4-4-2000

Fuel Prices and Farm Costs

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April 5, 2000

Cornhusker Economics

Cooperative Extension

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Market Report	Yr Ago	4 Wks Ago	3/31/00
Livestock and Products, Average Prices for Week Ending			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt.	$64.00	$69.86	$72.03
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt.	78.75	95.12	94.37
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg.	83.88	98.02	100.63
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt.	97.68	105.26	111.95
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt.	30.50	39.25	46.25
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd.	*	*	62.57
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt.	82.80	104.05	116.28
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt.	58.25	76.38	83.75
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt.	150.00	170.00	170.00
Crops, Cash Truck Prices for Date Shown			
Wheat, No. 1, H.W. Omaha, bu.	2.97	2.79	2.85
Corn, No. 2, Yellow Omaha, bu.	1.96	1.95	2.09
Soybeans, No. 1, Yellow Omaha, bu.	4.47	4.76	5.15
Grain Sorghum, No. 2, Yellow Kansas City, cwt.	3.39	3.32	3.65
Oats, No. 2, Heavy Sioux City, IA , bu.	1.22	1.33	1.37
Hay, First Day of Week Pile Prices			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton.	100.00	87.50	85.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton.	42.50	90.00	85.00
Prairie, Sm. Square, Good Northeast Nebraska, ton.	62.50	*	*

* No market.

We have received questions lately on the impact of increased fuel prices on Nebraska's agricultural producers. While the direction is certain, the magnitude of the effect is a difficult question to answer. Strategies employed by individual producers that we have visited with range from a few who locked in diesel fuel prices at lower levels, to those who were waiting as long as possible to buy their fuel for spring work.

Aggregate Approach

Two approaches were used to estimate the impact of higher diesel and gasoline prices. The first approach used aggregate data. The Nebraska Agricultural Statistics Service conducts an annual survey of expenditures by agricultural producers. "Petroleum Fuel and Oils" is one of the expense categories. This expense has ranged from $249 million to $310 million dollars in the years 1995-99. The 1999 expense of $310 million is a projection, based on the 1998 figure for Nebraska and the 1999 national estimate by the Economic Research Service, USDA.

If we apply a percentage increase in fuel price to the aggregate figure, we would have an estimate of the dollar impact of the fuel price increase. A mid-Nebraska cooperative is quoting a price of $1.02 per gallon for farm-delivered diesel fuel. According to their records, the price a year ago was $.63 per gallon. This April-to-April comparison is a 62% increase. But the fuel prices during the growing season, and the timing of purchases, would determine a producer's average cost per gallon for the year. In 1999 the diesel price trended upward during the growing season. It

had increased to 71 cents by July, 79 cents by August and to 90 cents by October. If producers bought fuel as needed during the 1999 growing season they may have realized an average diesel fuel cost of approximately 73 cents per gallon. If the current price of $1.02/gal holds for the 2000 growing season, this would result in a 40% increase in fuel costs from 1999, not 62%. Futures prices for crude and heating oil indicate a steady to slight decline in diesel fuel prices in the coming months.

A 40% increase in fuel price from 1999, applied to the expenditure for petroleum fuel and oils of $310 million results in an increased cost of $124 million. This probably overstates the impact, as the $310 million includes natural gas, propane and lubricating oils, which have not increased in price as diesel fuel and gasoline have. The $124 million is over 6% of the average net farm income of the Nebraska agricultural production sector. Even if we discount this estimate, this is a significant impact on the net income of agricultural producers.

Budgeted Approach

The second method of estimating the impact of higher fuel prices was a budgeting approach, to determine the gallons of refined fuels (diesel and gasoline) used in agricultural production in Nebraska. Fuel requirements per acre were estimated by crop, using the "Nebraska Crop Budgets" (EC99-872-S) and "Fuel Use for Field Operations" (G81-578-A). These fuel requirements were applied to 22 crops on over 18 million acres of crop land. The result was 145 million gallons of fuel required for tillage, planting, cultivation, harvesting and farm trucking.

The estimated gallons of diesel fuel required for irrigation was based on acreage irrigated, type of distribution system, inches applied and depth to water. The "1995 Water Use Report" of the Nebraska Natural Resources Commission indicates that 6.4 million acres are irrigated from groundwater. Of this, 3.8 million are irrigated by sprinkler and 2.6 million by flood irrigation. Estimates from prior surveys indicate that 36% of this land is irrigated with pumps using diesel engines. Application rates of 15 inches by sprinkler and 22 inches by flood were used, in an attempt to reflect typical irrigation practices. Fuel requirements were used from "Estimated Irrigation Costs, 1997" (CC371), assuming a 75 foot lift for flood irrigation and 125 feet for sprinklers. The result was a requirement of 68 million gallons of diesel fuel for irrigation.

An estimate of fuel used for "overhead" activities such as in pickups and transport of farm machinery was also made, resulting in an additional requirement of 20 million gallons of fuel. The total budgeted fuel requirements for farming, irrigation and overhead was 233 million gallons.

The fuel price increase of 29 cents/gallon (from $.73 to $1.02), applied to 233 million gallons results in an added cost of $68 million. This is considerably less than the $124 million calculated using aggregate data. But that figure is overstated, for reasons indicated above. And, the $68 million is understated, as it does not include diesel and gasoline used in livestock production.

Conclusions

The wide range in these estimates, from 68 to 124 million dollars, reflects the gaps in data needed for a more accurate estimate. But it does establish a range, and given the fact that one is knowingly over estimated and the other under estimated, we could reason that a more appropriate range might be 75-100 million dollars, still a significant cost increase, particularly in a period of low crop prices.

These estimates reflect only a fuel price increase. An unknown at this point is how much more irrigation water will need to be pumped this year, given the dry soil conditions.The compounding of a higher fuel price and additional hours of pumping would be a major impact on those irrigating with diesel fuel.

These estimates do not include fuel for commercial trucking of farm products to market or for delivery of inputs to the farm. If freight rates are increased as a result of fuel prices, this would increase the cost of inputs and lower the net price received for products.

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