

Photo courtesy of Zoetis.



Using genomics to make commercial replacement heifer decisions

Jim Johnson for *Progressive Cattle*

AT A GLANCE

New genomic expected progeny differences (GEPDs) can help commercial cow-calf producers make informed selection, breeding and marketing decisions to help reach herd goals.

The decision on which replacement females to keep for your breeding herd is one of the more important decisions you make. As a commercial cow-calf producer, you may have limited information

available other than visual appraisal to help you determine if a heifer will be an asset or detriment to the success of your operation.

Unfortunately, it is difficult to determine through visual appraisal, with a high degree of accuracy, the future of any potential herd replacement. When decisions based on phenotype are correct, your herd benefits from the addition of better genetics. However, a wrong decision can send genetically inferior animals into your breeding herd and potentially send heifers with better genetics off the farm.

A new type of prediction

New genomic expected progeny

differences (GEPDs) are now available for crossbred commercial females. This provides producers the opportunity to obtain performance predictions based on the genomic make-up of their heifers and make more informed replacement selection decisions.

The new GEPDs rely exclusively on genomic information and associate genotyped animals with pedigree and performance information.

GEPDs are available to commercial cow-calf producers through a multibreed genetic evaluation backed by 1.2 million animal records. These new

Continued on back

Using genomics to make commercial replacement heifer decisions, cont'd from front

predictions are intended for females with crossbred breed compositions, including Angus, Red Angus, South Devon, Hereford, Simmental, Gelbvieh, Limousin and Charolais.

Having more information available to make replacement female decisions can have a dramatic impact on profitability. The cost of raising a replacement female on a commercial cow-calf operation can be significant. Based on a University of Nebraska – Lincoln analysis conducted in 2019, the capital and feed costs associated with the replacement heifer enterprise account for 24% of costs per weaned calf. Those costs can be reduced if selection decisions yield greater lifetime productivity and can be made earlier – at weaning, for instance – through sorting based on the addition of GEPD predictions. This data helps producers assess the value of each heifer and select the right replacements that can

Producers can select the best animals based on one easy-to-use number rather than making decisions based on many individual pieces of information.

make advancements quicker and, ultimately, optimize costs, revenues and profit opportunity.

Commercial producers like Doug Harris, owner of Stirrup Bar Ranch LLC, know this all too well. That's why he uses genomic prediction tools to help him make better selection and breeding decisions to enable him to adjust and improve performance across his operation at a more rapid pace as the market changes.

"Markets and margins are so tight. You have to react quickly," Harris said. "With genomic information as a tool, we can start refining the herd immediately."

Without genomic information, producers must wait for a female's progeny performance data to validate her merit. With genomic information, producers can make faster and easier decisions. Commercial producers can use the genomic data to help understand which animals will help them achieve their breeding goals to improve specific traits.

"These new GEPDs can give us a lot more confidence in our decisions to cull lower-end animals," Harris said. "We have to cull hard to make the performance changes we need in our herd, and this tool will help us make these decisions."

The value of making the right decision

Genomic information enables producers to utilize both seen and unseen traits in making their breeding, selection and marketing decisions.

Economic indexes give producers the opportunity to compare animals on their overall value based on the combined genetic merit of all traits contained within the index calculations. This means producers can select the best animals based on one easy-to-use number rather than



Jim Johnson

Beef Genetics Business Manager
Zoetis, Global Genetics
jim.johnson@zoetis.com

making decisions based on many individual pieces of information. Of course, producers can still use individual trait predictions to select for specific breeding goals.

"We want to know the potential of every calf and cow," said Harris. "We make replacement decisions at weaning, so the genomic information helps us make better decisions to help us reach our herd goals faster."

Since Harris started using genomic testing in his herd, he has indicated the percentage of animals graded Choice or higher has increased from 74% five years ago to 94% in 2019.

"Getting every premium that we can is important for the operation's bottom line," said Harris. "When we're able to increase the number of animals sold graded as Choice or better, it means more profit for the operation."

The primary area of opportunity for commercial cow-calf producers through genomic testing is improving the genetic merit of the herd. This can lead to generation over generation of inherited improvements and a lifetime of greater productivity and profit potential. 

PROGRESSIVE CATTLE

Reprinted from September 2020