The "New" Economics of Crop Production in 2008

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These slides are a conglomeration of slides from various extension presentations made during Jan-Feb 2008

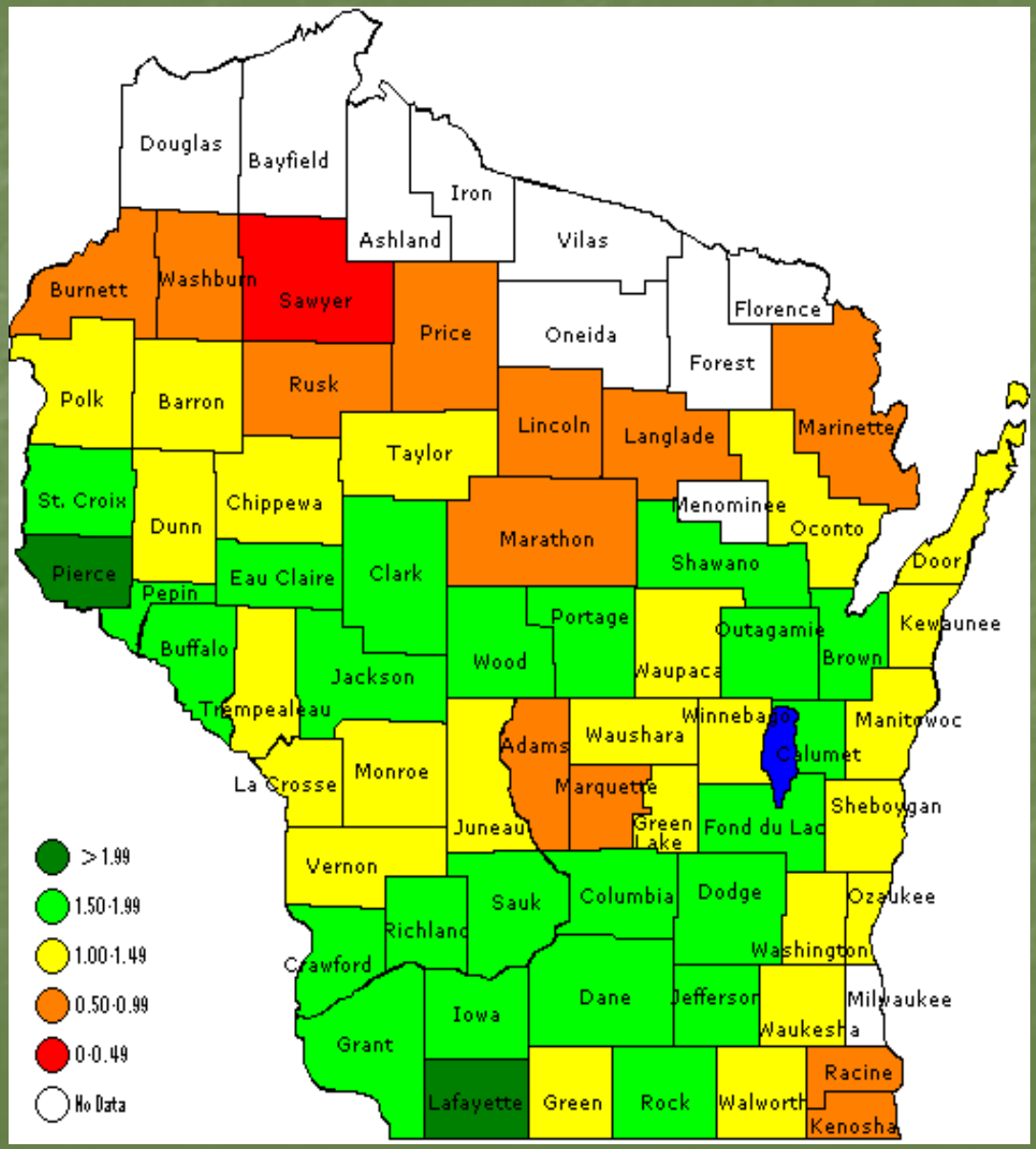
Crop Prices are High

- Closing prices on CBOT Tuesday 2/27
- Dec 08 corn $5.56/bu
- Nov 08 soybean $14.27/bu
- Sep 08 wheat $11.42/bu
- Sep 08 oats $4.45/bu

- These prices drive the image that farmers are rolling in the money

The "New" Economics of Corn and Soybeans

Yields are Increasing



Annual increase (bu/ac) in NASS county average yield from 1977 to 2006 as estimated by regression

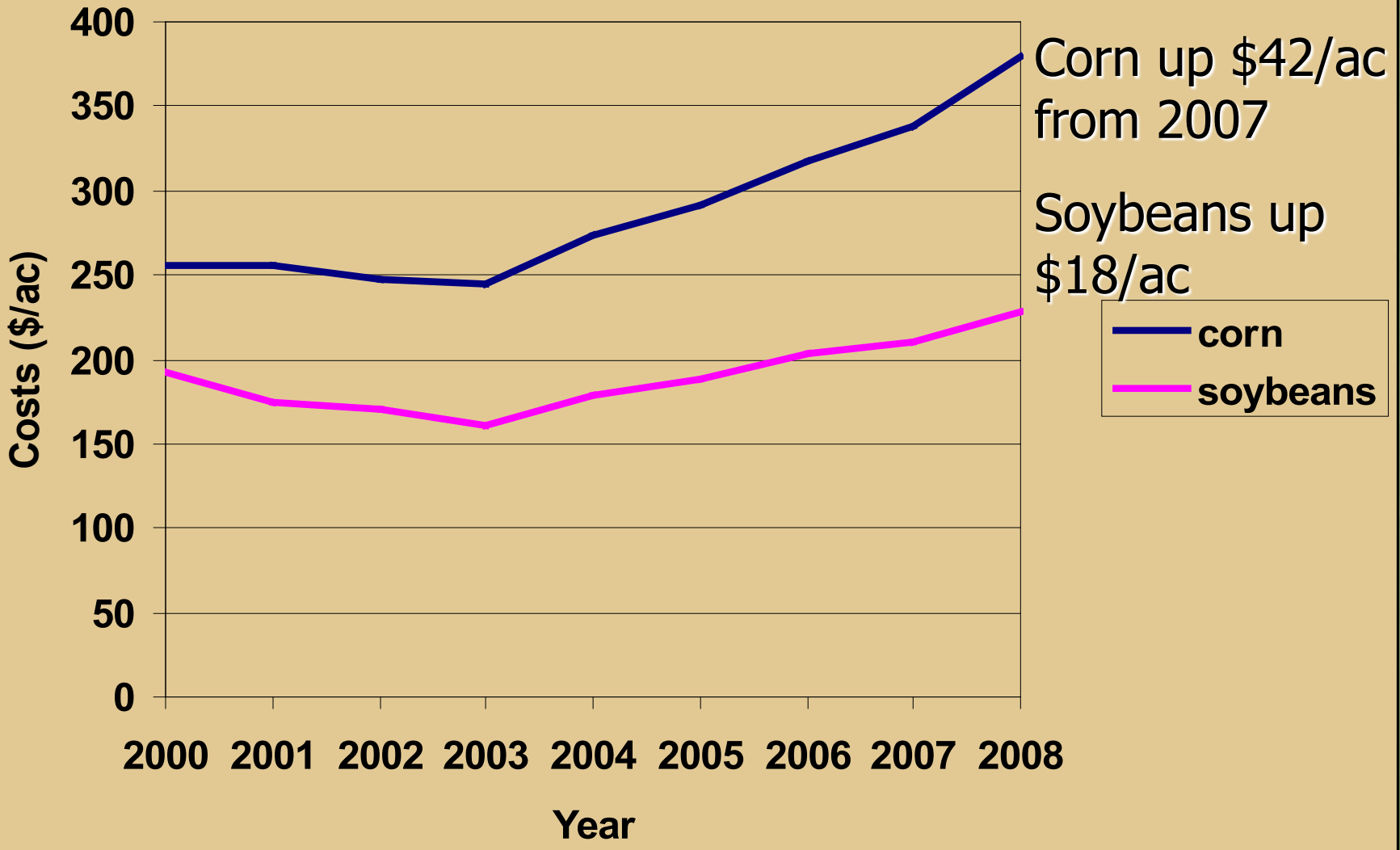
But Input Costs Have Increased

- Fertilizer prices are leading the way
- Seed is also up about 15%

Fertilizer	2008	2007	% increase
Urea	505	409	23%
Anhydrous	775	514	51%
32% N Solution	403	269	50%
Ammonium Sulfate	240	209	15%
DAP	578	334	73%
Potash	418	254	65%

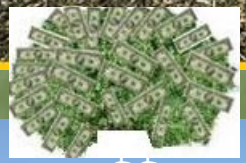
Prices from first week January of each year.

U of IL non-land costs for corn and soybean production in northern IL



Annual Increase: U of IL non-land costs for corn and soybeans in northern IL

The "Real" Economics of Corn and Soybeans



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Quick Cost of Production Estimates

- Quick cost of production estimates for corn, soybeans and wheat in Wisconsin
- Use major cost categories
- Neither scientific nor rigorous, but based on simple assumptions
- Farmers should do their own cost and returns projections

Fertilizer Costs

	Price	Corn		Soybeans		Wheat	
	$/lb	Amt	Cost	Amt	Cost	Amt	Cost
N	0.55	150	82.50	0	0	80	44.00
P	0.50	10	5.00	50	25.00	40	20.00
K	0.35	10	3.50	50	17.50	40	14.00
		Total	91.00		42.50		78.00

Seed Costs

- Corn
  - 32,000/ac @$168/bag = $67.20
- Soybeans
  - 1.2 bag/ac @ $32/bag = $38.40
- Wheat
  - Assume $30/ac
  - Lots of numbers out there
  - Depends on variety, germination rate, etc.

Input Cost Summary

Item	Corn	Soybeans	Wheat
Fertilizers	91.00	42.50	78.00
Seed	67.20	38.40	30.00
Pesticides	30.00	25.00	20.00
Insurance (75% CRC)	25.00	13.00	15.00
Miscellaneous	10.00	10.00	10.00
Interest (8% @8 mo.)	11.90	6.87	8.16
TOTAL	**235.10**	**135.77**	**161.16**

Machinery Costs

- Hard to estimate/measure
- Very specific to each farmer
- Use estimates for 2008 machinery costs from Iowa Sate University
- Adjusted upwards for WI about 25% for pre-harvest tillage, about 5% for harvest
  - Smaller fields and farms
  - Higher custom rates

Machinery Costs

Item	Corn	Soybeans	Wheat
Pre-Harvest	38.50	32.00	28.00
Harvest (Combine)	27.50	27.00	25.00
Haul/Handle	11.00	3.50	6.00
Dry	40.00	0.00	3.00
TOTAL	**117.00**	**62.50**	**62.00**

Cost Estimate Summary

Item	Corn	Soybeans	Wheat
Inputs	235	136	161
Machinery	117	63	62
TOTAL	$352/ac	$199/ac	$223/ac
Range (±25%)	$265-$440	$150-$250	$165-$275

Does not include cost for land, management, or investment of capital

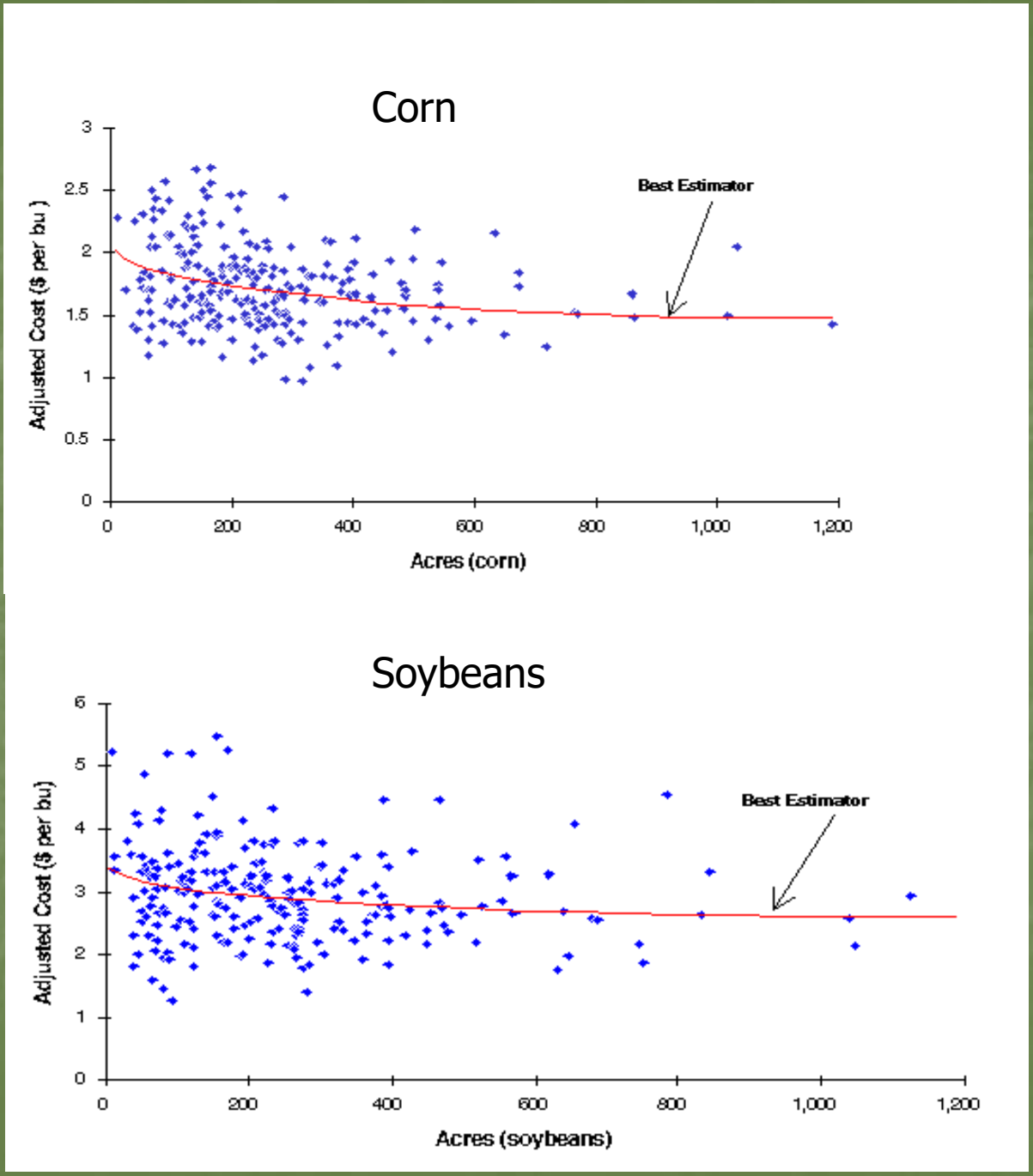
Corn following Corn vs. Corn following Soybeans

- This cost estimate was corn following soybeans, what about corn following corn?
- Need more N fertilizer: add 20 more lbs
  - 20 x 0.55 = $11/ac in added cost
- Soil insecticide or transgenic hybrid for corn rootworm control
  - $19/ac in added cost
- Together these imply $30/ac in added cost
  - Add $30 to corn costs in previous table

How do you decide what to plant?

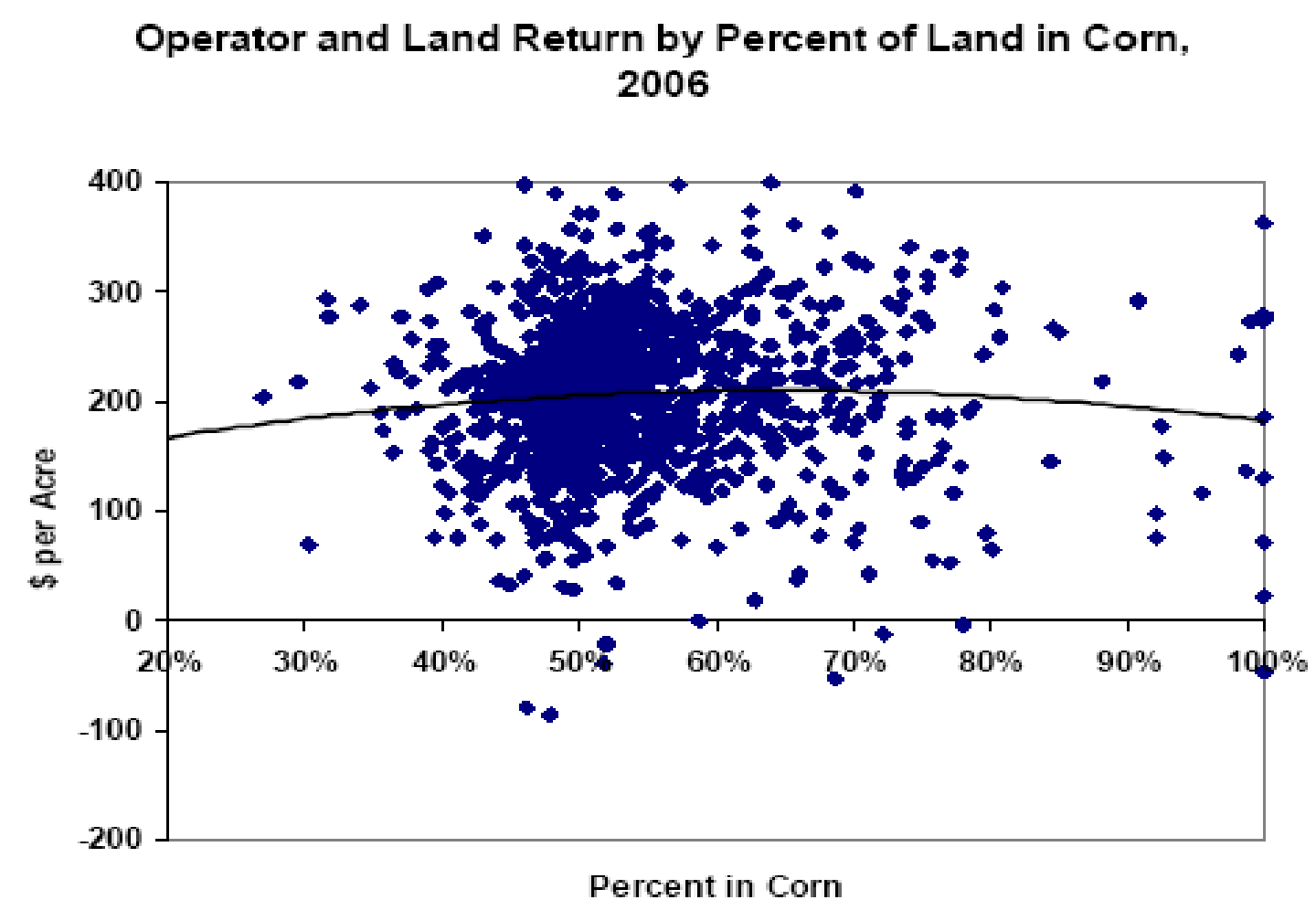
- Can use university budgets or other peoples' estimates of the yields, prices, costs, and net returns to different crops
- Problem: These are usually averages or even guesses
- Reality: Costs and returns vary greatly among farmers
- You want <u>your</u> costs and returns

1996 Data for about 250 Minnesota Corn and Soybean Farmers



Source: K. D. Olson and H. D. Lohano "Will the true cost of production please stand up?"

Illinois Data for 2006



Source: Gary Schnitkey "Crop Production Cost and Rotation Decisions"

Making Budgets

- Make budgets to estimate your net returns for corn after soybeans, plus corn after corn, soybeans, and wheat
- Budgets can be as simple or detailed as you want to make them: you decide
- Estimate your costs and returns, as it is your money, your responsibility, you live with the consequences of your decisions

My Goal

- Present some resources you can use
- Give you some things to think about

- Most are internet based. If you want the electronic files or paper copies, please contact me.

Wisconsin Resources Available

- UW Center for Dairy Profitability
  www.cdp.wisc.edu/crop%20enterprise.htm
- UW-Team Grains web page
  www.uwex.edu/ces/ag/teams/grains/
- My Extension web page
  www.aae.wisc.edu/mitchell/extension.htm
- Detailed Excel spreadsheets with base cases and then you enter your numbers

Estimating Costs

- Variable Inputs: Easy = price times quantity, then add them all up
- Machinery/Equipment Costs: Harder
- Land, Labor, and Management
  - Usually the unpaid costs of your time, management skill, and energy
  - Treat as residual: What's left after you pay for everything else?
  - Then ask, Is it enough to justify all the work?

Machinery Costs

- Economic Engineering Approach
  - Ron Schuler on UW Team Grains webpage
  - Google "Machinery Cost Estimates"
  - U of IL, U of MN, IA State, Purdue
- Simple Rules of Thumb
  - "Fast and Simple Method to Estimate Typical Machinery Costs" on my web page
  - Your cost 25%-50% higher than custom rate
- It's your money, you decide how much detail you want!

What's should I plant after last year's corn?

- Once you have cost estimates you are comfortable with, you can answer this question with yield and price assumptions

- Should I plant corn after corn?
- Should I plant soybeans instead?
- What about wheat?

Net Returns

	Corn after Corn	Corn after Soybeans	Soybeans	Wheat
Yield	155	180	50	80
Price	4.50	4.50	11.50	7.50
Revenue	697.50	810.00	575.00	600.00
Costs	382.00	352.00	199.00	223.00
Returns to land and operator	315.50	458.00	376.00	377.00
Rent	100	100	100	100
Net Return	215.50	358.00	276.00	277.00

Use your own yields, prices, and costs

Main Idea

- Develop cost estimates for your farm
- Assume reasonable yields for your farm
- What prices do you need to make soybeans and wheat equal to corn after corn returns?
- How likely are you to get these prices or better?
- Change your assumptions to see how sensitive your finding are

Other Factors to Consider

- Prices and yields can be higher or lower than you assumed: few years are average years
- Growing more corn means more acres to plant and more acres to harvest
  - More labor and/or different equipment needed, which increases costs
  - Yield losses if you can't get all of your fields planted or harvested in time
- More specialized, so more risk: weather, pest, or price issues that affect corn affect a larger portion of your acres

Questions?

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