

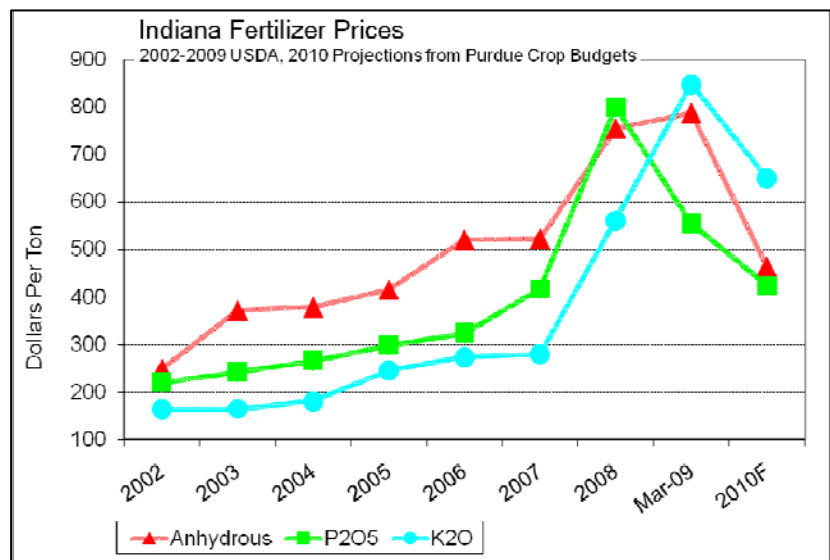
## Producing the 2010 Crop: Input Cost Projections & Analysis

by Bruce Erickson, Alan Miller, and Craig Dobbins

The costs for growing corn, soybeans, and wheat in Indiana are predicted to be less for 2010 than 2009, led by the dramatic decreases in fertilizer prices in the last year and prices held back for many other crop inputs as a result of the worldwide recession and lower commodity prices. While these general price trends are obvious, the real questions are at what level will prices find equilibrium, what factors will affect them, and what is in store for certain inputs. 2010 budget projections show variable costs for soybeans decreasing 13%, rotation corn by 17%, and for wheat by 22% compared to our January 2009 revised budgets (2002 to 2010 budgets posted at <http://www.agecon.purdue.edu/extension/pubs/>)

**Fertilizers** Fertilizer prices in Indiana have done an about-face in the last year. Prior to the global financial crisis of 2008, retail price reports of potash of over \$900 per ton, anhydrous ammonia of over \$1000 per ton, and diammonium phosphate (DAP) of over \$1100 per ton were reported. This was during a time of high commodity prices for many crops, substantially increasing the demand for fertilizers, and high energy prices, a key component of fertilizer manufacturing and distribution. Since that time prices of nearly all fertilizer products have dramatically declined, but nitrogen and phosphorus fertilizers have declined more than potassium (see figure). Fertilizer industry information shows that overall fertilizer use in North America declined 15-20% from 2008 to 2009, with potassium fertilizer application declining around 30%. September 2009 survey information from Illinois shows anhydrous ammonia for fall application selling for \$400-\$450, DAP at \$360-430, and potassium at \$560-670.

Depending on when fertilizers were purchased, some farmers may have spent \$200/A or more to fertilize their 2009 corn crop, but our budget projections for 2010 put corn fertilizer expenses in the \$100-\$130 range depending on previous crop, soils, and other factors (includes N as well as P, K, and lime replacement). Published industry sources indicate that prices for nitrogen and phosphorus fertilizer sources may have reached lows and could work upward; potassium prices could still come down more.



**Seed/Genetics** More value continues to be delivered through seed in the form of increasing yields and crop protection traits each year. But with lower grain prices the value of that additional production is less. Seed prices rose dramatically for the 2009 crop, and list prices for some of the highest-performing, most fully-equipped hybrids will be well over the \$300 mark for next spring's planting, and some soybeans will be over \$60/unit. Yet allowing for discounts and adjusting for seeding rates, seed budgets for 2010 will be in the \$75 to \$95 per acre range for many corn fields and about \$50 per acre for soybeans, similar to those of 2009.



Biotech traits continue to heavily influence the seed industry, product offerings, and prices. Technology fees charged to seed companies from the bioscience providers account for a large share of the pricing formula. The percentage of genetically modified corn acres in Indiana is catching up to soybeans, but the dramatic increases also appear to be leveling off as the market is becoming saturated and farmers are exploring additional options to spread their risks for pest control.

**Crop Protection** Prices for herbicides, insecticides, and fungicide products have been relatively flat in recent years. Last year prices for glyphosate-based herbicides were up substantially overall. But indications are for a corresponding decrease this year, and there is speculation of substantial price decreases. It will be a mixed bag for other pesticides depending on each particular market, but the overall trend appears relatively flat.

**Energy** The Energy Information Administration predicts diesel prices will increase about 15% in 2010 as compared to 2009—remembering that diesel fuel prices were relatively low during the first part of this year. The outlook for propane for dryer fuel is mostly flat. Propane prices have been relatively low this summer because of abundant supplies, will likely increase with the onset of the winter heating season, but after that are predicted to be relatively flat into next years’ harvest period.

**Machinery** Farmer’s expenses for machinery have been increasing in recent years. Sales numbers of smaller tractors across the industry have been down since 2004 due to housing and construction woes. Until this year larger horsepower tractor and combine sales had been on an upward trend, but the forecast shows declining sales for 2009, which could result in a softening in prices.

**Calculating Returns on Investment** While input prices for some inputs are down substantially, market prices for most crops are down, too. Economically optimum rates can be determined by calculating marginal rates of return. For nitrogen fertilizer, the ratio of N price per pound and the per bushel price for corn should be a primary driver in determining the optimum nitrogen rate. The following chart shows that at current price ratios nitrogen is relatively less expensive compared to some recent years.

**Corn Price/Nitrogen Cost Ratio, 2005 to 2010, Purdue Crop Budgets**

<b>Year</b>	<b>Corn Price \$/bu</b>	<b>N Price \$/lb</b>	<b>Ratio N price/Corn price</b>
2005	2.12	.26	.12
2006	2.31	.34	.15
2007	3.71	.28	.07
2008	5.00	.46	.09
2009	4.00	.49	.12
2010 F	3.30	.28	.08

**The Rest of the Story** Crop input costs are just a part of our 2010 agricultural outlook. For our views of the overall economy, exports, livestock, grain markets, and the interactions and implications of all of the above and more, see **Outlook for Indiana Agriculture 2010** at

[http://www.agecon.purdue.edu/extension/pubs/2010\\_Outlook\\_Newsletter\\_Updated.pdf](http://www.agecon.purdue.edu/extension/pubs/2010_Outlook_Newsletter_Updated.pdf).



## Summary

Input costs for producing crops have fallen along with grain prices, led by the dramatic drop in fertilizer prices. And it looks as if other crop inputs such as seeds and pesticides will be held down by the hangover from last year's worldwide financial crisis as well. When there is a decision to be made regarding how much of an input to apply, producers can maximize their investment in that input by considering its marginal rate of return.

## For More Information

USDA Economics, Statistics and Market Information System: <http://usda.mannlib.cornell.edu/>

Association of Equipment Manufacturers, Industry Trends: <http://www.aem.org/Trends/USAg/>

Energy Information Administration: <http://www.eia.doe.gov/oiaf/forecasting.html>

Bi-weekly Illinois Production Cost Report. USDA-Illinois Department of Agriculture Market News, Springfield, IL. Available at: [http://www.ams.usda.gov/mnreports/gx\\_gr210.txt](http://www.ams.usda.gov/mnreports/gx_gr210.txt)

Miller, Alan, Craig Dobbins, Bruce Erickson, Bob Nielsen, Tony Vyn, Bill Johnson, and Kiersten Wise. "2010 Purdue Crop Cost & Return Guide," Purdue Extension publication ID-166-W, September 2009. Available at: <http://www.agecon.purdue.edu/extension/pubs/>

