Cattle Chat: Using EPDs to make breeding decisions

K-State beef cattle geneticist explains how to use data in herd mating selections

By Lisa Moser, K-State Research and Extension news service

MANHATTAN, Kan. — At the start of a new sports season, there are always people speculating about the team, and some of the serious fans may use statistics to make their predictions about the individual athletes.

In much the same way, beef cattle producers have data to help in their decision-making about herd matings, said the experts at the Kansas State University Beef Cattle Institute.

One of the data tools for making breeding decisions is Expected Progeny Differences, also known as EPDs, said K-State beef cattle geneticist Megan Rolf, speaking on a recent Cattle Chat podcast.

“EPDs are the differences we expect to see in the performance among groups of progeny,” Rolf said.

She gave the example of comparing a weaning weight EPD between two bulls of the same breed.

“If Bull A’s weaning weight EPD is 50 and Bull B’s weaning weight EPD is 70, then we would expect the calves of Bull B to be 20 pounds heavier at weaning, on average, if we bred them to the same cows,” Rolf said.

While EPDs across the breeds are calculated similarly, the baseline of the calculation varies and so she advises that producers only compare EPDs between animals of the same breed.

“Factors that go into that calculation of the statistical model are phenotype information collected by breeders, the pedigree of the animal’s sire and dam, and, in some cases, the animal’s own
genomic data,” Rolf said. Genomic data is collected through a hair or tissue sample of the animal on which the EPD is calculated. Rolf added that if producers want to compare bulls of different breeds, one way to do so is to look at their rankings within their respective breeds.

“Comparing EPDs against percentile rankings in their breed is one way to broadly evaluate bulls,” Rolf said.

When studying the animal’s EPDs, it is also important to note the accuracy of that data point, Rolf said.

“Accuracy is a risk management tool because it gives producers an idea of how much data is in the EPD calculation and how much that number might change over time,” Rolf said.

For heifer matings, Rolf recommends producers use high-accuracy sires, especially related to calving ease. With cows, since they are less prone to calving difficulty, she said some producers may prefer to take more risks with a lower accuracy sire who is often younger or a natural service sire.

In commercial herds, oftentimes the cows do not have EPDs calculated for them so Rolf said she puts a lot of focus on the sire’s EPDs.

“In commercial operations, you can put a lot of selection pressure on the sire to make changes within the herd, especially if replacement heifers are being retained from those matings,” she said.

To hear the full discussion, listen to the Cattle Chat podcast online or through your preferred streaming platform.

-30-

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