



By the Numbers

► by American Angus Association staff

Improving Southern quality grades

Nationwide, the beef industry is continuously faced with the challenge to meet consumer demand for high-quality product. Low quality grades are especially problematic among cattle processed in Kansas and Texas, where 40% of all U.S.-fed beef is produced.

Making the grade

Beef packing plants in these two states run short on Choice beef — and long on Select — every day of the year. Cattle harvested in Kansas and Texas consistently grade 15-20 percentage points lower than Northern-origin cattle processed in Nebraska. And, unfortunately, this situation is not improving (see Fig. 1).

Prime and Choice accounted for 64% of the quality grade mix in Nebraska from 2000 through 2005. But, in Kansas and Texas, grading levels remain stagnant and disappointing, with only 48% and 44% of all carcasses reaching Choice or better, respectively, during the past five years. Grading in Southern states sometimes drops to only 40% Choice, as seen for an entire month this past summer.

Low-marbling genetics are costing cattle producers in the South at least \$160 million per year, says Tom Brink, vice president of cattle ownership and risk management at Five Rivers Ranch Cattle Feeding LLC.

Speaking at the National Angus Conference in Kansas City, Mo., in September, Brink said, “Cattle that originate from South-central and Southeastern states are often fed and

harvested in Kansas and Texas. No one in our industry talks publicly about this problem, but cattle feeders have a real struggle getting these cattle to reach acceptable quality grades. Many Southern-origin cattle simply don't have the genetics to reach the Choice grade, and it's costing everyone in the supply chain a lot of money.”

A 2002 survey of Southern Plains feedyards reached the same conclusion, while identifying Angus genetics as the problem's solution. Slaven Assoc. researched a broad range of issues related to Southern-origin feeder cattle. Their findings represent the collective viewpoint of 135 feedyards, representing 4.5 million head of one-time feeding capacity. Greg Slaven's final commentary on genetics is reprinted in the paragraph below with permission:

Genetics are an important issue to cattle feeders. They view genetics as the primary reason for low quality grades in Kansas and Texas. To meet cattle performance and carcass targets, feedyard managers recommend significant changes in the genetics used by some Southern producers. Feedyards do prefer a crossbred animal, and they recognize that

many Southern cow-calf producers need some heat-adapted genetics in their cow herds. However, they strongly believe heat-adapted breeds should be limited to 25% or less of the feeder animal's genetic makeup. Survey respondents also suggest less Hereford influence, continued moderate use of Continental breeds, and a greater infusion of Angus genetics into the Southern cattle population.

More marbling with Angus

Cattle feeders and packers desire more Angus in Southern-origin cattle. So, could Angus genetics be used to solve the problem of low quality grades in Kansas and Texas? Just how much progress could be made using one or two generations of Angus sires on cow herds that exist today in the South? Recent research conducted by the American Angus Association offers interesting answers to these important questions and clearly demonstrates the benefit of more Angus influence in Southern feeder cattle.

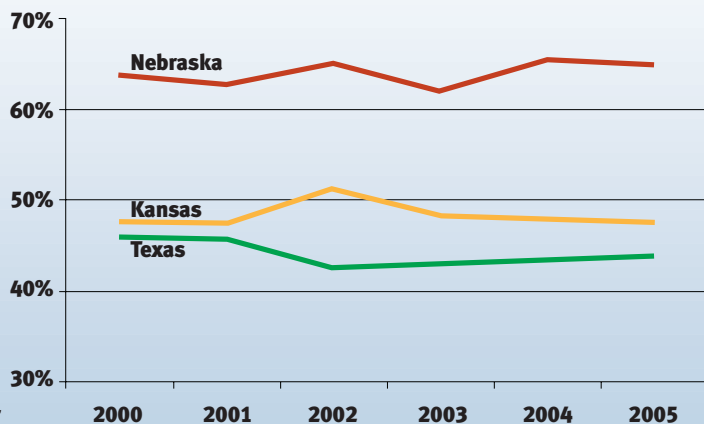
Genotypic-to-phenotypic relationships measured by the Association during its work on dollar value indexes (\$Values) for the feedlot (\$F), grid (\$G) and overall beef value (\$B) provided the analytical framework for this analysis. According to Sally Northcutt, Association director of genetic research, the application of these mathematical models to a real-world problem (such as low quality grades) is fitting, because the data behind the calculations is industry-level data.

The genetics of cattle populations consistently grading only 40% to 45% Choice would be associated with relatively low marbling expected progeny differences (MARB EPDs) and intramuscular fat (%IMF) EPDs if directly compared to Angus cattle.

“Southern sires influencing these Kansas-Texas fed cattle would have average EPDs roughly equivalent to the bottom 1% of marbling genetics we see in the Angus breed,” Northcutt says. “And, that means significant progress could be made in one generation by simply mating these cattle to Angus sires with breed-average marbling genetics.”

The analysis supports Northcutt's statement. Using one generation of an Angus sire ranking at the 50th percentile for both MARB (0.12) and %IMF (0.04) EPDs would increase the Choice and Prime percentage from an assumed starting point of 40% to approximately 54% — enough to earn a

Fig. 1: Percentage of Prime and Choice beef carcasses



Source: U.S. Department of Agriculture Agricultural Marketing Service.

premium over the base price on many Southern grids.

Standard-grade carcasses [typically discounted \$10 to \$15 per hundredweight (cwt.)] would decline from about 7.5% to just more than 3%. There would also be a modest increase in the upper two-thirds of Choice and Prime carcasses, though this increase is difficult to gauge precisely.

“You can basically go from unacceptable to acceptable carcass results — by Southern U.S. standards at least — using one generation of Angus,” Northcutt notes.

“Given what they are accustomed to, most Kansas and Texas feedyards look favorably on cattle that exceed 50% Choice.”

Adding a second generation of average

Angus genetics would push beyond acceptability to higher quality grades that would rival many Northern cattle. The Association’s estimates point to an average grade of 62% Choice and Prime, less than 2% Standard, and a meaningful number of *Certified Angus Beef*® (CAB®)-qualifying carcasses. Such cattle could earn sizable premiums when sold on Southern grids, because they would easily exceed the average quality grade at virtually any packing plant in Kansas or Texas.

Using high-marbling Angus genetics would lead to even faster improvement in Southern quality grades. One generation of top 10% MARB and %IMF genetics would push a population grading 40% Choice and Prime to

58%, according to Association estimates. Two generations of such high-marbling Angus sires applied to typical Southern-origin cattle could result in approximately 70% Choice and Prime quality grades, very few Standards, and more than 20% CAB carcasses (see Table 1).

Individual Southern herds would experience somewhat different results compared to those presented here, due to a myriad of environmental and genetic factors specific to their cow herds and postweaning management regimes. No single herd is “typical” in every way, and this analysis is generalized in that it takes broad industry averages for Southern cattle and conducts the evaluation as if on a single herd. Even so, the fact that Angus genetics can be used to significantly improve Southern quality grade is unmistakable. Southern cattle need better marbling genetics, and Angus is the best-proven source for exactly that.



Editor’s Note: “By the Numbers” is a column authored by Association performance programs staff to share insights with Angus members about data collection and interpretation, the National Cattle Evaluation, genetic selection, and relevant technology and industry issues. If you have questions or would like to suggest a topic for a future column, contact Sally Northcutt, director of genetic research, or Bill Bowman, director of performance programs, at (816) 383-5100.

Table 1: Using Angus genetics to improve quality grades in Southern cattle

	% Prime & Choice	% Improvement over base
Grade base assumed for typical Southern-origin cattle	40%	
After one generation average Angus sires	54%	+14%
After two generations average Angus sires	62%	+22%
Grade base assumed for typical Southern-origin cattle	40%	
After one generation high-marbling Angus sires*	58%	+18%
After two generations high-marbling Angus sires*	70%	+30%

*Top 10% of the current sires for MARB and %IMF.