



# Capturing Maximum Value in Beef Cattle Production

Comparing profit loss from the beef industry in 1991 and today.

by *Kayla Jennings*

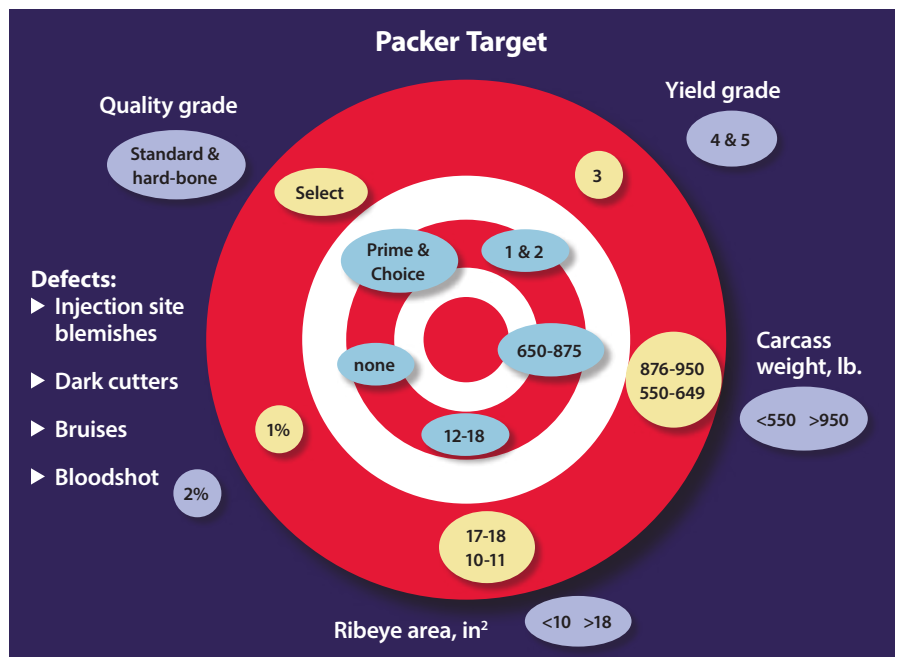
Reflecting on 1991, the chief economist for the National Cattlemen's Beef Association (NCBA), Chuck Lambert, did a presentation noting beef was too expensive for the consumer. In an effort to resolve the issue and to minimize losses for the industry, he identified ways the industry can utilize the beef supply chain to increase efficiency.

He identified 11 potential sources of economic gain. He assigned an economic loss value to all 11 and identified the four largest problem areas — reproductive performance, calf death, excess fat and things that occur at the retail supermarket. As part of the NCBA Cattlemen's College on Jan. 31, Gary Smith, Ph.D., Texas A&M University, unpacked the findings from a replication of that study done in 2016 by himself and Dustin Pendell, Ph.D., Kansas State University (K-State). This team sought to discover to what degree the beef industry has improved efficiency in those areas.

Smith says in 1991 the industry was a \$44 billion industry for beef and byproducts — \$458 per steer or heifer — and

27% of that total was in lost economic opportunity. Lambert said if the industry could capture that loss, the saved dollars could be redistributed to industry people or could be used to reduce the price of cattle, beef, and byproducts to build a better market share in comparison with pork and poultry.

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This chart indicates the ideal carcass from a packer perspective and areas a carcass will receive discounts at the packer.

The first National Beef Quality audit analyzed four of the economic gain categories, but industry researchers have never analyzed the other seven until now. A team of more than 16 experts from all facets of the industry worked on this project and calculated the numerical value associated with all 11 categories.

**On the farm**

Reproductive performance is the first economic gain category explored in the original study. Lambert found 80% of all U.S. beef cows and heifers weaned a calf in 1989, and he reasoned that percentage could increase to 95%. Considering a 15% increase, the industry could experience a \$2.6 million paycheck.

The industry has not yet met Lambert’s expectation, but experts say the industry has increased to 85% of cows or heifers weaning calves to date. “The reason we were able to go to 85% was because we had fewer open cows, despite the fact that both California and Texas have had droughts in that period of time,” Smith says. “We have been able to capitalize on that.”

Smith says in order to continue increasing the percentage value, purebred and commercial operations should practice selective breeding. Commercial producers should also capitalize on the opportunity to maximize hybrid vigor via heterosis in crossbreeding.

The next economic gain category identified was death loss. Lambert noted 6.5% of the calves born died between birth and packing. “He is predicating this on the cost of keeping a cow for a year, even though she didn’t produce something that you could sell in the end,” Smith says. Additionally, Lambert included the monetary value of time and labor associated with the amount of time the calf did survive.

Unfortunately, today’s study indicated the industry has increased in death loss — also increasing economic loss there. Smith says the death loss is the result of dystocia, environmental

conditions, Bovine Respiratory Disease (BRD) or occurrences during the stocking or feedlot stage.

In 1991 Lambert noted weaning weight as slightly less than 500 lb., predicated on a target of 550 lb. Experts today note the national average as 555 lb. However, Smith warns this number was challenging to quantify because of the differences in cattle size from the West to the East Coast. He says producers should recognize target weaning weight is achieved 70% by genetics and 30% by management. “We have to have better individual animal identification and record keeping,” he says. “It is the only way we can really improve and know where we are.”

Looking back, multiple processing was also a challenge in the industry. “Cattle would pass through so many hands that they were being processed up to 12 times,” Smith says. Lambert estimated lightweight calves were getting processed one and a half times more than needed, and the average number of times beef calves were processed was 3.6 times.

Smith says the number of times cattle need to be processed depends heavily on the way they are going through the system. Further, he says most of the cost is related to the chute because of the potential for problems like stress or injury. “Preconditioning has helped in this category because it improves the immune capabilities of the calves,” Smith explains. “The other thing that has helped a whole bunch is better history.” For example, as cattle pass through hands, people have been better about noting the prior health regimen to avoid redundancy.

**Feedlot to harvest**

Lambert’s study noted 7 lb. of feed was needed to achieve 1 lb. of gain. He challenged the industry to improve by a half pound to experience drastic savings — purely from the tons of feed that are fed in order to get cattle to a slaughter weight. Experts say the industry has reacted to the call, as it takes approximately 5.92 lb. of feed per pound of gain today.

Interestingly enough, while weaning weight is influenced 70% by genetics and 30% by management, experts agree feed efficiency is not the same ratio. Smith says, “In this case, our experts said, ‘If in fact you have improved feed efficiency, it was 2% genetic and 98% management.’”

Management practices are not focused on feed alone. Those practices are also inclusive of identification like hot iron

Potential gain (millions), annually, for the beef industry			
Reproductive performance	\$5,520	Outlier cattle	\$1,386
Death loss	2,703	Excess fat	8,710
Hot-iron branding	36	Management	714
Weaning weight	56	Retail shrink	1,649
Multiple processing	419	Out-of-stock	762
Feed efficiency	758	<b>TOTAL</b>	<b>\$22,714</b>

This table indicates the 11 areas the industry has room to add value. The dollar amount represents the projected loss in that area for 2016. By improving in these 11 areas, the industry has tremendous opportunity to add product value.

branding. Smith says Lambert understood the need for branding at the rancher level, but he did not agree with branding as part of a state regulation in the feedlot.

Branding costs approximately \$25 per head — a combination of stress and the change in hide value. At that time, the industry was losing \$0.18 billion per year on hot iron branding 45% of feedlot animals. Today, the study indicated only 25.7% of feedlot animals

underwent hot iron branding. “We have made really good progress from the audit done in 1991 and the one done in 2016,” Smith says. “The emphasis on health and pressure from animal rights activists have prompted people to seek out alternative identification methods.”

Beyond identification on those animals, it is even more important to consider their weight, their United States Department of Agriculture (USDA) quality and yield grade, and if they are dark cutters. Lambert noted animals outside the packer target in those areas as outlier animals. Smith says the industry has reduced the percentage of lightweight carcasses, of carcasses grading lower than Select, of dark-cutting beef and of yield grade 4 or 5 carcasses. However, there has been a drastic increase in the percentage of heavy carcasses.

He notes a study from K-State in 2016 that said, “Most consumers don’t want roasts anymore,” he explains. “They want everything cut into a steak. In order to cut everything into a steak and still achieve ideal package size, we have to cut everything way thinner and people really want thick.” Additionally, the analysis said this problem is costing the beef industry \$8.6 billion in consumer welfare. That value is derived from the sum of the decrease in price charged to motivate buying and the fact that some people won’t buy the product at all.

According to Smith, “We have done a great job on increasing Prime and Choice but not so good on trying to reduce yield grades 4 and 5. That is a price we have had to pay [for quality grade].”

Yield grade and excess fat go hand in hand. Smith says the study discounts fat if it is in excess of .25 inches because there are costs associated with an increase in fat. “Excess fat costs us because of the excess feed,” Smith explains. “It costs us because the weight of everything goes down, the labor that is required to take it off, and some of it has to be sent to rendering because it is inedible [decreasing value].” Because so many suppliers can’t grind their own beef today — due to government



Management dictates 98% of feed efficiency in today’s cow herd.

regulations — they are forced to send the beef to a third party devaluing the product even further.

The last economic gain category before beef hits the grocery store shelves is management. Those management procedures include condemnations of carcasses and offals, bruises, injection site lesions and abscesses. Lambert’s study indicated a \$0.143 billion per year loss in this area. Smith reports the industry has since decreased in horn and injection-site lesions, but it has increased in condemnations and bruises.

### On the shelf

When beef products are reworked, marked down or thrown away, it is noted as retail shrink. In 1991 the industry lost 6% of beef products to retail shrink. Experts say today the industry loses 4.8% on beef marked down for sale and 5.2% on beef thrown away. He says grinding logs (a regulation minimizing the grinding of meat) are to blame.

“Grinding logs have really hurt us,” he notes. “We have gone from six to 10% if you add those numbers together.” Smith says the answer may be a management change in the feedlot. Consumers want to buy things that are fresh, and they perceive bright red as fresh.

“If we fed \$1.50 worth of Vitamin E to each steer or heifer while they are in the feedyard, we get three days of extra case life,” he says.

Lastly, out-of-stock products were a real challenge in 1991. Fortunately, with today’s large grocery stores, Smith says the industry has improved dramatically in that area.

Although the industry has not seen desired improvement across the board, this study revealed even more economic gain opportunity for the industry.

“It is a big win for the beef industry, but not as big as we wish it was in all areas,” Smith says. “Some things are going up and some things are going down, but at least we are headed in the right direction, and we know the path to take. Dr. Pendell considers it a win for the beef industry because we have increased gross revenues by 5% of lost opportunities.” **HW**