Making EPDs Understandable

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Expected progeny differences (EPD) are essential tools in the beef industry. Thus, it is important to understand their basic usage in beef herds. By utilizing the following key steps, EPDs can be readily understood. Let's overview the following three steps to better understand how to use them effectively.

1) Know the Unit of Measure

a. Each EPD is a relative measure of a particular trait. EPDs are reported in the unit of measure in which they are recorded. For example, birth weight, weaning weight, yearling weight, and carcass weight are reported in lbs. Other examples include ribeye area which is in square inches; scrotal circumference is reported in centimeters; marbling is reported in marbling scores. More examples are listed below in Table 1.

b. When we understand the unit of measure, we can better understand what is being evaluated and ultimately how to use the EPD. Evaluators can then more readily know whether the lower or higher number is more advantageous in a given situation. More lbs are generally advantageous. However, more lbs. at birth can eventually lead to higher incidence of dystocia.

2) Take the Difference

a. EPDs were initially designed to use in the comparison between two individual animals. Hence the name, Expected Progeny Differences. If we evaluate two bulls for growth performance using the weaning weight (WW) EPD, we simply look at the EPD reported for each bull and subtract one from the other to see the projected difference in their respective progeny for a given trait.

Bull A 50 WW
Bull B - 40 WW
10 WW

In the example, if Bull "A" is used in the same group of cows as Bull B, Bull A should sire calves that are on average 10 lbs. heavier at weaning compared with Bull B. There are two key terms in the previous statement, "should" and "on average". EPDs are not guarantees, but with all environmental impacts being equal, EPDs are predictors of genetic differences between two animals for a specific trait. It is important to realize that cattle with low accuracy EPDs such as yearling bulls may have significant adjustments as new records are available. A yearling bull with a 50 lbs. WW EPD may only have a 44 WW EPD after additional records are submitted to the breed association. One way to reduce the risk of unproven animals is to purchase bulls and heifers with Genomic enhanced EPDs. These cattle will have higher accuracy EPD and the improved confidence that comes with it.

3) Understand the Need

Understanding the need is a key part of utilizing EPDs judiciously. There are multiple considerations in this point.

a. Not all EPDs will be utilized equally across herds. In some herds, the use of docility may not be a high priority as the herd is already very docile, but in others it may be a primary decision-making tool that ranks high on the list of needs.

b. Small differences are often insignificant to make a meaningful impact. For illustration, the example weaning weight comparison described previously has 10 lbs. of difference. This difference across a calf crop should have measurable impact over the course of 3 to 5 years assuming the genetic difference holds over time with newly reported information. However, a difference of 1 or 2 lbs. is economically insignificant. Instead, it would be more prudent to consider other EPDs, visual characteristics and individual performance measures. Even a 5 or 10 lbs. difference should not be considered if other characteristics negate the added value in weaning.

c. When using EPDs as a selection tool, many EPDs should be evaluated at one time. Producers must keep their overall management and marketing goals in mind during the process. For example, producers often want to improve growth performance in their calf crop. However, for herds wanting to retain replacement heifers, other EPDs such as Heifer Pregnancy (HP), Mature Weight (MW), and longevity will also need to be considered. In these situations, it may be beneficial to choose a bull that yields a moderate improvement in growth without sacrificing fertility and input cost.

When comparing EPDs between animals, they must be of the same breed or hybrid breed. Angus and Hereford, nor SimAngus and Simmental can be directly compared. This is a quick overview of how to use Expected Progeny Differences. If you have additional questions about specific EPDs and their usage, please don't hesitate to reach out.

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