Candid Conversation

A commercial producer's perspective on genomics.

by ***Leoma Wells***

Many Hereford breeders utilize genomic-enhanced expected progeny differences (GE-EPDs) to drive their genetic progress. The same science and data driving Hereford's genetic evaluation also enable commercial users of registered Hereford cattle to make selection decisions with increased confidence in the accuracy of genetic predictions.

For instance, Charles "Chuck" Campbell is a Missouri commercial cow-calf producer whose family owns Campbell Ranch LLC (formerly known as Ridgeway Farms). They run about 750 cow-calf pairs — strategically crossing their Angus-based cow herd to maximize heterosis. The Campbell family also has a small herd of polled Hereford cattle. Chuck's perspectives on using genomic tools in commercial operations can inform seedstock producers and commercial cattlemen, alike.

Q When did you first become aware of genomics?

A: "When I moved back to the family farm six years ago and took more of an active role in everyday decision making, I read an article in a magazine about genomics. Since my eight-to-five job is data analytics, the article fascinated me since it was bringing together my two worlds — cattle and data. So, I reached out to my NEOGEN territory manager and inquired about genomic testing the commercial heifers. After many discussions, we invested and have been testing the heifers and analyzing the data ever since."

Q Did EPDs change the way you approached breeding and bull buying decisions?

A: "Absolutely, EPDs have played a role in making some changes in our cattle management. Prior to utilizing EPDs as a tool, we had groups of females with very little information attached to them. We started genomic testing and keeping better records on farm, which led us to being able to sort the females into maternal and terminal herds to be more efficient in reaching our goals. EPDs are a crucial part of the final decisions in determining which bulls are placed appropriately. With the adoption of genomic testing our commercial heifers, we've been able to sire identify, which allows us to utilize more of our home-raised bulls. Previously, this wasn't an option due to the concerns of line breeding."

Q When seeking out a seedstock provider, how important is it for them to have submitted not only the phenotype data (actual birth, weaning and yearling weights) but also for the animal to have genomics and GE-EPDs?

A: "Every year, this is becoming more and more important for us. Early on in our family operation, EPDs, and especially GE-EPDs, were not as important or even a factor in decisions. But now, that information is very important. Before genomic testing, you can look at a bull's EPDs and see the accuracy is minimal. Basing an investment on a low accuracy bull is a lot like going to Vegas — you're accepting more risk. Genomics add accuracy, which equals less risk. I appreciate that, personally.

"For example, we purchase calving-ease bulls to have smaller, hopefully, live calves from our first-calf heifers, and run them in multi-sire pastures. Prior to genomics, we weren't using sire verification. Now, we can easily identify which bull is the likely sire. We had a group of three calving-ease bulls in with a group of heifers. We had to assist three heifers during calving because their calves were too large. Through submitting a DNA sample and running sire verification, we were able to identify the culprit. When purchased, all three bulls were in the top 15% for the Calving Ease EPD (CE). However, when the genomic tests came back, sure enough, the genomics moved the one bull to a CE EPD number we wouldn't have used on first-calf heifers."

Q How do you utilize the genomic information on a farm, and is it included in your management decisions?

A: "First, with the parentage included, we find it extremely useful. Keeping generation upon generation of heifers, it's interesting to see certain sire groups stand out. To be clear, we never select replacements solely based upon genomics. We select heifers by phenotype first, and then, we look at the data. We find it fascinating to see large numbers of heifers from the same sire and question whether we really like that particular phenotype or if the bull is a maternal machine. To now know the sires has been interesting.

"The genomic marker side of it, as an operation, we have culled very few females based upon their genomic scores alone. We hear of other operations incorporating genomics into the forefront of their culling decisions, but we haven't done that so far. Being a data guy, I want to collect the actual information and compare back to the genomics. We are primarily using the scores to decide whether the female goes into the terminal or maternal herds."

Q If we asked you to define genomics and what it means for a commercial producer, what would that look like?

A: "This one is a two-part answer. The first part of genomics, which some are not aware of, is parentage. Especially as a large commercial operation, parent verification has provided us the ability to manage our replacement females differently than before. Prior to genomics, we were identifying great calves and some that were less desirable but were not able to group them by sire. DNA testing allows us to identify the sire and really dive into which ones are living up to their potential.

"The second part of this answer is how we use the genomics today. The genomic scores are allowing us to have another unbiased, comparative example of what we physically see. We're able to prove/improve upon what we see much faster than before."

Q Do you believe there is increased value in your cattle due to having been genomically tested?

A: "Absolutely. While we don't sell females, we can physically look at the females generation by generation and tell that we're making a difference."

Q What advice do you have for those considering implementation of technology on their operation?

A: "I truly believe that where this technology is going and where it will get to will be amazing, even though we're not there yet. Regardless of your trust/belief, at a minimum, you should get involved with it to some degree. Educate yourself, compare back to your own data, examine how it can help now and where it can be improved upon in the future. In the years until then, you're going to develop increased confidence in the numbers, and as the technology improves, that confidence will continue to increase."

Q What resource did you utilize to learn more about genomic testing and what would you recommend to others seeking information?

A: "It's been a constant process. Anything and everything that I could find to read about EPDs and genomics was a resource. I would encourage each producer to read materials from multiple sources, since some information was contradictory and forced me to think about it from different perspectives. A great resource was my NEOGEN territory manager; he helped paint the picture of how the information could be used as another tool in our arsenal."

Q Any additional thoughts or comments?

A: "What I want to put out there is that, as a commercial producer, I study EPDs and am extremely knowledgeable, but not everyone invests or has the time to analyze all this information. EPDs and genomics can help us arrive at a decision quicker. While they are not perfect, they provide a tool for producers to help select what they wish to focus on — whatever that may be. We should welcome EPDs and genomics as helpful tools to a commercial producer and do whatever we can to make it a valuable resource. My father, who is 81, did not care or pay attention to the numbers. My brother, who is 60, glances at them. But, myself, I am 44, and I care/analyze them a lot more than the older generations. My kids are probably going to study and use them more than I do. There's no short term in the beef business; it all starts with long-term planning and each generation is progressing past the last. It's all about setting ourselves up for success." HW

The Campbell family.

Editor's Note: Leoma Wells is the strategic account manager for NEOGEN Genomics.