You be the judge

Can you spot cattle with the most genetic capability for postweaning gain and grade? Rank these four commercial Angus heifers based on their potential for gain and carcass performance. Official results are based on GeneMax™ scores.

Keeping the Right Ones

GMX™ gives commercial producers a way to analyze replacements.

For many dedicated cow-calf producers, replacement heifers are the most important part of each year's calf crop. Sorted to cull out any high-headed or other negative outliers, those that remain are the pride and future of the herd.

But what do you really know about them?

"Sometimes, there's more than what meets the eye," says Kara Wilson, supply programs manager for Certified Angus Beef LLC (CAB). She helped prove that as part of the team that conducted hands-on educational programs all across North America this year.

From Texas to the Canadian border and at many points to the east and west, impromptu commercial heifer classes were assembled for a new kind of judging contest.

"Other than what producers could see, we provided very limited sire pedigree data and asked them to rank heifers based on guessing their GeneMax™ (GMX) scores," Wilson explains. That's the Angus-specific DNA tool launched last February to predict grade and gain potential in commercial herds that use registered-Angus sires.

Of course, all the participants could do was guess, but they learned from the exchange on how scores are calculated and how the information can be used in marketing and herd improvement over time.

At one field day, out of 50 entries, only six started the class with the highest-scoring GeneMax heifer. Her half-sibling by the same sire, however, had the lowest GMX score, indicating a major difference in their dams.

"The take-home message was simple," Wilson says. "With the information we have available today, it's no longer enough to just make a gate cut on your replacement heifers."

Try your hand

Photos from one summer demonstration made their way to Facebook for an exercise called "You be the Judge!" In later sessions, the sire-matching aspect of GMX was included, since the test can find the most probable sire among sires with Pfizer 50K DNA test results. Both live and online, the judging contests yielded the same range of answers.

Karl Hoppe, a North Dakota Extension livestock specialist who attended one of the events, sees potential in the test.

"Those were typical of the heifers anybody would want to keep back as replacements," he says. "You'd go through and cull out the tail-enders and keep some on structure and looks, but you're still looking at a top half. They're all good. How can you find the top half of this half?"

What if you could see DNA test results on the whole group you thought were good? "This gives you another tool to help decide," Hoppe says. "As EPDs (expected progeny differences) are to purebred cattle, maybe DNA testing can be for commercial herds."

There's a longstanding bias toward big when picking replacements, he notes, but it needs to be about more than visual frame.

"In our industry, marbling is getting to be a big deal," Hoppe says. "You can't usually see that by looking."

Drought became increasingly important as a culling factor last summer, and Wilson blogged, "You don't have to lose sleep wondering if you culled or kept the right ones. Good records can be a big indicator, and you can partner with a feedlot to gather performance and carcass data. But what about this year's heifers?"

Says Hoppe, "We all have good heifers, but we don't always know which ones. If you're keeping replacements, you want them to get better, to improve the quality of your herd. It's pretty eye-opening to see the GMX scores. It's sure better than waiting to see what gets bred. It puts you a step ahead."

To listen to a short video about GMX, visit *bit.ly/Zr7zxy.* Step-by-step instructions for how to utilize GMX — from determining your testing strategy to how to take blood samples to implementing the results — are available at *www.cabpartners.com/genemax/how.php.*

Editor's Note: *This article was provided by Certified Angus Beef LLC and the American Angus Association.*

Fig. 1: Example test results, with guide for how to interpret the results

Name: Heifer Demo Class
Address: 123 Webside Dr., Cowtown, MO

CERTIFIED ANGUS BEEF

GMX GENEMAX

							Most Likely Sire	
Tag	Sex	Association Num	GMX	GMX MB	GMX Gain	Tag	
0142	H	BIR	621788545	94	4	5	874	AAA 13395334
0212	H	BIR	621788526	75	3	4	512	AAA 15150631
0190	H	BIR	621788620	54	2	4	1239	AAA 14963730
0159	H	BIR	621788645	40	1	5	874	AAA 13395334

GMX = For the GMX Score, the genomic results for both marbling and gain are weighted based on historical averages and industry economic trends. Each individual's GMX Score is then ranked against the GeneMax database and given a value between 1 and 100, with a higher value being more favorable.

GMX MB = For the individual trait GMX Marbling, the genomic prediction for each trait is ranked against the GeneMax database. Animals testing in the top 20% are assigned a value of "5." The next 20% are assigned a "4," and so forth. Higher values are more favorable.

GMX Gain = For the individual trait GMX Gain, the genomic prediction for each trait is ranked against the GeneMax database. Animals testing in the top 20% are assigned a value of "5." The next 20% are assigned a "4," and so forth. Higher values are more favorable.

How close did you come?

How would you rank the four heifers pictured above if you were evaluating them as replacement heifers for your herd? The heifers were used in a North Dakota field day demonstration of GeneMax™ (GMX), the DNA test introduced earlier this year for evaluation of replacement heifers and feeder cattle, providing a genomic prediction of an individual's ability to grow and marble. Certified Angus Beef LLC (CAB) also offered the class, with an additional heifer added in, as a contest on the Black Ink Basics Facebook page in mid-July.

Have you made your placing?

Ranking the heifers on their (GMX) scores instead of phenotype, CAB's Black Ink team ranked the heifers 2-3-1-4. The overall potential for marbling and post-weaning gain on these heifers ranged from 85 to 6, based on the GMX scale of 1-100.

The mystery of DNA potential is one that even the best cattle experts can't identify with the human eye.