

2011 Ag Profitability Conference

Profitability in Volatile Times:
Recovering from Disaster

December 6, 2011

4-H Hall
7001 W. 21st St. N.
(21st St. North & Ridge Rd)
Wichita, Kansas

SEDGWICK COUNTY EXTENSION

K-STATE
Research and Extension



Sedgwick County... working for you

Kansas State University
Department of Agricultural Economics

Crop Economics

Kevin C. Dhuyvetter, PhD
Extension Ag Economist
Kansas State University
Manhattan, KS 66506
785-532-3527 -- kcd@ksu.edu



What we're going to talk about ...

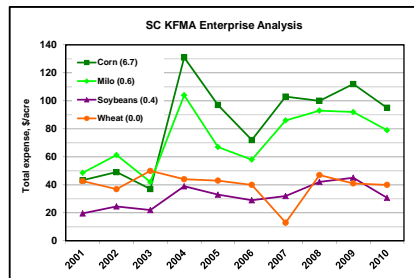
- Historical returns from KFMA enterprise reports
- Variability between producers / machinery costs
- Projected crop budgets

Wheat has the least variable yields, corn has the most...

Economic comparison of crops for South Central Kansas
Source: SC Farm Management Association - Enterprise Analysis

Yield						2001-2010*	
	2006	2007	2008	2009	2010	Avg.	CV
Corn	72.0	103.0	100.0	112.0	95.0	83.9	37.9%
Milo	58.0	86.0	93.0	92.0	79.0	73.1	28.4%
Soybeans	29.0	32.0	42.1	45.1	30.7	31.7	26.6%
Wheat	40.0	13.0	47.0	41.0	40.0	39.8	25.4%

* CV is coefficient of variation (standard deviation / average).



Soybeans and corn have highest return over VC...

(but both are considerably more variable than milo and wheat)

Economic comparison of crops for South Central Kansas
Source: SC Farm Management Association - Enterprise Analysis

Return over Variable Costs, \$/acre						2001-2010*	
	2006	2007	2008	2009	2010	Avg.	Std Dev
Corn	73.49	237.83	132.82	127.49	118.02	91.69	69.51
Milo	42.78	146.87	84.69	84.70	117.47	58.76	48.52
Soybeans	59.00	135.50	191.67	202.48	128.68	94.98	66.75
Wheat	52.24	25.34	118.96	52.01	36.94	51.70	26.14

* Std Dev is standard deviation over 2001-2010 time period.

Corn also has higher costs compared to other crops...

Economic comparison of crops for South Central Kansas

Source: SC Farm Management Association - Enterprise Analysis

Total Expense						2001-2010*	
	2006	2007	2008	2009	2010	Avg.	Std Dev
Corn	189.59	262.82	308.33	290.11	332.18	211.73	79.30
Milo	184.06	243.19	281.81	263.86	247.00	196.74	57.60
Soybeans	151.18	188.61	219.73	242.92	219.81	176.40	40.41
Wheat	150.86	170.27	238.64	230.54	223.34	167.09	46.63

* Std Dev is standard deviation over 2001-2010 time period.

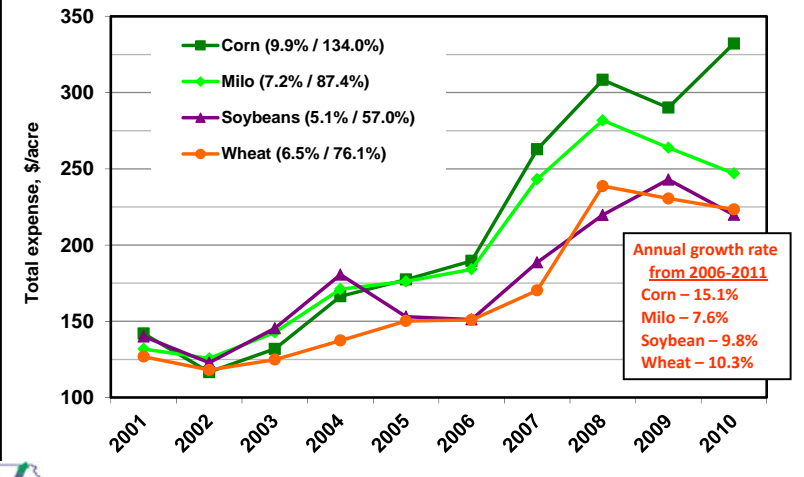


Source: KFMA Enterprise Analysis Report

...and they have been increasing faster than other crops!

(but costs have been increasing for all crops)

SC KFMA Enterprise Analysis



Source: KFMA Enterprise Analysis Report

Even with FC included, things have been quite good...

Economic comparison of crops for South Central Kansas

Source: SC Farm Management Association - Enterprise Analysis

Net Return to Management (return over total costs), \$/acre						2001-2010*	
	2006	2007	2008	2009	2010	Avg.	Std Dev
Corn	21.42	147.38	39.62	42.90	17.02	27.23	51.11
Milo	-11.90	63.78	-2.08	-0.72	26.09	-3.41	31.21
Soybeans	11.71	72.12	116.74	118.18	48.41	35.89	51.84
Wheat	5.42	-25.30	50.37	-20.54	-42.55	-2.62	26.26

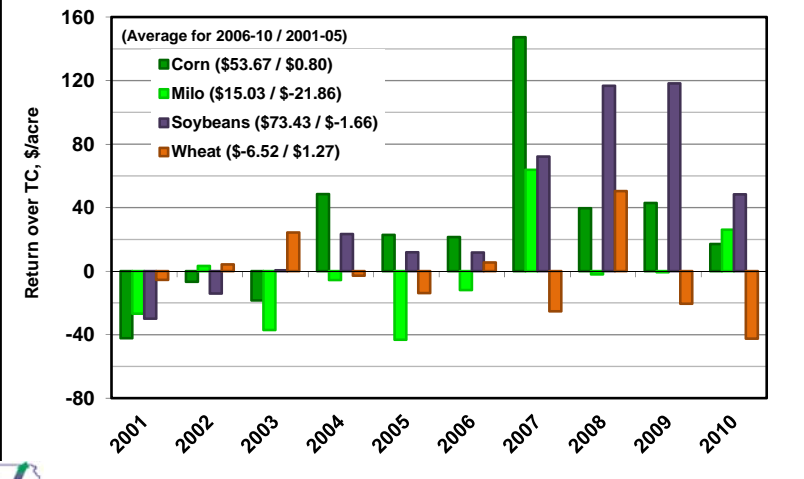
* Std Dev is standard deviation over 2001-2010 time period.



Source: KFMA Enterprise Analysis Report

... historically, things haven't been quite as good.

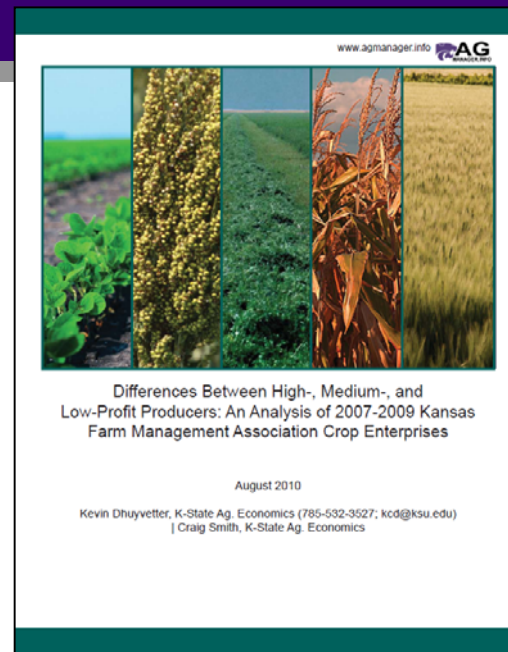
SC KFMA Enterprise Analysis



Source: KFMA Enterprise Analysis Report

Returns look pretty good for the last several years (not counting 2011)...

... does this mean that all crop farmers are making lots of money?



Study examining profitability differences between crop producers for different enterprises. Costs are quite important in explaining differences and machinery costs represent a relatively large portion of costs.*

Paper is available on www.agmanager.info

* In this study, income plays a larger part in explaining profit differences than earlier analyses have found, which is attributed to the years analyzed (i.e., 2007-09).

Average returns over TC quite good for most crops...

Average Income, Total Costs, and Return to Management Kansas Farm Management Association Enterprise Analysis, State Averages 2007-09						
	Corn	Irr Corn	Sorghum	Wheat	Soybean	Alfalfa
Number of farms	115	50	128	221	139	46
INCOME (\$/acre)						
Yield per acre, bu	113.3	187.1	92.4	39.3	41.2	3.6
Price per unit	\$3.78	\$3.91	\$3.43	\$5.83	\$9.36	\$95.01
Crop income ¹	\$370.20	\$640.02	\$263.45	\$193.22	\$332.27	\$328.99
Government payment	\$13.95	\$24.93	\$14.42	\$15.75	\$12.58	\$8.72
Gross income	\$397.03	\$694.53	\$287.94	\$233.50	\$353.63	\$340.66
COSTS (\$/acre)²						
Seed	\$42.44	\$61.97	\$13.45	\$12.65	\$35.53	\$12.01
Fertilizer	61.63	93.02	44.99	44.96	9.02	12.39
Herbicide-insecticide	30.94	47.44	33.92	11.11	24.01	11.36
Crop insurance	16.66	24.65	11.50	11.28	13.01	0.15
Machinery	97.49	126.23	83.73	86.92	92.22	120.18
Other	25.39	42.88	22.20	22.99	24.70	29.47
Land	60.65	95.40	38.10	34.41	55.69	61.27
Interest	24.80	39.99	17.44	17.26	18.99	20.81
Total Cost	\$360.00	\$595.26	\$265.36	\$241.59	\$273.16	\$267.64
Net Return to Management	\$37.03	\$99.27	\$22.58	-\$8.09	\$80.47	\$73.02

¹ Does not equal yield x price because landowner's share of production is excluded from crop income.

² Based on the operator's share of production, and thus includes only production expenses paid by the operator.

Not everybody is making money though...

DIFFERENCE between the High 1/3 and Low 1/3 farms ranked on return to management Kansas Farm Management Association Enterprise Analysis, State Averages 2007-09						
	Corn	Irr Corn	Sorghum	Wheat	Soybean	Alfalfa
Number of farms	115	50	128	221	139	46
INCOME (\$/acre)						
Yield per acre, bu	17.8	16.6	23.2	7.6	7.8	1.2
Price per unit	\$0.25	\$0.28	\$0.12	\$0.29	\$0.40	\$13.12
Crop income	\$97.17	\$51.95	\$72.78	\$45.16	\$91.51	\$167.91
Government payment	-0.04	-5.09	-1.64	1.10	-0.20	-1.61
Gross income	\$97.64	\$45.16	\$68.63	\$50.69	\$94.12	\$166.63
COSTS (\$/acre)¹						
Seed	-\$3.83	-\$27.93	-\$2.53	-\$2.14	-\$2.30	\$1.42
Fertilizer	-7.42	-26.14	-3.81	-15.32	-0.92	2.67
Herbicide-insecticide	-6.10	-17.85	-7.77	-3.42	-2.67	-3.10
Crop insurance	0.72	-15.37	0.24	0.04	0.64	-0.40
Machinery	-19.70	-22.91	-27.75	-30.52	-32.71	-17.79
Other	-5.41	-49.21	-8.76	-11.06	-10.23	-5.83
Land	3.11	-36.25	-3.49	-7.41	6.15	11.26
Interest	-4.46	-16.16	-4.11	-4.75	-5.02	-4.36
Total Cost	-\$43.08	-\$211.82	-\$57.97	-\$74.59	-\$47.06	-\$16.12
Net Return to Management	\$140.72	\$256.98	\$126.60	\$125.28	\$141.18	\$182.75
Enterprise acres	184	-99	201	606	150	-28
Operator percentage	4.2%	-7.3%	-0.6%	-1.6%	3.0%	6.5%
Yield effect	37.9%	19.9%	48.1%	34.3%	45.7%	49.3%
Price effect	18.5%	16.2%	7.5%	9.9%	11.8%	29.0%
Operator % effect	13.0%	-18.5%	-1.4%	-3.8%	9.1%	12.9%
Cost effect	30.6%	82.4%	45.8%	59.5%	33.3%	8.8%

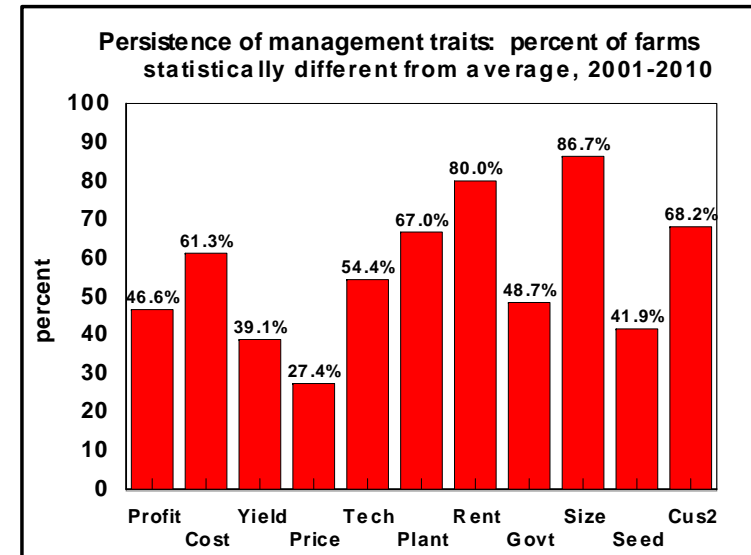
¹ Based on the operator's share of production, and thus includes only production expenses paid by the operator.

Persistence --

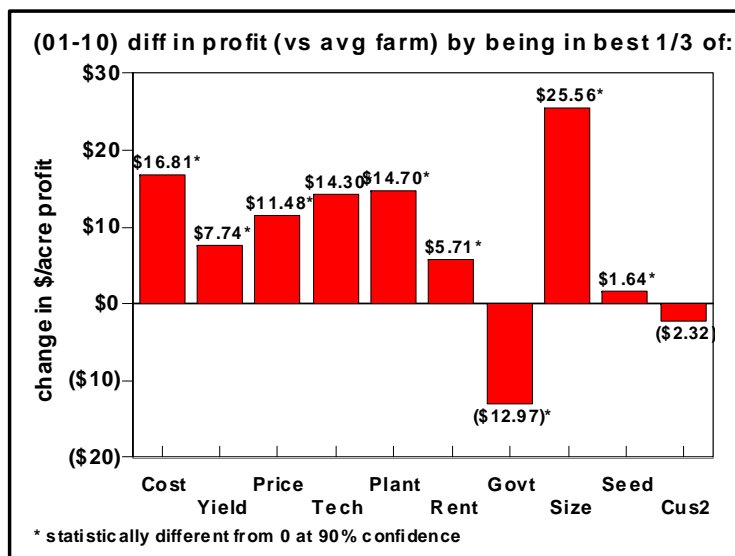
Something is said to be persistent if it is consistently different (better or worse) than average. Thus, the less persistent something is, the more random it is.

What does this mean in terms of where we should spend our management efforts?

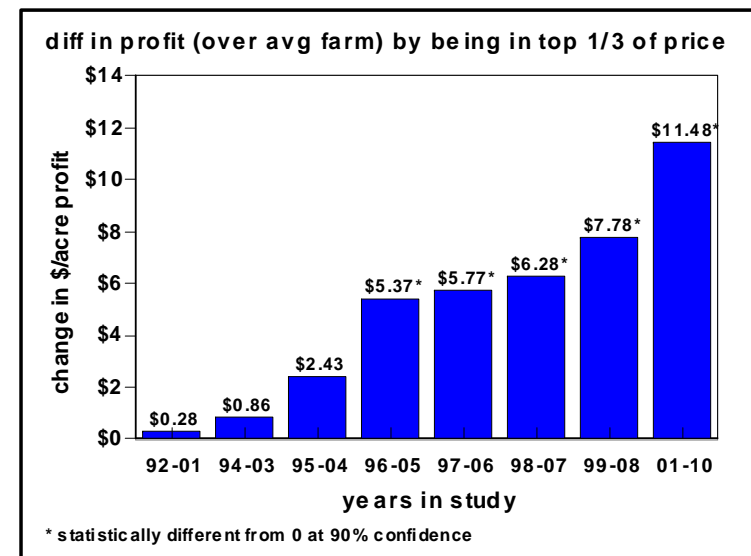
Persistence of management traits...



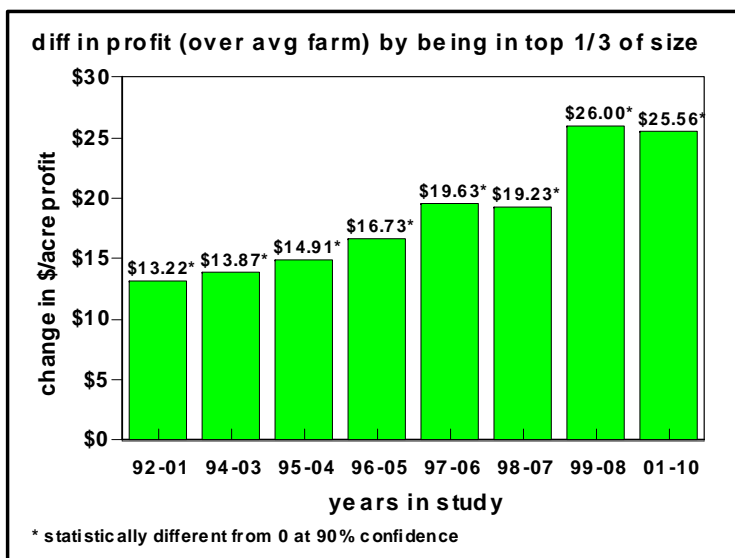
Factors impacting profitability differences...



Price is becoming more important over time...



The benefit of being larger than average is also increasing...



Key drivers of profitability differences among producers...

- Costs
- Technology adoption
- Farm size

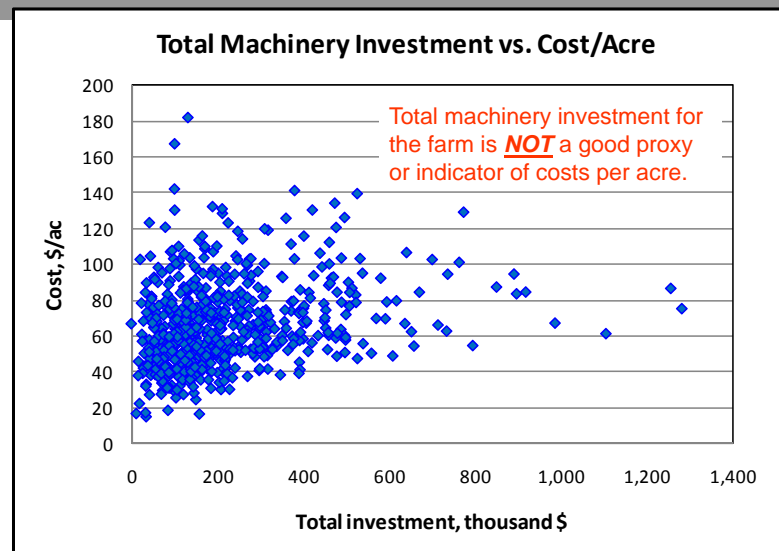
Machinery investment and costs are directly related to these three factors...

What leads to some producers having lower costs?

- 1) Hard to beat intensity of use as a cost reducer
- 2) Hard to beat machinery size as a cost reducer
(at least historically)

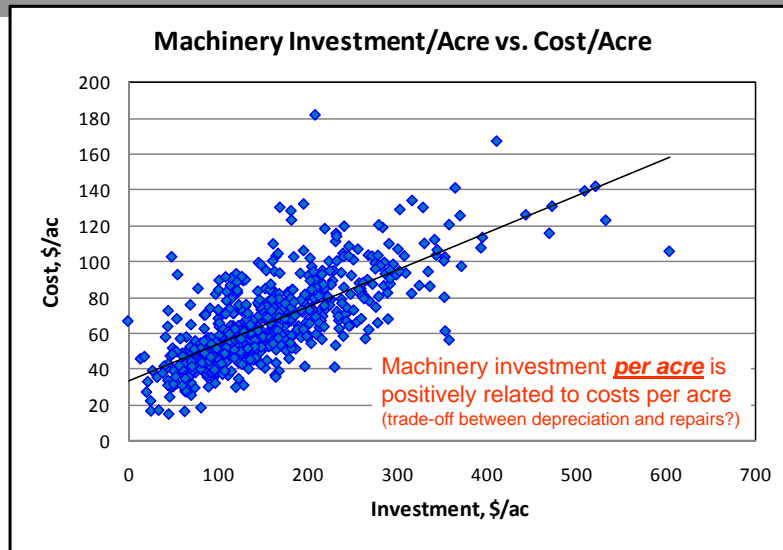


Machinery investment is not the same as machinery cost



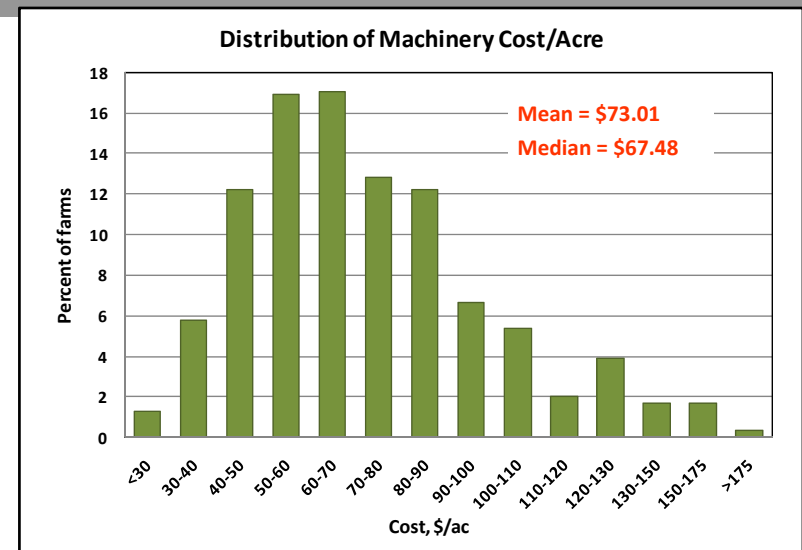
Source: KFMA non-irrigated crop farms having continuous data from 2005-2009 (minimum of 160 acres and machinery cost/acre > \$10/ac; costs do not include labor – total of 614 farms)

It is important to use assets efficiently...



Source: KFMA non-irrigated crop farms having continuous data from 2005-2009 (minimum of 160 acres and machinery cost/acre > \$10/ac; costs do not include labor – total of 614 farms)

Different sample of farms, but similar variability...



Source: KFMA farms having continuous data from 2006-2010 and crop labor percentage \geq 75% (minimum of 160 acres and machinery cost/acre > \$10/ac; costs do not include labor – total of 539 farms)

KFMA machinery costs definition...

- **Total Crop Machinery Cost (TCMC)**
 - Equal to the crop share of machinery repairs, gas-fuel-oil, auto expense, motor vehicle depreciation, listed property depreciation, and machinery and equipment depreciation plus crop machine hire expense plus an opportunity interest charge on crop machinery investment minus machine work income.*
- **Machinery cost/acre = TCMC/total crop acres**

* Note – labor associated with operating and servicing machinery is not included in total crop machinery cost.

Can we explain variability in machinery costs?

- **Cost/ac was estimated as a function of...**
 - investment/acre
 - crop acres
 - region (SE is default)
 - % acres irrigated
 - % acres corn
 - % acres other row crop
 - % acres hay
 - no-till (when available)
 - custom income as % of value of production

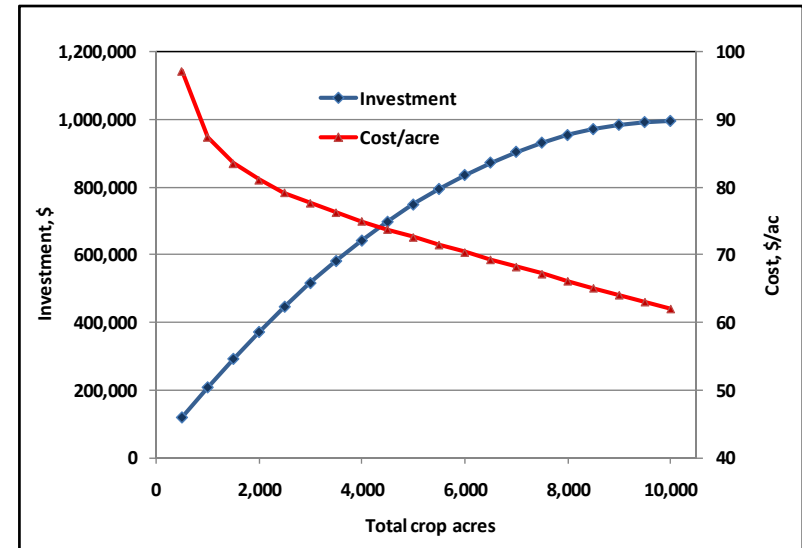
Machinery cost model results...

Model of Machinery Cost/Acre (2006-2010 data)

Variable	Estimate	p-value
Intercept	22.61	<.0001
MachInvAcX	0.20	<.0001
TCAinv	3352.19	0.0005
NW	-0.21	0.9663
SW	0.28	0.9468
NC	9.91	0.0022
SC	10.18	0.0008
NE	-5.12	0.0810
IrrAcPctX	7.13	0.2240
CrnAcPctX	33.34	<.0001
OthAcPctX	3.18	0.6101
HayAcPctX	29.61	<.0001
NCntX	-8.79	0.0268
SCntX	-16.88	<.0001
NEntX	-3.56	0.3778
NWntX	-6.67	0.2246
MachHirePctX	-68.51	0.0034
Adjusted R-square	0.62	
RMSE	17.09	
Number of observations	539	



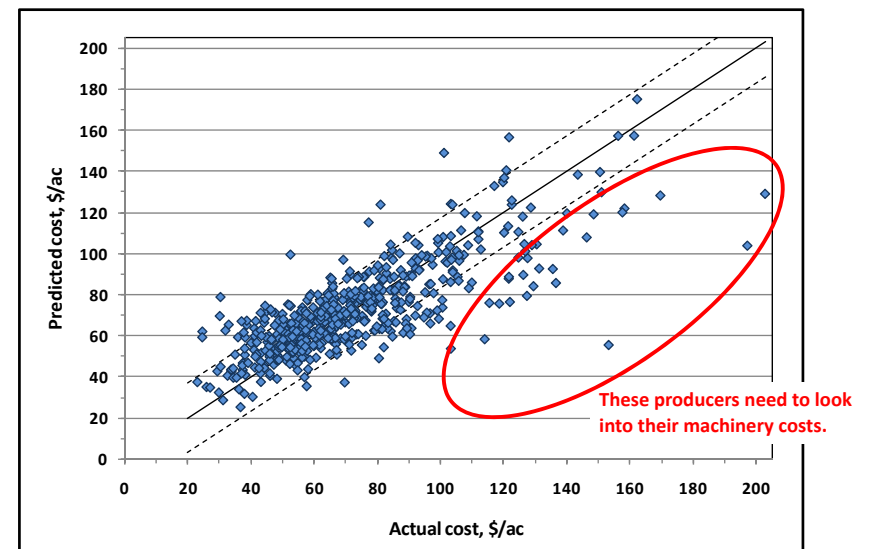
Machinery investment and cost/acre vs. farm size...



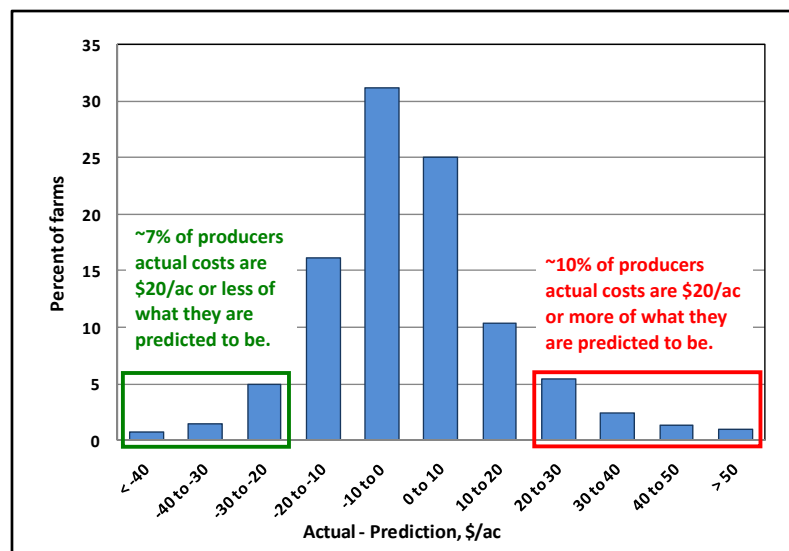
Model can be used to calculate “expected” costs...

- Actual costs (KFMA value)
- Expected costs (i.e., model-predicted costs) (KFMA “x-variables” multiplied by model coefficients)
- Error (difference between actual and predicted values)
 - Actual – Predicted (absolute measure)
 - ➔ positive values are “bad” and negative values are “good”

Actual costs versus model-predicted costs...



Actual costs versus model-predicted costs...



Summary of machinery cost model results...

- Higher investment/acre leads to higher cost
- Larger farms have lower cost (primarily the result of having lower investment/acre)
- NC/SC farms have higher costs and NE farms have lower costs relative to SE region (other regions are similar to SE)
- Irrigated farms have slightly higher costs (only marginally statistically significant)
- Farms with higher proportion of acres in corn and hay have higher costs
- No-till farms (in 2010) in NC/SC regions had lower costs (similar for NE/NW farms but not statistically significant)
- Higher custom work income leads to lower cost

Summary of machinery cost model results...

- Considerable variability in machinery costs across producers
- Characteristics of operation can explain much of that variability, but not all of it (i.e., “other stuff matters”)
- Investment per acre is an important variable in explaining differences
- Producers are encouraged to use available tools to help them make machinery investment decisions that best fit their operations

Machinery decision-tools available from KSU...

- OwnSeries (Excel spreadsheets)
 - Sprayer, Tractor, Combine, Baler



Sprayer, Tractor, and Baler models recently updated. Combine model to be updated in near future. Models estimate the cost of owning and operating equipment given user input for annual usage, age, purchase price, tax rates, etc.

- Guidance and section controller calculators
 - Excel spreadsheets and web dashboard
- Excel spreadsheets for trucks and buildings
- KSU-MachCost – benchmarking spreadsheet
- Custom rate projections (web dashboard)



So, what does crop profit potential look like for next year?

Home / Farm Management

Land & Leasing	Machinery	Finance & Business Planning	Farm Management Guides	KFMA / Farm Income	Papers, HR, and Links
Land Buying & Valuing	Diesel Price Forecasts	Investment Forecasts	Non-Irrigated Crops	KFMA	Papers and Presentations
Leasing	Farm Machinery Papers	Financial Management	Irrigated Crops	K, MAR, 105	Human Resources
Interest Rate Forecasts	Decision-Making Tools	Financial Statements / Ratio	Livestock	Farm Income	Links, Farm Management Sites
	CHAMP Annual Reports	Business Planning	Other FM Guides		

Farm Management: Farm Management Guides

Non-Irrigated Crops

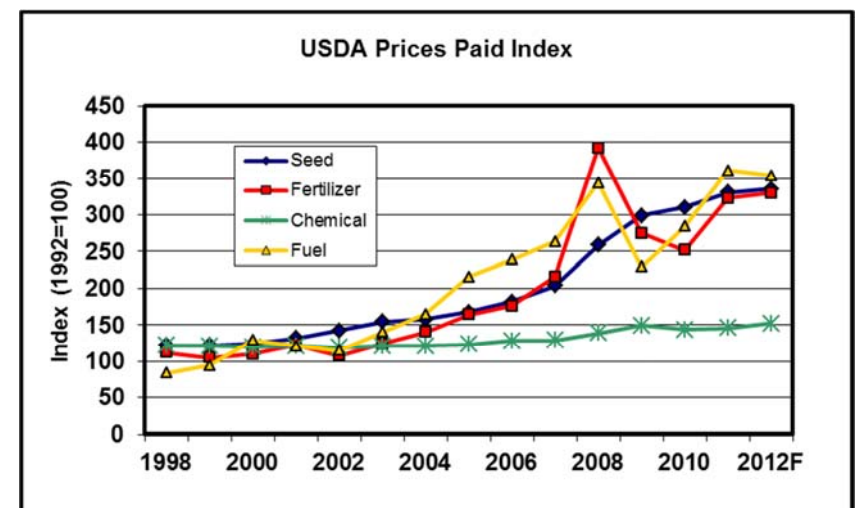
Crop	Western	South Central	North Central	Northeast	Southeast	Southwest
Wheat	MF-903	MF-574	MF-2159	MF-572	MF-992	
Grain Sorghum	MF-901	MF-575	MF-2159	MF-573	MF-995	
Forage Sorghum Silage		MF-648				
Soybeans	MF-2366	MF-2156	MF-2160	MF-570	MF-994	
Double Crop Soybeans		MF-2537	MF-2537	MF-2537	MF-2537	
Corn	MF-2150	MF-2157	MF-2161	MF-571	MF-993	
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-897					

2012 projected budgets assumptions (Nov 2011)...

TABLE 2. Production Inputs Used for Budgets

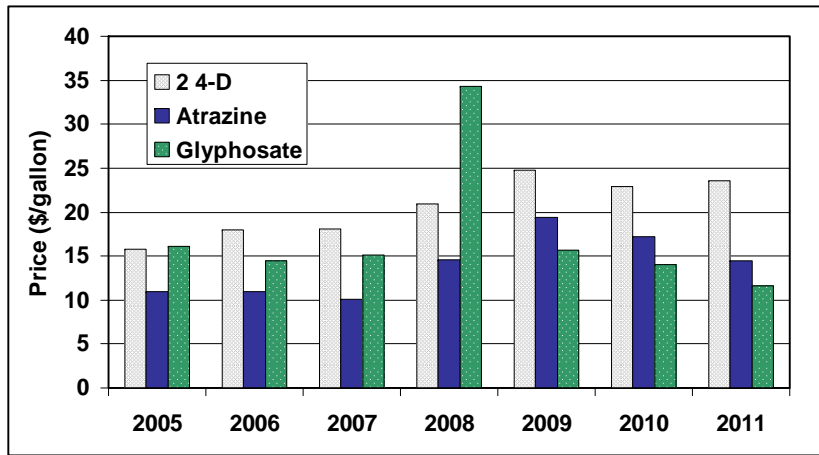
ITEM	Wheat-R	Wheat-C	SB	Milo	Corn	DC SB	\$/unit
Seeding rate (lbs, seeds, etc)	90	60	130	3	21	150	
Seed price, \$/unit	\$0.17	\$0.17	\$0.31	\$3.43	\$2.89	\$0.31	
Fertilizer:							
82-0-0	60.0	50.0	0.0	100.0	100.0	0.0	\$0.440 /lb
N (dry/liquid)	50.0	25.0	0.0	0.0	0.0	0.0	\$0.680 /lb
P	25.0	25.0	20.0	30.0	30.0	20.0	\$0.800 /lb
K	0.0	0.0	0.0	0.0	0.0	0.0	\$0.550 /lb
Lime	500.0	500.0	500.0	500.0	500.0	0.0	\$0.010 /lb
Herbicide							
Ally	0.1						\$13.93 /oz
+ Banvel	4	4					\$0.34 /oz
Glean		0.25					\$18.68 /oz
Bicep II Magnum				1.6			\$10.55 /qt
Atrazine 4L + crop oil				16	16		\$0.10 /oz
Glyphosate			64			64	\$0.09 /oz
+ Ammonium Sulfate			3			6	\$0.34 /lb
Bicep Lite II Magnum					2		\$13.28 /qt
xxx							\$5.20 /ac
xxx							\$3.00 /oz
Insecticide / Fungicide							
Seed treatment	1	1			1		\$1.00 /ac
xxx							\$141.09 /lb
xxx							\$3.10 /oz
xxx							\$1.00 /ac
xxx							\$4.00 /in
Irrigation water, inches/acre							\$4.00 /in
Irrigation repairs, \$/acre-inch							\$0.50 /in
Drying cost, \$/unit (bu, cwt, etc)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	

Projections for crop production expenses to be relatively flat...



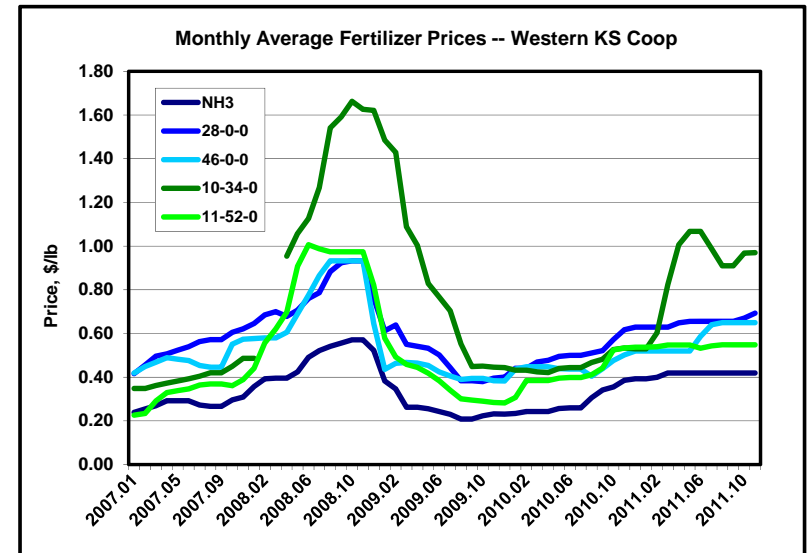
Source: USDA

Select herbicide prices...

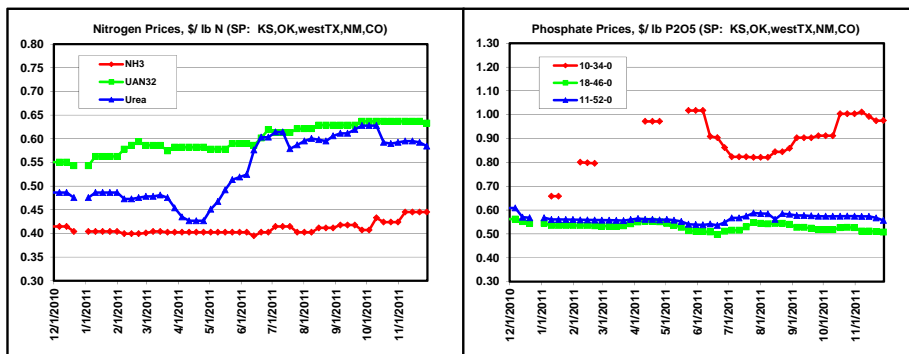


Source: KSU Farm Management Guide Crop Input Survey (Dumler)

Fertilizer prices are up and big spread between some products...



Fertilizer prices are up and big spread between some products...



2012 projected budgets assumptions (Nov 2011)...

TABLE 3. Machinery and Land Resources Used for Budgets

ITEM	Wheat-R	Wheat-C	SB	Milo	Corn	DC SB	\$/unit
Drill/Plant, \$/acre	\$12.36	\$12.36	\$15.96	\$13.81	\$14.20	\$15.96	
Tillage and Chemical Applications:							
Chisel	1	1	0	0	0	0	\$11.56 /ac
Disk	1	1	0	1	1	0	\$9.89 /ac
Field cultivate	1	1	0	1	1	0	\$9.49 /ac
Cultivate w/side-dress N	0	0	0	0	1	0	\$8.68 /ac
Anhydrous application	1	1	0	1	1	0	\$10.89 /ac
Fertilizer application	1	1	1	1	1	0	\$5.36 /ac
Herbicide application	1	1	2	2	1	2	\$5.47 /ac
Insecticide/fungicide application	0	0	0	0	0	0	\$5.54 /ac
Harvest							
Base charge, \$/acre	\$20.63	\$20.63	\$26.24	\$21.58	\$26.19	\$26.24	
Charge for high yields, \$/unit	\$0.200	\$0.200	\$0.199	\$0.204	\$0.207	\$0.199	
High yield	22	22	28	36	74	28	
Hauling, \$/unit	\$0.191	\$0.191	\$0.179	\$0.190	\$0.174	\$0.179	
Non-machinery labor, hr/acre	0.86	0.86	0.55	0.92	0.96	0.49	\$13.00 /hr
Irrigation labor, hr/acre	0.00	0.00	0.00	0.00	0.00	0.00	\$13.00 /hr
Average land value, \$/acre /A	\$70	\$70	\$70	\$70	\$70	\$70	
Annual return to land, % /A							100.0%
Interest on capital, %							6.5%
Irrigation Equipment							
	Total	\$/wet ac	Years	Salvage value, %			
Well, pump and gearhead value	\$0	n/a	25	0%			
Power unit and meter	\$0	n/a	7	0%			
Irrigation system	\$0	n/a	20	10%			

/A – The annual cost associated with land can either be entered as a Land Value x Rent-to-Value OR as a Cash Rent x 100%. For example, if cash rent in region is \$42 per acre, this can be entered as \$42 in row 94 and 100% in cell K95 OR as \$840 in row 94 and 5% in cell K95 [\$42 x 100% = \$840 x 5%].

Machinery costs are projected to be up slightly...

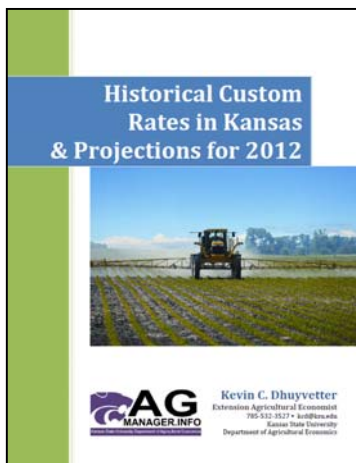


Table 2. Historical and Projected Custom Rates – PLANTING (\$/acre)

Operation	2008	2009	Projections			2012 versus 2011		R ²
			2010	2011	2012	\$/acre chg	% chg	
Planting - Fall								
Small grains	\$11.09	\$11.14	\$10.52	\$11.78	\$12.36	\$0.58	4.9%	0.959
Sorghum	\$12.30	\$12.61	\$11.91	\$13.09	\$14.81	\$0.71	5.5%	0.960
Corn	\$12.51	\$12.61	\$12.36	\$13.44	\$14.20	\$0.76	5.7%	0.964
Soybeans	\$12.87	\$12.58	\$12.57	\$13.74	\$14.56	\$0.82	5.9%	0.964
Grass	\$14.05	\$14.02	\$14.05	\$15.55	\$16.29	\$0.73	4.7%	0.967
Alfalfa	\$13.75	\$12.68	\$13.23	\$14.48	\$15.33	\$0.85	5.9%	0.962
Minimum Fall or No-Fall								
Small grains	\$13.73	\$13.31	\$13.62	\$14.60	\$15.43	\$0.82	5.6%	0.966
Sorghum	\$13.49	\$13.63	\$13.72	\$14.55	\$15.49	\$0.93	6.4%	0.979
Corn	\$13.57	\$13.70	\$13.91	\$14.59	\$15.48	\$0.89	6.1%	0.964
Soybeans	\$14.07	\$13.68	\$14.31	\$15.01	\$15.96	\$0.95	6.4%	0.975

Table 3. Historical and Projected Custom Rates – CHEMICAL APPLICATIONS (\$/acre)

Operation	2008	2009	Projections			2012 versus 2011		R ²
			2010	2011	2012	\$/acre chg	% chg	
Flow crop calcinate w/ fertilizer	\$8.41	\$8.00	\$8.01	\$8.44	\$8.66	\$0.24	2.9%	0.810
Flow crop calcinate w/o fertilizer	\$8.46	\$7.24	\$7.60	\$8.24	\$8.55	\$0.31	3.8%	0.869
Dry fertilizer application	\$4.96	\$4.05	\$4.78	\$5.14	\$5.36	\$0.22	4.3%	0.987
Liquid fertilizer application	\$4.98	\$4.82	\$4.87	\$5.25	\$5.44	\$0.19	3.6%	0.987
Anhydrous ammonia application	\$10.20	\$10.55	\$9.27	\$10.44	\$10.89	\$0.46	4.4%	0.895
Aerial herbicide application	\$6.20	\$6.93	\$5.61	\$6.17	\$6.23	\$0.07	1.1%	0.690
Ground herbicide application	\$5.21	\$4.98	\$4.93	\$5.28	\$5.47	\$0.19	3.5%	0.964
Aerial insecticide application	\$6.20	\$6.00	\$5.81	\$6.32	\$6.44	\$0.12	2.0%	0.810
Ground insecticide application	\$5.07	\$4.95	\$5.00	\$5.34	\$5.54	\$0.20	3.7%	0.905

Models for projecting custom rates are based on inflation and diesel fuel price. Strong demand likely will result in costs being up higher than model projections.

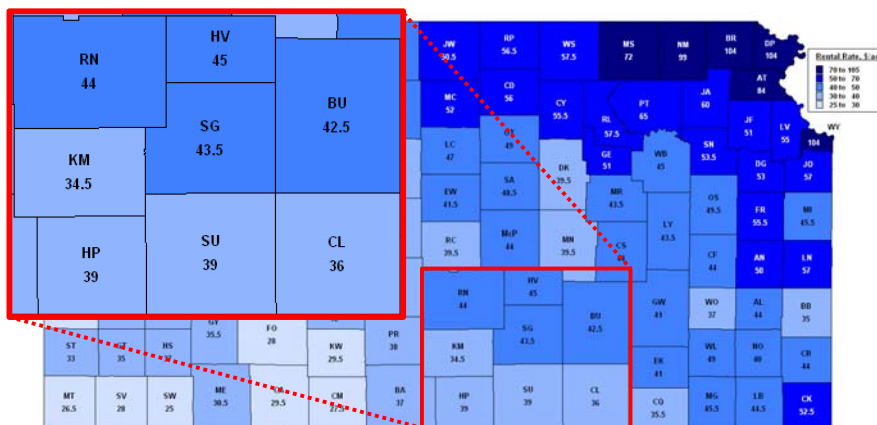
Actual (A) and projected (P) machinery custom rates*

Operation	2008A	2009A	2010P	2011P	2012P
	----- \$/acre -----				
Wheat Harvest (base)	21.65	20.86	18.32	20.58	20.63
Fertilizer App. (dry)	4.96	4.68	4.78	5.14	5.36
Herbicide App. (ground)	5.01	4.98	4.93	5.28	5.47
Disking	9.02	9.06	8.74	9.59	9.89
Wheat Planting (RT)	11.09	11.14	10.52	11.78	12.36
Corn Planting (MT/NT)	13.57	13.70	13.81	14.59	15.48
Baling (rd w/ net), \$/bale	11.10	10.86	10.58	11.23	11.46

* Estimates from *Historical Custom Rates in Kansas & Projections for 2012*.

Web dashboard at www.AgManager.info can be used to update projections for various fuel prices.

Kansas Nonirrigated Cash Rents, 2011*



* Cash rent values as reported by USDA NASS and Kansas Agricultural Statistics (KAS).

County average rents reported by KAS for 2011 ranged from about \$36-\$45 per acre in region.

Averages can be misleading because...

- 1) Not all land is equal
- 2) Not all relationships are equal

2012 projected budgets assumptions (Nov 2011)...

TABLE 4. Alternative Yield and Price Scenarios (minimum of one must be entered)

Yield scenarios to consider							
	Wheat-R	Wheat-C	SB	Milo	Corn	DC SB	Use (Y=1, N=0)
Used in analysis above	45.0	45.0	27.0	80.0	90.0	20.0	1
FM guides average	45.0	45.0	27.0	80.0	90.0	20	1 (base)
SC KFMA 10-yr avg	39.8	39.8	31.7	73.1	83.9	20	0
FM guides high	55	55	35	100	110	35	0
FM guides low	35	35	20	60	70	15	0
Other ???	40	40	30	75	85	20	0
Price scenarios to consider							
	Wheat-R	Wheat-C	SB	Milo	Corn	DC SB	Use (Y=1, N=0)
Used in analysis above	\$6.30	\$6.30	\$10.76	\$4.72	\$5.08	\$10.76	1
5-yr avg for region (harvest)	\$6.20	\$6.20	\$9.95	\$4.03	\$4.24	\$9.95	0 (base)
Current forward bids (12/2/11)	\$6.30	\$6.30	\$10.76	\$4.72	\$5.08	\$10.76	1
High prices	\$8.00	\$8.00	\$13.50	\$5.60	\$6.00	\$13.50	0
Low prices	\$5.50	\$5.50	\$9.50	\$3.70	\$4.00	\$9.50	0
Multi-year futures implied bids	\$6.47	\$6.47	\$10.77	\$4.76	\$5.12	\$10.77	0

Machinery cost adjustment (percent of values entered in Table 2)

115.0%

What should be used for yield and price projections?

