilizer and fuel costs for major field crops. Variable costs in this baseline include costs that are somewhat flexible from year to year and do not include capital or fixed costs for items such as land and equipment.

This baseline incorporates December 2005 macroeconomic projections, including energy projections, from Global Insight and the historical cost of production survey developed by the National Agricultural Statistics Service within USDA. In addition, the FAPRI January 2006 baseline would suggest that fuel and fertilizer costs for the next ten-year period are expected to remain well above pre-2005 price levels. Fertilizer costs for 2006 are expected to be 10 to 15 percent above 2005 and fuel prices are expected to increase almost 10 percent in 2006. Figure 1 provides a historical perspective for the prices paid index for farmers, as well as FAPRI's baseline through 2010. The outlook for 2006 would suggest fertilizer prices are 70 percent above 2002 with corresponding fuel prices up approximately 113 percent.

**Figure 1**



***Spring 2006 Outlook***

This spring outlook report will highlight the costs of production facing producers for the 2006/07 season, with fuel and fertilizer costs as the main focus. Current fertilizer prices throughout Missouri, when compared to last spring, would indicate increases in ammonium nitrate and anhydrous ammonia nitrogen prices of 6.5 to 8 cents per pound, phosphate prices of 3 to 4 cents per pound, and potassium prices of approximately 1 to 2 cents per pound. Table 1 highlights the per acre costs associated with these increases, depending on application rates, for corn, soybeans and wheat. The application rates represent a low and high target for yields. Ammonium nitrate prices are generally16 cents per pound higher than anhydrous ammonia.

**Table 1. - Fertilizer and fuel costs per acre, Spring 2006 for Corn, Soybeans, and Wheat**

| | Corn 110-60-60* | Corn 190-115-115* | Soybeans 0-30-50* | Soybeans 0-46-80* | Wheat 60-20-15* | Wheat 100-35-20* |
|---|---|---|---|---|---|---|
| Nitrogen | $31.90 | $55.10 | $0.00 | $0.00 | $27.00 | $45.00 |
| Phosphate | $17.10 | $32.78 | $8.55 | $13.11 | $5.70 | $9.98 |
| Potash | $13.20 | $25.30 | $11.00 | $17.60 | $3.30 | $4.40 |
| **Fertilizer cost/acre** | **$62.20** | **$113.18** | **$19.55** | **$30.71** | **$36.00** | **$59.38** |
| **Fuel field cost/acre **** | **$11.03** | **$11.03** | **$7.05** | **$7.05** | **$6.02** | **$6.02** |
| **Fertilizer and fuel cost/acre** | **$73.23** | **$124.21** | **$26.60** | **$37.76** | **$42.02** | **$65.40** |
| *Avg. increase from spring '05* | *$12.80* | *$21.30* | *$3.21* | *$4.24* | *$7.76* | *$22.24* |
| *Avg. increase from spring '04* | *$22.35* | *$34.75* | *$7.47* | *$9.83* | *$13.00* | *$27.67* |
| *Avg. increase from spring '03* | *$26.19* | *$36.77* | *$9.73* | *$13.35* | *$14.18* | *$30.76* |

Note: *Represents nitrogen (N), phosphate ($P_2O_5$), and potassium ($K_2O$) pounds applied per acre.

**Fuel costs do not include costs of custome application, hauling, irrigation, or drying. UMC Farm Budgets and EIA retail diesel prices used to compute fuel field cost/acre.

For cotton and rice producers, the outlook for this spring is similar with increased costs of production expected. The FAPRI January 2006 Baseline would indicate fuel and fertilizer costs for U.S. rice and cotton producers could increase by at least 10 percent compared to 2005. Table 2 provides a breakdown of costs for these two commodities for fertilizer type and application rates for Spring 2006. Volatility in fuel and energy costs also heavily impact these sectors, especially when considering the costs of irrigation and ginning.

**Table 2. - Fertilizer costs per acre, Spring 2006 for Upland Cotton and Rice**

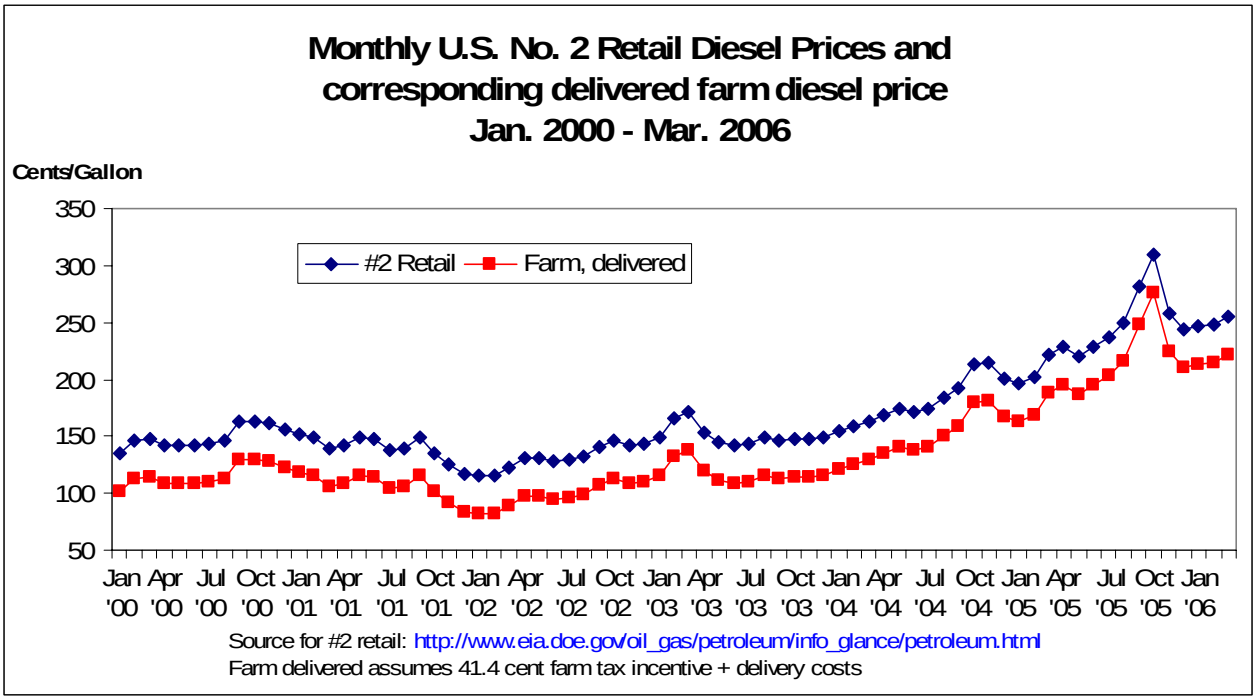
| | Cotton 80-30-60** | Cotton 100-35-90* | Rice 150-0-0** | Rice 180-50-60* |
|---|---|---|---|---|
| Nitrogen | $32.00 | $40.00 | $60.00 | $72.00 |
| Phosphate | $8.55 | $9.98 | $0.00 | $14.25 |
| Potash | $13.20 | $19.80 | $0.00 | $13.20 |
| **Fertilizer cost/acre** | **$53.75** | **$69.78** | **$60.00** | **$99.45** |
| *Avg. increase from spring '05* | *$7.15* | *$8.88* | *$9.75* | *$14.75* |

Note: *Represents nitrogen (N), phosphate ($P_2O_5$), and potassium ($K_2O$) pounds applied per acre.

** University of Missouri Extension Southeast Missouri Crop Budget by David Reinbott used for application rates for Mid-range yields for Missouri.

According to the Energy Information Administration (EIA), retail #2 diesel prices averaged $2.56 for March 2006 compared with $2.21 for March 2005 and $1.63 for March 2004. Farm grade diesel is approximately 41.4 cents below retail diesel prices and is averaging $2.22 delivered. (Figure 2.) January through March U.S. city average diesel prices for 1998-2002 were $1.35 per gallon or $1.20 below the current retail diesel prices. However, the potential for price volatility in the retail diesel market is strong for not only the outlook for this spring, but this summer as well. Monthly fluctuations in diesel prices over the past six months have ranged from a decrease of 52 cents per gallon to an increase of 27 cents per gallon. At the current $2.22 per gallon price for farm diesel, the per acre cost associated with diesel fuel for tillage, planting, spraying, and harvest is approximately $11.03 for corn, $7.05 for soybeans, and $6.02 for wheat.

**Figure 2**




The combined costs per acre associated with fuel and fertilizer for Spring 2006, as presented in Table 1, could range from $73.23 to $124.21 or 21 percent above 2005, for corn. The range for soybeans is $26.60 to $37.76 or 13 to 14 percent above 2005, with the range for wheat at $43.62 to $53.72 or 24 to 27 percent above 2005.

USDA cost of production survey data provides the proportion of costs of production attributable to all input costs for a U.S. average for 2005. According to these figures, almost 50 percent of the variable costs associated with producing corn are comprised of fuel and fertilizer, including hauling and other fuel related costs. For soybeans and wheat, these percentages are 25 and 52 respectively. Rice variable costs of production indicate 38 percent of input costs are associated with fuel and fertilizer. The percentage of costs associated with cotton production for fuel and fertilizer, on average for the U.S., is approximately 22 percent.

***Summer Outlook***

The near term outlook for fertilizer and diesel prices would tend to support volatility and the potential for higher prices during 2006. The EIA's April 2006 summer outlook suggests retail diesel prices could average $2.62 this summer and continues to project a West Texas Intermediate (WTI) crude price of $65 per barrel throughout 2006. This report indicates increased gasoline and diesel consumption, Tier 2 requirements for low-sulfur fuel, and the phase-out of MTBE as potential market movers this summer.

While the impacts for low-sulfur fuel and the phase-out of MTBE are only expected to add a few cents per gallon to U.S. fuel prices, the short-term impacts of an inability to quickly switch to foreign suppliers in a local supply shortage or demand surge are cited by EIA as possible reasons for increased costs this summer. However, the EIA suggests these short-term impacts should by alleviated by 2007 as U.S. refiners and distributors adjust to the new standards.

If summer consumption of fuel does not increase relative to 2005, the increases in gasoline and diesel prices predicted by EIA may not materialize. In addition, the domestic refining capacity should be back to full capacity by mid-summer. However, uncertainty in oil producing nations such as Nigeria, Venezuela, Iraq, and Iran will continue to add volatility to the market in 2006.

While many agricultural producers may have forward contracted or engaged in pre-pay arrangements for a portion of their fuel and fertilizer needs for this planting season, the impacts of the past four years of increasing costs continue to influence their profit margins, cropping practices, and farm management decisions.

*Additional graphics available at*
*www.fapri.missouri.edu/outreach/publications/2006/FertandFuelGraphics.pdf*

*Contact Lori Wilcox at 573-882-9057 or visit FAPRI's website at www.fapri.missouri.edu for additional information.*