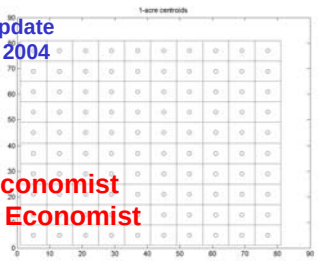
Do Farmers Need You More Today than in the Past?

KARA/KSU Crop Management Update
Holidome, Salina, KS. Dec. 7-9, 2004



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Profit is not a zero sum game

- If you make your clients profitable then you will be profitable
- So, you'd better know what makes your clients profitable

South Central Kansas Farm Management Association

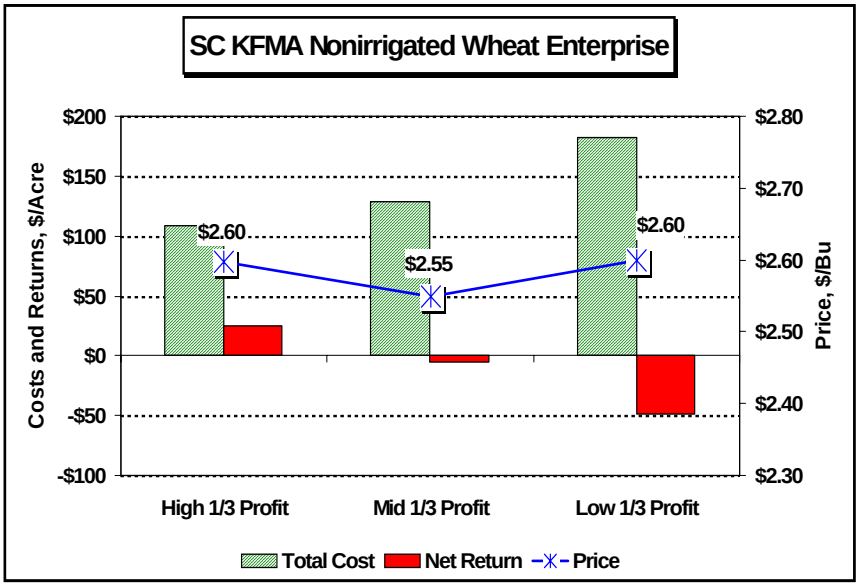
Nonirrigated Wheat Enterprise Sorted by Net Return to Management per Acre, 1999-2001

	Profit Category			Difference between High 1/3 and Low 1/3	
	High 1/3 Per Acre	Mid 1/3 Per Acre	Low 1/3 Per Acre	Absolute	%
Number of Farms	24	24	24		
Percent of Total Crop Acres	50%	63%	59%	-10%	-16%
Enterprise Acres	902	851	541	361	67%
Owned Acres	151	172	186	(36)	-19%
Rented Acres	751	679	355	396	112%
Yield per Acre	46.8	42.9	40.4	6.4	16%
Operator Percentage	73.5%	74.4%	79.2%	-5.8%	-7%
Price per bushel	$2.60	$2.55	$2.60	($0.00)	0%
INCOME:					
Crop Income	$89.01	$81.18	$82.20	$6.80	8%
Government Payments	$36.79	$33.57	$37.15	($0.35)	-1%
Other Income	$6.83	$9.28	$13.82	($6.99)	-51%
Gross Income	**$132.63**	**$124.03**	**$133.17**	**($0.54)**	**0%**
COSTS:					
Seed	$5.29	$6.03	$8.36	($3.07)	-37%
Fertilizer	$14.37	$14.88	$18.90	($4.52)	-24%
Herbicide-Insecticide	$6.83	$5.32	$8.22	($1.39)	-17%
Crop Insurance	$1.47	$2.29	$3.06	($1.59)	-52%
General Machinery Repair	$10.53	$13.67	$18.40	($7.87)	-43%
Machine Hire	$2.07	$4.49	$8.16	($6.09)	-75%
Gas, Fuel, and Oil	$6.09	$7.22	$9.37	($3.27)	-35%
Depreciation	$12.90	$15.06	$17.97	($5.07)	-28%
Machinery Sub-total	$31.59	$40.43	$53.90	($22.31)	-41%
Labor	$21.30	$26.14	$43.12	($21.82)	-51%
Other	$5.49	$6.39	$10.25	($4.76)	-46%
Land	$12.26	$13.85	$21.21	($8.95)	-42%
Interest	$9.53	$13.77	$15.35	($5.82)	-38%
Total Cost	**$108.13**	**$129.11**	**$182.36**	**($74.23)**	**-41%**
Net Return to Management	**$24.50**	**($5.08)**	**($49.19)**	**$73.69**	

This crop enterprise is based on the operator's share of production, and thus includes only production expenses paid by the operator.

-1%

+101%



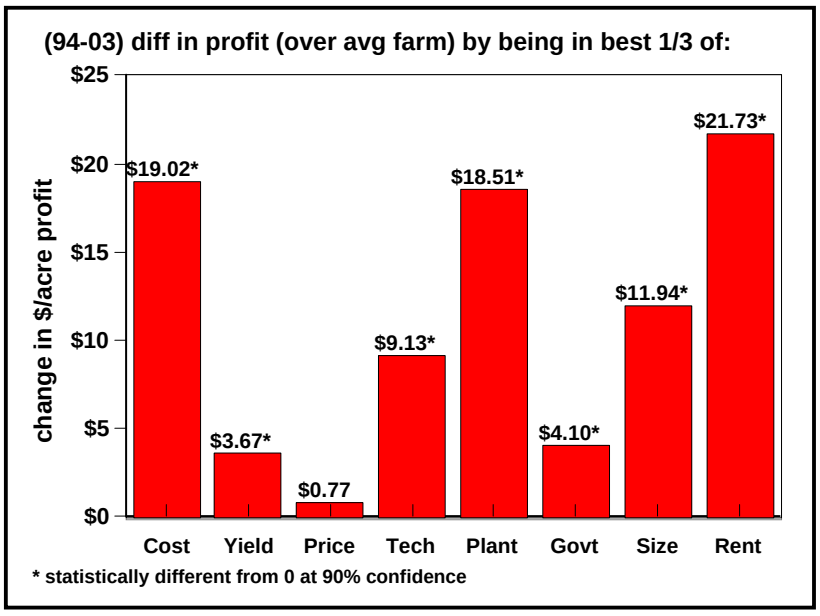
Cost, not revenue, drives profit

- **Good Management**

- A well-managed firm is one that consistently makes greater profits than competing firms in the industry.

- In production agriculture, profitability has to do with persistently having higher profits than similarly structured neighboring farms.

- So, what management traits matter? What makes farmers more profitable than their neighbors?



Cost is a large driver of profit; Technology matters; but also size and renting more

Machinery costs are highly variable across farms …

Kansas Farm Management Association Enterprise Analysis
Nonirrigated Crops -- State Averages, 2001-2003

	Corn	Sorghum	Wheat	Soybean	Alfalfa	
Number of Farms	105	194	327	170	57	
Average Acres						Total Ac
High profit farms	481	432	692	443	112	2,160
Mid profit farms	306	313	679	310	130	1,739
Low profit farms	196	208	382	228	66	1,080
Machinery Costs, $/acre						Wtd Avg
High profit farms	$54.32	$42.85	$47.58	$50.04	$61.30	$49.35
Mid profit farms	$60.73	$51.68	$49.26	$60.38	$76.77	$55.76
Low profit farms	$91.65	$65.61	$67.79	$76.19	$99.00	$75.38
High less low, $	**-$37.33**	**-$22.76**	**-$20.21**	**-$26.16**	**-$37.70**	**-$26.03**
High less low, %	**-40.7%**	**-34.7%**	**-29.8%**	**-34.3%**	**-38.1%**	**-34.5%**

Machinery costs are important in explaining profitability differences across farms …

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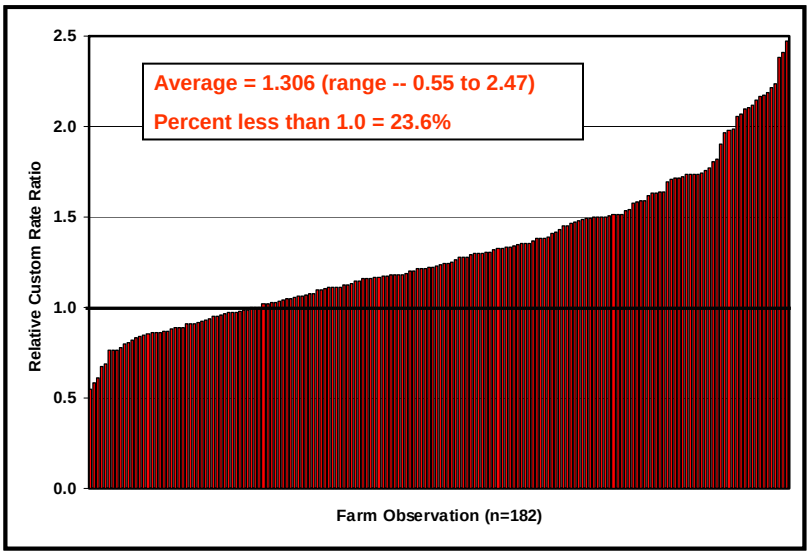
High less low, %	**-40.7%**	**-34.7%**	**-29.8%**	**-34.3%**	**-38.1%**	**-34.5%**
Differences between high profit farms and low profit farms in …						
Total costs	-$89.28	-$62.37	-$46.46	-$57.36	-$75.84	-$61.92
Net returns	$91.29	$73.01	$65.97	$78.23	$165.55	$80.90
Cost/net returns	97.8%	85.4%	70.4%	73.3%	45.8%	76.5%
Mach/total costs	41.8%	36.5%	43.5%	45.6%	49.7%	42.0%
Mach/net returns	40.9%	31.2%	30.6%	33.4%	22.8%	32.2%

Machinery bigger part of costs for alfalfa relative to other crops. Managing costs really matters for corn – matters for alfalfa but revenue does too.

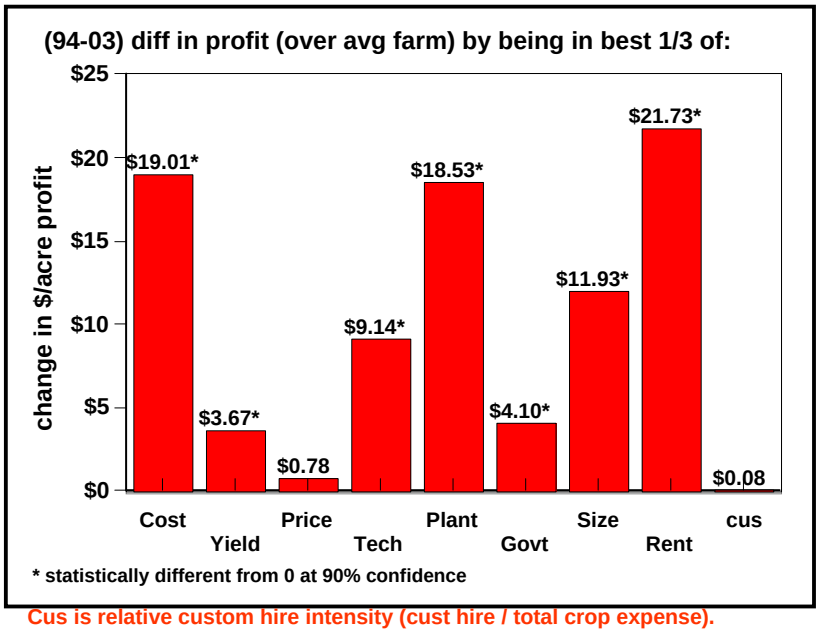
Relative custom rate ratio



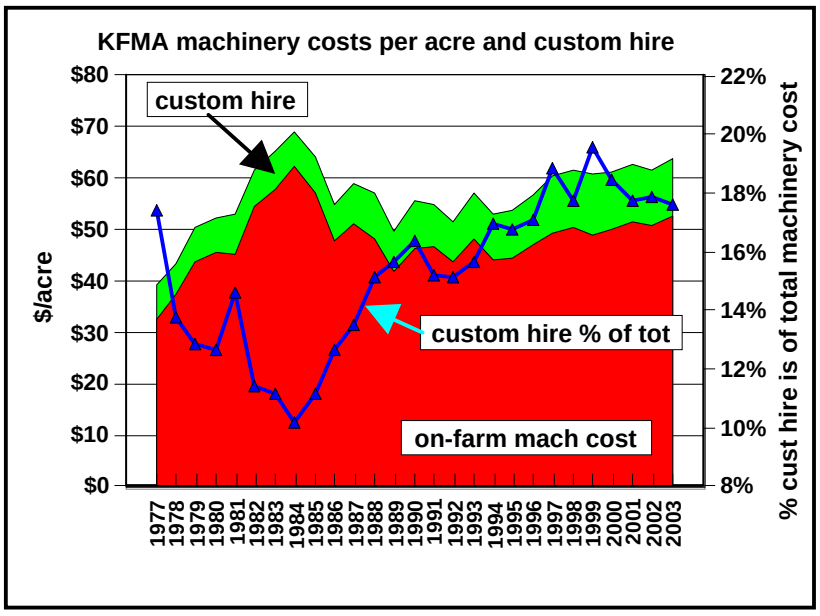
Most farms have machinery costs higher than published custom rates

Should crop input providers get into or expand their custom farming business?

- It does appear many farms would be better off hiring farming operations rather than doing them in house
  - Is that really true?
- Are farms using more custom work today?
  - i.e., is the overall demand increasing?
- Are bigger or smaller farms hiring custom work?
  - Where is the best market segment?

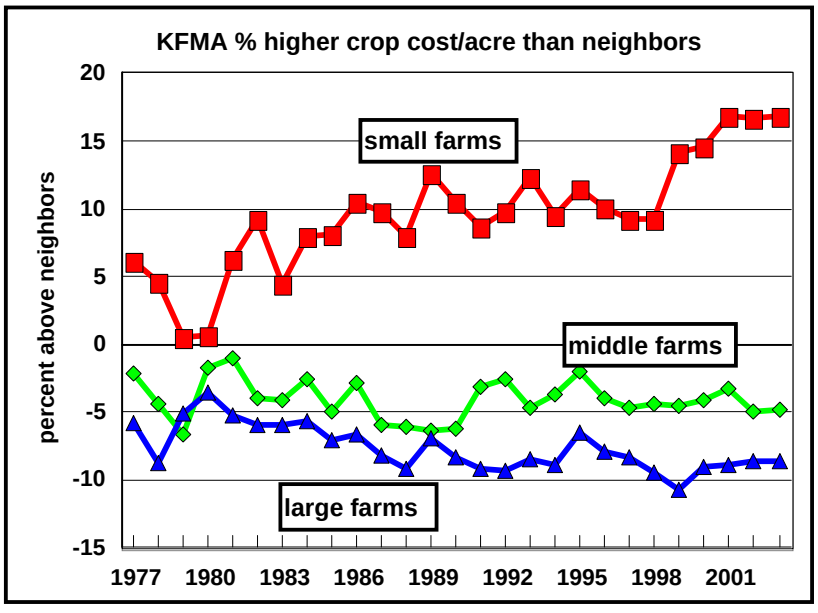


Cus is relative custom hire intensity (cust hire / total crop expense).
Custom hire doesn't of itself make you profitable.

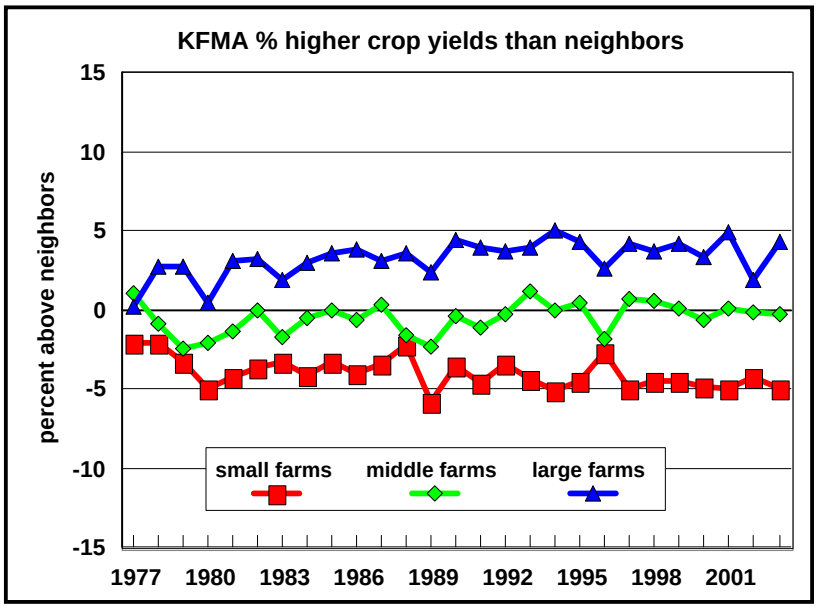


Maybe a slight temporal increase in demand for custom hire . . .

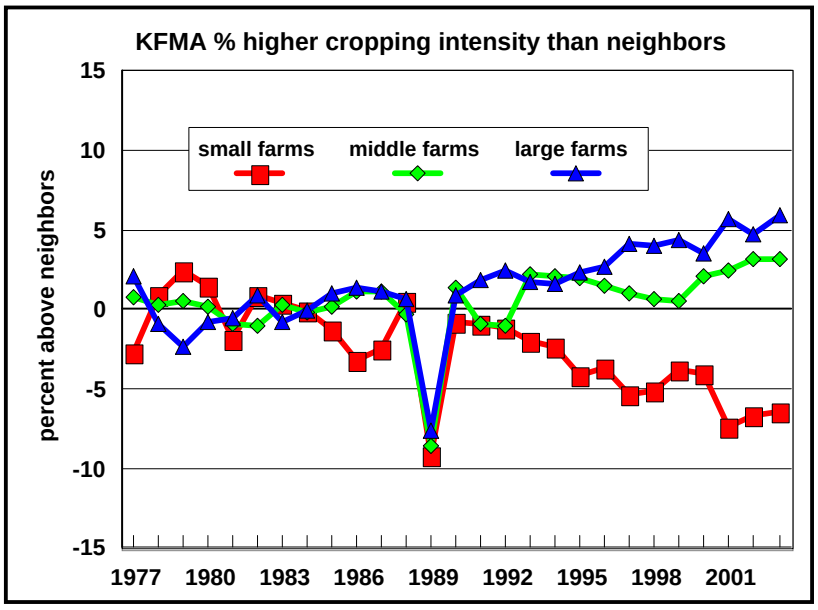
- **Some management features have showed trends over time related to big vs. small farmers**
- **Has that been true regarding custom hire?**



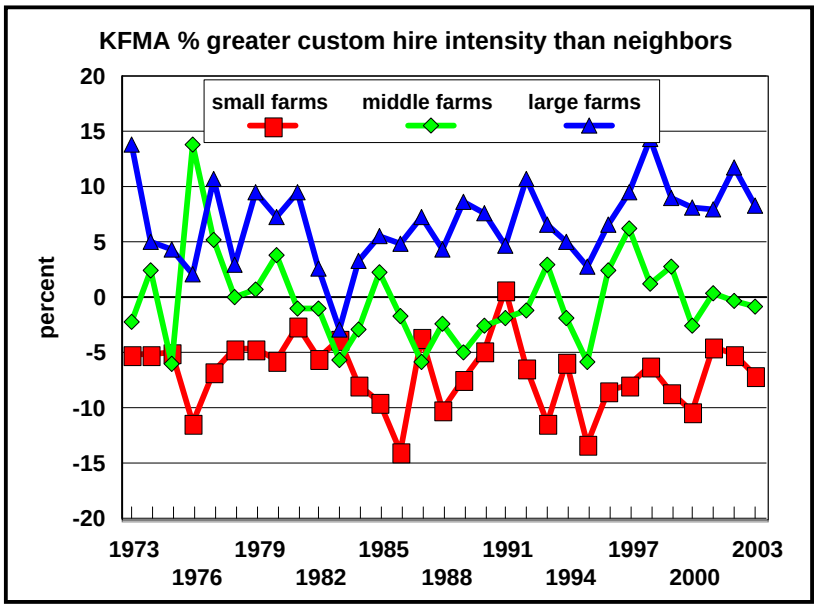
Example of one factor that showed a very distinct trend across farm size



Example of one factor that showed a smaller trend across farm size



Example of one factor that showed a big recent trend across farm size



A larger portion of total crop expenses/acre is cust hire for big farms. But, bigger farms have much lower expenses per acre.

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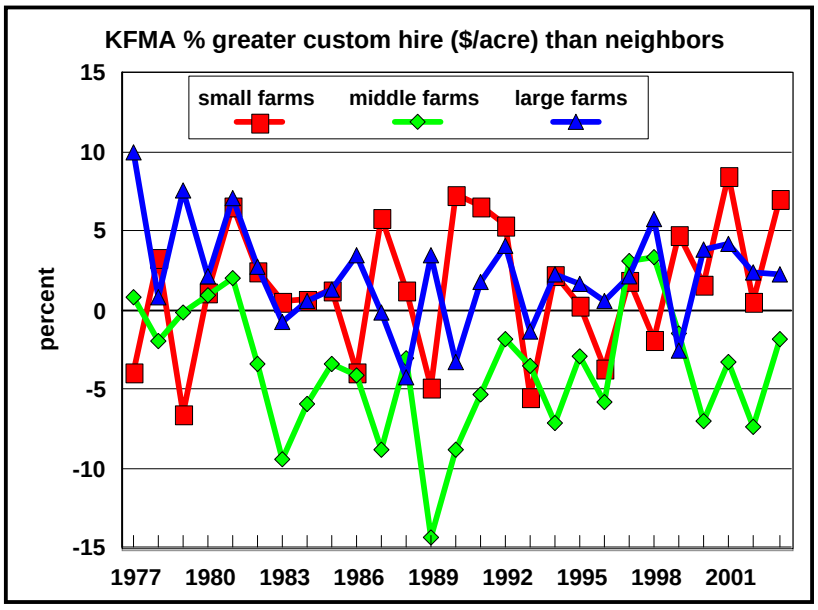

Small and large farms tend to spend more $/acre in cust hire than avg size.

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Additional thoughts on going into custom work

- Doug Karre, Frenchman Valley Coop (Dec 8)
  - Customers are small and big farms, not middle
  - Profitable in its own right; related seed and fertilizer sales is an added bonus
- We're wondering. . .
  - History showed cust hire by big and small farms
  - With increasing size-polarization of farms, the big and small will be all that's left – increased demand
- Things to consider:
  - Make custom services profitable in their own right
    - Not just machinery but also agronomic services
  - Keep thinking about bi-polarization

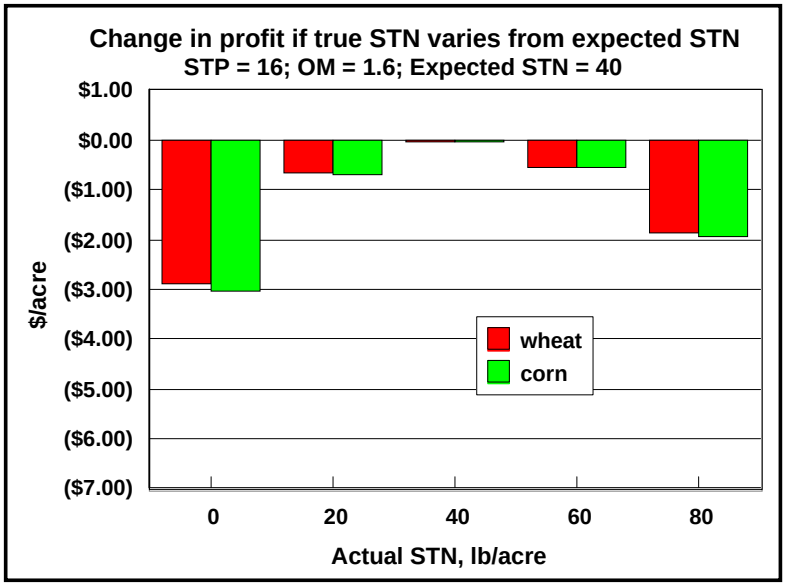
Back to something more agronomic

- "Soil Sampling, Especially for N & P: Does it Pay?"
  - At www.agmanager.info
  - Click on Crops, then on Precision Agriculture
- Just going to show a few highlights until we run out of time
- We know fertilizer recs. but have trouble answering many of the hard questions . . .

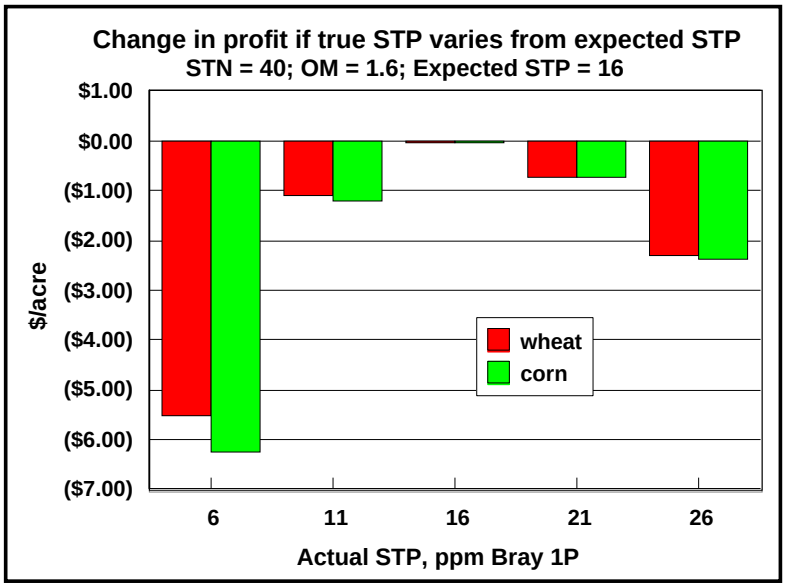
Unanswered questions

- **Many interesting questions cannot be answered using only fertilizer recommendation formulas:**
  - **How many sampling locations should comprise a soil sample? How many cores at a location?**
  - **Does it pay to soil sample? If so, how frequently?**
  - **How do crop and fertilizer prices impact the returns to soil sampling?**
  - **How much more should I pay to rent or buy land with higher fertility?**
  - **Is grid sampling worth the cost?**
  - **How much can I afford to pay for electronic sensing devices?**
- **Yield models are needed to answer such questions**

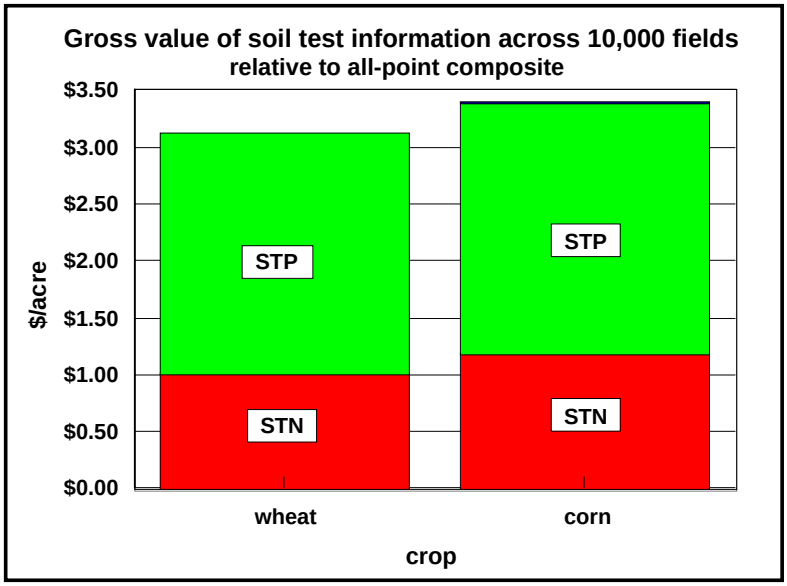
Potential gains to soil testing for N (assume 75 bu/a corn 45 wheat)



Potential gains to soil testing for P

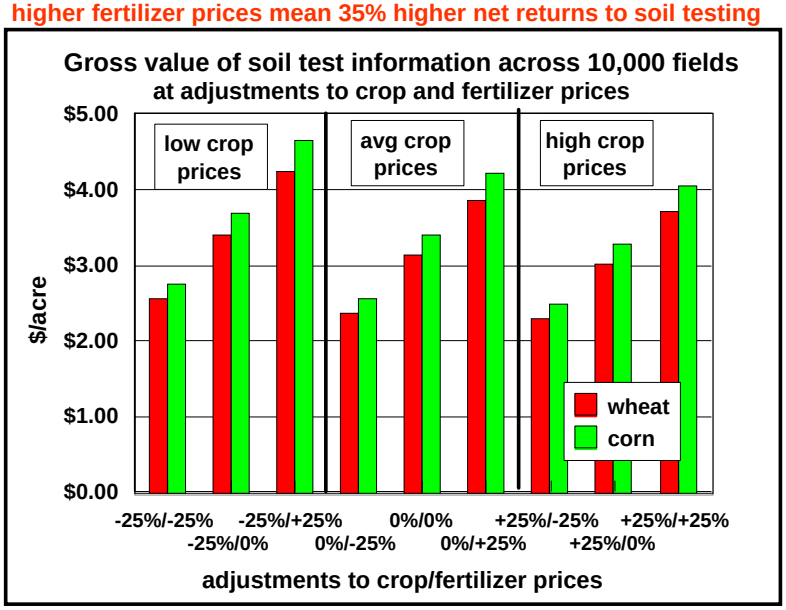


Expected yields 45 (wheat) and 75 (corn); average benefit $3.26/acre



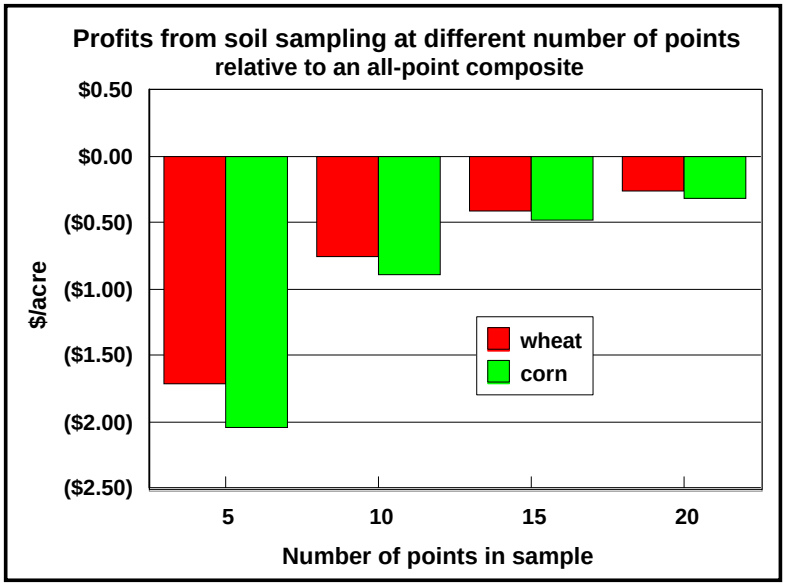
Cost is $0.99/acre for a net profit of $2.27/acre

Fertilizer, not crop, prices drive returns to soil sampling. 25% higher fertilizer prices mean 35% higher net returns to soil testing



Lo crop & hi fert prices means it really pays to know which fields to skip

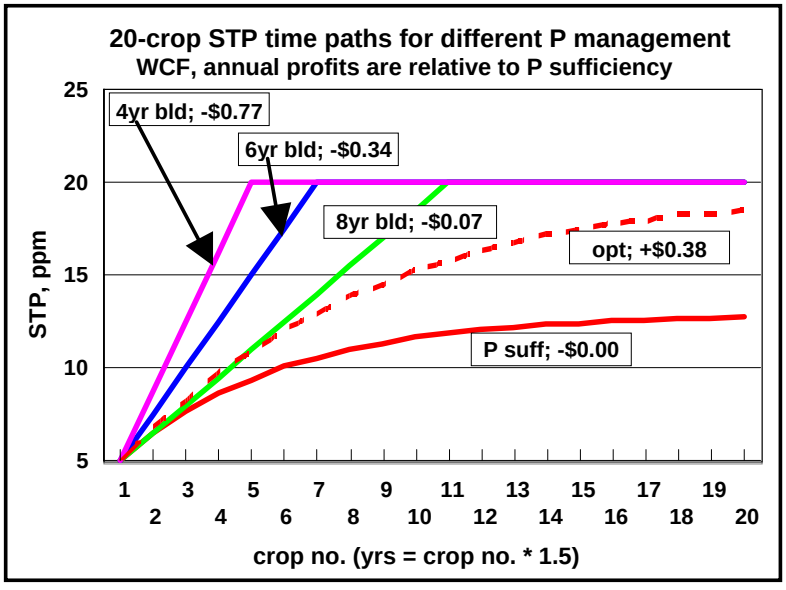
Inadequate sampling can negate expected returns to soil testing



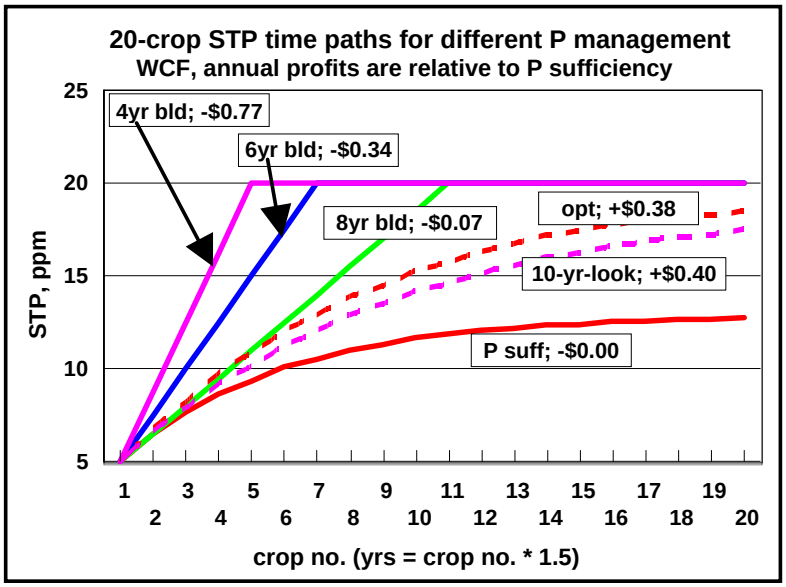
Managing P over time

assuming 18 lb/a excess (above crop removal) P_2O_5 to increase Bray STP 1 ppm

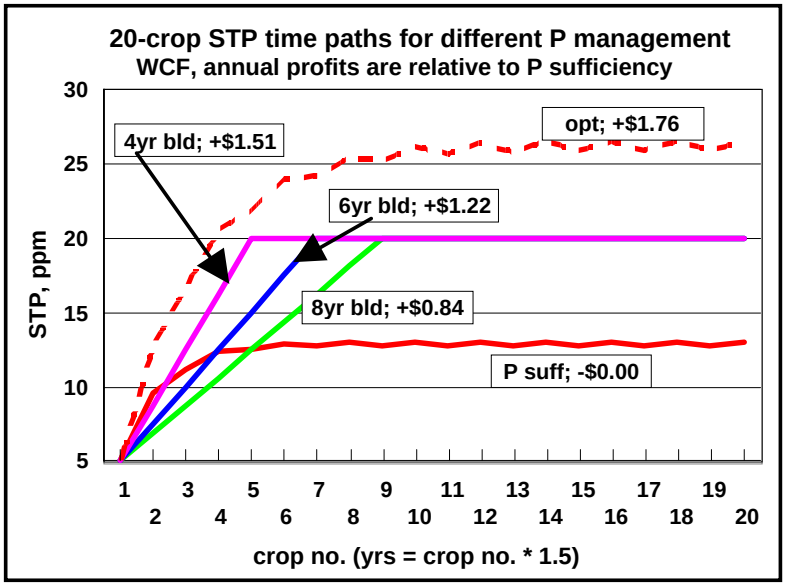
First 20 crops (30 yrs) of an infinite horizon (relative profit/a/yr)



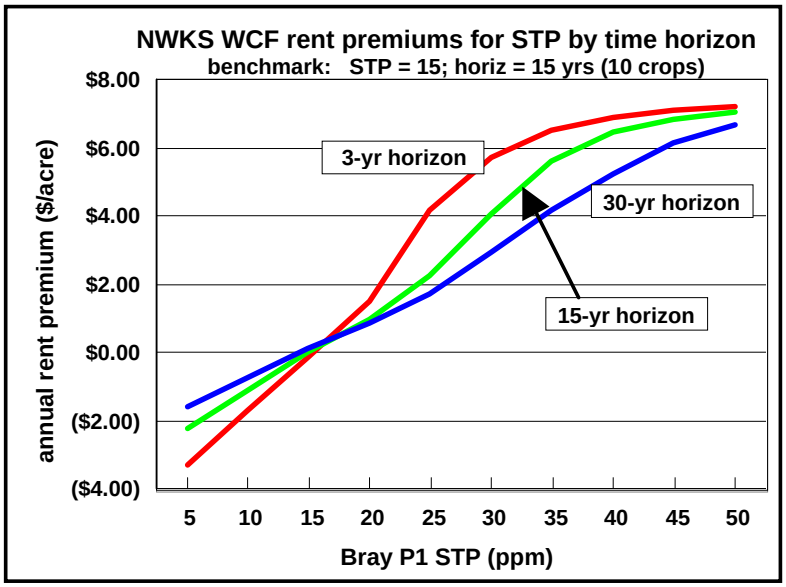
A moving, 10-year look-ahead may not be a bad strategy



What if transformation rate is 6 lb excess phosphate per ppm?

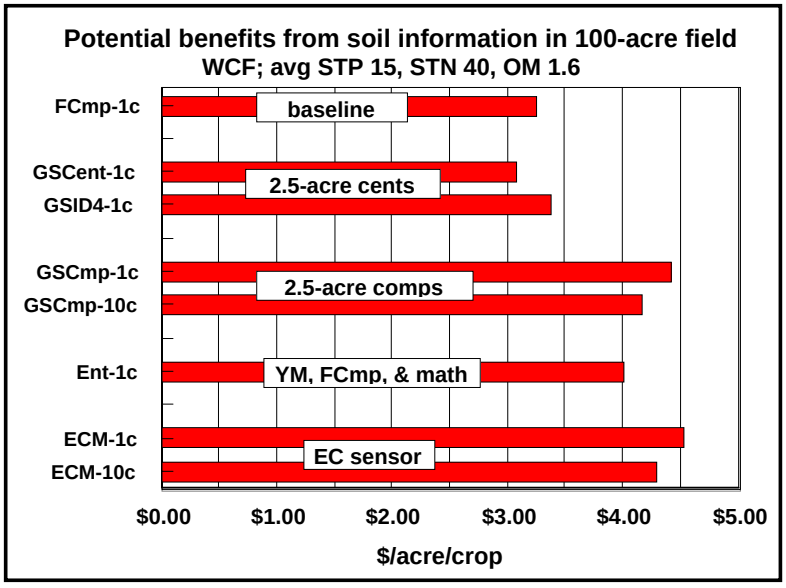


Large implications for rents and land values (annual, not per crop)

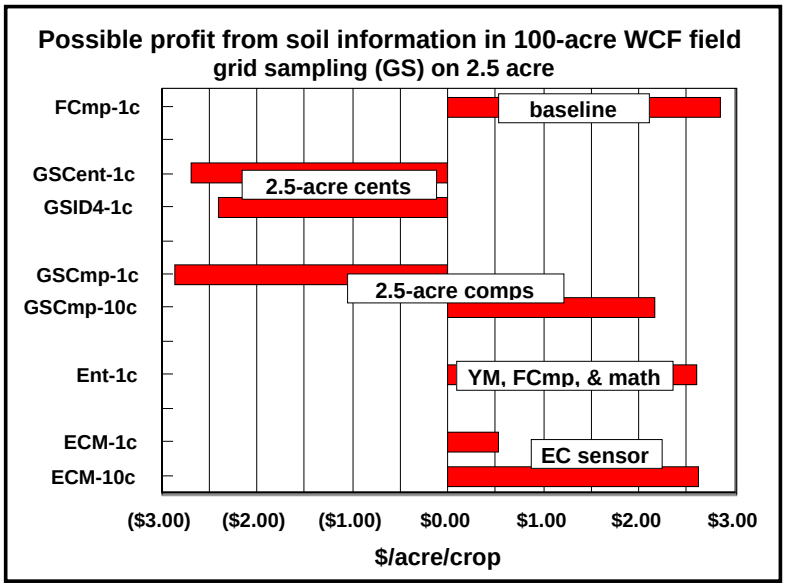


Back to assuming a transformation rate of 18

Many opportunities to improve on the usual field composite soil sample



Many opportunities for site-specific profits dissipate with costs.



Managing P over time (build or drawdown) adds $0.50 - $1.50 to all bars

Summary

- Getting into custom farming may pay but it will be risky
- There's a lot of room to increase farmer profit with soil sampling