

2016 Soil Management & Land Valuation Conference

Cash Rent Panelist

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Current and Future Cash Rents in Iowa

Current

They're too High

Future

Tenants and Landlords
aren't always speaking the
same language

Divergence of Dialogue

Tenants

How much should I pay for rent?

How much will you let me pay for rent?

How much should my rent be reduced from last year?

Landlords

How do I get my tenant to try cover crops?

Does no-till effect yield?

Do I have any liability for run-off from my farm?

Common Cash Rent Analysis

- Farmer A- The average CSR2 of your farm is 82, therefore I am willing to pay you \$300/acre cash rent.
- Farmer B- The average CSR2 of your farm is 82, therefore I am willing to pay you \$310/acre cash rent.

Farmer B wins the
Bid!

Q- When is cash rent not cash rent?

A- When it's cash rent with land depreciation figured in.

- | | | | |
|-------------------|---------|-------------------|---------|
| • Cash Rent | \$310 | • Cash Rent | \$310 |
| • Real Estate tax | (\$ 30) | • Real Estate tax | (\$ 30) |
| • Net Cash Rent | \$280 | • Depreciation | (\$ 51) |
| | | • Net Cash rent | \$229 |

Tractor Rental Agreement

- Tractor #1- Rent for \$75 per engine hour, 100 hours of use
- Tractor #2- Rent for \$85 per engine hour, 100 hours of use

Tractor #1 Rental Agreement with Farmer A

- Beginning Asset:



Operate during the year



Washed and Waxed



The Tractor Farmer A Returned



Tractor #2 Rental Agreement with Farmer B

- Beginning Asset



Operate During the Year



The Tractor Farmer B Returned



We pay attention to machinery depreciation, why don't typical land rental agreements pay attention to land depreciation?

NRCS Soil Health Indicators

- Soil organic matter => nutrient retention; soil fertility; soil structure; soil stability; and soil erosion
- Physical: bulk density, infiltration, soil structure and macropores, soil depth, and water holding capacity => retention and transport of water and nutrients; habitat for soil microbes; estimate of crop productivity potential; compaction, plow pan, water movement; porosity; and workability
- Chemical: electrical conductivity, reactive carbon, soil nitrate, soil pH, and extractable phosphorus and potassium => biological and chemical activity thresholds; plant and microbial activity thresholds; and plant available nutrients and potential for N and P loss
- Biological: earthworms, microbial biomass C and N, particulate organic matter, potentially mineralizable N, soil enzymes, soil respiration, and total organic carbon => microbial catalytic potential and repository for C and N; soil productivity and N supplying potential; and microbial activity measure

Land depreciates? Leopold Center 2015 Fall Letter

- Rick Cruse, Professor of Agronomy at Iowa State University & Director of the Iowa Water Center:
- We're losing much more soil than we think because not all types of erosion are part of the models that estimate soil loss.

Leopold Letter continued

Soil erosion loss estimates from the National Resources Inventory:

- A conservative estimate is that Iowa cropland loses 5.5 tons of topsoil /acre per year, resulting in a total average loss of 6.8 inches of topsoil in Iowa since 1850.

Leopold Letter continued

- A modest estimate: an average of 10 bushels per acre yield loss from the 6.8 inches of soil erosion that has occurred in Iowa since about 1850 means you will quickly surpass a billion dollars of annual lost revenue”
- $\$1\text{B revenue} / 25\text{M crop acres} = \$40/\text{acre}$

For the most part, past topsoil loss occurred when we had:

- Organic Cropping systems
- Renewable Fuels Production-Hay and Pasture were a large component of the crop rotation
- Farmsteads and timber provided windbreaks
- Smaller fields and fence lines created shorter slopes and acted as terraces and windbreaks
- Shallow tillage
- Healthier soils- widespread manure usage

Today we have

- Cellulosic renewable fuels production is removing cover and organic matter
- Deep Tillage & Vertical Tillage
- More intensive cropping including soybeans
- Less organic matter
- More NH₃ usage, less widespread manure usage
- Impediments to erosion such as farmsteads, timber, and fence lines have largely disappeared
- More frequent and intense rainfall patterns
- Water Quality issues and lawsuits

After a quick ½” rain in 2015



What's the economic impact of topsoil loss?

- Starting Point: Half of Iowa's top soil has been lost in the last 150 years.
- At that rate in another 150 years the topsoil will be gone, making the land essentially useless, possibly before 150 years have passed
- Evenly amortized, that's about \$51/acre loss of value per year with land valued today at \$7,633/acre

Questions for landlords to ask tenants

How will your cultural practices impact the value of my land?

- What are your tillage/no-till practices?
- What types of fertilizer do you use? How is it applied?
- Do you use cover crops?
- How do you measure soil health and value?

Questions for tenants to ask landlords

- There could be some temporary yield loss as a farm is converted from intensively tilled to no-till. How can you help me financially with that process?
- How will you judge my rental agreement if I can improve the soil health of your farm?
- While benefiting your farmland value, cover crops bring risk and cost into my operation, how can we both be fairly compensated?

Hopefully, my points have been made

- Iowa topsoil has value,
- Iowa is losing topsoil,
- Farming practices can influence whether a piece of land loses, retains, or builds topsoil
- There is no clear template for cash rental agreements that address the issue of soil health, productivity, related costs and benefits, or how the cost and benefits should be allocated.

So, where are cash rents heading?

The market needs to figure out how to:

- Measure and value topsoil and productivity,
- Measure topsoil gain or loss,
- Accurately measure improvements or degradation in soil health and quality,
- Develop rental agreements that incent both landlord and tenant to share the risks, costs, and benefits of sound, sustainable cultural practices