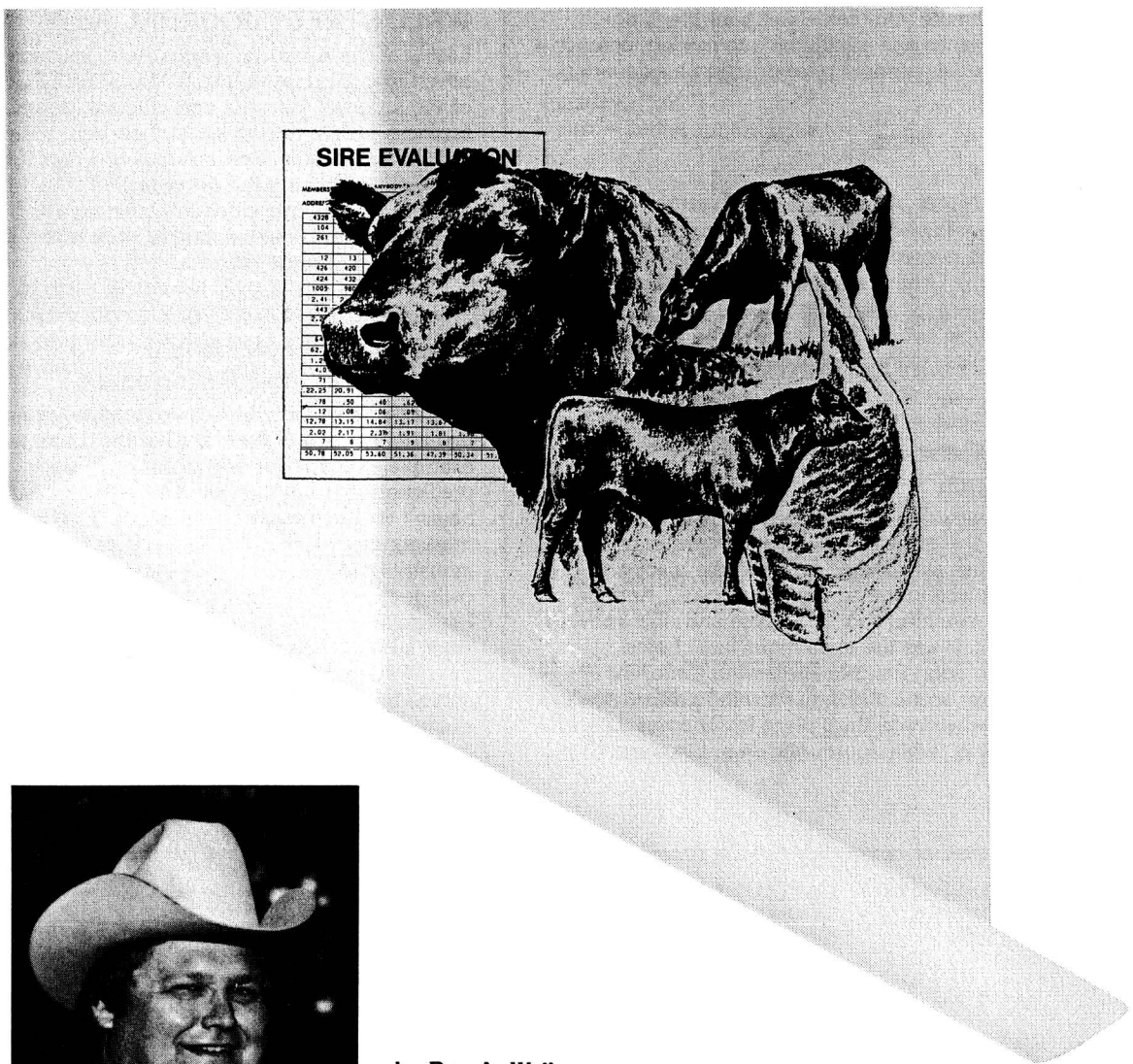
The Sire Summary— A Blueprint for Beef Cattle Improvement



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In this issue of the ANGUS JOURNAL you will see that the 1981 Angus Sire Evaluation Report has been made available. This one piece of literature is probably the most important ever published for Angus breeders; it can be used in building genetically superior herds of cattle that are economically sound and will convert roughages and coarse grain into protein.

As you will notice, there are 673 bulls in this new report, compared to 564 in the one issued last year. One of the reasons for the increase is that in 1980 only data from AHIR records were used, whereas in the 1981 report information from the structured sire evaluation program and AHIR field data have been added together. There will no longer be two separate reports for the Angus breed.

The carcass data included in the new sire report originated from the structured program.

There have been some changes in this report since last year. Not only are there some new terms but also there will be some bulls that appeared in the 1980 report that do not appear this year. The reason is that bulls used only in one herd are deleted from the 1981 report. For a bull to qualify this year, he must have sired calves in at least two different herds. Also you will find many of the bulls that have been evaluated in the structured program now appear in the complete report as this information was calculated separately and then combined with AHIR field data.

I think for the Angus breed today, the guidelines I would follow in a breeding program would be to use bulls that are +30 lb. or higher on yearling weight and at least 100 or above on maternal breeding value.

Accuracy Figures

In the 1981 report birth weights, weaning weights and yearling weights are expressed in expected progeny difference (EPD). However, instead of having EPN (effective progeny number) the new data are expressed in accuracy figures. The best way to explain an accuracy figure is that it is the amount of reliability that can be placed on the EPD. An accuracy figure close to 1.0 is preferred. You will find accuracy figures in this report from .00 to .97 on birth weight, from .64 to .97 on weaning weight and from .64 to .97 on yearling weight.

In analyzing accuracy figures, you would estimate that any bull that is in the .60s to low .80s accuracy range has a possibility of moving around quite a bit—either up or down. When a bull reaches the 90% accuracy range his opportunity of moving is very limited. Bulls with high numbers of progeny are going to have high accuracies. Once a bull reaches accuracies of 90% or better, additional progeny usually do not change data very significantly. If you want reliability and do not want to gamble, you should use bulls with high accuracies. The accuracy figure also is used in calculation of maternal breeding value and is given to you to evaluate its accuracy.

Answers to Common Questions

I think one way for me to approach the sire evaluation report would be to answer some of the common questions I have been asked.

Do not get infatuated with one young bull. If you are going to use young bulls use them in groups.

The first question usually asked of me is, "Are the bulls in the report comparable?" In other words if a bull was born in 1969 and is in the report, can he be compared to a bull born in 1978 or 1979? Yes, all data you see appearing in the 1981 sire summary are comparable—birth weights, weaning weights and yearling weights. They are evaluated by a procedure which ties together many different herds and many different bulls and it can compare bulls even if their calves were not born in the same calf crops.

"Can a bull that has calves born on the west coast be compared to a bull that has calves on the east coast?" Yes, these bulls can be compared because there are bulls used throughout the population that tie the report together. These tie bulls are simply sires used in many herds and all of the rest of the bulls are compared to them and analysis of the data uses the differences expressed in each herd.

Maternal Breeding Value

One thing you must remember is that the maternal breeding value appearing in this report is not calculated the same way as birth weight, weaning weight and yearling weight. The maternal breeding value in the sire evaluation report is the same maternal breeding value expressed on the performance pedigree. This is not adjusted for genetic difference throughout the herds. It is the average of the daughters' calves compared against the herd average.

The EPD figure given is the predicted difference you can expect if you use that bull in your breeding program. If a bull is +50 lb. on yearling weight then you would expect in an average Angus herd that this bull is going to add 50 lb. to the yearling weights of the steers, bulls or heifers in that program. Maternal breeding value on the report, however, is twice the actual difference, so if a bull is 106 on maternal breeding value, the best estimate we have is that his daughters will be 103 or 3% above the average of the herd they are in.

Accurate Evaluation

Concerning the growth information, I feel it is a very accurate evaluation of the bulls. You will notice that figures on some of the bulls in the 1981 report have changed since they appeared in the 1980 report. One thing that is evident when we are working with large banks of data and with genetic variation is that we never really establish true breeding values of the bulls. With each new run of the sire evaluation report some bulls' data will go up and others will go down.

If one analyzes most of the bulls in the new report, you will see the majority of the bulls with high accuracy figures have changed very little from last year. This gives me great confidence that the report is doing what it set out to do—that is rank bulls within the breed on the economically important traits of birth weight, weaning weight and yearling weight.

Data Source

I am sure many of you question where the data for the report came from. If you are on the Angus Herd Improvement Records Program, you are part of the process. If you weigh your calves at birth, at weaning and as yearlings and send the information to the association and also use some of the bulls within the breed A.I., your information more than likely has been used in the 1981 report. Also if you were one of the breeders that put a bull on the structured program, you participated. Because of wide-scale use of A.I. and because of the large number of purebred breeders evaluating their cattle through AHIR, a report of this type can be published.

Many of us still don't understand how the complex calculations for the sire evaluation report are made. I agree with Ike Eller's statement in the SIMMENTAL SHIELD, "But like the biblical story of creation, we are learning to accept on faith that these are as close to the truth as they can get in dealing with genetic material."

There are bulls within the report that are +30 lb. or more on yearling weights and plus on maternal traits that are average or below on birth weight and can be used on heifers to lower the amount of dystocia.

Why do I make statements like that? Simply because when I evaluate the bulls in the report and see how they are ranked and then go into the field and look at AHIR data and the calves by those bulls, the animals match the data on the report. Usually bulls high on yearling weight in the report are the high indexing bulls in the different herds of cattle I have observed.

Guidelines for Use

The next thing one must look at is how do I as an individual breeder use the report? Where do I start? And how can I best use it? My personal preference is to put minimum

criteria on the bulls I plan to use. I think for the Angus breed today, the guidelines I would follow in a breeding program would be to use bulls that are +30 lb. or higher on yearling weight and at least 100 or above on maternal breeding value.

One must always remember what makes up maternal breeding value. If you have maternal breeding value of 100 and the accuracy rating is .58 you know all of the maternal breeding value is coming only from ancestral data and can change drastically. If you have an accuracy figure of .96 on maternal breeding value, the information is coming from a bull's daughters and additional data on his daughters are not going to change much.

If we currently could take all bulls listed in the report that are +30 lb. or higher on yearling weight and have an estimated breeding value for maternal traits at 100 or higher, we would have 91 bulls. These 91 represent 14% of the bulls in the report.

Heaviest Used Bulls

We must realize bulls that appear in the report were originally selected out of the population as being the fastest growing, biggest framed calves. Then these bulls have enjoyed wide-scale use and really only the cattle that excelled probably got into the report. If a young bull's calves were not promising he was not used further and therefore the chances of his getting into the report were slim. So really the 673 bulls in the report are the heaviest used bulls in the breed. The bulls that are +30 lb. or higher on yearling weights and above average on maternal breeding value represent an elite part of the population.

The bulls that are +40 and +50 lb. at yearling as far as growth is concerned are truly the superior bulls within the breed; these are the bulls that should be used to their utmost because they are the ones that are going to change the population.

Looking at the bulls that are +30 lb. on yearling weights and have an EBV of 100 or better on maternal traits, one can see there are many different sizes, forms, bloodlines, etc., that make up this particular group. One must remember that performance comes in many packages. It can be tall. It can be long. It can be thick. And just because a particular bull is not 60 inches tall at the withers does not mean he is not going to be one of the high performance bulls in the breed. So you must accept the data as is and forget about looking at the particular bull and evaluate him for his progeny data and the kind and shape of progeny he sires. That is the most accurate information available on that bull at this point in time.

Maximum Birth Weight

After evaluating the bulls that are +30 lb. for yearling weight and have a maternal EBV of 100 or more, then you need to decide how much birth weight you are going to accept. If bulls are exceptionally high in birth weight and you do not want to increase the birth weight in your herd, then you need to eliminate them from your program. If you have a group of heifers to breed, you certainly need to think about bulls that are relatively high in growth and high in maternal traits but are break-even or below as far as birth weight is concerned. There are bulls within the report that are +30 lb. or more on yearling weights and plus on maternal traits that are average or below on birth weight and can be used on heifers to lower the amount of dystocia.

Once you have decided which bulls qualify in your herd from a data standpoint, you need to think about some of the other traits not evaluated in the report. Those traits which I think are important to cattle breeders today are skeletal soundness, muscle structure, frame size, fleshing ability, disposition, testical size on sons, udder and teat placement on daughters, amount of white they will transmit or the presence or absence of the red gene. To obtain this information, one must evaluate the bull's progeny or contact people you have confidence in that can give you a type pattern on the bull you are interested in.

A Common Concern

One of the concerns many breeders have is that by the time a bull is listed in the Angus Sire Evaluation Report he may already have been passed by the young bulls coming on. We are in a fast race changing the population of Angus cattle for growth and frame size.

When analyzing all of the young bulls going into the report, you will find that on the average they are not going to be as superior as those top proven sires. All bulls that are +50 lb. on yearling weight with an EBV of 100 or more on maternal traits are a very elite group within the population. I think before you abandon the top proven older bulls and feel that the younger population is that much superior, you need to look at the odds of selection.

For example, in this report we (Select Sires, Inc.) have eight young bulls that are appearing for the first time. When we selected these bulls they had an average weaning weight of 671 lb. with an average ratio of 119.8. Their average yearling weight was 1,154 lb. with an average ratio of 115. In this report the average weaning weight EPD on the bulls was +11.58 lb. with a high of +25 lb. and a low of +1.4 lb. On yearling weight the average of this group of bulls was +33 lb. with a low of +9.5 lb. and a high of +41.5 lb.

Even selecting eight of the very promising yearling bulls and evaluating them in the sire report, we still did not come up with a bull that was above +50 lb. on yearling weight. The bulls that are +40 and +50 lb. at yearling as far as growth is concerned are truly the superior bulls within the breed; these are the bulls that should be used to their utmost because they are the ones that are going to change the population.

How to Use Young Sires

Do not get infatuated with one young bull. If you are going to use young bulls use them in groups. For example, in the group of young bulls I discussed above, we are saving and putting back into our program only three of the eight. Now if you would have been fortunate to use one of those three, you would have been okay. But if you would have been the unfortunate one to use the other five, you would have made very little progress.

I might point out that you as a breeder do not have to use the bulls that are high on the report. But I might also point out that you are going to have to compete with the people who are using them.

Breeders with small herds of cattle need to use proven bulls with high accuracy value because with their small population they cannot afford mistakes. An individual with a large herd can gamble more and use more young bulls because he has a larger population to work with. If a 300-cow operator has 10 calves sired by a young bull that turns out to be a dud, it does not affect that herd's overall population much. But if a 30-cow operator has 10 calves sired by a below average bull, that's a significant part of his calf crop and it will affect drastically the amount of genetic advancement he can make in that herd.

Complete and Up-to-Date

The 1981 report is the most complete and up-to-date piece of information ever put in the hands of Angus breeders in the U.S. If you as a breeder use the data available to you, you can make great strides in changing the genetic pool within your herd. Never before have you had at your fingertips this kind of sound, factual information in which there is no bias and which has no advertising dollars attached to it. It ranks the bulls according to their merit and if you use the bulls superior in the traits for which you want to select, your herd will make positive genetic advancement.

I might point out that you as a breeder do not have to use the bulls that are high on the report. But I might also point out that you are going to have to compete with the people who are using them. The decision is up to you whether you want to breed an economically sound, functional set of cattle with genetic predictability.

I think the decisions you make in your breeding program in the next few years will dictate your future as a purebred breeder in the '80s.