



# The GAR REPORT

December 2000

PROUD TO BE A FOUNDING MEMBER OF U.S. PREMIUM BEEF.

**Editor's note:**

Response to our first newsletter has been quite positive. In fact, we have received a letter with suggested questions to be discussed. We would like to thank Jess Mitchell, Cary, NC, for his response. Jess suggested discussions regarding optimum frame score.

Also in this issue, we will continue "Reproduction, growth, carcass traits — can we have it all?" In addition, we are reprinting, with permission, Dr. Bob Long's article "Uniform Product or Genetic Diversity" from the August 31, 2000, ANGUS NEWS. As a noted academian, Dr. Long has spent many years researching the economic value of EPDs.

## A young Gardiner customer asked the following questions

### 1. What is the ideal frame score for a mature bull?

First of all there is no perfect frame score that fits each and everyone's needs. What Gardiner Angus Ranch wants and needs and our customers may be different than what other breeders or commercial cattlemen need and want to do to fit their environment and goals. GAR believes that frame score 5.0-6.5 works very well in our environment and our customers' environments. The reason this moderate frame size works so well is because it usually equates to a mature cow that can work in these environments, and also to a market steer that will fit size parameters of the consumer and packer.

### 2. Is there a bad frame score?

Jess, you can certainly have cattle that are too small. We believe that cattle below a frame score 4.0 are too small. We also believe that cattle greater than a frame score 8.0 are too big. Many people in our industry equate frame with growth rate. When Angus cattle of the 1950s and 1960s were known as the "shorty blacks" it was because they were extremely small framed and they were also extremely slow growing. When the push for later maturing, faster growing cattle came about, with influx of Continental breeds of cattle in the early 1970s, Angus cattle began a race for increased frame size in order to make

(continued on back)

## Reproduction, growth, carcass traits — can we have it all?

Mark Gardiner  
Gardiner Angus Ranch, Ashland, KS

### PART II

Our steer weights from 1980 through 1999 tell the rest of the story:

**Table 1.**  
**Weaning Weights of Steer Calves at Gardiner Angus (10 mo. of age)**

Year	Wng. Wt.
1980	526 lbs
1981	661 lbs
1982	723 lbs
1983	706 lbs
1984	736 lbs
1985	705 lbs
1986	786 lbs
1987	774 lbs
1988	810 lbs
1989	800 lbs
1990	798 lbs
1999	847 lbs

We have retained ownership of some of our home-raised steers through slaughter since 1970. We have also been buying feeder cattle and putting them into the feedlot since 1972. There have been about 2000 steers purchased each year and about 60 to 100 home-raised steers fed. Over the past nineteen years the purchased cattle's performance has improved some, but not as dramatically as our home-raised steers (Table 2).

**Table 2.**  
**Improvement in Performance of Gardiner Angus Ranch Steers 1978-1999**

Steers	Feedlot/ADG (lbs/day)	Days on Feed	Slaughter Weight
1978-80	2.81	154	980
1986-87	3.63	108	1172
1995-96	4.22	102	1239
1998-99	4.32	105	1242

**Change: +1.51 lbs/d -50 days +262 lbs**

The data in Table 2 illustrates that with the disciplined use of EPDs over a 20-year period we dramatically improved the performance of our home-raised steers. The genetically improved steers were in the feedlot 50 days less than their herd mates two decades earlier, but still went to slaughter 262 pounds heavier than their earlier relatives. The genetic improvement was all done by the selection of sires. The mothers of the 1998-99 steers were out of the descendants of the same cowherd that produced the 1978-80 steers. The management and forage system was the same in 1998-99 as it was in 1978-80.

In the fall of 1994 Dad mentioned to a friend that our bulls had done well in their 95-day feed test with some gaining over 7 lbs. per day. The reply was, "Well how do you know that the faster gaining bulls do not eat all the time and are not the most efficient gainers?" We could not answer that question to our own satisfaction until we examined the gain and dry matter conversion of our bulls on test from 1977-1999.

We have seen average pen gains go from 2.7 lbs. per day in 1977 to 5.37 lbs. per day in 1998. We have also observed that during the

same time period feed conversion improved from 7.48 lbs. of feed consumed on a dry matter basis for a pound of gain to 4.28 lbs. of feed consumed on a dry matter basis per pound of gain. That's a 57% decrease in feed consumed per pound of gain, while we almost doubled their rate of gain. It's pretty obvious that selection for faster gain also produced cattle that were more efficient. In the 1980's we identified as our goals to wean 10-month-old steer calves at 800 lbs. and to have our steers gain 4 lbs. per day in the feedlot. We accomplished both goals by 1990. Before the year 2005 I predict that we will feed a pen of cattle that will have a feed conversion of a pound of gain from less than 4 lbs. of feed on a dry matter basis. In addition to being efficient, those cattle will be gaining 6 lbs. or more per day during their time on feed. That's a long way from weaning 526 lbs. steers that take 7.48 lbs. of feed to produce a pound of gain at the rate of 2.7 lbs. per day!!

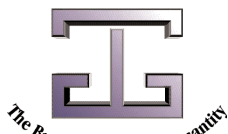
### Carcass Traits

Value based marketing is here. I have heard all my life that someday all cattle would be marketed based on the value of their end product. This becomes more true every day. In the past all fed cattle were marketed on an average pricing system. This led to huge premiums for the wrong cattle, because the best way to make money was to upgrade sorry cattle and receive an average price for them. When the Certified Angus Beef (CAB) program was started, this was a good program for consumers and the retailers who were marketing CAB, but there were not strong economic signals to 'pull' more CAB cattle through the system. Granted, packers wanted to purchase Angus influenced cattle, but only for the 'one price fits all' average price. This did nothing to pay producers more for producing a higher quality beef product.

One of the reasons I became involved in US Premium Beef (USPB), was because I felt commercial producers should receive more for using high quality Angus genetics. Today USPB pays \$14.00 per cwt. for each and every Prime carcass, and \$4.50 per cwt. for every CAB carcass. An 800-pound Prime carcass is worth \$112 dollars more per head, and an 800-pound CAB carcass is worth \$36 more per head. Farmland Black Angus is worth \$3.00 cwt or \$24.00 per head more. USPB is proud to pay some of the highest premiums in the business for high-quality Angus cattle, and I'm even more proud that we have helped the other packers see the light and pay more money for the high quality Angus cattle (trust me they didn't start doing it out of the goodness of their hearts). This is good news for the beef business because these economic incentives help pull the better beef products through to the consumer. The greatest news in the beef world today is that by improving product quality we have stabilized beef demand.

So what does this all mean to Angus breeders? We have Angus cattle. They put up good quality grades on the rail. We have Certified

Since 1885



If you have industry related questions or specific issues that may be addressed in the GAR Report, please submit to:

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Angus Beef. Everything is great right?! Wrong!! Barely 20% of all eligible Angus cattle meet the minimum requirements for CAB. The biggest reason CAB still struggles with supply is because carcass traits of Angus cattle have not been good enough. When you look at the selection strategies our breed has applied over the past 26 years you find that the Angus breed has increased the yearling growth by about 30%. However, during the same period you find that we have only improved the marbling by +.11 units and the REA by +.17 in. In other words, we have made very little genetic change in our breed for carcass traits.

Carcass traits are highly heritable. We should be able to make more change with carcass traits than growth traits. We have not. WHY? The American Angus Association has the largest carcass database in the world, but this carcass database has not been large enough or good enough. That's about to change. (continued in the January issue)



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## Uniform Product or Genetic Diversity?

by R.A. (Bob) Long

Beef cattle breeders, both purebred and commercial, must find current articles in livestock publications very confusing. A single issue can contain a piece pointing out the great variation in beef carcasses, and the need for increased quality control and uniformity of product. The following page may be devoted to an article underlining the need to maintain genetic diversity in order to provide genes that will contribute to the future quantity and quality of beef products. Obviously, genetic diversity is in conflict with uniformity of product-hence the confusion.

It is a fact that the carcasses produced by the nations beef herd vary greatly in weight, degree of fatness, muscle to bone ration, tenderness, marbling and percent yield of edible portion. Since these characteristics are known to be largely influenced by genetics, it is obvious there is currently no shortage of genetic diversity.

Each of these viewpoints does have merit. Without question, a uniform product of excellence is desirable. Ideally every carcass should be within a narrow range in weight, of good cutability and with good eating quality. Such uniformity assures uniform cut size in retail packages as well as consumer confidence in palatability.

Likewise, genetic diversity can contribute to uniformity and production efficiency through intelligent, well planned crossbreeding. Remember, crossbreeding is not a guarantee of excellence. It improves traits of low heritability but only slightly above the average of the parent stock. Further, practically no heterosis is realized in growth rate and none in carcass traits. Therefore, it is better to have a productive straightbred herd than a crossbreeding program based on inferior germplasm.

(Gardiner customer continued)

them more competitive with exotic cattle. Angus cattle of this time were too small and it was beneficial to add some frame size, however, single trait selection of any trait is always a mistake. Angus cattle did get taller, but we really did not make them faster growing or more efficient. We could not make multi-trait selection for improved genetics until we, as a breed, received our first sire summary in 1980.

### 3. Should a bull and heifer have the same frame score when bred?

Once again this would depend on your goals. First of all, realize that heifers and bulls of the same age could be the exact same size in inches, but different in their frame score. For example, a 12 month old heifer that is 47" tall would be a frame score 5.0, while a 12 month old bull that is 47" tall would be a frame score 4.0. If you are trying to increase the frame size of your cowherd, then you would want to use a larger framed bull.

Conversely, if you are trying to decrease your cowherd frame size you want a smaller framed bull. And finally, if you have achieved your "Goldielocks cowherd" i.e. "just right" then you would want your cows and bull to be the same frame score in order to maintain the same frame size.

*Season's  
Greeting  
From C  
Family To Yours*



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A successful commercial crossbreeding program must employ cow herds superior in maternal traits mated with terminal cross bulls which excel in growth rate and carcass value. Perhaps the best solution of all is an F1 cow herd resulting from crossing two breeds or strains each of which is superior in maternal traits and adapted to range conditions. These F1 cows should be mated with bulls which have been individually selected for rapid growth and carcass quality and cutability. These traits are highly heritable so the bulls must themselves have recorded rapid post weaning gains on high energy diets and be lean, trim and heavily muscled.

The female offspring should all be fed and slaughtered along with the steers since their "terminal cross" sire will add too much growth, muscle and mature size for good breeding females under range conditions.

This breeding plan for commercial production is not possible unless purebred breeders take advantage of their respective breed's performance record programs and develop strains of seedstock superior in specific traits. This makes available the genetic material necessary to furnish the unrelated maternal strains for producing the F1 cows as well as the terminal cross bulls.

Unfortunately, some proponents of "genetic diversity" are not referring to the "strains of seedstock superior in specific traits" mentioned above, but simply to nonspecific genetic variation. Some scientists believe it is important to maintain all the worlds genetic material. This opinion is based on the assumption that biotechnology techniques such as gene mapping and gene transfer will soon allow "more precise breeding programs and speed the movement of desirable genes into widely used species."

The author has no doubt that the scientific community will make progress in "genetic engineering" and years in the future developments will make possible increased efficiency of animal production. However, the time table for practical application of gene mapping and transfer is decades down the road not months or years as has been implied by some scientists and the media. While waiting for such procedures to be developed, many beef producers could "lose the ranch."

Therefore, breeders must continue to maintain complete and accurate performance records. These records must be tied together on a national basis and the total data bank maintained in a central location. This will enable the computation of Expected Progeny Differences (EPDs) for performance traits and permit continued improvement in beef production efficiency.

**We invite you to submit  
questions or industry related  
topics to be discussed  
in upcoming issues to  
Gardiner Angus Ranch.**

