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LET'S LOSE LESS SLEEP: Birth Weight and Calving Ease

Pounds of healthy calves weaned, as a percentage of cows exposed, is one of the most important characteristics of a profitable beef enterprise. There are several traits which contribute to this measurement of herd profitability, including: fertility, calving ease, calf vigor, udder quality, teat quality, mothering ability, and growth. Some of these traits have an effect on other traits. For example, calving ease can contribute to improved fertility, as cows experiencing fewer calving issues are quicker to return to estrus. Likewise, calves that are born more easily typically express better vigor, and are healthier from birth to weaning, which contributes to heavier weaning weights. Plus, we, and our veterinarians, lose less sleep.



FEATURE

The earliest genetic evaluations mostly focused on computing birth weight EPDs, which are a great indicator for calving ease. But producers were aware that birth weight alone didn't explain all the differences in calving difficulty. Questions still remained, regarding calving ease and what other traits contributed. Early research indicated that birth weight was the biggest driver to determine genetic differences between bulls, but variation still existed. Many suggested that body shape was an important factor, and it is; but research found that those calves, with larger heads, shoulders, etc., also had larger birth weights. Once birth weight was included in prediction models

for calving ease those additional body measurements didn't improve predictability of calving ease. Plus, those measurements were difficult to measure in the field.

Calving ease scores are a useful tool as they are easy to record, and differences between bulls are recognized by breeders. Few mature cows experience dystocia; and when they do it's most often an abnormal delivery, such as a breach birth, rather than an issue of inherent calving difficulty. At first we might wrongly believe there are no genetic differences between bulls for calving ease if they are mated to those mature cows. In other words, there is no variation for calving ease typically observed in most mature

cow herds. However, for these same bulls, differences in calving ease are often more apparent when mated to heifers, rather than mature cows.

It's important to understand that a given sire, because of either chance or has been mated only to mature cows, may have never had a difficult birth reported. We know there are underlying differences between sires and cows for calving difficulty that are not always observed in the calving pasture. So this could be problematic if we solely relied on calving ease scores to determine calving ease sires.

It's for that reason, the differences between mating bulls to mature cows or heifers, that for the most
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part only calving ease scores are important to genetic evaluations when differences can be observed and variation exists within groups, mostly first calf heifers. On occasion we observe differences among some groups of mature cows, which makes it important to report calving ease scores for mature cows as well.

Today's calving ease models incorporate both birth weights and calving ease scores to compute Calving Ease EPD. This approach is more accurate than using either one of the two measurements alone to predict future calving ease differences between sires.

Another advantage for calving ease EPD is the division into both direct and maternal components, much like weaning weight is divided into direct (Weaning Weight EPD) and maternal (Milk EPD). Direct calving ease is the genetic contribution of a calf for the probability of being born unassisted and is a combination of the genetics inherited from both its sire and dam for calving ease. The dam also effects calving ease through factors unrelated to the calf. This may be due, in part, to greater pelvic area for example. These genes

are inherited from the cows, sires and dams.

Calving ease EPDs are reported on a scale as if they are being mated to first-calf heifers. This is because most calving difficulties arise when bulls are mated to young females and calving ease is of the greatest concern. Both calving ease direct (CED) and maternal calving ease (CEM) are presented as a percentage difference in unassisted births when bred to heifers or when calved as heifers, respectively.

For example, two sires with CED EPD of +6 and -6 one would expect a difference of 12 percent in unassisted births when both bulls are mated to heifers with the +6 bull expecting fewer difficulties. The same is true for CEM EPD. If a sire (or dam) has a 12 percent advantage in CEM EPD compared to another sire (or dam) you would expect their daughters to calve unassisted 12 percent more of the time as heifers.

The question also arises: "Should I select for calving ease EPD or birth weight EPD?" For CED, both are highly related because of the high genetic correlation between calving ease and birth weight, larger calves experience more calving difficulty

typically. But calving ease EPD incorporates additional information missed by the birth weight EPD, and is a better indicator for calving ease than birth weight alone.

Selecting for calving ease EPD gives no promises we will never experience calving difficulty from those sires. But when using calving ease EPD correctly, and if we've done everything else right, we should be able to get a little more rest and save on veterinarian bills come calving season, as we've reduced the likelihood of calving difficulty in our cowherd.

ABOUT THE AUTHOR:

Robert E. Williams, Ph.D. was raised on a farm and ranch, near Freedom, Oklahoma, where his family still farms and runs a cow-calf operation today. This agricultural background laid the foundation for him to actively pursue participation and leadership roles throughout several outlets of the beef cattle industry.

Williams was a member of the 1981 Oklahoma State University (OSU) National Champion Livestock Judging Team. He completed his masters and doctorate degrees in Beef Breeding and Genetics at the University of Georgia. Williams has served the cattle industry in several roles among the following organizations: Beefmaster Breeders Universal, Still Hills Beefmasters, American-International Charolais Association, Beef Improvement Federation, Ultrasound Guidelines Council, and the United States Livestock Genetics Export Association.

Having served in many different geographical regions within the United States, Williams has earned more than sufficient credentials to receive recognition from multiple organizations. The OSU animal science department graduate was recognized in 2014 as a Graduate of Distinction for his contributions to the beef cattle industry.

Williams directed the release of the U.S. beef industry's first web-based selection index, has authored or co-authored numerous research papers and educational articles, has traveled extensively promoting U.S. genetics worldwide in addition to serving as a beef cattle judge and invited speaker both domestically within the United States and internationally.

Currently, Williams is the general manager for Cain Cattle Company, where he directs all operations. Cain Cattle Company is an elite supplier of seed-stock genetics for Angus, Beefmaster and Brangus beef cattle with two ranching divisions in the state of Mississippi.

