

Crossbreeding and Cattle Feeding

Crossbreeding with Gelbvieh goes Hand-in-Hand with Feed Yard Preferences

By Wayne Vanderwert, AGA Executive Director

It's easy to get the impression that cattle feeders and packers want Angus. With the proliferation of branded beef programs one gets a sense that Angus cattle, and the higher percentage the better, is the only thing in demand. As is often the case, perception and reality are two different things.

If you study the preferences of the largest cattle feeders you'll find that the majority want continental influence in the cattle.

Most of the recent talk and renewed interest in crossbreeding has focused on the cow-calf producer. But the benefits are also important in the feedlot sector. Remember there are two reasons cattle producers crossbreed: first for breed complementarity and second heterosis. It is important that Gelbvieh seedstock producers understand this in order to make Gelbvieh the "Continental Breed of Choice".

Breed complementarity comes from crossing two breeds where the strengths of one breed compensate for the weaknesses of the other breed and vice-versa. Heterosis, or hybrid vigor, is when the offspring are superior to the average of the parents. Heterosis normally is greatest in the traits that are low in heritability.

Since growth traits are moderately heritable and the carcass traits highly inherited, it would seem that heterosis would have only a small economic impact in the feedlot. On the other hand, heterosis plays a big role in many of the reproductive traits, so it's little wonder that more talk is generated about crossbreeding's importance to the cow-calf producer. However, recent concerns about observed increases in health costs and death loss might be attributed to a lack of heterosis in higher percentage and straight bred cattle in the feed yard.

Breed Complementarity & Feedlot Economics

From a feeder's perspective, there is no single better reason to crossbreed and simultaneously demonstrate breed complementarity than in the balance of quality grade and yield grade. It is textbook classic and the reason why the majority of cattle feeders prefer Continental x British (Angus) in their pens.

No stranger to the Gelbvieh breed, Tom Brink, Senior Vice President of Five Rivers Ranch Cattle Feeding LLC, outlined his company's preference for breed composition at this spring's Beef Improvement Federation meeting in Mississippi. Five Rivers is a recent joint venture between ContiGroup and Smithfield Foods, making them the largest cattle feeder in the world with a one-time capacity of 811,000 head.

Five Rivers preference is a Continental X Angus that is 50 to 75 percent Angus and 25 to 50 percent Continental. While Brink hinted that they preferred no Brahman influence, he was quick to point out the necessity of having "ear" influence in southern-based cowherds for heat tolerance. His maximum percentage for a heat tolerant component is 25 percent.

From the early Meat Animal Research Center germplasm evaluations it was quickly learned that the Continental breeds like Gelbvieh, Charolais, Limousin and Simmental, were typically higher growth cattle with bigger ribeyes, less fat and higher retail product than the British breeds. Angus cattle fattened more readily and had higher quality grades due to their genetic ability to deposit marbling.

What feeders like Tom Brink desire is to capitalize on the breed complementarity that a well-designed crossbreeding program provides. The Gelbvieh breed's SmartCross® program targets just such an animal. "This combination makes the right-sized, good-feeding, good-grading, good-yielding animal that covers a lot of important bases," according to Brink. No doubt the most important base he refers to is simply economic, and these cattle will feed more

cheaply and go to the rail with more value than cattle that bend the percentage curve too far out of bounds.

The Gelbvieh Alliance data presented in Table 1 demonstrates the quality and yield grade profile of various combinations of Angus and Gelbvieh. This data demonstrates how Gelbvieh and Angus complement each other and provided incentive for the development of the SmartCross program.

Heterosis and Health

There is an emerging feeling among feeders that crossbreeding plays an important role in improved health. There isn't much talk about the importance of feeder calf health in seedstock circles. It is not as glamorous as selecting for more yearling weight or milk, it's difficult to measure, and there certainly isn't an EPD for immunity. But this is exactly the kind of trait where heterosis plays an essential and economic role.

Health is as important to the feeder's bottom line as many of the traits seedstock providers normally tackle. Data on more than 75,000 cattle harvested from Five Rivers feed yards in February 2006 demonstrate the consequences (see Table 2). The groups with no death loss were \$40/head more profitable than the death loss category where groups ranged from 2 to 5 percent and averaged 2.49 percent mortality.

To get around the problem, many feeders like Five Rivers, feed predominantly yearling cattle. Feed yards that focus on calf-feds are particularly sensitive to keeping cattle healthy.

Problems persist and appear to be worsening, even though there has been a big educational push over the last decade or more on the importance of preconditioning, weaning, VAC-45, modified-live vaccine use, etc. Is this related to the fact that more high percentage Angus cattle are in the pipeline? That's the conclusion some in the industry are reaching.

Dr. Pete Anderson, a Technical Service Manager for VetLife, provides hard evidence that health costs and death loss are on the rise in feedlots. VetLife, which services feedlot clients with a number of products, has developed the Benchmark Performance Program, a database that helps their member feedlots identify the positive and negative contributors to profitability.

"The increase in health related costs and death loss has been a steady trend over the last several years," says Anderson.

He agrees that these trends are surprising when you consider the emphasis on pre-shipment health programs, but he states, "What is really concerning is the fact that health costs per head have risen even though the cost of many health products themselves has declined in the same time period."

The feeling that this might be related to the swing away from crossbreeding and the increase in higher percentage Angus cattle parallels what has been witnessed in the dairy industry. There is now interest in crossbreeding dairy cattle after many decades of Holstein dominance. Improved health was one of the big advantages cited in studies where Holsteins were crossed with other dairy breeds and compared to straight-bred Holsteins. This should not be surprising since it is expected for heterosis to play a role in low heritable traits like disease resistance, hardiness and fitness.

Credence to this hypothesis also comes from a major western feeding and branded product entity that has focused on straight-bred Angus cattle. Increased health costs resulted as the potential for heterosis declined in their feeding operation.

None of this is rocket science. Providing cattle that meet the expectations of feed yard operators, packers and consumers should not be that difficult. Gelbvieh, Balancers and the SmartCross Program are positioned to make it happen with cattle that are genetically designed to increase profitability.

Editor's Note: Reprints of Tom Brink's BIF paper, "Satisfying the 21st Century Beef Consumer: A Cattle Feeder's Perspective" are available by request from the AGA office.

Table 1. Quality and Yield Grades of Various Combinations of Gelbvieh and Angus

Breed Composition	% USDA Choice or Higher	% USDA Yield Grade 1's & 2's
100 % Angus	76	49
75% Angus – 25% Gelbvieh	69	55
50% Angus – 50% Gelbvieh	57	68
25% Angus – 75% Gelbvieh	49	82
100% Gelbvieh	41	85

Table 2. February 2006 Steer Closeout Results - Five Rivers Ranch Cattle Feeding LLC (Pre-interest profits on 75,206 total head)

Death Loss Group	Average Death Loss	Profit per Head
0%	0 %	\$ 87.16
0 - 1%	.43%	\$ 81.82
1 – 2%	1.39%	\$ 62.10
2 – 5%	2.49%	\$ 47.54

Photo captions:

SmartCross steers (Gelbvieh x Angus) like this provide cattle feeders with good performance, carcass merit and have the potential to reduce health costs and death loss as well.

Brink photo (use AGA file photo)

Anderson photo (s:lori/gvworld/peteanderson.jpg)

Vet Life data slide (Mortality %)