Cornhusker Economics

University of Nebraska–Lincoln Extension

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Institute of Agriculture & Natural Resources
Department of Agricultural Economics
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Fuel Prices and Cost of Production

Market Report	Year Ago	4 Wks Ago	3/13/15
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	150.88	163.12	162.50
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	227.17	269.97	288.61
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	179.62	212.01	220.40
Choice Boxed Beef, 600-750 lb. Carcass.	240.72	238.69	246.59
Western Corn Belt Base Hog Price Carcass, Negotiated.	113.58	56.51	67.74
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean.	118.75	72.05	59.82
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct.	153.75	*	*
National Carcass Lamb Cutout FOB.	374.82	365.03	367.29
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	7.07	5.13	4.89
Corn, No. 2, Yellow Nebraska City, bu.	4.46	3.69	3.65
Soybeans, No. 1, Yellow Nebraska City, bu.	13.59	9.55	9.29
Grain Sorghum, No.2, Yellow Dorchester, cwt.	8.02	7.18	6.98
Oats, No. 2, Heavy Minneapolis, Mn, bu.	4.66	3.11	3.11
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	182.50	195.00	190.00
Alfalfa, Large Rounds, Good Platte Valley, ton.	127.50	75.00	77.50
Grass Hay, Large Rounds, Good Nebraska, ton.	107.50	82.50	95.00
Dried Distillers Grains, 10% Moisture Nebraska Average.	232.50	178.75	170.00
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	66.00	57.50	54.00

* No Market

Last fall, when the 2015 Nebraska Crop Budgets were being developed, the cost of fuel for 2015 was estimated to be $3.25 per gallon. A farm supplier reported on March 10, 2015 that the price of fuel delivered to the farm is around $2.40. How much affect does that price change have on cost of production?

The 2015 Nebraska Crop Budgets were used to answer that question. The answer is, it depends on the crop and the production system.

The 2015 Nebraska Crop Budgets contain 69 different crop budgets including 14 corn budgets, 8 soybean budgets, and 7 wheat budgets. The reason for different budgets for the same crop is the different production systems. A crop may be produced using conventional tillage, no tillage, or another system such as ridge tillage. In addition, some crops are watered only by rainfall while others are irrigated. Irrigated crops may either use a pivot or gravity system for water distribution. Each system uses a different amount of fuel.

For example, non-irrigated corn produced in a no-till system uses only $8.49 worth of fuel at $3.25. The savings per acre when fuel prices fall to $2.40 per gallon is $2.22 per acre or 2 cents per bushel for the 115 bushels of corn produced. This compares to a $106.96 fuel bill for gravity irrigated corn grown using a ridge-till system. The savings when the price of fuel falls to $2.40 per gallon is $27.98 per acre which is 12 cents per bushel for the 225 bushels of corn produced.

As illustrated above, yield is important when looking at cost per bushel. While the gravity-irrigated, ridge-till system used the most fuel per acre, cost per bushel was higher for two other systems because they had similar per acre costs but the expected yields were lower. The conventional-till, pivot-irrigated system and the ridge-till gravity system using Bt, ECB, & RW seed showed the largest price decline per bushel ($0.13) from the lower fuel prices even though they had lower cost per acre changes because they used a lower yield.

Summing up these results, lowering fuel prices from $3.25 per gallon to $2.40 resulted in lower cost of production for corn averaging seven cents and ranging from two to 13 cents per bushel depending on the production system.

The changes in cost of production per bushel resulting from lowering fuel prices are more dramatic for soybeans than for corn because of lower soybean yields. The most fuel-intensive soybean budget ($75.64 per acre) was pivot-irrigated soybeans grown following corn using conventional tillage. Non-irrigated soybeans grown using a no-till system was least fuel intensive ($8.08 per acre). The savings per bushel of soybeans produced was 32 cents for the most fuel- intensive system compared to 5 cents for the least fuel intensive system when the price of fuel falls from $3.25 to $2.40 per gallon.

The cost saving for producing wheat is similar to soybeans when fuel prices decline. The most fuel intensive wheat budget was for wheat grown under a pivot following beans ($63.35 per acre) while the least intensive was non-irrigated, no-till wheat grown following corn ($7.87 per acre). The cost savings per bushel when fuel prices fell to $2.40 per gallon for these two systems were 18 cents and 5 cents respectively.

The tables below extract the cost changes in corn, soybean, and wheat budgets resulting from the change in fuel price.

The 2015 Nebraska Crop Budgets are available online at http://cropwatch.unl.edu/economics/budgets. Excel files may be downloaded and modified as needed to better reflect a specific operation.

Corn

Budget	Cropping System	Tillage/Irrigation System	Yield	Fuel @ 3.25	Fuel @ 2.40	Reduction in Fuel Cost per Acre	Reduction in Fuel Cost per Bushel
Budget 15	Continous	Conventional Tillage	85	17.87	13.20	4.67	0.05
Budget 16	Continous	No-Till Bt ECB RW & RR2	115	8.49	6.27	2.22	0.02
Budget 17	Continous	No-Till SmartStax RIB	120	8.52	6.30	2.22	0.02
Budget 18	After Soybeans	No-Till Bt ECB	125	8.76	6.47	2.29	0.02
Budget 19	Follows Wheat, 2 Crops in 3 Yr	EcoFallow	115	9.27	6.85	2.42	0.02
Budget 20	Continous	Ridge-Till Bt,ECB & RW, Gravity	215	106.5	78.64	27.86	0.13
Budget 21	Continous	Ridge-Till SmartStax RIB. Gravity	225	106.96	78.98	27.98	0.12
Budget 22	Continous	Conventional SmartStax RIB, Gravity	180	18.19	13.43	4.76	0.03
Budget 23	Continous	No-Till Bt ECB&RW, Pivot	225	71.6	52.87	18.73	0.08
Budget 24	Continous	No-Till SmartStax RIB, Pivot	235	71.43	52.75	18.68	0.08
Budget 25	Continous	Conventional Bt ECB&RW, Pivot	215	106.86	78.91	27.95	0.13
Budget 26	Continous	Conventional SmartStax RIB, Pivot	180	50.65	37.40	13.25	0.07
Budget 27	Continous	Conventional SmartStax RIB, Pivot	225	106.93	78.96	27.97	0.12
Budget 28	After Soybeans	No-Till Bt ECB, Pivot	225	71.52	52.81	18.71	0.08

Soybeans

Budget	Cropping System	Tillage/Irrigation System	Yield	Fuel @ 3.25	Fuel @ 2.40	Reduction in Fuel Cost per Acre	Reduction in Fuel Cost per Bushel
Budget 46	Continous	Tilled seed bed	39	12.72	9.39	3.33	0.09
Budget 47	After Corn	No-Till	43	8.08	5.97	2.11	0.05
Budget 48	Continous	No-Till	39	8.08	5.97	2.11	0.05
Budget 49	After Corn	Tilled seedbed, Pivot	62	75.64	55.86	19.78	0.32
Budget 50	After RR Corn	Ridge-Till, Gravity	62	72.14	53.27	18.87	0.30
Budget 51	After Corn	No-Till 15" Row, Pivot	65	49.89	36.84	13.05	0.20
Budget 52	Continous	No-Till Narrow Row, Pivot	59	49.89	36.84	13.05	0.22
Budget 53	After Corn	No-Till Drilled 7.5" rows, Pivot	65	50.82	37.53	13.29	0.20

Wheat

Budget	Cropping System	Tillage/Irrigation System	Yield	Fuel @ 3.25	Fuel @ 2.40	Reduction in Fuel Cost per Acre	Reduction in Fuel Cost per Bushel
Budget 61	After Row Crop	No-Till	45	7.87	5.81	2.06	0.05
Budget 62	1 Crop in 2 Yr	No-Till Fallow	55	10.96	8.09	2.87	0.05
Budget 63	1 Crop in 2 Yr	Stubble Mulch Fallow	50	18.62	13.75	4.87	0.10
Budget 64	1 Crop in 2 Yr	Clean Till Fallow	45	19.45	14.36	5.09	0.11
Budget 65	Before Corn, 2 Crops in 3 Yr	No-Till	60	10.57	7.81	2.76	0.05
Budget 66	After Beans	No-Till, Pivot	90	63.35	46.78	16.57	0.18
Budget 67	In Rotation	No-Till, Pivot	85	24.19	17.86	6.33	0.07

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