

What Does It Take To Satisfy The Specifications In Beef Marketing Programs While Maintaining A Profitable Cow Herd In Florida?

T.A. Thrift

Department of Animal Sciences
University of Florida
Gainesville, Florida

Today's beef producers are faced with a rapidly changing industry. Value based marketing is becoming a reality in certain segments of our industry. New strategic alliance programs are forming at an exponential rate. At the same time, our customers continue to evolve and demand more from the products we produce. These customers include not only the initial buyers of your calves but also the packers, retailers, and most importantly, consumers. With all of the changes taking place, the question that arises is "What combination of management and genetics will produce the kind of calf that meets the demands of all segments of our industry as well as consumers of our end product?" The next question is "Can we produce that calf with tropically adapted cows in the Southeastern U.S.?"

Current Status Of The Beef Industry

For years the beef industry has identified target carcass specifications for the

cattle we produce. These targets have changed as our consumers have evolved. The current carcass targets are a combination of what the packers, retailers, and restaurateurs have identified as "ideal" to provide a consistent product to consumers. The 1995 National Beef Quality Audit (NBQA) revealed that on the average, the cattle that we produce are hitting right on the "ideal" target (Figure 1). However, an examination of the range in carcass values (Figure 2) reveals that there is considerable variation in the end product we produce. It is unreasonable to expect that all cattle will produce the "ideal" carcass. However, expansion of the "ideal" specifications to include an acceptable range of values should allow carcass specifications as follows:

Carcass weight	600-850 lbs
Fat thickness	<.5 in
Ribeye area	11-15 sq in
Yield grade	<3.5
Quality grade	Select or higher

National Beef Quality Audit		
	<u>1995 NBQA</u>	<u>Ideal</u>
Carcass wt	748 lbs	750 lbs
Fat thickness	.47"	<.40"
Ribeye area	12.8"	12.5"
KPH fat	2.1%	2.0%
USDA YG	2.8	<3.5
Marbling	SM-	SM-
Prime and Ch	48%	60%
YG 1&2	58%	75%

Figure 1. Results of the 1995 NBQA.

Even with these less stringent guidelines, a significant number of cattle failed to produce carcasses in the acceptable range (Figure 3). Additionally, a significant number of cattle had management defects that included such items as side brands, liver condemnation, and injection site blemishes. It can safely be concluded that approximately 30% of the cattle produced have some kind of “hole” in them created by poor genetic decisions or mismanagement. The 1995 NBQA revealed that \$138 is lost for every steer or heifer marketed in the U.S. This loss is primarily due to excess fat, low palatability, and excessive variability. Admittedly, not all of the \$138 would be returned to the cow/calf producer for better quality calves. However, a significant increase in net returns could be realized by reducing the variability in the cattle produced. As stated earlier, most of this variability can be attributed to poor breeding decisions and mismanagement.

Marketing Cattle Through An Alliance Program

In the last ten years, many programs have been developed in an attempt to aid the producer at capturing some of the value loss that was identified in the 1991 and 1995 NBQA. Most of these programs focus on rewarding cattle that hit very specific targets. Likewise many programs have developed

discounts for cattle that fail to meet certain specifications. In most programs the discounts are considerably larger than the premiums. With this in mind producers marketing cattle in alliance programs should focus on the specific target, but should also pay particular attention to avoiding outliers (YG 4 and 5, standards, overweights, underweights, dark cutters). Producers should also select an alliance very carefully and avoid trying to force the wrong kind of cattle into a specialized alliance. Many of the alliances are focused on cattle with high genetic potential for marbling. This product is often destined for white tablecloth restaurants and export markets. Other alliances have developed which focus on cattle that are higher in red meat yield with less emphasis on marbling. Much of this product will be utilized in the retail supermarket trade. These two types of alliances certainly compose the lion’s share of the marketplace but niche alliances do exist that focus on extra lean, all natural, organic, and other unique parameters. The key for producers interested in marketing through alliance programs is to obtain carcass data that reveals the genetic potential of their calves. Once this data is obtained decisions can be made about fitting cattle into specific alliances. Forcing high red meat yield cattle into a high marbling alliance can be a costly mistake. In addition, producers should remember that although premiums and

1995 National Beef Quality Audit					
	<u>1995 NBQA</u>	<u>SD</u>	<u>Ideal</u>	<u>Minimum</u>	<u>Maximum</u>
Carcass wt	748 lbs	93 lbs	750	301 lbs	1108 lbs
Fat thickness	.47"	.19"	<.40"	0.0"	1.64"
Ribeye area	12.8"	1.6"	12.5"	6.0"	19.9"
KPH fat	2.1%	.6%	2.0%	0.0%	5.0%
USDA YG	2.8	.8	<3.5	-.5	6.8
Marbling	SM-	-	SM-	PD	AB

Figure 2. Carcass data for the 1995 NBQA.

discounts are based on quality grade, yield grade, and outliers the bottom line is based on pounds. For example, assuming \$110/cwt carcass base price and a \$6/cwt choice/select spread, a 700 lb choice, YG 2 carcass is worth \$770. A 800 lb select, YG 2 carcass is worth \$832. According to this example, if producers increase the quality grade of cattle at the expense of weight gain (lbs), then they may lose money.

Many people feel that beef producers in the Southeastern U.S. are at a disadvantage when trying to fit into some marketing alliances. Many of the alliances specify that there should be minimal to no Brahman influence in the calves marketed through the specific programs. Other programs lack specific breed requirements. Southeastern beef producers are faced with the question “How can I manipulate the genetics in my cowherd so that I might produce calves that are more industry accepted?”

Genetic Strategies To Improve Calf Value

Currently in the U.S., there are over 80 breeds of beef cattle. Twelve to 15 of these breeds are available in significant number to

make a major impact on the beef industry. A staggering number of possible crosses exist from the combination of only these breeds. Most of these breeds can, however, be categorized into functional groups. Briefly these groups (and several examples of each) include:

1. British - made up of British breeds used mostly for beef production (Angus, Hereford).
2. Continental - Continental European breeds used mostly for beef production (Charolais, Limousin, Simmental, Gelbvieh).
3. Dairy - developed only for dairy purposes, with beef production as a by-product (Holstein).
4. *Bos indicus* - containing only *Bos indicus* background (Brahman).
5. American - the American created composite breeds generally containing 3/8-1/2 Brahman (Brangus, Braford, Beefmaster, Santa Gertrudis)

Utilization of these functional groups is based upon many factors including environment, resources, and source of replacement heifers. Regardless of the breed(s) chosen, the decision should be based

Incidence of Quality Outliers			
<u>Concern</u>		<u>Incidence</u>	
Yield grade 3.5 or better		20%	
USDA Standard or \geq B maturity		9%	
Carcass Wt. >850 and <600		19%	
Ribeye area >15 and <11		19%	
Side brands on the hide		17%	
Liver condemnation		22%	
Dark cutter		3%	
Injection site blemish		8%	
SIZE	FAT	PALATABILITY	VARIABILITY

Figure 3. Incidence of quality outliers.

upon sound data and include a long term breeding plan. Additionally, producers must be aware of genetic antagonisms that exist between different traits. Four of the more important antagonisms are illustrated in Figure 4. In general, as selection for retail product yield increases, calving difficulty increases, marbling decreases, age at puberty increases, and mature size increases. While these relationships are not absolute, they must be considered when designing a breeding program to produce the “ideal” calf. Currently, no one breed optimizes the three M’s: Maternal, Muscle, and Marbling. With this in mind, studies at the Meat Animal Research Center in Nebraska have been conducted to determine what combinations of breeds will produce an end product with acceptable leanness and marbling without sacrificing maternal performance. The research data suggests that the “ideal” calf consists of a combination of 50% British and 50% Continental. However, in the hot, humid areas of the Southeastern U.S., designing a crossbreeding system to produce this combination is difficult. Neither of these functional groups is noted for heat tolerance, therefore maternal performance during the summer months will generally be lower.

Utilization Of The Brahman Breed In Crossbreeding

Due to their tropical adaptation, cattle of varying *Bos indicus* percentage have been

extensively utilized in the Southern U.S. for over 100 years. The Brahman is the most common *Bos indicus* breed in the U.S. and is noted for adaptability to hot, humid conditions and ability to tolerate insects. Crossbreeding with Brahman cattle has been commonplace in the gulf coast region for 75 years and represents one of the most effective means of improving production efficiency. Much of the original research focused on the reproductive and growth rate of purebred Brahman cattle. As a breed, Brahman cattle generally have poorer reproductive rates, and slower growth rates than British cattle. However, Brahman crossbred animals often excel in traits of economic importance to the beef industry. Franke (1980) summarized experiments with Brahman, British, and Brahman x British crosses and concluded that reproductive traits were significantly improved in F1 Brahman x British cows. Calving rate, calf survival, and weaning rate were increased nearly 10%, 5%, and 12.5% respectively, due to hybrid vigor. It was also estimated that calf weight at weaning was increased by nearly 70 lbs in calves born to Brahman x British F1 cows as compared to straightbreds. For most cow/calf producers, pounds of calf weaned per cow exposed, is the trait of primary economic importance since many calves are marketed at weaning. In the past ten years an increasing amount of attention has been placed on postweaning gain, and carcass traits as many producers are retaining ownership. Generally hybrid vigor for these traits is small, therefore crossbreeding results in minimal

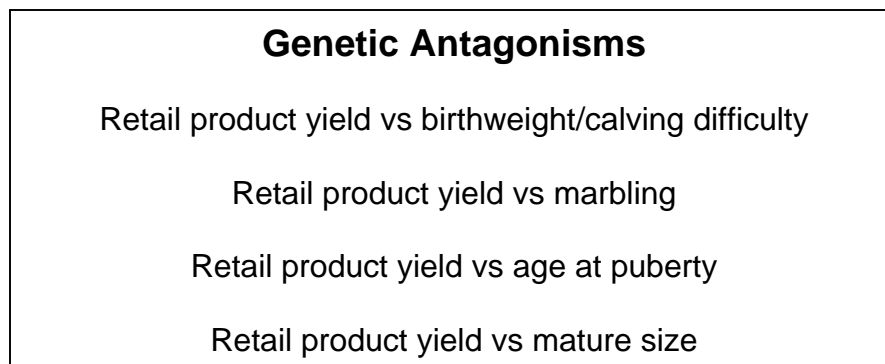


Figure 4. Genetic antagonisms that exist.

improvements in postweaning growth or carcass traits. It is well established that Brahman cross cattle will gain and perform comparable to straightbred British cattle. It has also been documented that Brahman cross cattle have acceptable carcass weights and fat thickness, but are generally lighter muscled as evaluated by ribeye area/cwt of carcass. Recent research has documented that cattle of high (>50%) Brahman percentage have lower marbling scores, lower percent choice, and tend to be tougher and more variable in tenderness as measured by Warner-Bratzler shear force. These reasons are often given for the substantial price discount applied to cattle with greater than ½ Brahman inheritance.

Many of the American breeds have been developed to capitalize on the strengths of the Brahman breed while trying to minimize the negative traits associated with *Bos indicus* cattle. These breeds vary in *Bos indicus* percentage, but generally have 3/8 to 1/2 *Bos indicus* blood. Less research is available on the productivity females of these breeds in comparison to F1 females. It is generally accepted that their performance is improved over the straightbreds, but not superior to the F1.

The question often asked by producers is “How much *Bos indicus* influence is needed to maintain the adaptability to the Florida climate but still avoid many of the discounts which are currently being applied to *Bos indicus* influenced cattle?” Turned around, the question might be asked, “Can I produce cattle in Florida that will meet the specifications for many of the branded programs and what might be the consequences on my cow herd productivity?”

The utilization of an F1 *Bos indicus* (Brahman x English) or Brahman influenced (American breeds and crosses) females mated to British bulls to produce cattle with higher quality grades or Continental bulls to produce higher lean yield, represent breeding alternatives to the 50% British x 50%

Continental “ideal mix” discussed earlier. Realistically, many combinations exist that can utilize 1/4-1/2 *Bos indicus* on the maternal side to provide heat tolerance, and when mated to the correct **TYPE** of bull, can also produce acceptable carcass specifications. As a rule of thumb producers should be raising calves that are a minimum of 25% British, a maximum of 50% Continental and a maximum of 25% *Bos indicus*. Although niche markets do exist for cattle outside of these combinations, keep in mind that extremes of any kind are generally discounted.

Large producers are at an advantage in marketing because they are often able to retain ownership of cattle and sell based on grade and yield. In doing so, they avoid many of the discounts that are applied to *Bos indicus* cattle due to phenotype. This phenotype is often expressed in the form of longer ears, sheaths, and naval flaps in *Bos indicus* influenced cattle. This phenotype is often evident in cattle that are as little as ¼ *Bos indicus* in breed makeup. It is difficult to believe that the ¼ *Bos indicus* is causing all of the carcass problems without revealing something about the other ¾ of the animal. It is also difficult to give up the tremendous hybrid vigor associated with the *Bos indicus* cross female. The carcass premiums need to be very large to offset reductions in reproductive rate, calf survival, and milk production if we are to abandon the *Bos indicus* cross female in the hot, humid South.

Today’s producers are faced with a rapidly changing industry. Producers who are diligent about measuring performance and paying specific attention to management will have the upperhand in the future. A set of goals is helpful in establishing the target(s) that our industry is shooting for. Producers that set goals to find out if their calves: have good feedlot health records, gain greater than 3 lbs/d in the feedlot, grade 50% choice with no standards, and have a high percentage YG2 with no YG 4 or 5 will become the “select suppliers” of the future. It is an eye opening

experience for most producers to learn how their cattle perform after they leave the ranch. Finally, keep in mind that your primary customer is the consumer. Today's consumer does not know how to select, prepare or cook our product, but they do understand that beef costs the most. Most consumers have had excellent eating experiences with beef, unfortunately, it is the bad experiences that are often remembered. Instead of returning tough

meat, most customers just won't return. Consider that next time you make a breeding or management decision.

Literature Cited

Franke, D.E. 1980. Breed and heterosis effects of American Zebu cattle. *J. Anim. Sci.* 50:1206.

Notes:

Notes: