

Technology at Work

DNA information boosts animal selection and marketability.

by Chel Terrell

If you had a crystal ball to foretell the future of your operation, wouldn't it be amazing if it could magically reveal which animals will be the most productive and profitable members of the herd? What if it could show the progeny of those animals, their future performance and how they will add value to the operation?

With the advancement of DNA technology, cattlemen can toss out those unpredictable crystal balls and utilize solid data to capitalize on this valuable information.

Just ask Brad Turner. The commercial cow-calf producer is sold on using DNA technology to enhance his management and marketing decisions on his Lipan, Texas, ranch where he raises black Angus and black baldy replacement females. He recently sold 10 heifers in the Southwestern Expo Commercial Replacement Heifer Sale for a larger profit than he would have expected without the additional data.

"I believe my heifers brought about \$150 more per head than they normally would because they were genetic profiled and I provided that DNA data to potential buyers," he said. "I believe it's a great tool. We use it on all our bulls and replacement females."

The tool Turner is referring to is Igenity®, a division of Merial that has operated for six years. The comprehensive Igenity profile includes multiple-marker DNA analysis for traits such as marbling, tenderness, fat thickness, ribeye area, yield grade, coat color, breed-specific horned/poled status and confirmation of parentage in multiple-sire settings.

"Igenity is the most comprehensive genetic profiling tool that's out there for key traits," said Dr. Kevin DeHaan, Igenity technical services director. "We profile animals for some of the most important economic traits not necessarily covered by EPDs that give

producers a more complete picture of an animal's potential performance earlier in life."

Just recently, the Igenity profile expanded to include analyses for heifer pregnancy rate, stayability (longevity), calving ease and docility. Producers can also choose a diagnostic test that identifies cattle persistently infected with bovine viral diarrhea (BVD-PI).

The use of DNA technology in conjunction with management, marketing and other selection tools such as EPDs is valuable to any operation, said Dr. Jim Gibb, beef seedstock sales director for Igenity. Gibb recently spoke about the use of Igenity on a special segment of "The Cattle Show" on RFD-TV.

"DNA can be used to determine parentage, cattle performance and disease prevention. It shows multiple traits of economic importance and helps produce a higher quality, more consistent end product," he said. "It enables a producer to know more about the individual animal earlier in life, to help point the operation in the right direction."

Cow-calf producers and seedstock cowmen can both benefit from profiling bulls and replacement females, DeHaan said.

"This is the most logical place to start since these are the two areas that are really going to provide the most genetic change going forward in their operation. It (DNA) may sound complicated, but we're trying to make it as straightforward and simple as possible," he said.

"Producers can profile those bulls, replacement heifers, utilize the Igenity profile information we give them in an easy to read report, and incorporate that information along with the other tools they have in their hands (whether that's pedigree information, EPD information, ultrasound and so forth). They can incorporate it as part of their selection

tools they're already utilizing for their operation."

To have cattle DNA profiled, producers must send in a tissue sample, either a hair sample taken from the tail switch or ear tissue taken when an Igenity tissue collection ear tag is applied. Results take about two weeks.

After samples are analyzed, the Igenity profile utilizes a scoring system for each trait on a scale of 1 to 10. Higher scores indicate the animal has greater potential to express that individual trait.

"For example, if an animal scores a 10 for a particular trait such as tenderness, carcass weight and ribeye area, we would expect that animal to be more tender, have more carcass weight and have a larger ribeye area than the animal that scores a 1," DeHaan said.

However, he cautions that a 10 does not always mean the best. It just means the animal has the potential for more of that specific trait.

"There are situations like yield grade and fat thickness where a score 10 also means more of that particular trait is not desirable."

The cost to run the standard Igenity profile is \$35 per tissue tag sample and \$40 per hair sample. An additional \$2.50 per sample is required for the BVD-PI diagnostic test.

Igenity can also provide producers a way to evaluate sire performance after parentage is established in multiple-sire settings. This Commercial Ranch Genetic Evaluation runs \$35 per bull for the first trait and \$5 for each additional trait.

"We can develop in-herd EPDs to rank the bulls in terms of which are producing the better-performing calves or poorer-performing," DeHaan said. "This gives a producer better information prior to the next turnout to figure out which bulls to keep and which to not utilize again."

DNA technology has been called

the next generation of management tools, enabling producers to make genetic progress more quickly and confidently. Profiling not only affords the opportunity to improve breeding decisions, it can assist other choices further down the production chain.

If a cow-calf producer chooses to retain ownership of calves that score high in carcass composition traits like ribeye area and yield grade, they can pass that information on to the feeder who can purchase those cattle with greater confidence.

"Using DNA results can help producers better market their cattle," DeHaan said. "We've got many customers with bull sales and production sales going on right now that are putting the Igenity profile information into the sale catalog to give customers additional confidence in the animals that are available to purchase."

Parker Angus Ranch, Waurika, Okla., is one of those producers. Owner Eddie Parker also recently spoke about his experience with Igenity on "The Cattle Show."

"We raise cattle on 6,000 acres and really like the comprehensive profile of multiple traits for one price," he said. "This information gives our customer a tool to manage and market their animals better."

Parker Ranch profiles all of their herd sires and donors and plans to profile their entire cowherd before the next production sale.

"Our goal for using Igenity is to improve the marketability of our cattle, to know what we're going to produce and make better breeding decisions in the cowherd," Parker said.

"It really elevates a herd and operation in the eyes of their customers," DeHaan said. "They're incorporating the latest and most comprehensive tool that's out there and doing as much possible to make the genetic change they can pass along to the customer."

This spring, Turner plans to use the DNA information he has gathered on both his bulls and females to sort breeding groups to improve herd genetics. He is confident that buyers will continue to appreciate having this data when they purchase his cattle.

"If a person is going to come buy a set of females to take to his pasture and make money, they're going to want that information. They'll spend a little more to get that information instead of gambling on what kind of milkers or

calvers they'll be."

"Knowing which heifers will become pregnant and remain productive members of the cowherd for many years is valuable information for any producer," DeHaan said. "That kind of information is viable for our cow-calf customer to help reduce cost in terms of having to turn that herd over as frequently as sometimes happens."

DNA technology is also helping producers who are searching for ways to improve feed efficiency as rising feed costs take a bite out of profits. Harahan, La.-based Bovigen LLC has developed a DNA test that helps identify genetic lines that provide feed-efficient animals.

According to Bovigen CEO Victor Castellon, GeneStar® Feed Efficiency enables producers to identify up to a \$50 difference in feed cost between animals when ration price is \$165/ton.

For example, an animal with a Feed Efficiency of -3.0 will eat 3 lbs. less feed per day than an animal with a zero Feed Efficiency. Over a 150-day feeding period, this animal will cost \$37 less to feed without sacrificing growth or carcass quality.

The adoption of DNA technology by a growing number of producers shows the desire to improve efficiency within management and marketing decisions and provide the beef industry a more consistent end product.

"I believe a commercial cowman with the right genetics and the right tools can raise just as good of replacement females as what a purebred man's raising," Turner said. "What I like about Igenity is that you can take a set of females that have been genetic profiled and take some bulls that have been genetic profiled and you can compare both sets of data to raise good cattle."

"We want to raise the best cut of beef we can raise, but we also want to raise the best replacement females we can at the same time. We're not waiting to use a feedlot to get our carcass data because we've got it right there. It's a tool that you can use to get the most bang for your buck."

"It reduces the wait-and-see factor," Gibb said. "You can add value to cattle and make more confident decisions. It provides a wealth of information to use over the life of the animal." ☺

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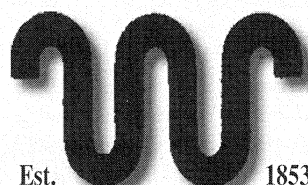
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