

HEREFORD INFLUENCE

Use the Calving Ease EPD For Ease of Mind

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What Are EPDs?

EPD stands for Expected Progeny Difference - a fancy term which means that EPDs provide an estimate of an animal's genetic merit as a parent. Differences in EPDs between two animals of the same breed, mated similarly, predict differences in performance between their future offspring. Remember that EPDs include the performance of the relatives of the animal, as well as its individual performance.

What Can EPDs Do For Me?

- Use EPDs to compare two different animals of the SAME breed to assist in selection decisions. Remember EPDs simply predict genetic merit, so management and environment also have to be taken into consideration.
- Use EPDs as a tool to assess and place selection pressure on any trait for which they are calculated. Remember that single trait selection often has undesirable consequences, and extremes are not always the best choice in terms of selection. Remember that an EPD with a value of zero does NOT mean the animal is average for the trait in question.

Example: Bull A has a weaning weight EPD of 41.1 lbs (the current Hereford breed average). Bull B has a weaning weight EPD of 0 lbs. Bull A's calves will be, on average, 41.1 lbs heavier than Bull B's calves.

EPDs Cannot...

- Be used to compare animals of different breeds. Each breed has their own methods of calculating EPDs, and without the use of a proper across breed adjustment table, EPDs of different breeds are NOT comparable.
- Predict outcomes. Bull A with a +25 weaning weight EPD does NOT mean that 25 lbs will be added to your calves come weaning time. It means that Bull A will sire calves that are 25 lbs heavier, on average, than a bull with an EPD of 0.
- Make up for poor management.

Why Is The Calving Ease EPD A Better Indicator Of Calving Ease Than Actual Birth Weight?

Currently, the CHA calving ease EPD predicts the ease with which progeny of a certain animal will be born to first calf heifers. In calculating the calving ease EPD, both observed calving scores and birth weight are taken into account. Attempting to predict calving ease based upon actual birth weight or the birth weight EPD alone ignores many other factors which play a role in calving ease, such as calf shape, cow pelvic area, etc. By combining observed calving ease scores and birth weight into the calving ease EPD, we get a more complete picture of the actual calving ease of that animal - and don't forget, with EPDs, we are looking at the relatives of that animal as well, information which actual birth weight does not provide. A bull can have an actual birth weight of 80 lbs and still have all his calves cut out the side. Using the calving ease EPD to help select breeding animals with a lower incidence of calving difficulty will provide faster and more accurate results than using actual birth weight or the birth weight EPD alone. Ideally, you should take both the calving ease EPD and the birth weight EPD into account when selecting animals with improved calving ease.

A Note On Accuracy: Accuracy measures an EPD's potential to change over time. The higher the accuracy, the less likely the EPD value will change. It is NOT a percentage of progeny that will have that EPD.

Example: Bull A has a weaning weight EPD of 25, with an accuracy of .95

Bull B has a weaning weight EPD of 0, with an accuracy of .50

95% of Bull A's calves will NOT be 25 lbs heavier than Bull B's calves, but Bull A's EPD value of +25 is far LESS likely to change over time than Bull B's EPD of 0.

Factors Affecting Calving Ease

1. Age of Dam
2. Calf Birth Weight
3. Sex of Calf
4. Dam Pelvic Area
5. Gestation Length
6. Cow Size
7. Shape of Calf
8. Breed of Sire
9. Breed of Dam
10. Uterine Environment
11. Hormonal Control
12. Geographic Region
13. Season of Year
14. Environmental Temperature
15. Nutrition of Dam
16. Condition of Dam
17. Implants and Feed Additives
18. Feeding Time
19. Exercise
20. Other Unknown Factors

As you can see, a multitude of factors impact the calving ease of a particular calf. We only partially know how all of these factors interact to create an unassisted birth. We can measure birth weight, and we can combine birth weight with calving ease scores to create the best tool possible to predict calving ease - in the form of the Calving Ease EPD.

Maximizing Calving Ease With Management

The Calving Ease EPD, while an excellent tool to predict genetic merit for calving ease, does not tell the whole story. Management and environment also play a large role in minimizing calving problems. Environment, to some extent, is out of our control - we cannot control the weather. However, we can control all of our management practices.

Diet and Nutrition

Nutrition of dam is one of the most important management factors that contributes to calving ease. Limiting feed intake prior to calving will reduce birthweight, however; research has shown that calving difficulty actually increases in restricted cows, regardless of the lighter birthweights. Underfeeding cows prior to calving will also delay their return to estrus. Overfat cows will also experience increased calving difficulty and have more trouble rebreeding. Make sure that your cows have adequate body condition scores (BCS) prior to calving. Ideally, cows should have a BCS of 3 to 3.5 before calving. This helps cows maintain condition during the energy deficit that occurs after calving and during lactation. If cows start off in good condition prior to calving, they will remain in adequate condition to breed back within a reasonable time frame, and produce enough milk for their calves. To reduce middle of the night calving checks, feed your cows late in the day during calving season. This will increase the likelihood of your cows calving during daylight hours.

Breeding, Bull Selection & Culling

Breed your heifers to proven calving ease sires. This will take a bit of the guesswork out, as first calf heifers have the highest probability of calving difficulty. If you begin breeding heifers 21 to 30 days before the rest of the cowherd, you will have more time to spend with the heifers in case of trouble. If calving ease is consistently a problem in your herd, you may want to get pelvic measurements on all the cows. Necessary pelvic size will vary from breed to breed, however; a general rule of thumb is medium sized cows should have pelvises at least 160 square cm at breeding, while large cows should have a pelvic size of 180 square cm. Cull those cows with small pelvic areas. Cull daughters of cows that have a record of calving difficulty. Record a calving score whenever possible, as this will help you monitor and track any changes in the calving ease of your herd over time.

With a combination of good management and understanding of the Calving Ease EPD, it is possible to greatly reduce the incidence of calving difficulty in your herd, and increase your peace of mind!

- References:**
1. Canadian Hereford Association Sire Summary 2008
 2. Using EPDs: Expected Progeny Differences, Darh Bullock, Extension Beef Specialist, University of Kentucky College of Agriculture
 3. Calving Difficulty in Beef Cattle: Part 1 - Factors Affecting Dystocia, BIF Fact Sheet, Harlan Ritchie & Peter T. Anderson, Michigan State University
 4. Minimizing Calving Difficulty in Beef Cattle - Pete Anderson, University of Minnesota