Maybe There Is a Reason (or 10)

Economics drives genetic and management decisions in the beef industry.

*Commentary by **Larry Corah,** vice president, Certified Angus Beef LLC*

In the early 1960s, excitement over the "new breeds" was starting to permeate the beef industry. Grown tired of the poor growth performance and "wastiness" of English breeds, producers welcomed change.

The effect of the Continental breed influx was staggering. By the next decade, registrations for Angus, Hereford and other English breeds were in a dramatic downward spiral. The new blood kept on coming until more than 80 breeds of cattle were being used somewhere in this country in the 1980s. The "rainbow" beef industry had been created.

Heterosis reigned supreme, and rightly so. Many of the nation's leading animal scientists had proven its benefits, which were subsequently touted in every cattle forum over the years. Weaning weights were up, and reproductive performance was better, but a spoiler appeared on the horizon. Beef demand was headed into the tank, because the industry was not consumer-focused.

By the 1990s, technology was the knight on the white horse, carrying a banner that suggested postharvest carcass management could make all beef appealing. Efficiency was still the name of the game, and genetic pools of "composite" cattle provided a vector for breed complementarity to win that game for the united beef industry.

So now, seven years into the 21st century, why are we using fewer breeds of cattle, interest in composites is waning, and the calf crop is becoming increasingly black? We know heterosis is sound science, so why are straightbred Angus cattle becoming the norm, not the exception?

Money. Economics drives genetic and management decisions in the beef industry. The consumer is the source of this money, sending loud and bright signals from the cash registers and card readers.

During the past nine years, Certified Angus Beef LLC (CAB) has conducted continual sale barn, packing industry and economic surveys while analyzing numerous other databases. Looking at the results of these studies, the answers become clear.

Here are 10 reasons behind the trend toward straightbreds.

Table 1: Net added value by percent Angus genetics

	% Angus		
	0-25	**26-75**	**76-100**
Net added value	PAR	+$26.40	+$67.93

Table 2: Quality grade by percent Angus genetics

	% Angus			
	0-25	**26-50**	**51-75**	**76-100**
% Prime	0.4	0.7	1.6	3.1
% Premium Choice	9.7	18.2	21.3	34.3
% Low Choice	46	52.7	51.6	50.2
% Select	38.3	26.2	23	11.7
% Standard	5.6	2.3	2.6	0.8

1 Market value of calves

Our CAB sale-barn survey data — collected 17 times at 10 locations across the United States — shows that straightbred Angus calves top the market everywhere. In fact, we are having problems continuing the survey because it's becoming difficult to find non-Angus or crossbred calves for comparison at many locations. The Angus premium is $15 to $30 per head at comparable weights.

A recent University of Arkansas sale-barn survey sheds more light. Reported at the 2007 American Society of Animal Science (ASAS) meetings, it compares 2000 to 2005 sale-barn results on nearly 200,000 calves.

When evaluating breed effect, the greatest increase in price [$3.26 per hundredweight (cwt.) from 2000 to 2005] was for straightbred Angus calves, ranking No. 1 for all breeds and breed combinations. The crossbred black baldies ranked second, but they only increased in value by $1.53 per cwt.

2 Market value of fed cattle

Universally, feedlot managers will tell you that the easiest pen of cattle to sell is a set of straightbred Angus steers or heifers. The packers literally fight to get them, typically paying $2 to $5 per cwt. more than they do for other cattle on a live basis.

3 The CAB® effect

Until the late 1990s, there were almost no premiums for cattle that qualified for the *Certified Angus Beef*® brand (CAB®), even though the program was nearly 20 years old. Then it changed, and it changed rapidly.

Today, virtually all beef grids include CAB carcass premiums, with the range being $3 to

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$6 per cwt.; the 2006 average was $4.50 per cwt., or about $36 per head.

A biannual survey by our Industry Information Division shows that, during the last 10 years, packers have paid producers more than $200 million in grid premiums, just for that CAB component.

Just this year (2007), Cattle-Fax evaluated the overall economic effect of premium programs like CAB and USDA Prime on the beef industry (see "Cattle-Fax Fixes Value of Quality" on page 158). Their data suggest an $18- to $20-per-head effect or a total annual effect of more than $500 million per year for the past four years.

4 Grid marketing drives change

In the late 1990s, selling fed cattle on a grid was a rarity, but today nearly 50% of all cattle are marketed on a grid. By 2010, Cattle-Fax says that number could be 70%.

Carcass weight is the key economic driver, but close behind is quality grade. Those two factors account for 60%-80% of the variation in individual animal value. Straightbred cattle can deliver both.

Even in grid marketing, we still sell on a pounds-based system, but in our data, the CAB carcasses are heavier than average and got there just as efficiently as the rest.

Because of the economic benefits of quality — without sacrificing weight — straightbred or high-percentage Angus steers commanded twice the net added value of Angus crossbreds in an Iowa State University (ISU) evaluation of Tri-County Steer Carcass Futurity (TCSCF) data (see Table 1).

5 Emerging added value of quality grade

In the 1990s, a typical Choice-Select carcass grade spread averaged $2-$5 per cwt. In 2005 the spread was $10.52 per cwt., and in 2006 it increased to $13.88 per cwt. Despite some short-term variations, there is every indication that this trend will continue.

Overlying and compounding this support is the emerging added value of hitting the premium Choice target. In 1999 the spread between CAB and Choice was virtually $0. In 2005, it was $6.61 per cwt., and in 2006 it averaged $8.56 per cwt., based on Urner-Barry's weekly boxed-beef price reports.

That means, for an 800-pound (lb.) carcass, there is more than $110 difference between Choice and Select and nearly $200 difference when comparing a CAB-qualifying carcass to a Select carcass. It's all because consumers are spending money to indicate their desire for a quality eating experience. Clearly, they will pay for the privilege.

Simply said, crossbred cattle do not grade as well as straightbred Angus, as shown in Table 2 with the TCSCF data.

6 Straightbreds outgain crosses in the feedlot

The age-old philosophy, handed down with the science of heterosis, has been that crossbreds outgain straightbreds. But genetic progress made by the Angus breed through extensive use of the expected progeny difference (EPD) tool has lifted the growth potential of straightbreds.

Evaluating feedlot databases, straightbred Angus calves outperformed the crossbreds. This is reflected in the analysis of the ISU database, where the daily gain advantage of straight- or high-percentage Angus calves was nearly 0.2 pounds (lb.) per day, resulting in added value of $25 per head over the middle-percentage Angus calves (see Table 3).

Table 3: Average daily gain by percent Angus genetics

	% Angus		
	0-25	26-75	76-100
Feedlot ADG, lb.	3.05	3.12	3.29
Added value due to ADG	PAR	+$10.48	+$35.40

Table 4: Health and treatment by percent Angus genetics

	% Angus			
	0-25	26-50	51-75	76-100
No. cattle	1,697	1,275	852	1,787
% treated	31	21	12	11
Treatment cost/head	$8.36	$6.38	$5.08	$4.06
Death loss	1.36	0.78	0.94	1.12

Again, this is a testament to genetic selection by Angus breeders, using weaning and yearling EPDs.

7 Straightbred calves are healthier

Another piece of conventional wisdom has suggested crossbred calves should be healthier than straightbreds. "Hybrid vigor" should overcome the health problems prevalent in straightbreds. Current data suggest these assumptions are incorrect.

The incidence of health problems in the overall cattle-feeding industry is on the rise. The related higher death loss is an obvious drain on feedlot profits, but the hidden factor is a reduction in carcass quality grade because of poorer calf health.

Certainly, one of the key advantages of heterosis is added calf vigor. Yet, one of the key influencers of calf vigor is calving difficulty. In the 1980s and 1990s, calving difficulty in heifers was typically 20%-25%, while today most herds have reduced calving difficulty to less than 5% because of predictable birth weight EPDs (BW EPDs) in straightbred herds. Thus, today most ranches have fewer calving problems with straightbred calves than with crossbred calves.

Could straightbred calves actually be healthier than crossbred calves? To our surprise, a 2004 analysis of the ISU data said yes (see Table 4). This is now supported by information from two other databases. When comparing straight- or high-percentage Angus calves to Angus-cross calves, the ratio of those requiring treatment and the treatment cost were reduced by 25% to 50%. As with the cow herd, labor is a critical issue for feedlots, and sick cattle present challenges.

8 Convenience

Without question, cow-calf operations are larger today, and labor is a constant challenge on all operations. A functional cow that requires limited attention is a basic necessity.

Convenience, along with economics, is a key driver that leads toward creating a straightbred cow herd. Mating decisions and bull selection for the herd become easier, especially in the case of heifer mating, when breed is not a factor.

Most cattle farms operate herds with fewer than 50 cows, where use of a crossbreeding system is not easy.

Just as bull selection is simpler when limited to one breed, understanding one set of EPDs beats learning those of two or three bull breeds.

Ask any smaller cow-calf producer why he produces straightbred calves. Convenience is his first justification.

9 Reduced animal and carcass variability

When the 2005 National Beef Quality Audit (NBQA) results were published, variability of product was identified as a key industry challenge. Now that we understand beef demand is consumer-driven, we can't afford to have 10%-15% of carcasses with tenderness problems or lack of flavor because 50% of cattle grade Select or lower.

That same difference exists in live cattle. Examining data in an eight-year study on 25,000 calves at Triangle H Grain & Cattle Co. in southwest Kansas showed the top 25% of calves gained 4.10 lb. per day vs. 2.93 lb. per day for the bottom 25%. The average carcass weight variation within a pen was 293 lb., and the average carcass value variation, top to bottom, was $459.14.

One of the best ways to reduce both carcass and live variability is to reduce the number of breeds used in a cow-calf operation and select bulls based on EPD values. Predictable genetics can solve much of our variability problem.

10 Heterosis is not free

The animal science community has created a philosophy based on the proven principles of heterosis — that of the "free lunch." Unfortunately, it may cost the industry more to pursue that freebie than to ignore its lure.

Setting aside the many offsetting advantages of straightbred predictability and value, the greatest economic value in heterosis is in the F_1 female. However, that is a rare animal in the commercial cattle industry, especially for smaller producers. Nobody can dispute the advantage of an F_1 female, but look around most states and try to find or buy them. You probably can't because of the added labor and expense of creating them.

In most herds trying to use heterosis to their advantage, the two- or three-breed rotations result in a loss of at least 30% to 50% of the potential heterosis value of an F_1 female. Worse, the genetic merit of progeny from those programs often crosses the line between hybrid and mongrel.

Don't feel guilty

In a recent chat with someone I consider a progressive cow-calf producer, he said, "I am weaning 650-pound calves, selling them for a nickel a pound over market and achieving 97% pregnancy rates. And yet, I feel guilty. I am not very progressive, because I am doing this with straightbred cows, not crossbreds."

Well, that's a natural feeling that comes from operating for 20 years in a commodity-oriented industry that still resists some easy answers to consumer focus. But there is no reason to feel backward or guilty, nor indifferent to a supposed free lunch.

In today's consumer-driven markets, straightbred cow herds are making sense (dollars and cents) for many, many astute cattlemen.

Today, the economic driver in the beef industry is the consumer. The resulting genetic makeup of today's cow herd reflects that effect. AJ