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Cornhusker Economics

Cooperative Extension

Institute of Agriculture & Natural Resources
Department of Agricultural Economics
University of Nebraska – Lincoln

Farmer Views on the Emerging Carbon Market

Market Report	Yr Ago	4 Wks Ago	1/9/04
<u>Livestock and Products,</u>			
<u>Average Prices for Week Ending</u>			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt	\$77.69	\$97.19	\$74.68
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt	88.71	*	91.08
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg	89.04	108.25	102.26
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt	119.52	149.35	115.94
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt	*	35.50	36.00
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd	*	*	33.67
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt	85.47	90.74	100.22
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt	86.75	84.70	*
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt	164.83	181.10	181.69
<u>Crops,</u>			
<u>Cash Truck Prices for Date Shown</u>			
Wheat, No. 1, H.W. Omaha, bu	3.52	3.84	3.83
Corn, No. 2, Yellow Omaha, bu	2.21	2.44	2.38
Soybeans, No. 1, Yellow Omaha, bu	5.35	2.68	7.81
Grain Sorghum, No. 2, Yellow Kansas City, cwt	4.43	4.70	4.48
Oats, No. 2, Heavy Minneapolis, MN, bu	2.32	1.69	1.80
<u>Hay,</u>			
<u>First Day of Week Pile Prices</u>			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton	150.00	130.00	130.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton	80.00	62.50	55.00
Prairie, Sm. Square, Good Northeast Nebraska, ton	117.50	*	*
* No market.			

Global warming is caused when excessive amounts of carbon dioxide, nitrous oxide, methane and chlorofluorocarbons trap the heat from solar energy in the atmosphere. During the past two centuries, soils have been a net source of greenhouse gases, especially carbon. A recent trend in policy dealing with global warming has been to investigate the possibility of utilizing agricultural practices to aid in lessening the global warming problem, rather than contributing to it. One focus has been to increase soil organic matter, thus using the soil as a sink for carbon. Other benefits of increasing organic matter (sequestered and stored carbon) levels include elevated soil water holding capacity, increased retention of plant nutrients, improved soil aggregation, mitigation of drought and improved overall soil quality. The U.S., in its negotiations regarding the Kyoto Protocol, has stressed the importance of using agricultural land as carbon sinks in meeting the challenge of climate change. Intriguingly, the Iowa Farm Bureau recently signed an agreement with the Chicago Climate Exchange to serve as an aggregator of farmers and farmland. The idea is that a price coming through buyers who are parties to the Chicago Climate Change would create an opportunity for farmers in Iowa to increase their use of farming practices that result in sequestering more carbon in farm soils. The Bureau would bring a price to farmers based on the price the Bureau negotiated with the buyers of storage through the Chicago Climate Exchange.

The intriguing question is: which farmers might find sequestration of carbon something they are interested in? Who might an organization like the Bureau, or perhaps some other aggregator like a farm cooperative, target in bringing an aggregation of stored carbon together (actually, to sign contracts to store carbon) for sale?

The table below summarizes some of the data collected in a research project addressing such questions for a representative corn-soybean area, having some irrigated but mainly rain fed land in the Western Corn Belt, as represented by the Saunders County area here in Nebraska. All farm operators in the county were mailed a questionnaire in 2003 asking their interest in carbon sequestration. The results in Table 1 represent part of what we learned about what the farming popula-



tion is thinking in relation to the global warming and carbon sequestration issue.

Also, sequestering and storing carbon is fundamentally about changing the way we farm, and especially about how much tillage is done on the land. The results in Table 1 focus on conservation tillage (CT) on cropland. Who is practicing CT (and, thus, who is already sequestering/storing more carbon in cropland)?

This table includes four different categories of farmers: 1) farmers with 0 percent crop acres under CT (representing 33 percent of the farmers surveyed), 2) farmers with 1-50 percent under CT (14 percent), 3) farmers with 51-99 percent under CT (13 percent), and 4) farmers with 100 percent of their crop acres under CT (40 percent of the farmers). Table 1 shows the mean response to each particular question for those respondents choosing a number from one to seven (strongly disagree to strongly agree scale), according to the category of CT that the farmer falls under. A number less than 3.50 means that on average the farmers disagreed; if it is greater than 3.50, they agreed. There is general agreement with all the statements, as the smallest average response is 4.08.

Perhaps more importantly there are really two groups of farmers, those represented in the first column who do not use any CT and those in the other columns that use CT in varying degrees. Also, within the second group, the two middle columns represent those in transition from no CT (with 0 percent) to all CT (with 100 percent). Intriguingly, this group often differs from those at either end. For example, those with 51-99 percent of their cropland under CT now tend to agree the most strongly with the need to address the greenhouse gas problem; sign the Kyoto; increase both government payments and the price for stored carbon; and to ask government to certify the amount stored. This group would likely be the most responsive to more

government involvement. Those with 1-50 percent tend to agree the most strongly with the need for a carbon market and a pricing mechanism. This group would likely be the most interested in pricing and market approaches such as that being proposed by the Chicago Climate Exchange. It will also likely take a higher payment and a higher price to induce the 51-99 percent group to use more CT, as indicated by the highest average response to both the “increase payments” and “create carbon market” statements.

Intriguingly, both the 0 percent CT and 100 percent CT groups have quite similar views on several issues. For example, both groups have about the same level of agreement on the role of government programs to bring about more stored carbon. Yet it is also clear that the 100 percent CT group is noticeably different, in being less concerned about new government programs and market pricing to bring about more carbon storage. These farmers are already doing it, so the historical incentives to do so have brought about this kind of activity for other reasons. Perhaps the most intriguing result is that the 100 percent CT group shows the lowest agreement on the statement “A carbon storage market should pay for the total amount of carbon stored in the soil.” Given this group would benefit the most from such a price and market, apparently they also have other reasons (that is, doing CT for reasons of profit but also for other reasons) to practice conservation tillage.

The evolving relationship among Iowa farmers, the Iowa Farm Bureau and the Chicago Climate Exchange bears watching. Intriguingly, the Chicago Climate Exchange has included roughly the eastern one-third of Nebraska in their potential market zone: no aggregator is currently operating to bring this area to market.

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Table 1. Average Responses to Statements about Greenhouse Gases and the Best Incentives for Storing Carbon as Related to Use of Conservation Tillage (CT)

Statement	Percentage of Crop Acres Under Conservation Tillage (CT)			
	0	1-50	51-99	100
The build-up of greenhouse gases leading to global warming is a real problem that we need to do something about.	4.75	4.75	5.27	5.01
Canada recently signed the Kyoto Protocol, which will, when fully ratified world-wide place a cap on greenhouse gas emissions. The U.S. should sign, too.	4.29	4.27	4.52	4.22
The best incentive to get more carbon stored in farm soil is to increase government conservation payments to farmers.	5.12	5.22	5.48	5.16
The best incentive to get more carbon stored in farm soil is to create a commodity market in carbon, so farmers could sell carbon storage on the open market.	4.78	5.15	5.50	5.29
If there were a carbon storage market, someone would have to certify the amount of stored carbon that is for sale. This is best done by a government agency rather than by a private business firm.	4.24	4.13	4.63	4.08
A carbon storage market should pay for the total amount of carbon stored in soil.	5.17	5.32	5.15	4.98
A carbon storage market should pay for the annual increase in stored carbon.	5.14	5.63	5.33	5.28