

## HOW DO I PROFIT FROM REPRODUCTION? – HITTING THE TARGET FOR HIGH-QUALITY PRODUCT

L.R. Corah

Certified Angus Beef LLC  
Manhattan, KS

### Introduction

As I reflect on the past 3-5 years, I am amazed at all that has happened. For 20-30 years, pre-2007, we sold calves at \$0.95-\$1.00/lb, feedlot cost of gain was \$0.45-\$0.60, fed cattle sold for \$60-75/cwt and we thought a \$1.00 swing in the calf or fed market was amazing. We even talked about cattle cycles – when did you last hear that mentioned? Today, we are seeing:

- Unprecedented cattle prices
- Unprecedented input cost
- Volatility of a magnitude never before experienced
- Global impacts of great influence

I would like to tell you all that is behind us and the future is bright and balmy for this great industry. Actually, I do see a bright future for this industry, especially for those willing to hit targets that the consumer will pay premiums for, but I do not see the volatility changing.

### So what is the consumer telling us?

At virtually all income levels, consumers prefer beef as their animal protein. Many will pay more for a better quality product, but when they do they expect predictable flavor and tenderness. The consumer identifies quality with the USDA beef grading system.

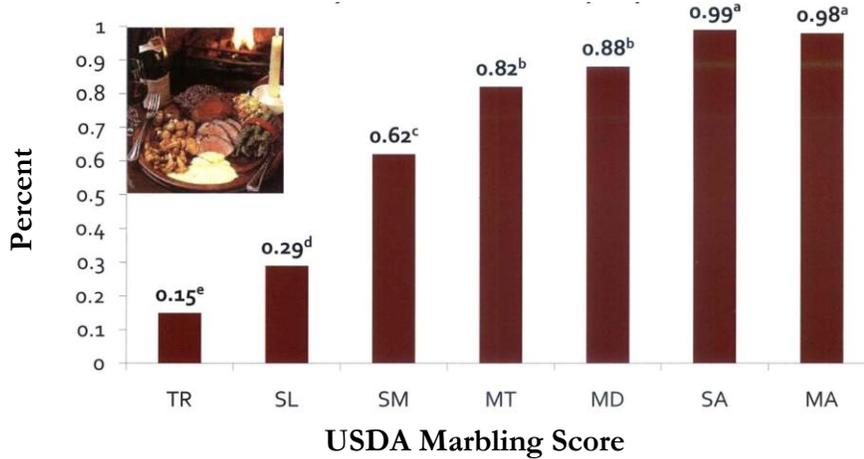
**Table 1.** Eating Satisfaction Related to USDA Quality Grades

Quality Grade	Undesirable Eating Experience	% Undesirable
Prime	1 in 26	4
Premium Choice (CAB <sup>®</sup> )	1 in 19	5
Choice	1 in 7	14
Select	1 in 5	20

Always remember the ultimate driver of consumer satisfaction is tenderness and flavor, which explains 91% of the variation in eating quality (Emerson, et al 2011). Thus, as you would expect,

as marbling levels decline, consumer satisfaction drops. A recent NCBA check-off funded project showed that exact trend.

**Figure 1.** Effect of Marbling Degree on Probability of a Positive Sensory Experience



So where does this leave the producer? Producers today are at a crossroad trying to decide whether to stay commodity focused or brand focused. Successful (and there will be many) commodity producers will need to be low cost, efficient producers who may have to sell at slightly lower prices. Brand focused producers likely will receive more dollars, but possibly at some loss of flexibility in how they do things (Feuz, 2011).

**Let us address four myths about quality (brand focused) beef production**

**Myth one – There is no extra money made by producing a higher quality animal.** Ten years ago maybe that was true. But today, whether it is a sale barn sold calf or fed steer, quality signals or grid premiums clearly exist. To not over simplify it will take some marketing skill to make sure you get those dollars, but they clearly exist.

**Table 2.** Example of Premiums Paid by One National Program Used by Many Producers in This Region

	Added \$/head as fed cattle
Top 25%	\$115.21
Top 50%	\$94.36

**Table 3.** Current (October 1, 2012) Year-to-Date Cutout Values by Quality Grade

	Year-to-Date		
	FY12	FY11	% Change
CAB <sup>®</sup>	\$199.40	\$180.10	+10.7%
USDA Choice	\$189.70	\$173.00	+9.7%
USDA Select	\$179.70	\$167.70	+7.2%
Choice-Select Spread	\$10.00	\$5.30	+88.7%
CAB <sup>®</sup> -Low Choice Spread	\$9.70	\$7.10	+36.6%

As more of the large retailers started selling Choice (or higher) beef, the demand for Choice and Premium Choice (CAB<sup>®</sup>) has shown dramatic increases (Table 3). For a typical 830 lb. carcass, the spread from Premium Choice (CAB<sup>®</sup>) to Select is in the range of \$160-170/head; making producing quality an important target for beef producers.

**Myth two – In a commercial straightbred Angus breeding program, you sacrifice growth and pounds to hit quality targets.** Not true with the progress Angus breeders have made on growth traits; you can have both as clearly shown in Table 4. Always remember, high gaining cattle are healthy, well managed genetically superior animals.

**Table 4.** Influence of Percent Angus Genetics on Carcass Traits and Feedlot Performance

	Percentage Angus			% Change
	0 to 25 (low)	26 to 75	76 to 100 (high)	
# of Head	9,712	17,266	13,980	
Prime, %	0.3	0.8	2.2	633.3
Premium Choice, %	7.4	13.9	23.6	218.9
Low Choice, %	44.0	54.2	56.3	28.0
Select, %	43.3	29.4	17.2	-60.3
Standard, %	5.0	1.7	0.7	-86.0
YG 1 or 2, %	75.9	59.3	44.0	-42.0
YG 3, %	22.8	38.4	52.0	128.1
YG 4 or 5, %	1.3	2.3	4.0	207.7
ADG, lbs.	3.13	3.21	3.31	5.8
Morbidity Rate, %	22.3	16.5	17.0	-23.8
Mortality Rate, %	1.67	1.30	1.62	-3.0

Source: Iowa Tri-County Steer Carcass Futurity

**Myth three – High-quality cattle do not feed as well.** Previous data has always shown you can have both performance and quality. So not surprising is a recent analysis by Tom Brink, JBS Five Rivers Cattle Feeding LLC, in which the results showed higher grading/higher growth cattle are the most profitable.

**Table 5.** Feedyard Closeout and Carcass Performance Comparison

<b>Yearling Steer Closeouts July-October, 2008-2011</b>	<b>Higher Growth Higher Grade*</b>	<b>Lower Growth Lower Grade**</b>
Pens	151	113
Total Head	36,266	26,729
Death Loss	1%	1%
Placement Weight (lbs.)	806	797
Purchase Cost Per Head	\$864	\$857
Finish Weight (lbs.)	1,387	1,276
Days on Feed	166	150
Dry Feed Intake (daily lbs.)	20.66	12.92
Average Daily Gain (lbs.)	3.49	3.26
Dry Feed/Gain (lbs.)	5.92	6.12
Feedlot Cost of Gain (\$/cwt)	88.39	93.64
Dress Percent	64.6%	64.1%
Prime & Choice	73%	40%
Certified Angus Beef	19%	5%
Yield Grades 1-3	89%	95%
Premium vs. Live Market (head)	\$64	\$12
Value Per Head Sold	\$1,415	\$1,256
<b>Profit/Loss Per Head</b>	<b>\$27.30</b>	<b>(\$58.29)</b>

\*1,350 lbs. or heavier finish weight/65% or better Prime and Choice grades

\*\*1,300 lbs. or lighter finish weight/45% or lower Prime and Choice grades

Source: Tom Brink, JBS Five Rivers Cattle Feeding, LLC

**Myth four – You cannot have functional cows and still focus on quality.** Dr. Twig Marston did an extensive literature search and created a “white paper” that said there is no relationship between functionality in the cow and how her progeny do on the rail ([http://www.cabpartners.com/news/research/marston\\_marblingandothertraits.pdf](http://www.cabpartners.com/news/research/marston_marblingandothertraits.pdf)).

### Keys to making the “Quality recipe” work

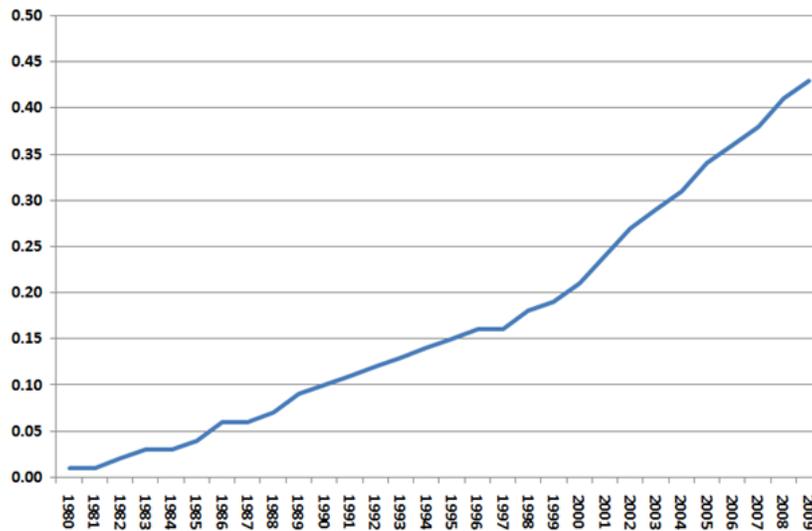
#### 1. Genetics are very important

When trying to create a positive eating experience, while still generating a profit for the producer, the old adage “it is hard to make silk out of a sow’s ear” really fits. Using the “right” genetics is really step one to hitting a quality target. Four key genetic factors should be considered.

- a. *Breed choice* – Yes, all cattle breeds can create a quality eating experience, but some breeds excel.

- b. *The Angus genetic influence* – Angus as a breed, from its origin in Scotland as the “butcher’s breed,” has created the image where the name Angus and eating quality are synonymous. The name Angus is present in 67-68% of all USDA beef brands. Hence, it is not surprising as the percentage of Angus in a calf increases, quality grade improves and *Certified Angus Beef*<sup>®</sup> (CAB<sup>®</sup>) acceptance rates grow, explaining why today 40-50% of all calves result from a straight commercial Angus cow mated to a registered Angus bull.
- c. *Successful use of genetic information like marbling EPDs and genetic indexes like \$B* – Although Angus as a breed marbles very well, there is a huge variation among bulls. A great way to incorporate those top bulls is use of marbling EPD information. As a breed, Angus breeders have made great progress in focusing on marbling as part of their selection process.

**Figure 2.** Angus Genetic Trend for Marbling (Spring 2011) – Average Marbling EPD by Birth Year



- d. *Use new DNA technology to hit quality target* – As an industry, we are in our infancy of using a genetic selection tool that will expand what we can select for and the accuracy of the genetic information we use – that technology being DNA.

In 2012, Certified Angus Beef LLC, in partnership with Angus Genetics, Inc. and Pfizer Animal Genetics, launched an Angus-specific DNA tool for commercial cattle producers called GeneMax<sup>™</sup> (GMX<sup>™</sup>). GeneMax allows commercial cow-calf producers to look under the hide and select replacement females that will produce progeny that are superior for both growth and grade. It also can be used to evaluate the grading and growth potential of feeder calves.

When a DNA sample is collected and submitted (<https://www.angusonline.org/genemax/logon.aspx>), the producer receives a GMX score, an economically weighted value for marbling and post-weaning gain combined, as shown in the following figure.

**Figure 3.** GeneMax™ Test Results

Tag	Sex	Assn Num	GMX™ Score	GMX™ Marbling	GMX™ Gain	Most Likely Sire	
						Tag	Reg. Num.
1R177	C	BIR 619046714	99	5	5	5899	AAA 13395344
1U093	C	BIR 620020729	99	5	5	5899	AAA 13395344
1S113	C	BIR 620020965	99	5	5	5899	AAA 13395344
1S009	C	BIR 620020932	98	5	5		
1W053	C	BIR 621342968	98	5	5	5899	AAA 13395344
1P142	C	BIR 619700932	98	5	4	5899	AAA 13395344
1R149	C	BIR 619046690	97	5	5	5899	AAA 13395344

GeneMax™ score of 99 = top 1%, 75 = top 25%, 50 = average; 25 = bottom 25%, 1 – bottom 1%

- e. *Through AI usage, the ability to use proven genetics* – In the “Missouri recipe,” one of the key success factors has been their effective use of artificial insemination. This allows use of proven genetics, but also bulls with high marbling EPDs. The following table graphically illustrates the value of proven genetics.

**Table 6.** Performance Data (2008-2011) for Steers from the University of Missouri Thompson Farm, Spickard, MO, That Were Fed at the Irsik & Doll Feed Yard in Garden City, KS

Sire Group	Maternal Grand Sire	No. of Steers	Choice or Higher (%)	CAB® (%)	Prime (%)
High accuracy	High accuracy	153	100	58	30
High accuracy	Low accuracy	64	100	61	34
High accuracy	Natural service	35	100	60	14
<b>Totals</b>		<b>252</b>	<b>100</b>	<b>59</b>	<b>29</b>
Natural service	High accuracy	58	97	60	12
Natural service	Low accuracy	17	100	53	18
Natural service	Natural service	26	92	27	12
<b>Totals</b>		<b>101</b>	<b>96</b>	<b>50</b>	<b>13</b>

The initial female mating is important. When daughters of proven high accuracy bulls are mated back to unrelated proven high accuracy bulls, the ultimate success can be achieved. These progeny become cattle with \$100-200 premium potential in a grid marketing program, as shown in the Mike Kasten data below.

**Table 7.** Stacking Marbling – Kasten Missouri Study

	Generations		
	Highly Proven (2 generations or more)	Highly Proven (one generation)	Sired by bull with positive carcass EPDs
Prime	49%	0%	0%
CAB <sup>®</sup>	47%	79%	59%
Low Choice	4%	21%	37.5%
Select	0%	0%	3.5%
Avg. Premium over non-stacked cattle	+\$177.48	+\$52.89	—

Source: Mike Kasten, Missouri beef producer

As Mr. Kasten stated so well, “Stacking generations of highly proven genetics adds great value and you cannot do that without using AI.”

## 2. Managing cattle for a quality target

As important as genetics is to hitting a quality target, management is equally important. Every day quality is managed out of cattle by poor decisions. Let us examine four key factors:

- a. *Health management* – Herd health is critical to a profitable ranching operation, and no less important in producing a high-quality beef product. The best genetics are easily derailed if cattle get sick at any time in their lives. Research has repeatedly shown the dramatic impact health has on both feedlot performance and carcass merit.

**Table 8.** Effect of Postweaning Disease on Carcass Traits, Feedlot Performance and Mortality and the Net Decrease in Dollars Per Head Returned

	Number of Treatments		
	0	1	2
ADG	3.3	3.1	2.9
Prime & CAB <sup>®</sup> , %	15.4	11.9	9.8
Mortality	.1	3.8	15.3
Net \$	—	-\$119.72	-\$365.01

Source: Iowa Tri-County Steer Carcass Futurity

b. *Nutritional management*

**Whole-herd Nutrition**

Herd nutrition, including your protein, energy and mineral programs, has a significant impact on the health and immune response of your calf crop, which can affect carcass-quality potential.

- Work with your nutritionist to develop an effective nutritional program.

**Pre-weaning and Weaning**

As early as 60 days of age, nutrition other than milk has been shown to affect carcass quality. Supplemental feed while still nursing can have a significant positive effect on marbling. Diets high in starch (especially corn) have been proven a most effective way to stimulate marbling deposition.

**Creep Feeding and Early Weaning**

Creep feeding and early weaning can improve marbling and aid transition to independent life at weaning. One of these two strategies, sometimes both, can benefit your operation.

**Post-weaning and Preconditioning**

- 45-day minimum preconditioning period.
- Target gains from 2 to 2.5 lb. per day.
- Get calves eating from a bunk and drinking from a waterer.
- Utilize a corn-based diet. Because of starch removal, distiller's grains are not recommended as the major component of the diet.

*Caution*

If calves are moved from a high-energy diet to a lower gain (<2.0 lb./day) growing diet, they will not continue to develop marbling at a high rate.

- c. *Reproductive management* – We all know that early calving cows (heifers) are the most economically efficient because they wean heavier calves and breed back sooner and at higher levels. What we did not know until recently is early born calves result in the production of higher quality carcasses. As first reported by Dr. Rick Funston, University of Nebraska beef scientist, this was supported by our data collected on a Missouri cattle operation.

**Table 9.** Quality Grade by Birth Sequence Within the Spring Calving Season

<b>USDA Quality Grade</b>	<b>Birth Sequence</b>				<b>Chi-Square P Value</b>
	<b>E</b>	<b>ME</b>	<b>ML</b>	<b>L</b>	
Prime	0.53%	0.78%	0.00%	0.11%	0.3915
CAB <sup>®</sup>	28.60%	24.37%	16.28%	11.24%	<.0001
All Choice	85.05%	83.63%	76.88%	77.89%	0.0087
Select	13.88%	14.81%	23.12%	21.05%	0.0043
Standard	0.53%	0.78%	0.00%	1.05%	0.9695

### **Summary**

Adding value beyond just pounds is a challenge, but improving quality grade sure can help achieve that goal allowing producers to take great pride in what they are achieving.

