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Whither Grain Ethanol?

Richard K. Perrin
University of Nebraska-Lincoln

CORNHUSKER ECONOMICS

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Market Report	Yr Ago	4 Wks Ago	10/13/06
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight	$88.56	$88.45	$87.10
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb	134.01	134.44	121.01
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb	121.24	122.84	116.15
Choice Boxed Beef, 600-750 lb. Carcass	143.45	147.26	143.02
Western Corn Belt Base Hog Price Carcass, Negotiated	61.80	67.55	62.87
Feeder Pigs, National Direct 45 lbs, FOB	54.43	53.65	50.71
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean	69.47	73.36	69.59
Slaughter Lambs, Ch. & Pr., 90-160 lbs., Shorn, Midwest	92.00	98.00	*
National Carcass Lamb Cutout, FOB	*	240.58	248.16
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu	*	4.12	4.99
Corn, No. 2, Yellow Omaha, bu	1.49	1.98	2.92
Soybeans, No. 1, Yellow Omaha, bu	5.31	5.13	5.45
Grain Sorghum, No. 2, Yellow Columbus, cwt	2.41	3.30	4.64
Oats, No. 2, Heavy Minneapolis, MN , bu	1.81	2.19	2.51
Hay			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton	117.50	135.00	135.00
Alfalfa, Large Rounds, Good Platte Valley, ton	37.50	87.50	87.50
Grass Hay, Large Rounds, Good Northeast Nebraska, ton	52.50	82.50	82.50

* No market.

Grain ethanol has been in the Nebraska news almost weekly over the last couple of years - plans announced, plant construction begun, plant openings, etc. The news has buoyed corn prices this fall, despite gasoline prices in the vicinity of $2.00/gal that reduces demand for ethanol. There is concern by some that diversion of corn from food (meat, milk and eggs) to fuel will have serious consequences for livestock and food markets. Concerns are also expressed that over-expansion will turn the ethanol boom into a bust. Much research remains to be done to clarify these economic issues, but some insights below are available from cursory analysis.

The eight ethanol plants currently under construction in Nebraska will nearly double the production capacity from the 11 plants in operation. New plants under construction will have their impact over the next two to three years, but planned construction will have an impact beyond that. Let's consider possible impacts in those two phases.

In 2005, the estimated 300 million bushels ground for ethanol and related products in Nebraska represented nearly 25 percent of the state's previous corn crop, and when plants under construction come on line, the fraction of Nebraska's corn crop going into ethanol will be about 45 percent. The corn for these new plants will come from reductions in the amount of corn now sent out of the state. Nebraska has recently sent a little over 40 percent of its corn crop out of state (most of this to other states rather than overseas), so there are ample amounts available for the additional 25 percent needed by the under-construction ethanol

plants, without reducing corn available for Nebraska livestock. Current supplies are not sufficient, however, for an additional expansion equal to that of plants now under construction.

For the U.S. as a whole, the expansion is slightly less dramatic; 33 plants under construction will increase capacity by about 50 percent over the existing 97 plants. This means that the current 13 percent of corn crop used by these plants will increase to 20 percent, shrinking the amount of corn available to foreign buyers. The U.S. exports about 20 percent of the corn crop (which accounts for about two-thirds of world corn trade). If the additional ethanol gulp of 7 percent of the U.S. crop were to happen all at once, it would have a substantial effect on U.S. and world corn prices. But this gulping will happen gradually over the next two to three years, giving time for U.S. and foreign farmers to increase corn production in response to increasing prices.

Standard trade theory applied to these numbers suggests that the gulp by ethanol plants now under construction should increase annual average world corn price by no more than 3 percent or so, or less than $0.10/bu. Even with no change in exports, the 7 percent gulp over this period should increase average U.S. prices by no more than 7-10 percent.

Then are predictions of $3 or $4 corn during the next two years just over-reactions? That depends on how many new plants start construction. If a year from now we see construction begun for another 3 percent of the corn crop, and another 3 percent after that, we will very likely see an annual average price of $3 per bushel.

Will the grain ethanol industry remain viable as corn prices rise, accompanied perhaps by higher petroleum costs than we are now seeing? The curves in the diagram below show the combinations of corn and energy prices that allow one to produce ethanol for a net cost of $1.00, $1.20 and $1.40/gallon. (This is *without* considering the $.51/gallon federal subsidy). The *x*'s identify the actual combinations of energy and corn prices that occurred in Nebraska over the last six years.

At recent prices in Nebraska, net ethanol production costs have been in the range of $1.15 to $1.30/gal. It appears that ethanol, even without subsidies, will be able to compete with gasoline under $2.00/gal., even though ethanol contains less energy per gallon. It appears from budget estimates that only at $4/bu would corn ethanol no longer compete directly with $2 gasoline. So expect to see more new plant construction - lots more.

Richard K. Perrin, (402) 472-9818
Roberts Professor of Agricultural Economics
University of Nebraska-Lincoln
rperrin1@unl.edu