

## Outlook for crop profitability in 2006

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**Regional  
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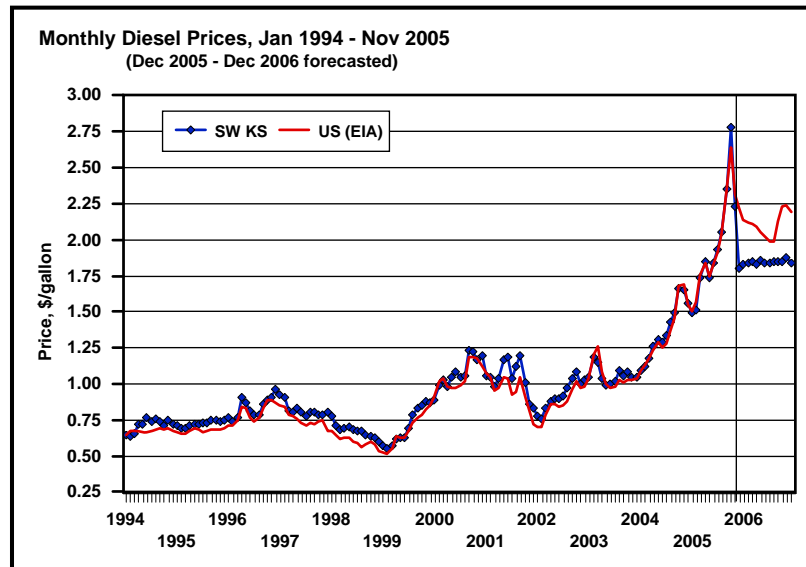
### Background thoughts . . .

- Prices for energy-related inputs are at extremely high levels (all-time highs in many cases)
- Producers likely cannot do much about the prices they face, but they need to “understand the numbers” to make good decisions
- Major crop decisions producers have pertain to input levels, crop selection, and possibly negotiating leases on rented land

## Historical and forecasted energy-related input prices (diesel fuel, fertilizer, natural gas)

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Diesel prices are at historically high levels, but appear to be heading in the right direction...



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## Historical and forecasted diesel prices during principal farming months...

### Diesel Fuel Prices

Year	Mar-Oct Diesel Price			Year-to-year percent change		
	SW KS	US (EIA)	Average	SW KS	US (EIA)	Average
2000	\$1.09	\$1.04	\$1.07	-----	-----	-----
2001	\$1.09	\$0.98	\$1.04	0.6%	-6.1%	-2.7%
2002	\$0.94	\$0.88	\$0.91	-14.1%	-10.0%	-12.1%
2003	\$1.05	\$1.05	\$1.05	12.1%	18.6%	15.3%
2004	\$1.37	\$1.34	\$1.36	30.0%	28.4%	29.2%
2005	\$2.04	\$2.02	\$2.03	48.5%	49.9%	49.2%
2006 (F)	\$1.85	\$2.08	\$1.96	-9.3%	3.1%	-3.1%
05 - Avg(00-04)	\$0.93	\$0.96	\$0.94	83.5%	90.2%	86.8%
06 - Avg(00-04)	\$0.74	\$1.02	\$0.88	66.4%	96.0%	80.9%

F = forecast

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## Effect diesel price has on machinery costs per acre based on fuel consumption...

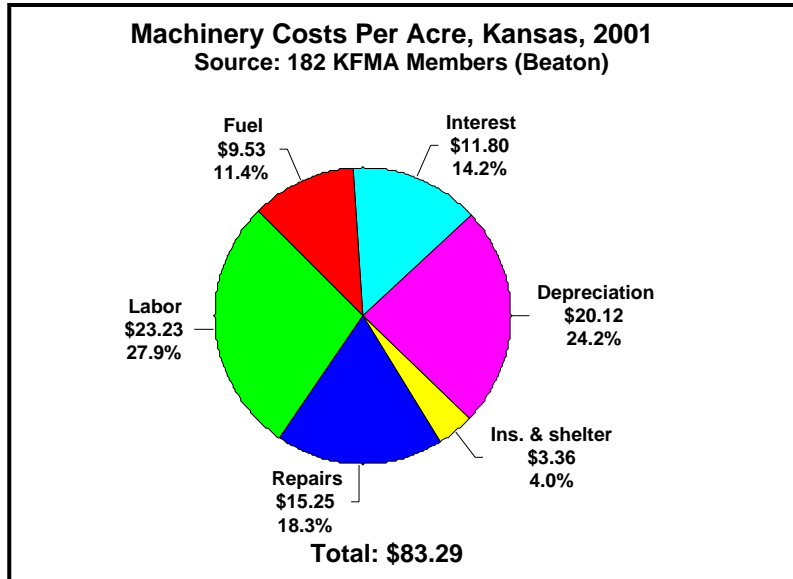
### Fuel Consumption and Diesel Price Impact for Various Field Operations

Operation	Fuel use gallons/acre	Fuel price increase, \$/gallon				Increase in operation cost, \$/acre
		\$0.25	\$0.50	\$0.75	\$1.00	
Chisel plow	0.64	\$0.16	\$0.32	\$0.48	\$0.64	\$0.80
Field cultivator	0.34	\$0.09	\$0.17	\$0.26	\$0.34	\$0.43
Tandem disk	0.49	\$0.12	\$0.25	\$0.37	\$0.49	\$0.61
Min-till planter	0.53	\$0.13	\$0.27	\$0.40	\$0.53	\$0.66
No-till drill	0.81	\$0.20	\$0.41	\$0.61	\$0.81	\$1.01
Sprayer	0.11	\$0.03	\$0.06	\$0.08	\$0.11	\$0.14
Swather-conditioner	0.42	\$0.11	\$0.21	\$0.32	\$0.42	\$0.53
Round baler	0.77	\$0.19	\$0.39	\$0.58	\$0.77	\$0.96
Combine--wheat	1.31	\$0.33	\$0.66	\$0.98	\$1.31	\$1.64
Combine--soybeans	2.02	\$0.51	\$1.01	\$1.52	\$2.02	\$2.53
Combine--corn	1.93	\$0.48	\$0.97	\$1.45	\$1.93	\$2.41

Source: Lazarus and Selley (abbreviated version)

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Fuel prices are extremely high, but fuel costs represent one of the smaller cost categories...



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Estimated effect diesel price has on machinery costs per acre based on custom rates...

**Fuel Consumption and Diesel Price Impact for Various Field Operations**

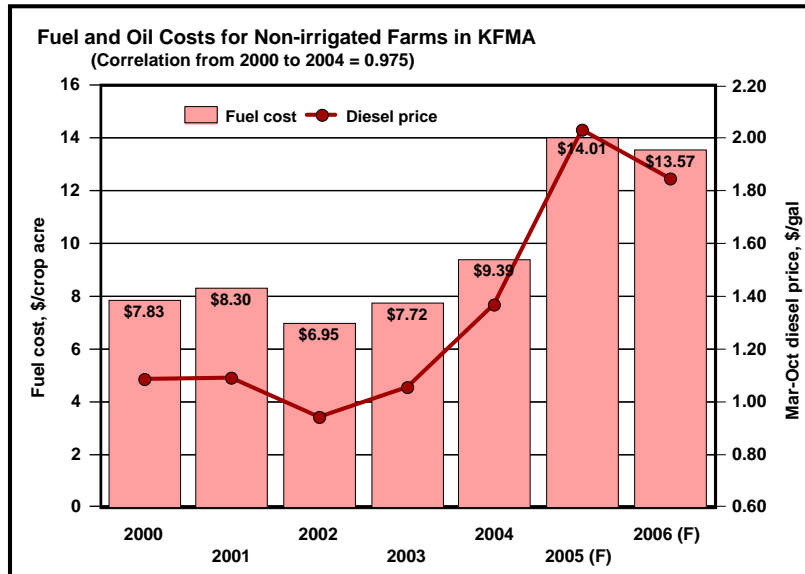
Operation	Custom rate*	Fuel price increase, \$/gallon				
		\$0.25	\$0.50	\$0.75	\$1.00	\$1.25
Increase in custom rate, \$/acre						
Chiseling	\$7.96	\$0.21	\$0.42	\$0.63	\$0.85	\$1.06
Field cultivation	\$6.27	\$0.17	\$0.33	\$0.50	\$0.67	\$0.83
Disking	\$6.84	\$0.18	\$0.36	\$0.54	\$0.73	\$0.91
Min-till planter	\$10.29	\$0.27	\$0.55	\$0.82	\$1.09	\$1.37
No-till drill	\$10.72	\$0.28	\$0.57	\$0.85	\$1.14	\$1.42
Sprayer	\$4.03	\$0.11	\$0.21	\$0.32	\$0.43	\$0.53
Swather-conditioner	\$8.90	\$0.24	\$0.47	\$0.71	\$0.94	\$1.18
Round baler	\$8.03	\$0.21	\$0.43	\$0.64	\$0.85	\$1.07
Combine--wheat	\$14.48	\$0.38	\$0.77	\$1.15	\$1.54	\$1.92
Combine--soybeans	\$20.06	\$0.53	\$1.06	\$1.60	\$2.13	\$2.66
Combine--corn	\$20.09	\$0.53	\$1.07	\$1.60	\$2.13	\$2.67

\* 2004 state average from Kansas Agricultural Statistics (assumes 14.4% of custom rate is fuel costs)  
2004 Mar-Oct average price of diesel = \$1.36/gallon

**Increase in custom rate                      2.7%      5.3%      8.0%      10.6%      13.3%**

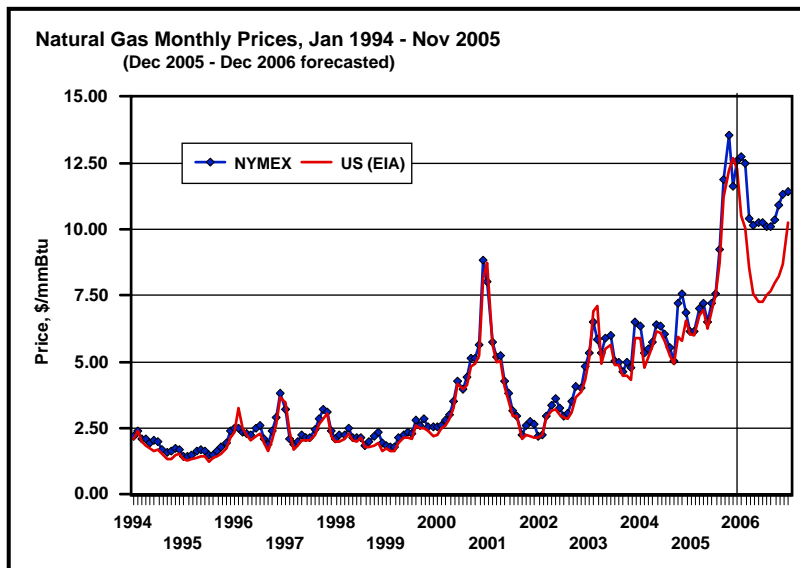
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### Fuel costs per acre versus diesel prices...



High correlation implies inelastic demand...

### Natural gas prices are at historically high levels...



## Historical and forecasted natural gas prices during principal farming months...

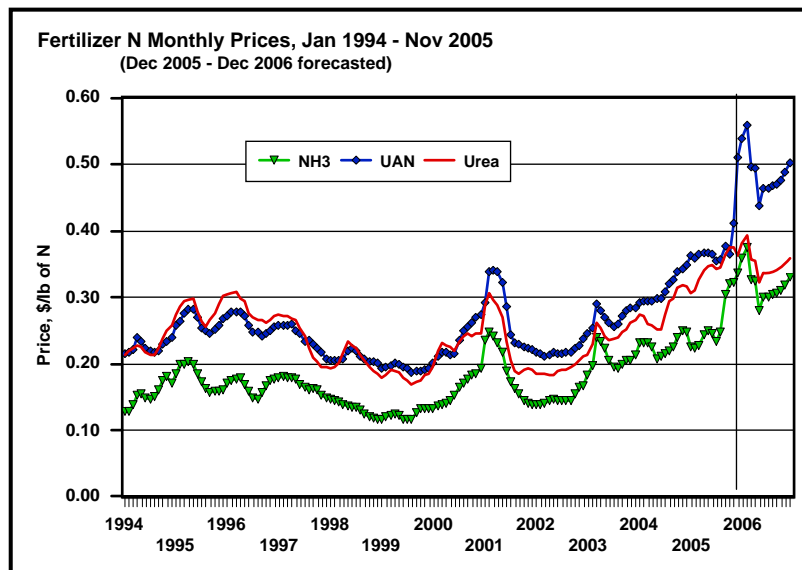
### Natural Gas Prices

Year	Mar-Oct Natural Gas Price			Year-to-year percent change		
	NYMEX	US (EIA)	Average	NYMEX	US (EIA)	Average
2000	\$4.04	\$3.85	\$3.95	----	----	----
2001	\$3.69	\$3.49	\$3.59	-8.6%	-9.3%	-9.0%
2002	\$3.35	\$3.12	\$3.23	-9.2%	-10.7%	-10.0%
2003	\$5.35	\$5.24	\$5.30	59.5%	68.2%	63.7%
2004	\$5.99	\$5.63	\$5.81	11.9%	7.5%	9.7%
2005	\$8.77	\$8.33	\$8.55	46.5%	47.8%	47.2%
2006 (F)	\$10.32	\$7.76	\$9.04	17.7%	-6.8%	5.8%
05 - Avg(00-04)	\$4.28	\$4.06	\$4.17	95.5%	95.3%	95.4%
06 - Avg(00-04)	\$5.84	\$3.50	\$4.67	130.2%	82.0%	106.7%

F = forecast

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## Nitrogen fertilizer prices are at historically high levels...



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## Historical and forecasted fertilizer prices during principal fertilizing months...

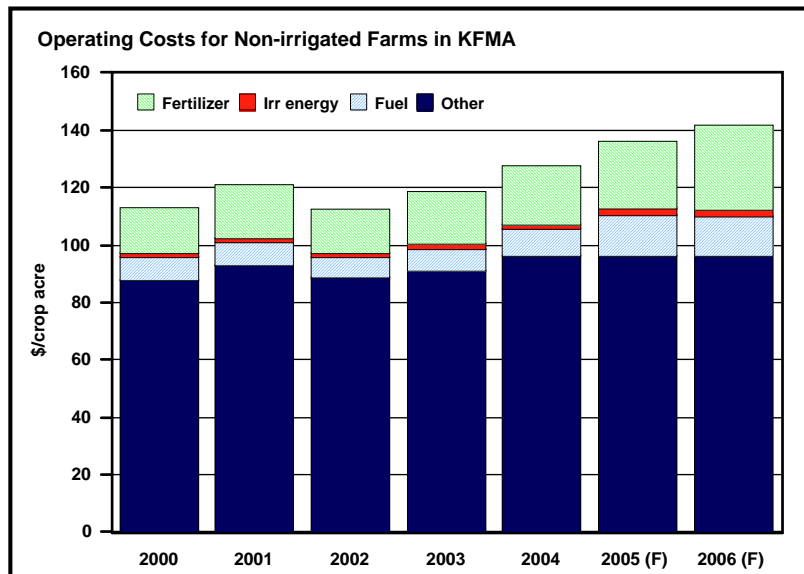
### Fertilizer Prices (Corn Belt)

Year	NH3 (82%)	UAN (32%)	Urea (46%)	- P -	- K -	Wtd Avg	Year-to-year % change
2000	\$0.136	\$0.204	\$0.205	\$0.211	\$0.148	\$0.175	----
2001	\$0.217	\$0.305	\$0.272	\$0.193	\$0.148	\$0.234	33.2%
2002	\$0.141	\$0.218	\$0.187	\$0.201	\$0.144	\$0.175	-25.3%
2003	\$0.195	\$0.253	\$0.227	\$0.209	\$0.141	\$0.211	20.7%
2004	\$0.218	\$0.290	\$0.262	\$0.214	\$0.141	\$0.234	10.8%
2005	\$0.238	\$0.356	\$0.322	\$0.223	\$0.174	\$0.267	14.4%
2006 (F)	\$0.330	\$0.476	\$0.365	\$0.224	\$0.190	\$0.333	24.8%
05 - Avg(00-04)	\$0.057	\$0.103	\$0.092	\$0.017	\$0.029	\$0.061	29.9%
06 - Avg(00-04)	\$0.148	\$0.222	\$0.134	\$0.019	\$0.045	\$0.128	62.1%
05 / Avg(00-04)	31.2%	40.4%	39.7%	8.3%	20.4%	29.9%	
06 / Avg(00-04)	81.7%	87.6%	58.2%	9.0%	31.4%	62.1%	

\* Oct-Dec of previous year (P = average of 10-34-0 and 18-46-0, K = muriate of potash)  
F = forecast

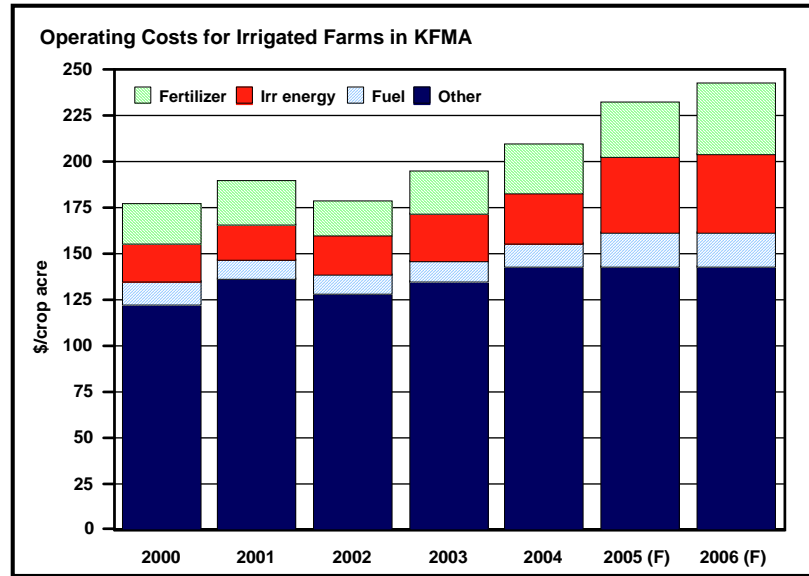
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## Costs per acre will be up in 2006 for third straight year...



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**Costs per acre will be up in 2006 for third straight year...**



**Fertilizer cost estimates for Iowa producers...**

	Com following Soybeans					Herbicide Tolerant Soybeans following Corn				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
<b>\$ Acre Unless Noted</b>										
Fertilizer Cost	\$40.56	\$50.05	\$53.68	\$61.53	\$72.99	\$19.98	\$20.95	\$23.08	\$28.34	\$31.22
Fertilizer (\$ Bu)	\$0.24	\$0.29	\$0.32	\$0.36	\$0.43	\$0.40	\$0.42	\$0.46	\$0.57	\$0.62
Fertilizer Percent of Variable Cost	24%	27%	28%	28%	28%	20%	20%	21%	24%	23%
Fertilizer Percent of Total Cost	11%	13%	13%	14%	15%	7%	7%	8%	9%	9%
Application Rate (lbs N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> O Acre)	255	255	255	255	255	131	131	131	131	131
Nitrogen (lbs N)	140	140	140	140	140	16	16	16	16	16
from Ammonia	115	115	115	115	115	0	0	0	0	0
from DAP	25	25	25	25	25	16	16	16	16	16
Phosphate (lbs P <sub>2</sub> O <sub>5</sub> from DAP)	65	65	65	65	65	40	40	40	40	40
Potash (lbs K <sub>2</sub> O from MOP)	50	50	50	50	50	75	75	75	75	75
Cost and Use by Product										
Ammonia Price (\$ Ton)	\$254	\$368	\$387	\$429	\$550	\$254	\$368	\$387	\$429	\$550
Ammonia Application (Tons Acre)	0.070	0.070	0.070	0.070	0.070	0.000	0.000	0.000	0.000	0.000
Ammonia Cost (\$ Acre)	\$17.74	\$25.71	\$27.03	\$29.97	\$38.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Ammonia Cost (\$ Bu)	\$0.10	\$0.15	\$0.16	\$0.18	\$0.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
DAP Price (\$ Ton)	\$228	\$249	\$275	\$304	\$330	\$228	\$249	\$275	\$304	\$330
DAP Application (Tons Acre)	0.071	0.071	0.071	0.071	0.071	0.043	0.043	0.043	0.043	0.043
DAP Cost (\$ Acre)	\$16.11	\$17.59	\$19.43	\$21.48	\$23.32	\$9.91	\$10.83	\$11.96	\$13.22	\$14.35
DAP Cost (\$ Bu)	\$0.09	\$0.10	\$0.11	\$0.13	\$0.14	\$0.20	\$0.22	\$0.24	\$0.26	\$0.29
MOP Price (\$ Ton)	\$161	\$162	\$178	\$242	\$270	\$161	\$162	\$178	\$242	\$270
MOP Application (Tons Acre)	0.042	0.042	0.042	0.042	0.042	0.063	0.063	0.063	0.063	0.063
MOP Cost (\$ Acre)	\$6.71	\$6.75	\$7.42	\$10.08	\$11.25	\$10.06	\$10.13	\$11.13	\$15.13	\$16.88
MOP Cost (\$ Bu)	\$0.04	\$0.04	\$0.04	\$0.06	\$0.07	\$0.20	\$0.20	\$0.22	\$0.30	\$0.34

Fertilizer costs from year-to-year assume no change in application rate

## Production cost estimates for Iowa producers...

Estimated Cost of Production for an Iowa Farm										
	Com following Soybeans					Herbicide Tolerant Soybeans following Com				
\$ Acre Unless Noted	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
Expected Yield (Bu Acre)	170	170	170	170	170	50	50	50	50	50
Variable Machinery (Fuel, Oil & Repair)*	\$16.81	\$20.29	\$21.27	\$26.51	\$43.20	\$11.39	\$13.91	\$13.27	\$17.08	\$26.65
Diesel Fuel Cost (\$ Gallon)	\$0.90	\$1.05	\$1.10	\$1.65	\$2.40	\$0.90	\$1.05	\$1.10	\$1.65	\$2.40
Seed	\$30.00	\$31.80	\$30.00	\$40.20	\$42.00	\$25.20	\$31.25	\$31.92	\$32.00	\$33.00
Herbicide	\$31.00	\$30.00	\$32.00	\$32.00	\$32.00	\$23.00	\$18.68	\$18.72	\$18.00	\$18.00
Fertilizer*	\$40.56	\$50.05	\$53.88	\$61.53	\$72.99	\$19.98	\$20.95	\$23.08	\$28.34	\$31.22
Grain Drying*	\$24.08	\$24.08	\$28.33	\$32.58	\$43.90	na	na	na	na	na
LP Gas Cost (\$ Gallon)	\$0.85	\$0.85	\$1.00	\$1.15	\$1.55	na	na	na	na	na
Other	\$26.90	\$25.92	\$27.13	\$28.70	\$30.00	\$20.52	\$20.06	\$21.69	\$23.54	\$24.75
Variable Cost	\$169.35	\$182.14	\$192.61	\$221.52	\$264.09	\$100.09	\$104.85	\$108.68	\$118.96	\$133.62
Variable Cost (\$ Bu)	\$1.00	\$1.07	\$1.13	\$1.30	\$1.55	\$2.00	\$2.10	\$2.17	\$2.38	\$2.67
Energy Sensitive Variable Cost	\$81.45	\$94.42	\$103.48	\$120.62	\$160.09	\$31.37	\$34.86	\$36.35	\$45.42	\$57.87
Energy Sensitive Variable Cost (\$ Bu)	\$0.48	\$0.56	\$0.61	\$0.71	\$0.94	\$0.63	\$0.70	\$0.73	\$0.91	\$1.16
Percent of Variable Cost	48%	52%	54%	54%	61%	31%	33%	33%	38%	43%
Percent of Total Cost	22%	24%	25%	27%	32%	12%	12%	12%	14%	17%
Other Variable Cost	\$87.90	\$87.72	\$89.13	\$100.90	\$104.00	\$68.72	\$69.99	\$72.33	\$73.54	\$75.75
Other Variable Cost (\$ Bu)	\$0.52	\$0.52	\$0.52	\$0.59	\$0.61	\$1.37	\$1.40	\$1.45	\$1.47	\$1.52
Percent of Variable Cost	52%	48%	46%	46%	39%	69%	67%	67%	62%	57%
Percent of Total Cost	23%	22%	21%	23%	21%	25%	24%	25%	23%	22%
Fixed Cost	\$205.25	\$218.20	\$225.92	\$224.70	\$230.32	\$170.23	\$181.52	\$186.37	\$207.06	\$212.24
Fixed Cost (\$ Bu)	\$1.21	\$1.28	\$1.33	\$1.32	\$1.35	\$3.40	\$3.63	\$3.73	\$4.14	\$4.24
Total Cost	\$374.60	\$400.34	\$418.53	\$446.22	\$494.41	\$270.32	\$286.37	\$295.05	\$326.02	\$345.86
Total Cost (\$ Bu)	\$2.20	\$2.35	\$2.46	\$2.62	\$2.91	\$5.41	\$5.73	\$5.90	\$6.52	\$6.92

\*Energy Sensitive Cost  
Source: Iowa State University Extension Service and Mosaic.

Fertilizer costs from year-to-year assume no change in application rate

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## K-State Crop Budgets

- Projected budgets – Farm Management Guides
- Actual budgets – KFMA Enterprise Analysis
- Both available on [www.agmanager.info](http://www.agmanager.info)



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AgManager: Providing Agricultural Economic Information on Crops, Livestock, Marketing and Outlook - Microsoft Internet Explorer

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- Modifying Fertilizer Recs to Reflect Price**  
December 2, 2005 by Karlens et al.
- Impact of Energy Prices on KS Farm Costs**  
December 2, 2005 by Dhuyvetter et al.
- Livestock and Hay Charts**  
December 2, 2005 by Jim Mintert
- Updated Cattle Databases**  
December 2, 2005 by Jim Mintert
- Updated Crop Basis Tool**  
December 1, 2005 by Kevin Dhuyvetter
- Monthly NH3 and Diesel Price Forecasts**  
November 30, 2005 by Kevin Dhuyvetter
- In The Cattle Markets**  
November 28, 2005 by Jim Mintert/LMIC
- The U.S. Ethanol Industry**  
November 25, 2005 by Dhuyvetter et al.
- Livestock Farm Management Update**  
November 18, 2005 by Rod Jones
- Crop Basis Maps**  
November 16, 2005, by Kevin Dhuyvetter
- Livestock Risk Protection**  
November 17, 2005 by Dhuyvetter and Mintert
- Grain Outlook**  
November 17, 2005 by Mike Woolverton
- Cost Comparison of Silage Storage Alternatives**  
November 8, 2005 by Dhuyvetter et al.

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## Farm Management

Farm management refers to the decisions made by producers, investors, and agricultural businesses to be as profitable and competitive as possible. Information is provided regarding the factors that affect profitability and risk including production, marketing, and finance decisions.

- Farm Income**
- Finance**
- Land and Leasing**
- Machinery**
- Business Planning**
- Farm Management Guides**
- Links to Useful Farm Management Sites**

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ApManager Farm Management Guides: Nonirrigated Crops - Microsoft Internet Explorer

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## Nonirrigated Crops

Crop	Western	South Central	North Central	Northeast	Southeast	Southwest
Wheat	MF-903	MF-574	MF-2158	MF-572	MF-992	
Grain Sorghum	MF-904	MF-575	MF-2159	MF-573	MF-995	
Forage Sorghum Silage		MF-548				
Soybeans	MF-2366	MF-2156	MF-2160	MF-570	MF-994	
Double Crop Soybeans		MF-2537	MF-2137	MF-2137	MF-2137	
Corn	MF-2150	MF-2157	MF-2161	MF-571	MF993	
Corn Silage				MF-2364		
Sunflower	MF-887		MF-2144	MF-2144		
Double Crop Sunflower		MF-2145	MF-2145	MF-2145	MF-2145	
Canola		MF-2421				
Cane Hay	MF-997					
Alfalfa	MF-2367	MF-363	MF-2365	MF-2365	MF-363	
Cotton		MF-939			MF-939	MF-2565
Brome Hay		MF-2143	MF-2143	MF-2143	MF-2143	
Fescue Hay		MF-2146	MF-2146	MF-2146	MF-2146	

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Crops - Microsoft Internet Explorer

Address: <http://www.agmanager.info/crops/>

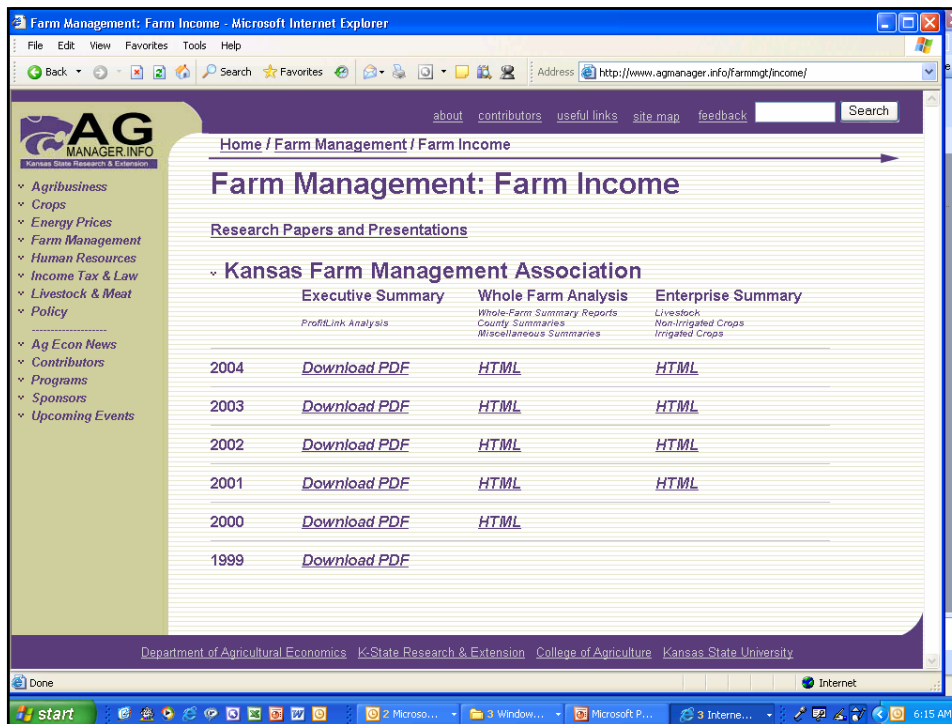
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This site contains information regarding crop marketing, budgets, and policy issues to assist producers in making marketing and management decisions.

- Marketing**  
 Extension bulletins, newsletters, and market price databases to assist with crop marketing decisions.
- Crop Insurance and Risk**  
 Strategies, newsletters, and decision-making tools to assist farmers with marketing and risk management decisions.
- Projected Budgets**  
 Decision-making tools to help calculate the costs and returns associated with various crops.
- Production Economics & Precision Agriculture**  
 Price forecasts, production publications, and decision-making tools to compare the irrigation pumping costs of various energy sources or the returns of certified and farmer-saved seed.
- Links to Other Crop Information**
  - Enterprise Summaries  
These reports provide detailed information to allow comparison with your own records or your individual KFMA yearend analysis summary of your farming operation.
  - Crop Policy



## Projected budgets...

- Wheat, corn, milo, soybeans, sunflowers, alfalfa
- NC KS dryland (no-till), western KS irrigated
- Crop prices based on futures market 12/2/05
- Machinery costs – 2004 vs. 2006-fuel-adjusted-rate
- Natural gas – 2000-04 avg vs. projected 2006 value
- Fertilizer – 2000-04 avg vs. projected 2006 values
- Inputs based on KSU Farm Management Guides except N fertilizer and irrigation → optimal levels

Focus should be on changes and relative differences rather than absolute values

## Cost scenarios...

	Average Prices	Current Prices
<b>Machinery</b>	2004 custom rates	2004 custom rates x 110%
<b>Fertilizer</b>	2000-04 avg	2006 forecast
<b>N</b>	\$0.21/lb	\$0.40/lb (+90%)
<b>P</b>	\$0.25/lb	\$0.31/lb (+23%)
<b>K</b>	\$0.20/lb	\$0.26/lb (+30%)
<b>Irrigation</b>	2000-04 avg \$3.10/inch	2006 forecast \$6.50/inch (+110%)

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Microsoft Excel - KSU Crop budgets (12-2-05 - NC dryland crops).xls

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100%

	Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa	Rotation1	Rotation2
Percent of rotation (total - 100%)	52%	5%	25%	10%	3%	5%	100%	0%
Yield Goal (YG), bu/ac	55.0	85.0	85.0	34.0	1600.0	3.5		
Enter 0 for Dryland or 1 for Irrigated	0	0	0	0	0	0		
Annual rainfall	30.0	30.0	30.0	30.0	30.0	30.0		
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00	2.00		
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0	20.0		
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0	0.0		
Nitrogen fertilizer cost, \$/lb	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40		
Irrigation energy cost, \$/inch	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50		
KSU recommended nitrogen, lbs/ac	92.0	76.0	76.0	0.0	60.0	---		
Econ Optimum fertN, lbs/ac	81.1	64.0	64.5	0.0	51.5	---		
Econ Optimum Irrigation Amount, in	0.0	0.0	0.0	0.0	0.0	---		
Yield at optimal N and I, bu/ac	53.6	82.8	82.6	30.6	1570.2	---		
<b>INCOME PER ACRE</b>								
A. Yield per acre	53.6	82.8	82.6	30.6	1,570.2	3.5	---	---
B. Price per unit	\$3.25	\$2.18	\$2.11	\$5.45	\$0.183	\$71.00	---	---
C. Net government payments	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	n/a
D. Indemnity payments	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a
E. Miscellaneous income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a
F. Returns/acre ((A x B) + C + D + E)	\$189.08	\$195.61	\$189.38	\$181.77	\$200.84	\$263.50	\$192.82	n/a
<b>COSTS PER ACRE</b>								
1. Seed	\$9.60	\$43.20	\$11.80	\$39.90	\$18.04	\$11.13	\$15.19	n/a
2. Herbicide	5.25	30.00	27.30	11.20	12.10	3.00	12.69	n/a
3. Insecticide / Fungicide	0.00	0.00	0.00	0.00	14.35	6.70	0.77	n/a
4. Fertilizer and Lime	46.57	41.50	42.32	13.39	34.67	31.23	40.81	n/a
5. Crop Consulting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a
6. Crop Insurance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a
7. Drying	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a
8. Miscellaneous	6.25	6.25	6.25	6.25	6.25	6.25	6.25	n/a
9. Machinery Expense	49.13	55.08	67.74	51.41	58.06	114.52	57.69	n/a
10. Non-machinery Labor	5.50	7.50	7.50	6.00	6.50	12.00	6.51	n/a
11. Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a
12. Land Charge / Rent	45.90	45.90	45.90	45.90	45.90	45.90	45.90	n/a
G. SUB TOTAL	\$168.20	\$229.43	\$208.81	\$174.05	\$195.87	\$227.73	\$185.80	n/a
13. Interest on 1/2 Nonland Costs	4.89	7.34	6.52	5.13	6.00	7.27	5.60	n/a
H. TOTAL COSTS	\$173.09	\$236.77	\$215.32	\$179.18	\$201.87	\$235.00	\$191.40	n/a
I. RETURNS OVER COSTS (F - H)	\$15.99	(\$41.16)	(\$25.94)	\$2.59	(\$1.04)	\$28.50	\$1.43	n/a

start

Microsoft Excel - KSU Crop budgets (12-2-05 -- Irrigated crops).xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

	A	B	C	D	E	F	G	H	I	J	K	L	M
2	<b>Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels</b>												
3	Crop/System		Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa			Rotation1	Rotation2	
4	Percent of rotation (total - 100%)		24.0%	49.0%	7.5%	6.0%	1.0%	12.5%			100%	0%	
7	Yield Goal (YG), bu/ac		75.0	225.0	125.0	65.0	2800.0	7.5					
8	Enter 0 for Dryland or 1 for Irrigated		1	1	1	1	1	1					
9	Annual rainfall		18.0	18.0	18.0	18.0	18.0	18.0					
10	Organic matter (OM), %		2.00	2.00	2.00	2.00	2.00	2.00					
11	Soil test nitrogen (STN), lbs/ac		20.0	20.0	20.0	20.0	20.0	20.0					
12	Other N adjustments, lbs/ac		0.0	0.0	0.0	0.0	0.0	0.0					
13	Nitrogen fertilizer cost, \$/lb		\$8.40	\$8.40	\$8.40	\$8.40	\$8.40	\$8.40					
14	Irrigation energy cost, \$/inch		\$6.50	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50					
15	KSU recommended nitrogen, lbs/ac		140.0	300.0	140.0	0.0	150.0	---					
16	Econ Optimum fertN, lbs/ac		66.5	224.9	66.9	0.0	82.7	---					
17	Econ Optimum Irrigation Amount, in		7.6	14.2	8.3	15.2	10.6	---					
18	Yield at optimal N and I, bu/ac		59.2	208.6	102.7	58.5	2419.5	---					
20	<b>INCOME PER ACRE</b>												
21	A. Yield per acre		59.2	208.6	102.7	58.5	2,419.5	7.5					
22	B. Price per unit		\$3.18	\$2.43	\$2.13	\$5.41	\$0.1193	\$71.00					
23	C. Net government payments		\$36.00	\$36.00	\$36.00	\$36.00	\$36.00	\$36.00			\$36.00	n/a	
24	D. Indemnity payments		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$0.00	n/a	
25	E. Miscellaneous income		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$0.00	n/a	
26	F. Returns/acre ((A x B) + C + D + E)		\$224.17	\$542.90	\$254.79	\$352.49	\$322.34	\$568.50			\$434.36	n/a	
28	<b>COSTS PER ACRE</b>												
29	1. Seed		\$7.20	\$50.66	\$19.18	\$31.50	\$19.19	\$11.13			\$31.46	n/a	
30	2. Herbicide		5.20	30.50	27.00	15.00	18.90	16.00			21.31	n/a	
31	3. Insecticide / Fungicide		0.00	38.70	0.00	0.00	14.35	8.60			20.18	n/a	
32	4. Fertilizer and Lime		36.70	117.54	40.30	15.60	48.81	38.44			75.66	n/a	
33	5. Crop Consulting		6.00	6.50	6.25	6.25	6.50	6.50			6.35	n/a	
34	6. Crop Insurance		0.00	0.00	0.00	0.00	0.00	0.00			0.00	n/a	
35	7. Drying		0.00	0.00	0.00	0.00	0.00	0.00			0.00	n/a	
36	8. Miscellaneous		10.00	10.00	10.00	10.00	10.00	10.00			10.00	n/a	
37	9. Machinery Expense		72.45	111.50	92.82	72.26	81.72	164.04			107.18	n/a	
38	10. Non-machinery Labor		8.00	13.50	10.00	8.50	9.00	20.00			12.39	n/a	
39	11. Irrigation		145.63	190.51	150.39	197.31	166.03	257.15			185.22	n/a	
40	12. Land Charge / Rent		40.80	40.80	40.80	40.80	40.80	40.80			40.80	n/a	
41	G. SUB TOTAL		\$331.98	\$610.30	\$396.74	\$397.21	\$415.29	\$592.66			\$510.54	n/a	
42	H. Interest on 1/2 Nonland Costs		8.09	19.22	10.68	10.70	11.42	18.52			15.23	n/a	
43	H. TOTAL COSTS		\$340.07	\$629.52	\$407.42	\$407.91	\$426.71	\$611.17			\$525.77	n/a	
44	I. RETURNS OVER COSTS (F - H)		(\$15.89)	(\$86.62)	(\$152.63)	(\$55.42)	(\$104.37)	(\$42.67)			(\$91.41)	n/a	

Budgets / Sensitivity / Optimal N&I / Figures / Tank mix costs / Irr energy costs / RLmodel / Tables

start

## Dryland optimal fertilizer N values @ \$0.21/lb N

### Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels

Crop/System	Wheat	Corn	Sorghum	Soybean	Sunflower
Rotation (1 or 2, if none enter 0)	1	1	1	1	1
Percent of rotation (total - 100%)	52%	5%	25%	10%	3%
Yield Goal (YG), bu/ac	55.0	85.0	85.0	34.0	1600.0
Enter 0 for Dryland or 1 for Irrigated	0	0	0	0	0
Annual rainfall	30.0	30.0	30.0	30.0	30.0
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0
Nitrogen fertilizer cost, \$/lb	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21
Irrigation energy cost, \$/inch	\$3.10	\$3.10	\$3.10	\$3.10	\$3.10
KSU recommended nitrogen, lbs/ac	92.0	76.0	76.0	0.0	60.0
Econ Optimum fertN, lbs/ac	92.2	75.1	76.3	0.0	59.9
Econ Optimum Irrigation Amount, in	0.0	0.0	0.0	0.0	0.0
Yield at optimal N and I, bu/ac	54.6	84.4	84.4	30.6	1591.8

Optimal rates are very close to KSU recommendations because prices are similar to long-term averages

## Dryland optimal fertilizer N values @ \$0.40/lb N

Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels					
Crop/System	Wheat	Corn	Sorghum	Soybean	Sunflower
Rotation (1 or 2, if none enter 0)	1	1	1	1	1
Percent of rotation (total - 100%)	52%	5%	25%	10%	3%
Yield Goal (YG), bu/ac	55.0	85.0	85.0	34.0	1600.0
Enter 0 for Dryland or 1 for Irrigated	0	0	0	0	0
Annual rainfall	30.0	30.0	30.0	30.0	30.0
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0
Nitrogen fertilizer cost, \$/lb	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Irrigation energy cost, \$/inch	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50
KSU recommended nitrogen, lbs/ac	92.0	76.0	76.0	0.0	60.0
Econ Optimum fertN, lbs/ac	81.1	64.0	64.5	0.0	51.5
Econ Optimum Irrigation Amount, in	0.0	0.0	0.0	0.0	0.0
Yield at optimal N and I, bu/ac	53.6	82.8	82.6	30.6	1570.2

Optimal rates are about 10-15% less than KSU recommendations at high N price

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## Irrigated optimal fert N values @ \$0.21/lb N & \$3.10/in

Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels					
Crop/System	Wheat	Corn	Sorghum	Soybean	Sunflower
Rotation (1 or 2, if none enter 0)	1	1	1	1	1
Percent of rotation (total - 100%)	24.0%	49.0%	7.5%	6.0%	1.0%
Yield Goal (YG), bu/ac	75.0	225.0	125.0	65.0	2800.0
Enter 0 for Dryland or 1 for Irrigated	1	1	1	1	1
Annual rainfall	18.0	18.0	18.0	18.0	18.0
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0
Nitrogen fertilizer cost, \$/lb	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21
Irrigation energy cost, \$/inch	\$3.10	\$3.10	\$3.10	\$3.10	\$3.10
KSU recommended nitrogen, lbs/ac	140.0	300.0	140.0	0.0	150.0
Econ Optimum fertN, lbs/ac	112.3	278.3	113.5	0.0	124.6
Econ Optimum Irrigation Amount, in	12.6	17.1	12.8	16.6	15.0
Yield at optimal N and I, bu/ac	71.1	221.0	119.5	58.5	2706.4

Optimal rates are below KSU recommendations because of irrigation

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## Irrigated optimal fert N values @ \$0.40/lb N & \$3.10/in

Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels					
Crop/System	Wheat	Corn	Sorghum	Soybean	Sunflower
Rotation (1 or 2, if none enter 0)	1	1	1	1	1
Percent of rotation (total - 100%)	24.0%	49.0%	7.5%	6.0%	1.0%
Yield Goal (YG), bu/ac	75.0	225.0	125.0	65.0	2800.0
Enter 0 for Dryland or 1 for Irrigated	1	1	1	1	1
Annual rainfall	18.0	18.0	18.0	18.0	18.0
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0
Nitrogen fertilizer cost, \$/lb	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Irrigation energy cost, \$/inch	\$3.10	\$3.10	\$3.10	\$3.10	\$3.10
KSU recommended nitrogen, lbs/ac	140.0	300.0	140.0	0.0	150.0
Econ Optimum fertN, lbs/ac	96.7	250.7	95.9	0.0	110.3
Econ Optimum Irrigation Amount, in	10.9	15.6	11.1	16.6	13.5
Yield at optimal N and I, bu/ac	68.0	215.6	114.5	58.5	2630.3

Optimal rates decrease 10-15% at high N price

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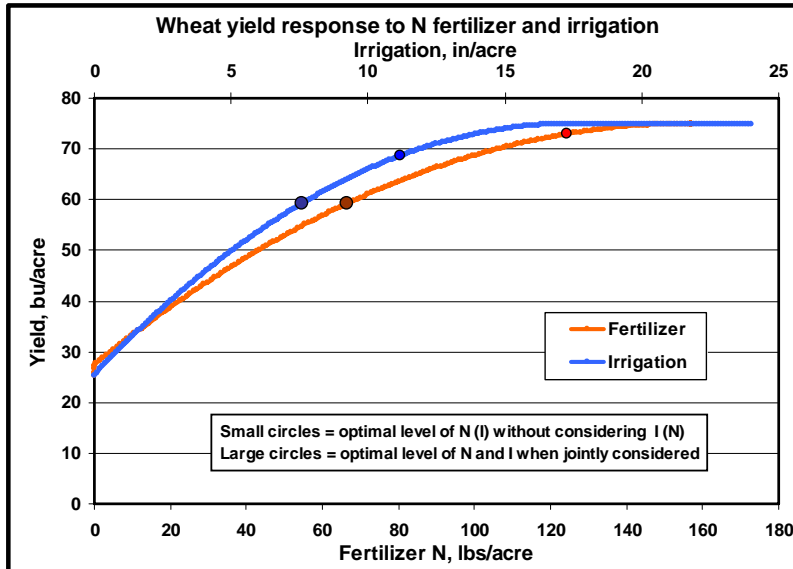
## Irrigated optimal fert N values @ \$0.40/lb N & \$6.50/in

Comparison of Crop Returns with Nitrogen Fertilizer and Irrigation Water at Economic Optimum Levels					
Crop/System	Wheat	Corn	Sorghum	Soybean	Sunflower
Rotation (1 or 2, if none enter 0)	1	1	1	1	1
Percent of rotation (total - 100%)	24.0%	49.0%	7.5%	6.0%	1.0%
Yield Goal (YG), bu/ac	75.0	225.0	125.0	65.0	2800.0
Enter 0 for Dryland or 1 for Irrigated	1	1	1	1	1
Annual rainfall	18.0	18.0	18.0	18.0	18.0
Organic matter (OM), %	2.00	2.00	2.00	2.00	2.00
Soil test nitrogen (STN), lbs/ac	20.0	20.0	20.0	20.0	20.0
Other N adjustments, lbs/ac	0.0	0.0	0.0	0.0	0.0
Nitrogen fertilizer cost, \$/lb	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Irrigation energy cost, \$/inch	\$6.50	\$6.50	\$6.50	\$6.50	\$6.50
KSU recommended nitrogen, lbs/ac	140.0	300.0	140.0	0.0	150.0
Econ Optimum fertN, lbs/ac	66.5	224.9	66.9	0.0	82.7
Econ Optimum Irrigation Amount, in	7.6	14.2	8.3	15.2	10.6
Yield at optimal N and I, bu/ac	59.2	208.6	102.7	58.5	2419.5

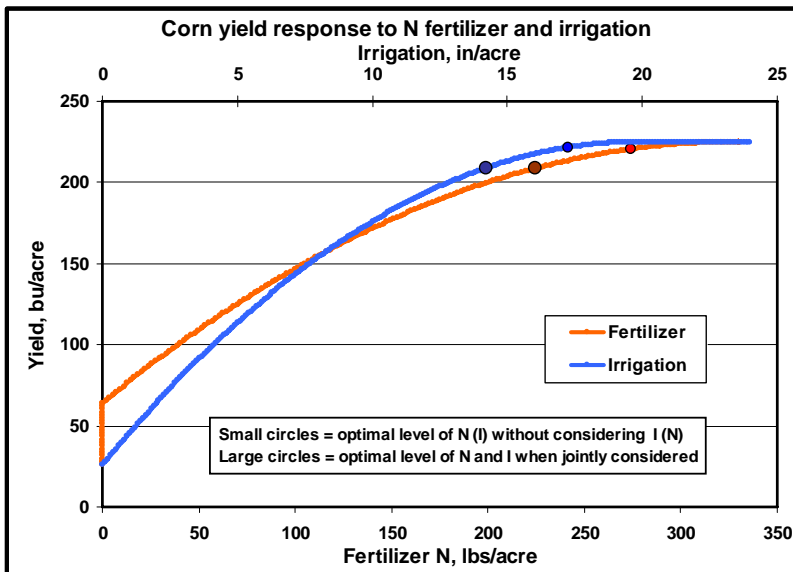
At high N and irrigation costs, optimal rates decrease significantly

32

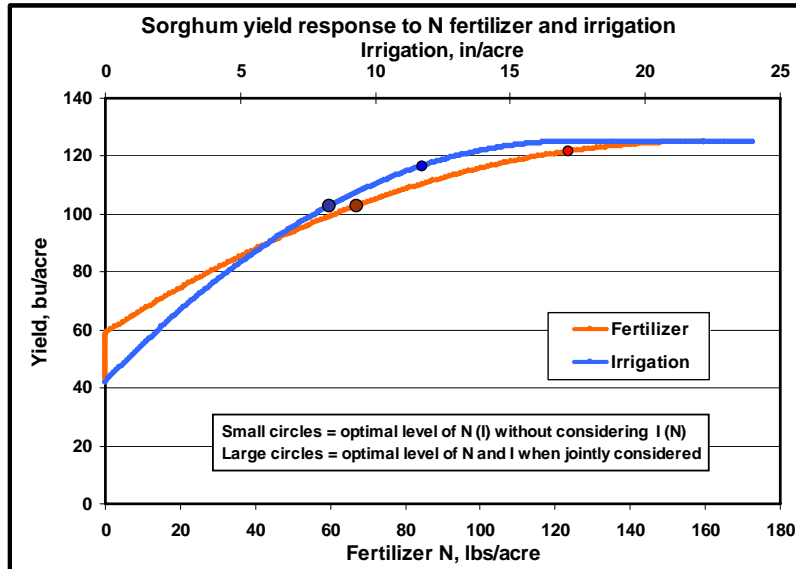
When considering irrigation and N together, optimal values decrease significantly...



When considering irrigation and N together, optimal values decrease significantly...

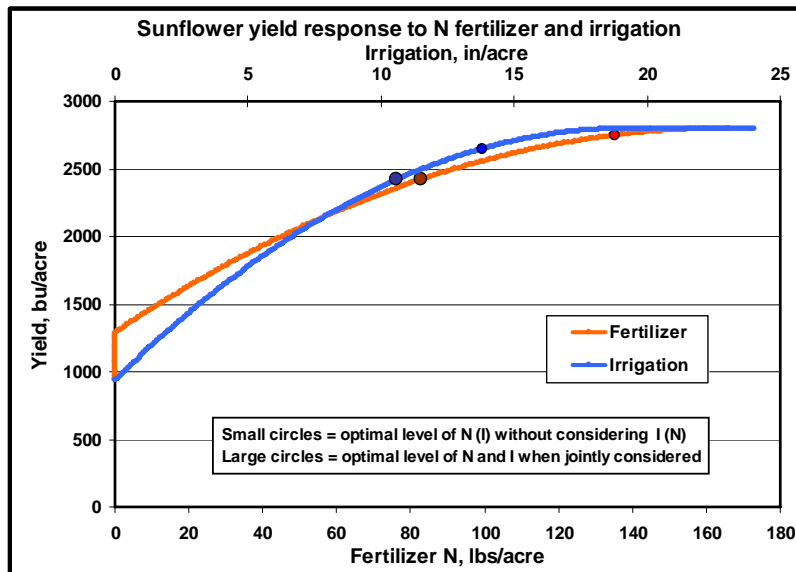


When considering irrigation and N together, optimal values decrease significantly...



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When considering irrigation and N together, optimal values decrease significantly...



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## Dryland crops example profitability summary ...

### Comparison of Crop Returns under Various Input Price Scenarios

Crop	Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa	Wtd Avg
Base scenario <sup>1</sup>	\$38.95	(\$20.80)	(\$4.21)	\$9.09	\$17.06	\$45.18	\$21.84
At forecasted 2006 prices for...							
Fuel <sup>2</sup>	\$34.28	(\$26.04)	(\$10.66)	\$4.23	\$11.57	\$34.63	\$16.36
Fertilizer <sup>2</sup>	\$20.64	(\$35.96)	(\$19.54)	\$7.45	\$4.45	\$39.04	\$6.88
Natural gas <sup>2</sup>	\$38.95	(\$20.80)	(\$4.21)	\$9.09	\$17.06	\$45.18	\$21.84
Fuel, fert, and nat gas <sup>2</sup>	\$15.99	(\$41.16)	(\$25.94)	\$2.59	(\$1.04)	\$28.50	\$1.43

<sup>1</sup>Returns based on current Farm Management Guide costs except fuel, fertilizer, and irrigation pumping (2000-04 avg) and futures-based crop prices as of 12/2/05.

<sup>2</sup>All other costs and crop prices are the same as in base scenario (yields vary with fertilizer and irrigation costs).

<b>Change, \$/ac</b>	<b>-\$22.96</b>	<b>-\$20.37</b>	<b>-\$21.74</b>	<b>-\$6.49</b>	<b>-\$18.10</b>	<b>-\$16.88</b>	<b>-\$20.42</b>
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## Irrigated crops example profitability summary ...

### Comparison of Crop Returns under Various Input Price Scenarios

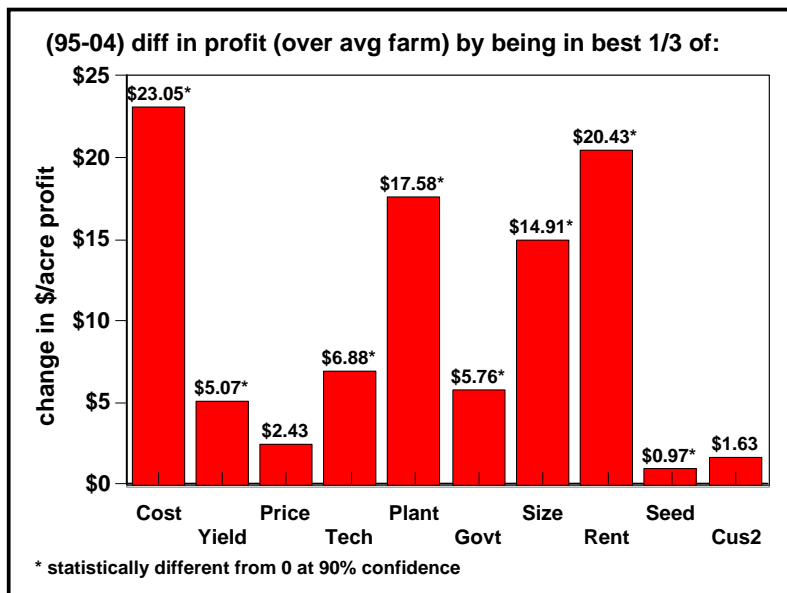
Crop	Wheat	Corn	Sorghum	Soybean	Sunflower	Alfalfa	Wtd Avg
Base scenario <sup>1</sup>	(\$61.76)	\$27.59	(\$95.53)	\$3.24	(\$31.14)	\$67.06	(\$0.20)
At forecasted 2006 prices for...							
Fuel <sup>2</sup>	(\$68.95)	\$16.72	(\$104.77)	(\$3.59)	(\$38.93)	\$49.66	(\$10.61)
Fertilizer <sup>2</sup>	(\$82.41)	(\$27.22)	(\$116.29)	\$0.21	(\$56.41)	\$59.59	(\$34.94)
Natural gas <sup>2</sup>	(\$95.64)	(\$27.51)	(\$130.31)	(\$45.56)	(\$77.09)	(\$17.80)	(\$51.94)
Fuel, fert, and nat gas <sup>2</sup>	(\$115.89)	(\$86.62)	(\$152.63)	(\$55.42)	(\$104.37)	(\$42.67)	(\$91.41)

<sup>1</sup>Returns based on current Farm Management Guide costs except fuel, fertilizer, and irrigation pumping (2000-04 avg) and futures-based crop prices as of 12/2/05.

<sup>2</sup>All other costs and crop prices are the same as in base scenario (yields vary with fertilizer and irrigation costs).

<b>Change, \$/ac</b>	<b>-\$54.13</b>	<b>-\$114.21</b>	<b>-\$57.10</b>	<b>-\$58.66</b>	<b>-\$73.23</b>	<b>-\$109.74</b>	<b>-\$91.21</b>
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Historically, cost differences are major driver of profitability differences between producers – likely this will be bigger in '06 than other years.

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## Impact of high costs on leases ...

*KSU-Lease.xls* is a tool that can be used to analyze the impact of current costs have on equitable crop share leases as well as their cash-rent equivalents

The impact high costs have on leases will depend on each specific situation due to how producers change (or not change) production practices in response to these high prices

➔ producers should “run their own numbers”

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### Summary ...

- High input prices will have significant impact on crop returns in 2006
  - Irrigated crops impacted more than dryland crops
  - Feedgrains impacted more than soybeans
  - How producers “manage” for this will depend on their unique situations
- High diesel fuel prices will impact returns, but they have relatively minor impact on equitable crop share percentages
- Crop share tenants will not be impacted nearly as much as those cash renting (assuming fertilizer and irrigation pumping expenses are being shared)

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### Summary ...

- Producers cash renting need to negotiate with landowners to see if they will help “share the pain” (likewise for crop share tenants not sharing fertilizer or irrigation pumping costs)
- Producers need to “do their homework” to make sure they understand the numbers before talking to their landowner(s)
- Tenants need to think long-term when negotiating with landowners
  - Impact of losing or giving up land?
  - Have “good times” been shared?

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AgManager: Providing Agricultural Economic Information on Crops, Livestock, Marketing and Outlook - Microsoft Internet Explorer

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**Questions ?**

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**Site Updates**

- Modifying Fertilizer Recs to Reflect Price**  
December 2, 2005 by Kastens et al.
- Impact of Energy Prices on KS Farm Costs**  
December 2, 2005 by Dhuyvetter et al.
- Livestock and Hay Charts**  
December 2, 2005 by Jim Mintert
- Updated Cattle Databases**  
December 2, 2005 by Jim Mintert
- Updated Crop Basis Tool**  
December 1, 2005 by Kevin Dhuyvetter
- Monthly NH3 and Diesel Price Forecasts**  
November 30, 2005 by Kevin Dhuyvetter
- In The Cattle Markets**  
November 28, 2005 by Jim Mintert/LMIC
- The U.S. Ethanol Industry**  
November 25, 2005 by Dhuyvetter et al.
- Livestock Farm Management Update**  
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- Livestock Risk Protection**  
November 17, 2005 by Dhuyvetter and Mintert
- Grain Outlook**  
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- Cost Comparison of Silage Storage Alternatives**  
November 8, 2005 by Dhuyvetter et al.

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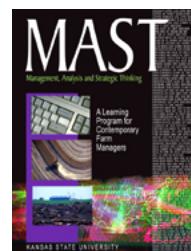
# Questions ???

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