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# Improved Beef Demand Benefits Nebraska Cattle Producers

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# Cornhusker Economics

## Cooperative Extension

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

### Improved Beef Demand Benefits Nebraska Cattle Producers

Market Report	Yr Ago	4 Wks Ago	9/22/00
<b><u>Livestock and Products,</u></b>			
<b><u>Average Prices for Week Ending</u></b>			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt. . . . .	\$66.01	\$65.83	\$65.19
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt. . . . .	81.64	82.00	94.91
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg. . . . .	89.54	99.95	97.67
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt. . . .	103.49	101.74	98.94
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt. . . . .	33.63	45.00	43.50
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd. . . . .	*	41.20	29.00
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt. . . .	102.85	115.75	120.60
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt. . . . .	72.00	74.13	70.05
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt. . . . .	164.00	168.00	158.00
<b><u>Crops,</u></b>			
<b><u>Cash Truck Prices for Date Shown</u></b>			
Wheat, No. 1, H.W. Omaha, bu. . . . .	2.90	2.99	2.98
Corn, No. 2, Yellow Omaha, bu. . . . .	1.66	1.49	1.53
Soybeans, No. 1, Yellow Omaha, bu. . . . .	4.35	4.42	4.61
Grain Sorghum, No. 2, Yellow Kansas City, cwt. . . . .	2.92	2.73	2.68
Oats, No. 2, Heavy Sioux City, IA, bu. . . . .	1.08	1.18	1.16
<b><u>Hay,</u></b>			
<b><u>First Day of Week Pile Prices</u></b>			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton. . . . .	92.50	110.00	90.00
Alfalfa, Lg. Round, Good Northeast Nebraska, ton. . . . .	32.50	77.50	65.00
Prairie, Sm. Square, Good Northeast Nebraska, ton. . . . .	*	77.50	82.50
* No market.			

From 1979 until 1997 inflation-adjusted, retail beef prices in the U.S. declined by over 30%. During this same time period, per capita consumption declined about 10 pounds. These two facts, declining prices and declining consumption, lead to the conclusion that demand for beef in the U.S. declined over this time period.

However, beginning in 1998 this downward trend in beef demand was reversed. Demand in 1998 was essentially unchanged from 1997. During 1999 per capita consumption increased and beef was sold at a higher inflation-adjusted retail price: evidence of an increase in beef demand. It would also appear that beef demand through August 2000 has continued to increase. The average USDA Choice retail beef price has averaged \$3.04 per pound from January through August 2000, a 7% increase over a \$2.89 per pound price from the same time period in 1999. The increase in the price of beef is not sufficient evidence by itself to conclude that beef demand has increased. However, the quantity of beef sold has also increased in 2000 relative to 1999. This provides strong evidence that beef demand is continuing to increase.

What factors contributed to the loss of beef demand in the 1980's and through most of the 1990's? Often demand for a product is influenced by the price of other goods that can be substituted for the product. Pork and poultry are generally considered substitute sources of protein for beef. However, during this time period, beef prices declined relative to pork and poultry. This should have been positive for beef demand. Consumer disposable income has also increased over this time period, and this too should



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have been positive for beef demand. So what were the negative factors: consumer tastes and preferences.

There are a number of consumer issues that negatively impacted beef demand. During the 1980's health concerns, particularly cholesterol, turned many consumers away from beef. As the health concerns decreased in the 1990's, the safety concerns increased. BSE, "mad cow disease" in England spooked many consumers and negatively impacted beef demand abroad as well as here in the U.S. Product recalls due to contamination of E. coli eroded consumer confidence in beef as a safe product. But perhaps the greatest negative impact on beef demand was the change in what consumers wanted in a product. With more women entering the work force, consumers wanted convenience in the kitchen. Quite frankly, the beef industry was slow to recognize this change and offer products that met consumers' needs.

However, it appears that beef industry efforts in the mid to late 1990's to meet consumer needs by offering various heat-and-eat, pre-cooked products is now paying off. The growth in the number of steak house restaurants throughout the country would indicate it is becoming popular again to consume beef. Positive beef advertising has probably helped to curb health and safety concerns. But, above all, a strong economy has consumers spending more on beef.

How does improved beef demand impact cattle producers? By using the concept of the price elasticity of demand, a measure of how responsive price is to a change in quantity, one can begin to answer this question. Previous research in the beef industry has estimated the price elasticity of demand at -0.60. This means that if the quantity of beef on the market increased by one percent, then the price would be expected to decrease by 1.67 percent.

Let's look at the situation in the first eight months of this year. There has been a two percent increase in the quantity of beef supplied to the market. If demand had remained constant, unchanged from 1999, then the price of beef would have declined from the 1999 average of \$2.89 per pound to \$2.74 per pound (Figure 1). However, the actual price of beef has average \$3.04 per pound through August of 2000. Clearly, this could only occur if demand had improved (Figure 1).

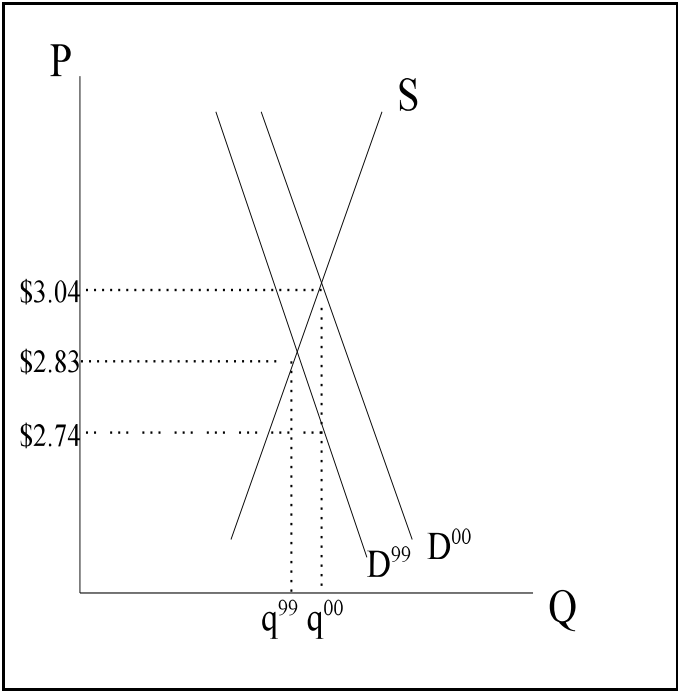


Figure 1. 2000 beef market.

The number of fed cattle marketed through August 2000 is nearly identical with the number marketed in the same time period for 1999. With a constant supply, and if demand remained constant, then one would expect prices to remain fairly constant as well. However, the seven percent increase in the price of beef, resulting from improved demand, translated into an eight percent increase in the price of fed cattle from \$63.91 per cwt. through August of 1999 to \$69.24 per cwt. through August of 2000.

Demand for fed cattle is a derived demand from demand for beef. Likewise, demand for feeder cattle and calves is a derived demand from the demand for fed cattle. So, what has happened with the calf market this year compared to last year? Calf prices through August 2000 have averaged \$104.59 per cwt. That is 17 percent higher than the \$89.25 per cwt for the same period in 1999. Not all of this 17 percent increase in price can be attributed to increased demand. The nations beef cow herd has been declining in number for the last few years. Supply of calves in 2000 is probably 1-2 percent less than in 1999. The combination of a decrease in supply and an increase in demand is depicted in Figure 2. Cow-calf producers are receiving the benefit of a reduced supply and an improved demand situation.

What will 2001 look like? The supply of calves and fed cattle should decrease in 2001. As long as demand remains stable, prices for calves and fed cattle should be higher in 2001 than in 2000. If demand continues to improve, there should be even greater year-over-year price increases.

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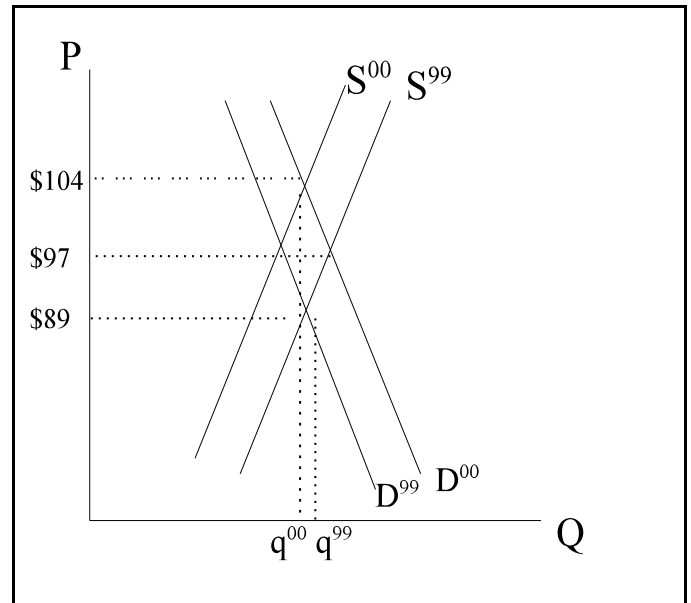


Figure 2. 2000 calf market.

**There has been a correction in the September 13, 2000 issue “Is Grass the Cheapest Feed?” An important line was deleted in the text. The entire article is being rerun with the correction in bold. Our apologies for any confusion this might have caused to our readers and to Dick Clark our author.**

### Is Grass the Cheapest Feed?

A recent IRM meeting with cattle producers in Gering highlighted the fact that different producers have different approaches to answering this question. It was quite obvious that the answer is “it depends.” It depends on the availability and cost of alternative sources of nutrition for the animal, labor costs and producer goals.

#### Goals and Grazing Costs

What do the goals of the producer have to do with an apparently empirical question such as the one asked? Goals relate to the method of analysis chosen and how resources are evaluated. Some producers are driven by financial analysis (primarily concerned with cash flow) while others are concerned about a full, economic accounting (consider opportunity cost for all resources). The producer driven by financial analysis will evaluate alternatives based on their costs and returns that primarily affect cash flow. Such producers will likely ignore the true opportunity cost of many of their owned resources. For example, instead of using the current cash rental rate for grass to evaluate a grazing enterprise, such producers will look only at the costs of conducting the grazing activity. These costs may include fuel for checking and moving cattle, repair and upkeep on equipment, fencing and water facilities and may or may not include labor costs. The land cost that may be considered is some return to service real estate debt. A producer who is driven by economic accounting will include the costs mentioned above but will also try in some way to account for the opportunity cost of the grazing resource itself instead of just allowing for interest on debt. The financial analysis answers the question as to whether the producer can make the enterprise pay its way, but begs the question of whether it is the “best” return from this resource. Does that mean that only those who use full economic accounting are correct? No, it only means that they have a different set of goals. A producer that does a complete financial analysis and discovers that the operation “works” will be around in the future. But without question, the two types of analyses can lead to quite different answers. That is partly the reason that the Guidelines for conducting a Standardized Performance Analysis (SPA) for cow-calf operations use both an economic and financial analyses.

Goals are also important in determining how opportunity costs of alternative sources of nutrition are evaluated. A



primarily crop producer with small, scattered areas of growing forage may view the opportunity value of such grass near zero. The producer may not even be interested in renting these areas to neighbors for various reasons. Contrast this view with a producer who believes that the return to land should be competitive with other investments. The opportunity cost of the grazing land may be the returns from investing dollars in other sectors of the economy if the land were sold. We have both extremes among our producers and their views of the opportunity costs could also lead to quite different answers to the question posed.

### Example Cost Comparison with Yearling Steers

If one uses the opportunity cost approach for evaluating grazing land, it is very possible that cost of gain from grass may exceed cost of gain from more concentrated feed. Consider a producer who is deciding whether to graze yearling steers on grass or send them directly to the feedlot. If the steers do not utilize the grass the producer may be able to lease the grass to another producer or increase the number of cows thus reducing acres/cow. Important determinants of the cost of gain on grass for the steers are the value of the land, its productivity and how that translates into a cost per head per day. **Table 1 shows various costs per head per day for an operator who wishes a 6% rate of return on land value, has property taxes of 1.4% of land value and additional grazing costs of \$8/acre (checking cattle, upkeep and operating cost for water and fence, etc.).** Table 2 shows the cost per pound of gain for steers grazing grass with different daily grazing costs and gains. The gains shown are within reasonable expectations for yearling cattle grazing grass in Nebraska during the summer months.

The costs per pound of gain range from a low of \$0.20/pound to \$0.77/pound. Currently, some feed yard closeouts are showing costs per pound of gain from the low to mid thirty cents. Even with higher priced corn closeouts in the low to mid \$0.40/pound of gain were common. A producer expecting a six percent return on grass valued at \$200/acre and yielding 0.7 AUMs/acre (daily cost of \$0.68/head) will need calves gaining at 2 lbs/day or better on grass to find grazing an attractive alternative. If land is valued at \$300/acre and yields 1 AUM/acre daily cost would be similar, so needed gain would also be in the 2 lbs/day range. On the other hand a producer who estimates the pasture cost is only \$0.40 per head per day will choose grazing over concentrated feeding. This discussion has been only from a cost standpoint. Other factors such as price and market timing are involved if we are talking about profit.

### Conclusion

So what is the answer to our original question? The answer remains-- it depends. It depends on operator goals, how the operator values the resource, yield of the resource and the performance of the calves on grass or concentrated feed.

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**Table 1. \$/Head/Day for 700-pound Yearlings with Various Pasture Yields and Land Values**

AUMs per acre	Land Value \$/acre				
	\$150	\$200	\$250	\$300	\$350
.5	.70	.88	1.05	1.22	1.40
.6	.62	.76	.91	1.05	1.19
.7	.56	.68	.80	.93	1.05
.8	.51	.62	.73	.83	.94
.9	.47	.57	.67	.76	.86
1.0	.45	.53	.62	.70	.79

**Table 2. \$/Pound of Gain for 700-pound Yearling Steers Grazing Grass—Alternate Costs/Day and Various Performance Levels**

Gain/head per day (pounds)	Cost per head per day (\$)						
	.40	.50	.60	.70	.80	.90	1.00
1.3	.31	.38	.46	.54	.62	.69	.77
1.4	.29	.36	.43	.50	.57	.64	.71
1.5	.27	.33	.40	.47	.53	.60	.67
1.6	.25	.31	.38	.44	.50	.56	.63
1.7	.24	.29	.35	.41	.47	.53	.59
1.8	.22	.28	.33	.39	.44	.50	.56
1.9	.21	.26	.32	.37	.42	.47	.53
2.0	.20	.25	.30	.35	.40	.45	.50