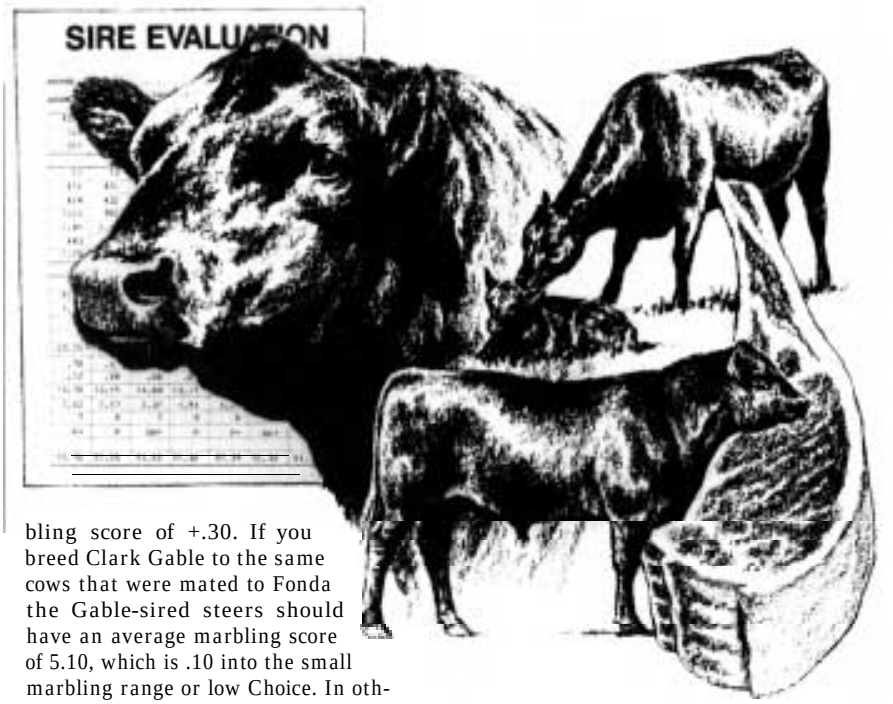
Proper Use of Marbling EPDs Can Improve Grades and Profits

by Keith Evans



When Kay Richardson of Evinston, Fla., received a carcass report on 300 head of retained ownership steers, he got a surprise. Only 25 percent of the three-way cross steers graded USDA Choice. That day each carcass which graded Select was worth $50 less than a Choice carcass.

Today, the spread between Select and Choice is narrower, less than $3 per cwt. But a $3 spread between Choice and Select amounts to $21 per head on a 700-pound carcass or $2,100 on 100 head of cattle.

It's enough to make an increasing number of cattle producers do what Kay Richardson did — go out and buy registered Angus bulls with positive marbling expected progeny differences (EPDs). But many cattle producers aren't sure what carcass EPDs mean or how to use them to increase the ability of their cattle to grade USDA Choice.

In effect you use carcass EPDs the same way you use any other EPDs. You need to know something about your herd and where it is located with respect to carcass quality, and then select bulls with the EPDs to move your herd in the direction you want it to go.

A common question goes something like this: If I use a bull that is +.30 for marbling, what percentage of my calves will grade USDA Choice? The answer, of course, is that nobody knows. It depends upon the average marbling ability of your cow herd, and how the +.30 bull compares with the bull you used before.

So let's put the question another way. Suppose you have been using a bull named Henry Fonda who is +.O for marbling. Fonda's steer calves have averaged a marbling score of 4.8. This is 80 points into the Select grade (a marbling score of 5 would be low Choice). Now suppose you like the bull Clark Gable, who has a marbling score of +.30. If you breed Clark Gable to the same cows that were mated to Fonda the Gable-sired steers should have an average marbling score of 5.10, which is .10 into the small marbling range or low Choice. In other words, by using Gable rather than Fonda you should be able to move the average marbling score of your herd by .30 of a marbling grade — from 4.8 to 5.10 or from Select to Low Choice. In today's market each 700-pound carcass that grades Choice rather than Select is worth about $21 more.

The key to estimating the amount of improvement you can expect in marbling from a particular bull is to know how your herd and the bulls you use stand on carcass quality. As John Crouch, director of performance programs for the American Angus Association, often points out, too many people are lost when it comes to carcass quality. It is a little like being dropped blindfolded in the middle of the country. When you take the blindfold off you don't know where you are, or in what direction to move to get back home. The first step is to determine where you are, then it is fairly simple to move in the direction you want to go.

If you know little about your cow herd and the bulls you have been using, with respect to their ability to produce acceptable carcasses, you can only guess at what a particular bull with positive EPDs for marbling will do in your herd.

On the other hand, as you collect information and compare bulls you develop a herd history which allows you to make more intelligent decisions. This is true for all traits measured as EPDs.

Information that allows you to improve carcass quality isn't visible or readily available. When a breeder weighs cattle at birth, weaning and yearling he or she can compare the results almost immediately. But carcass trait improvement can come only after cattle are followed through the feedlot and packing plant where the necessary data is collected.

For cattle producers with a crossbred cow herd, all that may be necessary to dramatically improve marbling might be to simply select Angus bulls with positive

marbling EPDs. In a two-year Nebraska study, Angus bulls with high and low marbling EPDs were bred to cows that were one-quarter each Hereford, Simmental, Gelbvieh and Angus. The results, over two years, showed that more than 70 percent of the 120 carcasses sired by high-marbling bulls graded USDA Choice. Only 50 percent of the steers sired by low-marbling bulls graded USDA Choice.

Studies at the University of Florida have shown similar results. Research conducted at the University of Georgia some time back found that cattle sired by high marbling EPD sires were worth $43 more per carcass than steers sired by low marbling bulls.

What's more, the Nebraska studies showed that differences between low and high marbling EPD bulls were even greater than would have been predicted by the EPD figures. This means that heritability for marbling may be higher than once thought. If so, then progress would be even easier to achieve.

Many people in the beef industry are convinced that beef's loss of market share to other meats can be traced at least partially to a loss of eating quality. They point out that since 1975 when the marbling requirements for the USDA Choice grade were lowered, with the goal of lowering fat production and increasing the percentage of USDA Choice carcasses, that the opposite has happened. The percentage of Choice carcasses has declined and the amount of fat produced has increased.

Over the past 20 years, the industry has, on average, apparently selected against marbling. In an effort to get these cattle with low marbling ability to grade USDA Choice, feedlot operators have increased time on feed and produced more waste fat. Only in recent years has the beef industry come to accept the fact that marbling is primarily genetic and cannot be produced solely by time on feed.

"Continuing loss of market share shows the industry must be increasingly conscious of delivering a consistent, problem-free product at a competitive price," says Chuck Lambert, National Cattlemen's Association vice president of research & industry information and coordinator of the Strategic Alliances Field Study. He says carcass EPDs are necessary to identity superior genetic lines that will improve quality.

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Carcass EPD Research Results

Means for feedlot performance and carcass data as affected by sire's marbling EPD (Florida data)1

Trait	Positive Marbling EPD Sire Group	Negative Marbling EPD Sire Group
No. of animals	**16**	**6**
Initial finishing wt., lb.	**652**	**670**
Final finishing wt., lb.	**1,085**	**1,090**
ADG, lb. per day	**2.66**	**2.35**
Days on feed	**163**	179
Hot carcass wt., lb.	**624**	**622**
Dressing %	**59.03**	**59.37**
Fat over eye, in.	**.43**	**.41**
Marbling score2	**435**	**375**
Ribeye area, sq. in	**11.03**	**11.55**
KPH, %	**2.06**	1.75
Quality grades3	**606**	**568**
Number USDA Choice	**13/16**	**2/6**
Yield grade	**2.9**	**2.6**
WBS, lb.4	**10.6**	**10.0**

1 Positive marbling group: mean sire marbling EPD = .11 mean sire ribeye EPD = .27. Negative marbling group: mean sire marbling EPD = -.13; mean sire ribeye EPD = .29
2 Marbling score: 300 = slight; 400 = small; 500 = modest.
3 Quality grade.. 700 = Prime; 600 = Choice; 500 = Select.
4 Tenderness score. The higher the number, the more tender the meat.

Comparison of 1992 and 1993 Certified Angus Beef Program Carcass Data Collection

	1992	1993
Total Number Evaluated	5,259	4,766
Total Number Meeting CAB Program Carcass Specifications	1,262	1,096
Certification Rate	24%	23%
Average Age (months)	16	16
Hot Carcass Weight (HCW)	765 lbs.	756 lbs.
Ribeye Area (REA)	12.5 sq. in.	12.3 sq. in.
Yield Grade Average	3.2	3.2
Yield Grade 1	4%	3%
Yield Grade 2	33%	33%
Yield Grade 3	51%	52%
Yield Grade 4	12%	11%
Yield Grade 5	1%	1%
Quality Grade		
Prime	2%	2%
Choice o/+	27%	26%
Choice -	49%	46%
Select	23%	26%
Standard	0%	0%