

BeefTalk 489: What You Want You Cannot See

In today's world, there are two very good tools that allow producers to get a feel for the genes a bull carries.

Two common thoughts persist within most beef operations as the new year unfolds. Producers become keenly aware that the cows are pregnant and bulls need to be bought for the next calving season.

Calving preparation commences. Bull sale dates fill the calendar. Interestingly, both events involve something we cannot see.

We cannot see the developing calf. We hope our sire selection, prenatal care and attention at calving reward us with a good, vigorous calf.

Likewise, at bull sales we cannot actually see what we are buying. We frantically bid on bulls that look good, but our true goal is to buy genes that will be expressed in future calf crops.

It is amazing how much money can be spent on something that we can't see. We are able to monitor individual calves during pregnancy, but practicality rules.

During calving, we are prepared for, or at least anticipate, potential problems and plan accordingly. In terms of buying genes, the same cannot be said.

In today's world, there are two very good tools that allow producers to get a feel for the genes a bull carries. Both of these tools come from two different backdrops.

The first tool is the Expected Progeny Difference (EPD). The second tool is the development of the newer technology that actually peaks as the DNA makeup of a bull.

An EPD is the best estimate of the value of a bull for a given trait, which is expressed in the common language of the trait. For example, weaning weight EPD is expressed in pounds.

The weaning weight EPD reflects the pounds a bull is expected to contribute to his offspring when compared with other bulls in the breed randomly mated to cows within the breed. The real meaning of the number is the difference in genes that affect, in this case, weaning weight.

For those who do not appreciate EPDs, perhaps one should talk about the red color gene in cattle. It is fairly well understood that if breeding a red bull to a red cow, the calf most likely will be red. A black bull bred to a black cow most likely produces a black calf.

Seldom would one anticipate getting a black calf from a cow and bull that are both red. Such a calf would be very creative. One could say the calf tinkered with its own DNA, which is frowned on by Mother Nature.

By contrast, mating a cow and a bull that are both black can produce a red calf. Such a calf is considered very normal because genes have two copies, one on each chromosome, with one chromosome coming from the dam and one from the sire.

What Genes Are You Wearing?

A Common Principle in the Cattle Business:

Red bull mated to a red cow produces a red calf, no buts.

Black bull mated to a black cow produces a black calf, but...

The bottom line — you can't always see the red gene.

In breeding red cattle, the black gene is dominant and will express itself over the red gene. In fact, some black cattle carry a hidden red gene.

When two red carriers are mated, the opportunity for the calf to obtain a red gene from its dam and sire exists, which allows for the birth of a red calf. We can, based on known pedigrees and known biological aspects of color within the pedigree, actually calculate the probability of a mating to produce a red calf.

In the same way, EPDs are expressions of genes we cannot readily see because many genes may affect weaning weight. So, as we calculate the EPD for a bull, we gather up all the weaning weight information we can that is logically connected to the bull, adjust for nongenetic effects, such as different management of the cattle, and determine the EPD.

When producers utilize the EPD for the many traits available, some of those supposedly hidden genes actually are exposed, not unlike the black bull that carries a red gene. We now can see what it is we are buying, or at least their expression is exposed.

As for the second tool, we will need to visit later.

May you find all your ear tags.

Your comments are always welcome at <http://www.BeefTalk.com>.

For more information, contact the NDBCIA Office, 1041 State Ave., Dickinson, ND 58601, or go to <http://www.CHAPS2000.com> on the Internet.