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Returns to Taxpayers' Research Expenditures: A Case in Point

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Cornhusker Economics

Cooperative Extension

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

Returns to Taxpayers' Research Expenditures: A Case in Point

Market Report	Yr Ago	4 Wks Ago	1/14/00
Livestock and Products,			
Average Prices for Week Ending			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt.	61.61	69.03	69.03
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt.	75.91	90.61	92.63
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg.	80.98	94.02	97.88
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt.	95.76	106.68	105.69
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt.	27.50	36.50	36.75
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd.	17.00	35.50	44.50
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt.	119.40	107.20	99.20
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt.	69.00	68.50	*
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt.	150.00	163.00	151.00
Crops,			
Cash Truck Prices for Date Shown			
Wheat, No. 1, H.W. Omaha, bu.	3.27	2.77	2.93
Corn, No. 2, Yellow Omaha, bu.	1.83	1.80	1.90
Soybeans, No. 1, Yellow Omaha, bu.	4.85	4.33	4.55
Grain Sorghum, No. 2, Yellow Kansas City, cwt.	3.37	2.97	3.28
Oats, No. 2, Heavy Sioux City, IA, bu.	1.21	1.18	1.22
Hay,			
First Day of Week Pile Prices			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton.	*	95.00	*
Alfalfa, Lg. Round, Good Northeast Nebraska, ton.	*	35.00	33.75
Prairie, Sm. Square, Good Northeast Nebraska, ton.	70.00	*	60.00
* No market.			

For more than a century, taxpayers in Nebraska and across the nation have invested in agricultural research through the University of Nebraska's Agricultural Research Division (ARD). In the past two fiscal years, the ARD received an average of \$27 million from state taxpayers and \$13 million from federal taxpayers - a total of \$40 million per year. In the study described below, we found that the annual net benefit from just one ARD research effort is about equal to this entire public expenditure.

The case examined is research on feeding ethanol industry byproducts to beef cattle. When Prof. Terry Klopfenstein and others began this research in the 1970's, Nebraska's ethanol industry was tiny. During the 1990's it grew from grinding about 10 million bushels to nearly 200 million (more than 15% of Nebraska's corn crop).

The research showed the desirability of feeding byproducts in wet form, basically as they emerge from the processing plant. The benefits from this research can be measured as the value of the byproduct realized in its new use, cattle feeding, relative to its value in its traditional use, dried distillers grains or dried corn gluten feed.

We estimated the feeding value as the market value of the other feeds for which the byproducts substituted. That value fluctuates with the value of the other feeds, but we found it to average about \$130 per ton of dry matter from 1992-1999, compared to its average value in traditional uses of \$93 per ton (net of drying costs).



Given that a million and a quarter tons of byproduct dry-matter are now being fed, this \$37/ton net benefit would contribute net benefits of about \$46 million per year with other feeds at average prices - more than enough to repay the \$40 million of public funds expended by UNL's Agricultural Research Division. (Because of the low corn prices in 1999, byproducts' feed value totaled only about \$90/ton, however, with total net benefits of \$35 million).

Furthermore, we learned from forty-two survey respondents who have fed these byproducts that the average price they paid was about \$100/ton of dry matter, \$30/ton less than our estimate of feed value. This indicates that on average, cattle feeders realized

about 80% of the net benefit generated, with the remaining 20% accruing to processors.

The time path of net benefits grew through time as the amount of byproducts fed increased (Figure 1), then decreased in the past two years as the prices of alternative feeds, primarily corn, fell (Figure 2).

Publicly-funded agricultural research continues to pay large benefits.

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Fig1. Quantity of Nebraska byproducts

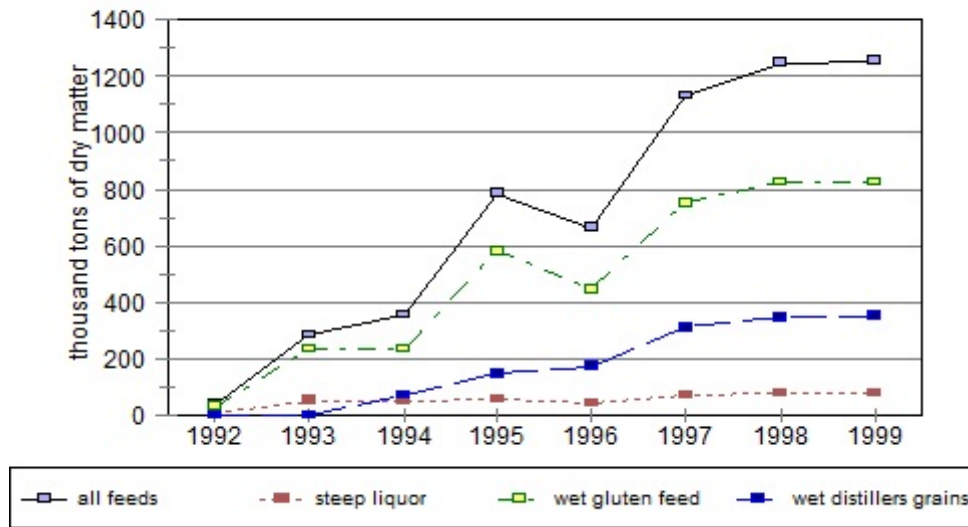


Fig2. Benefits from wet byproducts

