

Nebraska's Cattle Feeding Industry: Size, Structure and Related Industries

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With 6.7 million head of cattle and calves in 2007, Nebraska has the second largest beef cattle herd in the nation. Cash receipts from sales of these cattle and calves totaled \$6.6 billion in 2006. Nebraska's 2.7 million head of cattle on feed in January 2007 also makes the state the second largest in the number of cattle on feed and commercial cattle slaughtered. A number of unique factors and resources contribute to the large and thriving cattle feeding industry in Nebraska. More than half of the state's land area is comprised of pasture and rangeland, which supports a large cow-calf sector and provides a large calf crop to Nebraska feeders. Not only are cattle feeders near an ample supply of feeder cattle, but they also are close to key feed input markets. Nebraska traditionally is known for its corn production and is increasingly growing production of distillers grains and other feed byproducts from bio-energy production plants operating in the state. Finally, Nebraska cattle feeders have close access to a number of cattle slaughtering plants located throughout the state. Lower transportation costs for feeder and slaughter livestock as well as feed inputs creates cost advantages for Nebraska feeders that are not available in other states.

This report provides information on the size, scope and structure of Nebraska's cattle feeding industry. Such information can help Nebraska producers, industry leaders, state and local policy makers, rural communities and consumers understand the impact the cattle feeding sector has on the state's economy. Along with discussing the importance and magnitude of the cattle feeding sector in the state, the re-

port also examines the relationship of the feeding industry with the cow-calf production sector, beef processing industry, feedstuff production industry and export market.

Overview of Nebraska's Beef Cow Industry

The availability of high quality feeder cattle and calves in Nebraska supports the state's feeding industry. In 2012, Nebraska had approximately 6.3 percent of the nearly 30.3 million beef cows that calved in the U.S. that year. These 6.4 million head of beef cows and calves are on 23,280 beef cow operations throughout Nebraska for a state average herd size of 275 cows per operation. Cuming, Custer and Lincoln Counties have the three largest cattle inventories in the state. Notice that these counties generally are located close to counties with some of the largest cattle on feed numbers in Nebraska (see Figure 4).

Table 1. Top Five Beef Cow Counties in Nebraska

Rank	County	Head
1	Cherry	166,000
2	Custer	100,000
3	Holt	99,000
4	Lincoln	69,000
5	Sheridan	56,000

Source: National Agricultural Statistics Service (NASS)

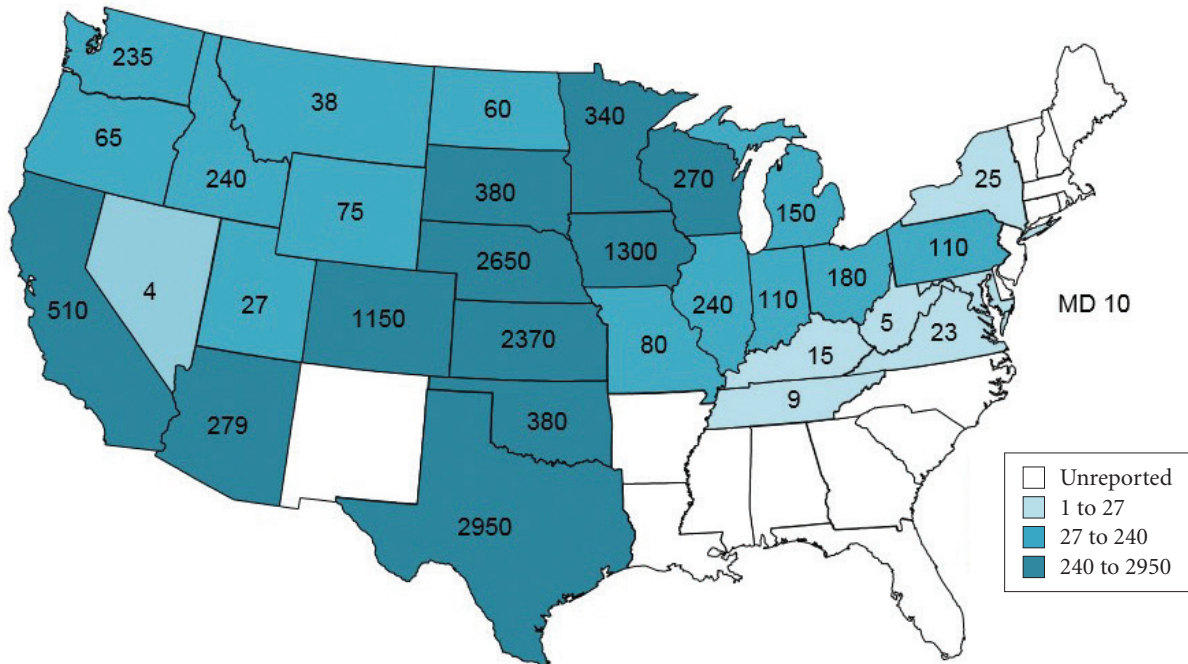


Figure 1. Cattle on Feed on January 1, 2012 (1,000 head). Source: Livestock Marketing Information Center (LMIC)

The Cattle Feeding Sector

In early 2012, Nebraska ranked second nationally in the number of cattle on feed in all feedyards and in feedyards with 1,000+ head capacities. Texas and Kansas, respectively, had the first and third largest cattle on feed inventory nationally. Much of the rest of the concentration of cattle on feed is in Iowa, Colorado, California, Oklahoma and South Dakota (Figure 1). Because of the increasing challenge of originating feed inputs, particularly corn, and competition for ethanol co-product feeds, there has been some shift of

cattle feeding numbers from the Southern Plains to Northern Plains states like Nebraska (Mark, D.R. 3/5/07 source LMIC). This trend has continued from the 2012 census until January 2014.

In 2012, there were 4,516 cattle feeding operations in Nebraska with approximately 2.6 million head of cattle on feed. The average size of those feeding operations was 1,490 head, but ranged considerably from smallest to largest. Of the 4,516 operations, 1,880 of them had capacities of 1,000 head or more (NASS; Figure 2).

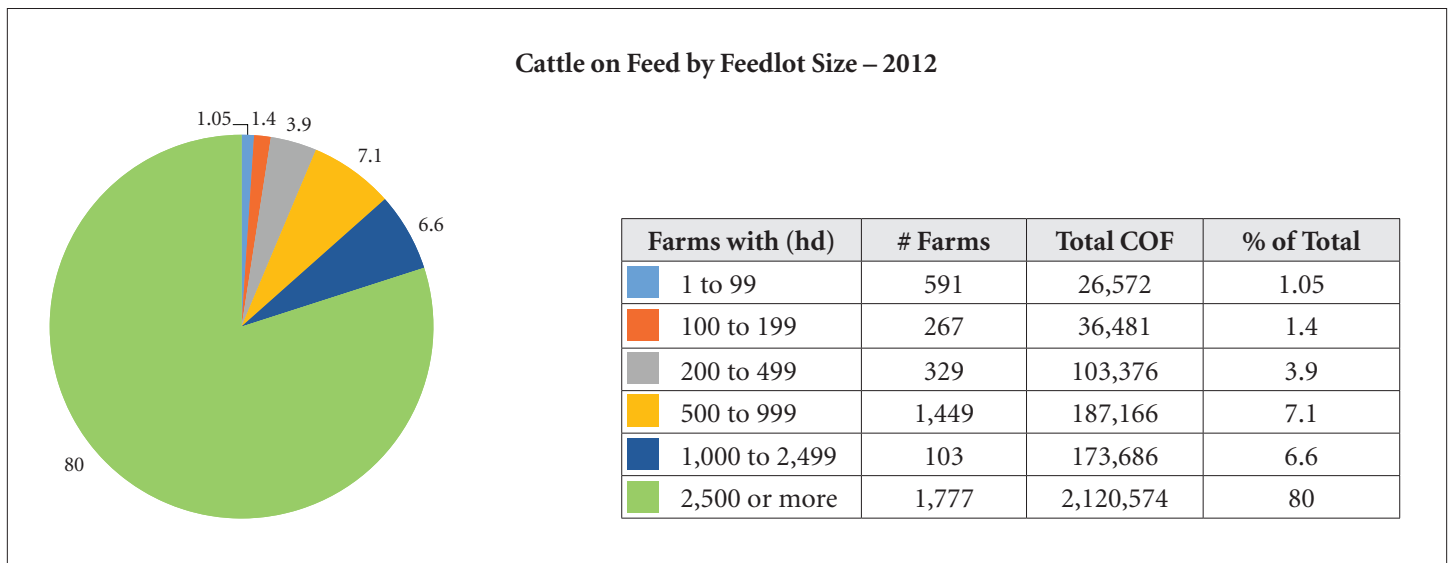
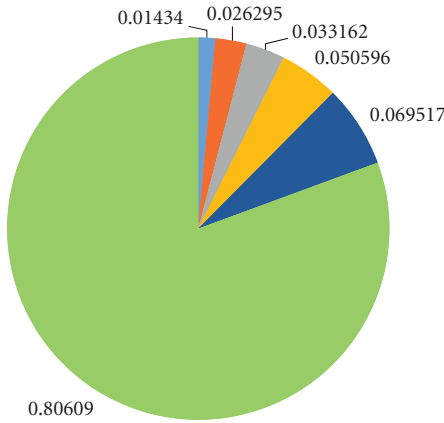


Figure 2. Number of Cattle Feeding Operations in Nebraska, By Size, 2012. Source: National Agricultural Statistics Service (NASS)

Cattle Marketed by Feedlot Size – 2012



Farms by number sold	# Farms	Total Cattle on Feed Sold	% of Total
1 to 199	1,115	72,300	0.01434
200 to 499	423	132,577	0.026295
500 to 999	242	167,195	0.033162
1,000 to 2,499	159	255,095	0.050596
2,500 to 4,999	93	350,493	0.069517
5,000 or more	200	4,064,163	0.80609

Figure 3. Cattle Marketed, By Operation Size, 2012. Source: Livestock Marketing Information Center (LMIC)

While Nebraska’s feeding industry is comprised of relatively fewer large feedyards with capacity at over 3,000 head, these feedyards account for over 2.5 million head of cattle. More than 1.8 million cattle were marketed from feedyards with 4,000 to 15,999 head, or 38 percent of all cattle marketings in Nebraska (data not in 2012 census). This size structure contrasts with other states. In Kansas and Texas, the majority of cattle marketed are from feedyards with 32,000+ head capacities, while most of Iowa’s cattle marketings came from 1,000 to 3,999 head size operations in 2012 (NASS).

Cattle are fed throughout the state (Figure 4), but cattle on feed inventories are generally concentrated in the northeast, south central and Panhandle areas of the state. Table 2 shows the five counties in Nebraska with the most cattle on feed (NASS). These top five counties, distributed from the east to west end of the state, account for approximately 23 percent of the cattle on feed inventory in Nebraska. There are 11 counties in Nebraska with more than 50,000 head of cattle on feed.

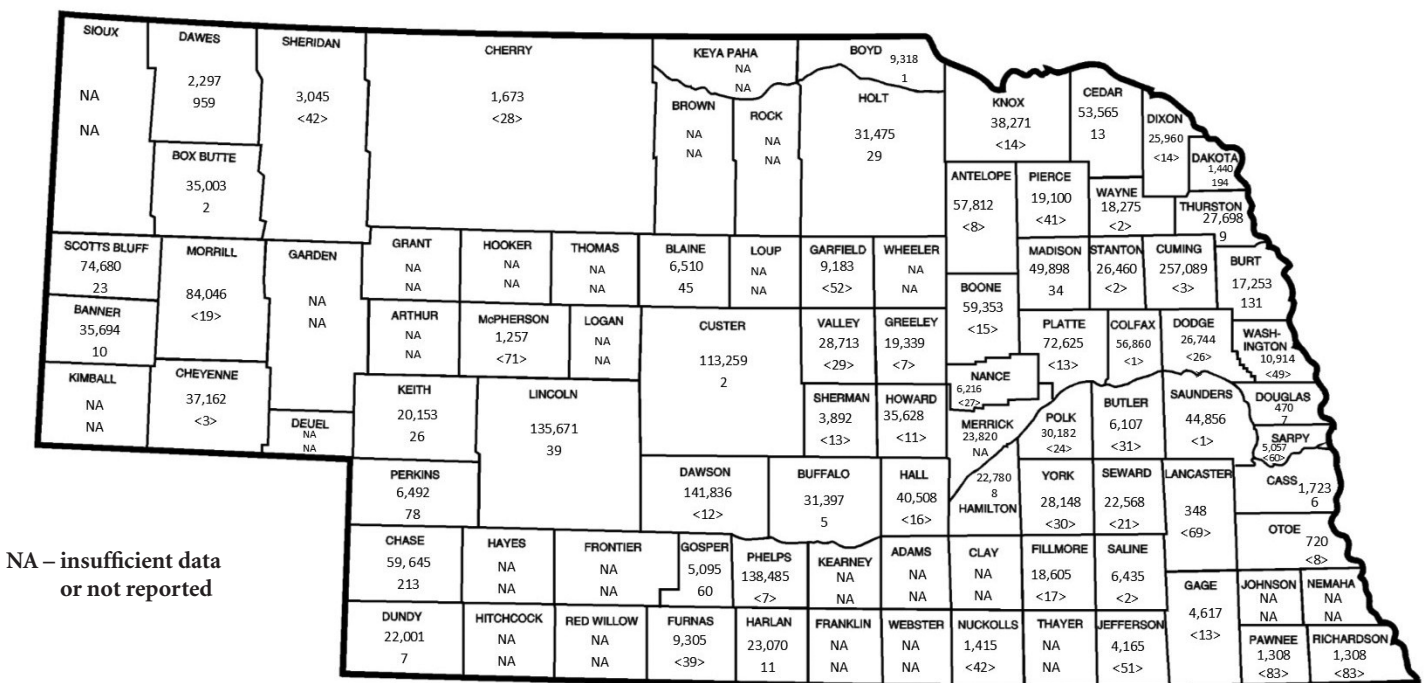


Figure 4. Nebraska Total Number of Cattle on Feed as of 1/1/12, by County, and percent change <negative> 2007-2012. Source: Livestock Marketing Information Center (LMIC)

Table 2. Top Five Cattle on Feed Counties in Nebraska, 2012

Rank	County	Head
1	Cuming	257,089
2	Dawson	141,836
3	Phelps	138,485
4	Lincoln	135,671
5	Custer	113,254

Source: NASS

Employment and Wages

Cattle feeding operations employ significant labor resources. Typically, efficient feedyards in Nebraska hire approximately one person for every 1,029 head of cattle on feed (Smith and Mark, 2004). Based on the cattle on feed inventory, this equates to about 2,527 people working in feedlots across Nebraska. In positions ranging from feedlot managers to mill operators to feedtruck drivers to pen riders and cowboys. The number of people employed at a feedlot is dependent on the size of the feedlot. A 2010 survey of Nebraska feedyards indicated average payrolls of about \$44,368 in the form of annual salaries, hourly wages, benefits and bonuses. In addition, the average benefit packages received by feedlot employees totaled \$14,514. (The size of operations surveyed by Jensen and Mark et al., 2010 ranged by categories: below 4,000 head, 4,000 to 12,000 head, and more than 12,000 head.)

Feed Inputs and Amounts

In addition to a large cow-calf industry and diverse feeding sector, part of Nebraska's success in cattle feeding is attributable to abundant crop production in the state. In 2013, Nebraska harvested approximately 9.6 million acres of corn for grain totaling 1.6 billion bushels with a value of production of \$7.4 billion. In addition, some 260,000 acres of corn went into silage production. The Nebraska cattle industry also supports significant hay production. In 2013, total hay production was approximately 4.9 million tons with an approximate value of \$736 million (NASS).

In the last several years, feed resources in the cattle feeding sector have changed dramatically because of increasing ethanol production. Nebraska ranks second in ethanol production at 43,420,000 barrels in 2013 (source: Nebraska Ethanol Board website). While ethanol production has increased demand for corn, and consequently corn prices, production of distillers grains have also increased.

In Nebraska, wet distillers grains plus solubles (WDGS) is the most commonly produced by product and available to cattle feeders. First, WDGS and other ethanol co-products are sometimes cheaper than corn (when compared on a pound-for-pound dry matter basis). This may not be the case for feedyards located further from ethanol plants (i.e., those away from the Corn Belt and current ethanol plants) as transportation costs limit shipment of this bulky, nutrient dense, high-moisture commodity. Secondly, significant improvements in feeding performance (i.e., higher average daily gain and lower feed conversion) result from feeding rations containing up to 40 percent distillers grains or gluten feed (on a dry matter basis) (Klopfenstein, et al. *Journal of Animal Science*, 2008). These performance responses are greatest for cattle fed WDGS as compared to dry distillers grains with solubles (DDGS), which Nebraska specializes in feeding. Feed performance improvements, along with competitive co-product prices for Nebraska feedyards near ethanol plants, provide significant advantages in feeding cost of gain for Nebraska feeders over other major cattle feeding states (Klopfenstein, et al. *Journal of Animal Science*, 2008).

The 2.6 million head of cattle fed in Nebraska provide a large market for the corn, hay and ethanol co-product produced in the state. For example, assume that some feeder cattle in Nebraska are on feed from approximately 575 pounds to 1,350 pounds and are fed a ration of corn (64 percent), WDGS (25 percent), hay (7 percent), and supplement (4 percent) for approximately 168 days. Implied usage with these assumptions, applied to all cattle on feed in Nebraska (2.6 million head), annually equals approximately 140 million bushels of corn, 4.7 million tons of WDGS, and more than 430,000 tons of hay. These assumptions will vary with different rations. In fact, because not all cattle on feed in Nebraska are currently fed WDGS or other co-products at these levels, corn use is actually much higher (around 250 million bushels) and WDGS use is lower (less than 2 million tons).

Ranking
All Cattle on Feed: 3rd (Jan. 12)
All Cattle and Calves: 2nd (Jan. 12)
Commercial Cattle Slaughter: 1st (2012)
Ethanol Production Capacity: 2nd (2012)

Source: NASS

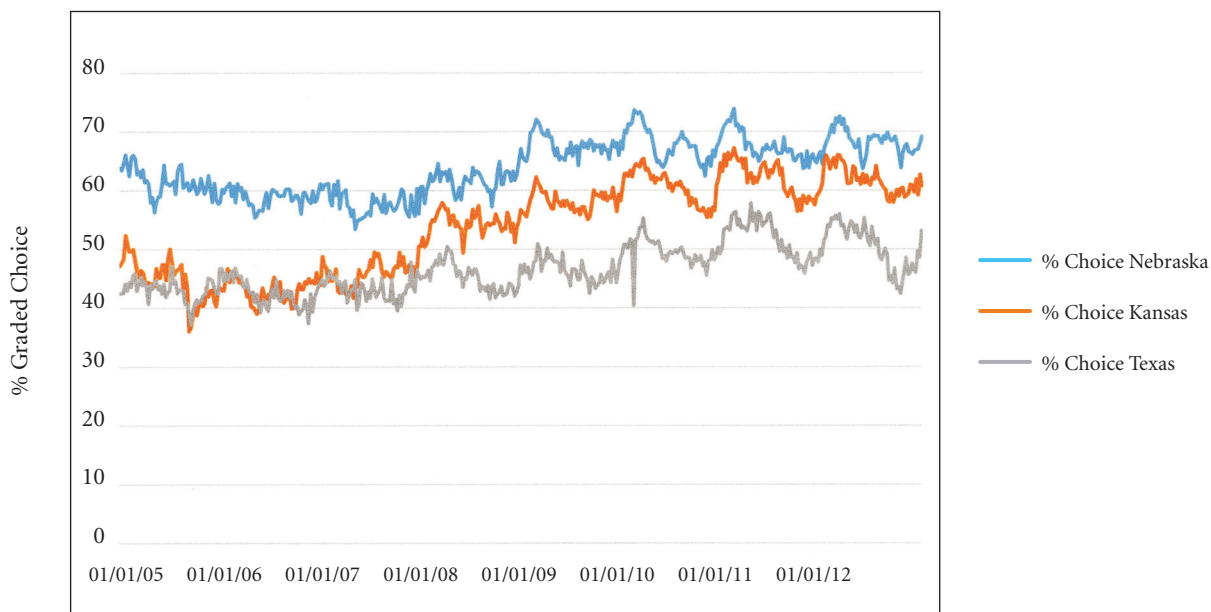


Figure 5. Percentage of Beef Grading Choice, Nebraska, Kansas, Texas, 2007-2012. Source: Livestock Marketing Information Center (LMIC).

Quality Grade

Another unique advantage Nebraska cattle feeders have is their ability to produce high quality cattle and beef. The quality of the feeder cattle purchased and fed in Nebraska, along with the feedstuffs used to finish the cattle, results in Nebraska having a higher relative percentage of cattle grading USDA choice. *Figure 5* shows the percent of cattle grading choice in Nebraska, Kansas and Texas. Of the three largest cattle feeding and slaughter states, Nebraska produces the highest quality beef. This is significant because choice carcasses can earn premiums of \$1 to \$30/cwt relative to lower grading select carcasses (source: LMIC).

Export Data

The high quality cattle grown in Nebraska, along with the large slaughter industry in the state, provide excellent opportunities for international export of Nebraska beef products. Nebraska was third, in beef and veal exports and meat exports (including offal, tongues, and livers) with \$844.4 million estimated exports in fiscal year 2012. Moreover, the \$844.4 million of beef and veal exports comprised over 10 percent of Nebraska's \$7,286 million dollars of total agricultural exports in 2012. Hides and skins along with animal fat exports are also important to Nebraska.

Farm and Inventory Numbers

Cattle and Calves:

Number of Operations in Nebraska: 19,313

Number of Beef Cows: 1.7 million

- Cuming County has the largest amount of beef cattle in 2012 (as compared to all other Nebraska counties) with 297,672 head of beef cattle.

Cattle Feeding:

Number of Operations in Nebraska: 4,516

Number of Operations 1,000+ head: 1,880

(Source: 2012 Census of Ag and Nebraska Beef Council)

Slaughter Data

In 2012, Nebraska ranked first in commercial cattle slaughter, just ahead of Kansas, slaughtering nearly 6.73 million head of cattle. This number includes cattle slaughtered in the 27 federally inspected cattle slaughter plants located in Nebraska (NASS). Nebraska commercial beef production was approximately 5.1 billion pounds in 2012.

Slaughter plants throughout Nebraska vary in size, location and type of cattle slaughtered. *Table 3* lists the five largest fed cattle slaughter plants by daily capacity, according to Livestock Market Information Center. Combined daily capacity of these six plants is 26,100 head. Assuming 255 slaughter days per year, these six largest plants have the capacity to slaughter approximately 6.6 million head of fed cattle, from Nebraska and other states.

Table 3. Largest Fed Cattle Slaughter Plants in Nebraska by Daily Capacity

<i>Company</i>	<i>Plant Location</i>	<i>Daily Capacity</i>
Tyson Foods	Dakota City & Lexington	9,800
JBS USA	Grand Island	6,000
Cargill Meat Solutions	Schuyler	5,000
Greater Omaha Packing	Omaha	2,900
Nebraska Beef	Omaha	2,400

Source: Livestock Market Information Center

Summary

The beef industry, based on this 2012 census data, plays a vital role in Nebraska's economy. The cattle feeding industry not only generates significant value of production through finishing cattle, but it also plays a key role in supporting related industries such as the cow-calf sector in Nebraska and other states, the crop production sector and the meat packing and processing industry. All indications show that this industry will not only remain economically prominent but likely increase in the coming years.

References

- Buckner, C., G. Erickson, T. Klopfenstein, D. Mark, and V. Bremer. Cattle Co-product Optimizer Decision Evaluator. University of Nebraska–Lincoln. Available online: <http://beef.unl.edu/byproducts.shtml>.
- Economic Research Service (ERS). U.S. Agricultural Trade Update-State Exports. June 29, 2007. Available online: <http://www.ers.usda.gov/publications/FAU/2007/06Jun/FAU123/fau123.pdf>.
- Livestock Marketing Information Center (LMIC). Livestock Databases. Available online: <http://lmic.info/>.
- National Agricultural Statistics Service (NASS). 2012 Census of Agriculture. Available online: <http://www.agcensus.usda.gov/Publications/2012/Full>.
- Nebraska Ethanol Board. Available online: <http://www.ne-ethanol.org>.
- National Agricultural Statistics Service (NASS). Quick Stats Database. Available online: http://www.nass.usda.gov/Quick_Stats/Ag.
- Jensen, Russ, and D.R. Mark. “2010 Nebraska Feedyard Labor Cost Benchmarks and Historical Trends.” Co-operative Extension, University of Nebraska–Lincoln, December 2010.
- Mark, D.R., “Is Weather and Corn Price Shifting Cattle Placements?” In the Cattle Markets. LMIC. March 5, 2007.
- Janson, Brooks, Johnson, “U.S. Livestock Industry Trends and Nebraska’s Role” EC863.
- Smith, R.R., and D.R. Mark “2004 Nebraska Feedyard Labor Cost Benchmarks and Historical Trends.” University of Nebraska–Lincoln, EC386, June 2004.
- Klopfenstein, T.J., G.E. Erickson, and V.R. Bremer *Journal of Animal Science*, 2008 86;5:1223-1231.